Appendix H – Hydrology and Water Quality Management Plan

Preliminary Drainage Study – Building 1

Beaumont Summit Station – Building 1
TPM 38223
County of Riverside, California

Preliminary Drainage Study

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SECTION 1 - SUMMARY

PURPOSE

The purpose of this report is to document the hydrologic and hydraulic analyses performed in support of the Beaumont Summit Station (BSS) - Building 1 project located in the City of Beaumont, County of Riverside, California. The overall project site consists of approximately 188 acres of TPM 38223 which currently contains mostly vacant land with some pavement and structures and is bounded by Cherry Valley Boulevard to the north, Brookside Avenue to the south, residential lots to the east and vacant land to the west. TPM 38223 consists of approximately 145.4 acres of e-commerce, 11.4 acres of commercial, and 31.2 acres of open space areas. This report will focus on the BSS - Building 1 project, a proposed e-commerce development on approximately 52.4 acres of the western portion of the overall project area. The BSS – Building 1 project is bounded by Cherry Valley Boulevard to the north, vacant land to the west, vacant Parcel 5 of TPM 38223 to the south and the future BSS – Building 2 and 3 developments to the east. This report will summarize the hydrologic and hydraulic analyses that were conducted in order to determine the necessary drainage improvements required to provide flood protection for the proposed building and safely convey the runoff through the site.

The scope of this report will include the following:

- Determine the peak 100-year and 10-year flow rates for the developed condition using the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Rational Method.
- Determine the required storm drain facilities, alignment, and sizes required to flood protect the project site.
- Preparation of a preliminary report summarizing the hydrology and hydraulic results.

DESCRIPTION OF WATERSHED

As previously described, the project is proposing to build an e-commerce development of three warehouses on approximately 145.4 acres of vacant land with some pavement and structures. The BSS project is located within the Sunny Cal Specific Plan. Existing elevations across the site vary from 2554 to 2419 (NAVD88 datum). The slopes throughout the site vary, while the general existing drainage pattern for the site is characterized by sheet flow to the southwest. Along the southwestern boundary of the BSS project, an existing escarpment conveys runoff from the site into a vegetated streambed which runs northwest. A portion of the eastern and southern areas of the site drain south, where the streambed parallels Brookside Avenue. The majority of the site drains southwest into the same streambed, further downstream. A field survey was performed to determine the boundary of the project site in order to reduce the impacts on the existing vegetated streambed. The streambed eventually enters an existing concrete ditch along Calimesa Boulevard to the northwest of the project.

EXISTING CONDITIONS

The BSS - Building 1 project is a proposed e-commerce development on approximately 52.4 acres of the western portion of the overall project area. The north area of the site currently slopes down at approximately 4% to southwest. Existing elevations across the site vary from 2513 to 2419 (NAVD88 datum). The southern area consists of various hills which vary greatly in slope although this area also generally slopes to the southwest. The existing drainage pattern for the site and the general area is characterized by sheet flow to the southwest.

PROPOSED CONDITIONS

The overall project includes development of Buildings 1, 2, and 3 with mass grading of Parcel 4. Prior to the individual building developments, the overall BSS site will be mass graded. During mass grading, the

backbone infrastructure will be constructed, including "A", "B", and "C" Streets and the emergency access road along with associated utilities. After mass grading, the individual building sites will be developed separately. Each building will mitigate for increased runoff within its own site. Facilities proposed to mitigate for increased runoff will be constructed as part of the individual building developments. Parcel 4 will be mass graded for future commercial development and will treat for water quality requirements and mitigate for increased runoff within its site once fully developed.

In the Building 1 proposed condition, onsite runoff will be conveyed through the site via proposed curb and gutters, and ribbon gutters. Runoff is collected via a network of inlets provided at low points throughout the site and conveyed via underground storm drain towards a proposed underground detention system. Due to the lack of downstream storm drain facilities, the project site will be required to mitigate for increases in runoff. The proposed underground CMP detention chambers have been sized to detain the water quality volume and mitigate for increased runoff for the 2-year, 5-year, 10-year and 100-year storm event with a duration of 24-hours. For preliminary purposes, it was assumed this will result in the largest mitigation volume required. Additional durations will be analyzed during final engineering. Further details on the mitigation for increased runoff for the overall BSS project may be found in the "Beaumont Summit Station Preliminary Drainage Study" (See Appendix D). An outlet structure from the detention system has been designed to achieve outflow that does not surpass the existing flowrates. Runoff will discharge from the detention system into the existing vegetated streambed to the western boundary of the site. The relevant agencies do not have required setbacks or buffers for the stream that are globally set or dictated, but project design will be implemented to ensure the avoided jurisdictional features are not directly or indirectly impacted. Permits are in process to obtain approval with the relevant agencies. If necessary, modifications will be made through the permit processes and changes will be implemented in final design.

The water quality runoff volume will be pumped from the detention chambers to the proposed stormwater treatment facilities. A portion of the onsite runoff will be treated for water quality by a proposed bioretention basin within a landscaped area along the eastern site boundary. Due to limited area available for the bioretention basin, the remainder of the water quality volume will be pumped to the infiltration basin within the BSS – Building 2 site. The proposed pump system will be designed in final engineering to ensure that Building 1 water quality flows will not be pumped to the infiltration basin until the Building 2 water quality volume has fully infiltrated. Therefore, the CMP chambers were designed to hold the water quality volume as well as the increased runoff volume. As an LID measure, a portion of the water quality flows are to be pumped to irrigate the natural vegetation along the southern Building 1 site boundary. Additional information regarding the water quality treatment methods proposed can be found in the separate "BSS – Building 1 Preliminary WQMP Report".

METHODOLOGY

HYDROLOGY

Hydrologic calculations were performed in accordance with the RCFC&WCD Hydrology Manual, dated April 1978. The Rational Method was utilized in determining peak flow rates.

The hydrological parameters, including rainfall values and soil types were derived from the RCFC&WCD Hydrology Manual. The isohyetal maps and soil map have been included in Section 2.

Rational Method calculations were performed using a computer program developed by CivilDesign Corporation and Joseph E. Bonadiman and Associates Inc. The computer program is commonly referred to as CivilD which incorporates the hydrological parameters outlined in the RCFC&WCD Hydrology Manual.

The Rational Method was used to determine the peak flow rates to size and design the drainage facilities need to convey onsite flows through the site to the proposed basin. The flow rates were computed by generating a hydrologic "link-node" model in which the overall area is divided into separate drainage sub-areas, each tributary to a concentration point (node) determined by the proposed layout and grading.

The Unit Hydrograph Method was used to determine the peak flow rates and volumes associated with the 2-year, 5-year, 10-year, and 100-year storm events. Calculations were performed for both the existing condition and developed condition to be used in the sizing of the CMP detention system. See "Beaumont Summit Station Preliminary Drainage Study" in Appendix C for additional information and results regarding the hydrologic analyses performed for this project.

HYDRAULICS

Water quality calculations were performed using spreadsheets that were created by RCFC&WCD. Final calculations and additional details can be found in the Preliminary-WQMP.

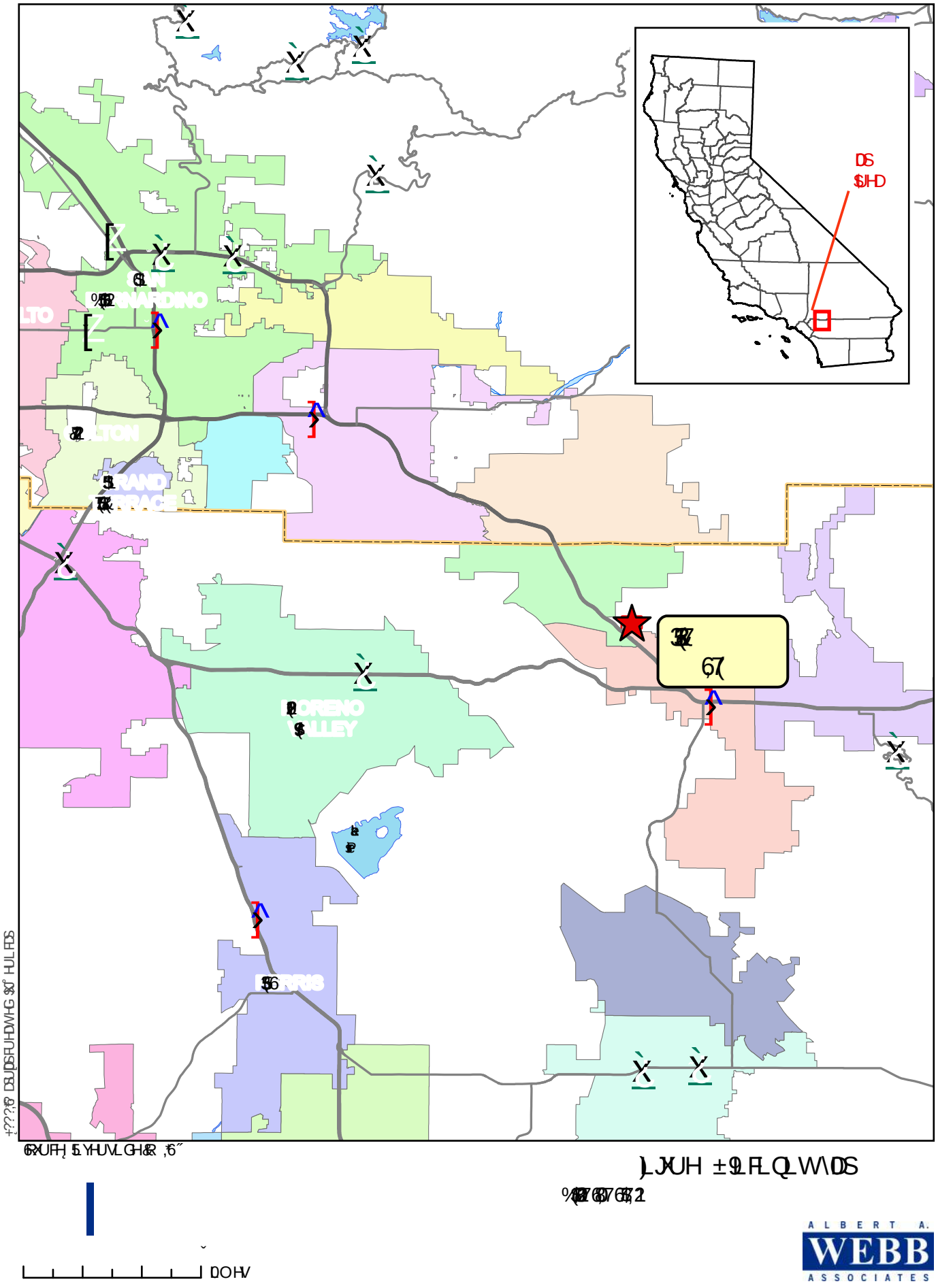
Hydraulic calculations to determine the required pipe sizes of proposed storm drain facilities will be provided in the Final Drainage Study.

FIG. 1 VICINITY MAP

FIG. 2 USGS TOPOGRAPHY MAP

FIG. 3 AERIAL PHOTOGRAPH

FIG. 4 RECEIVING WATERBODIES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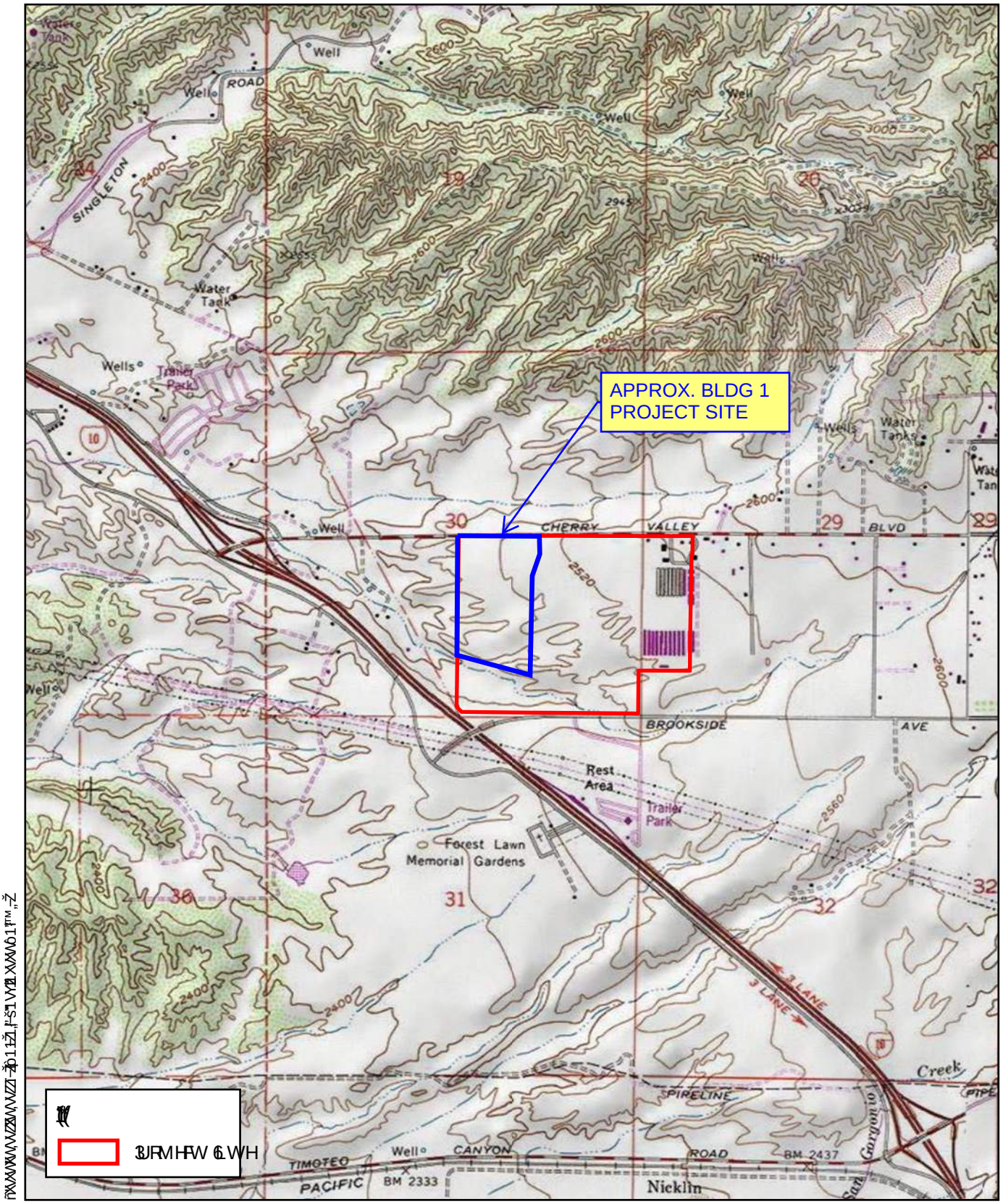

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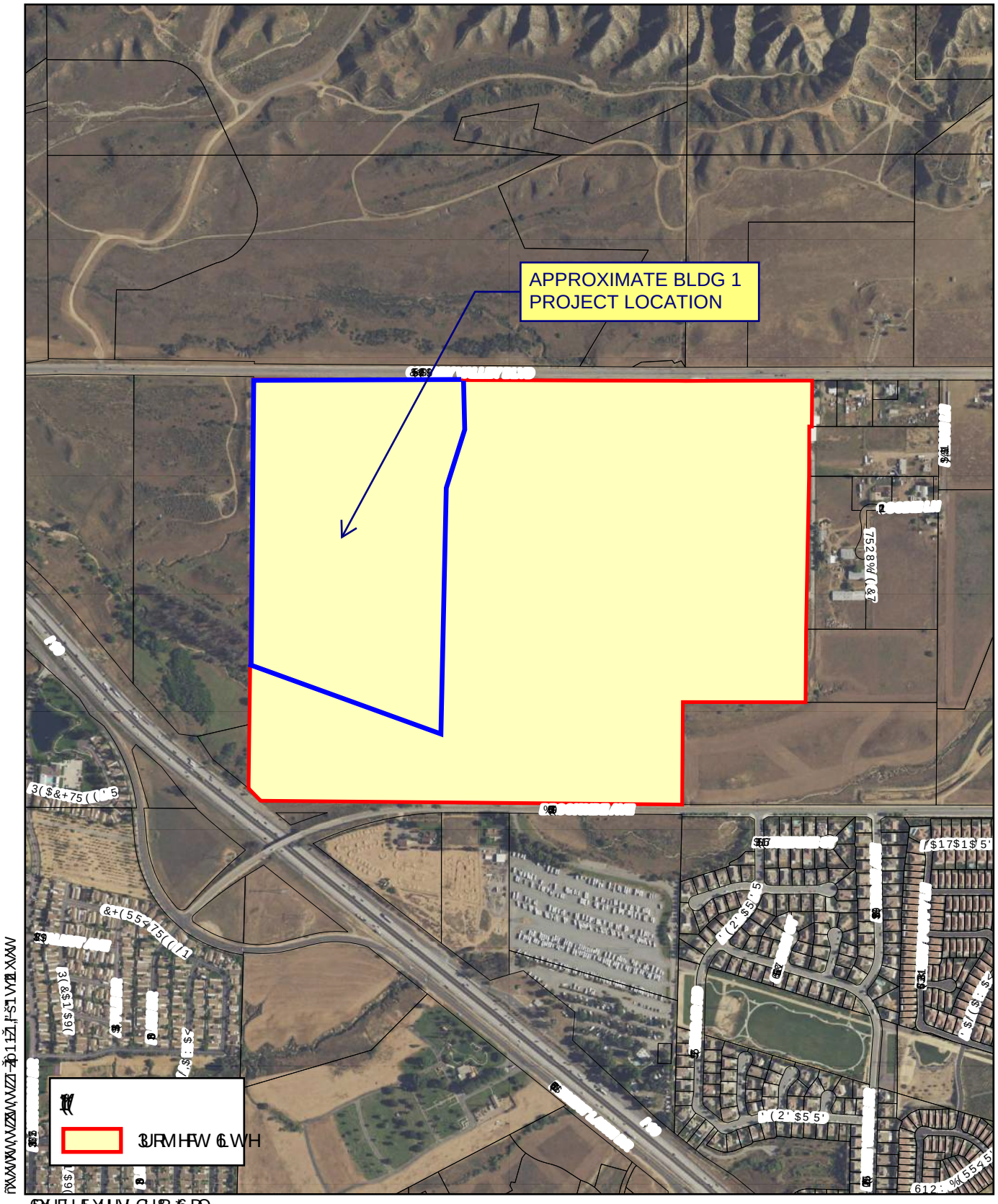

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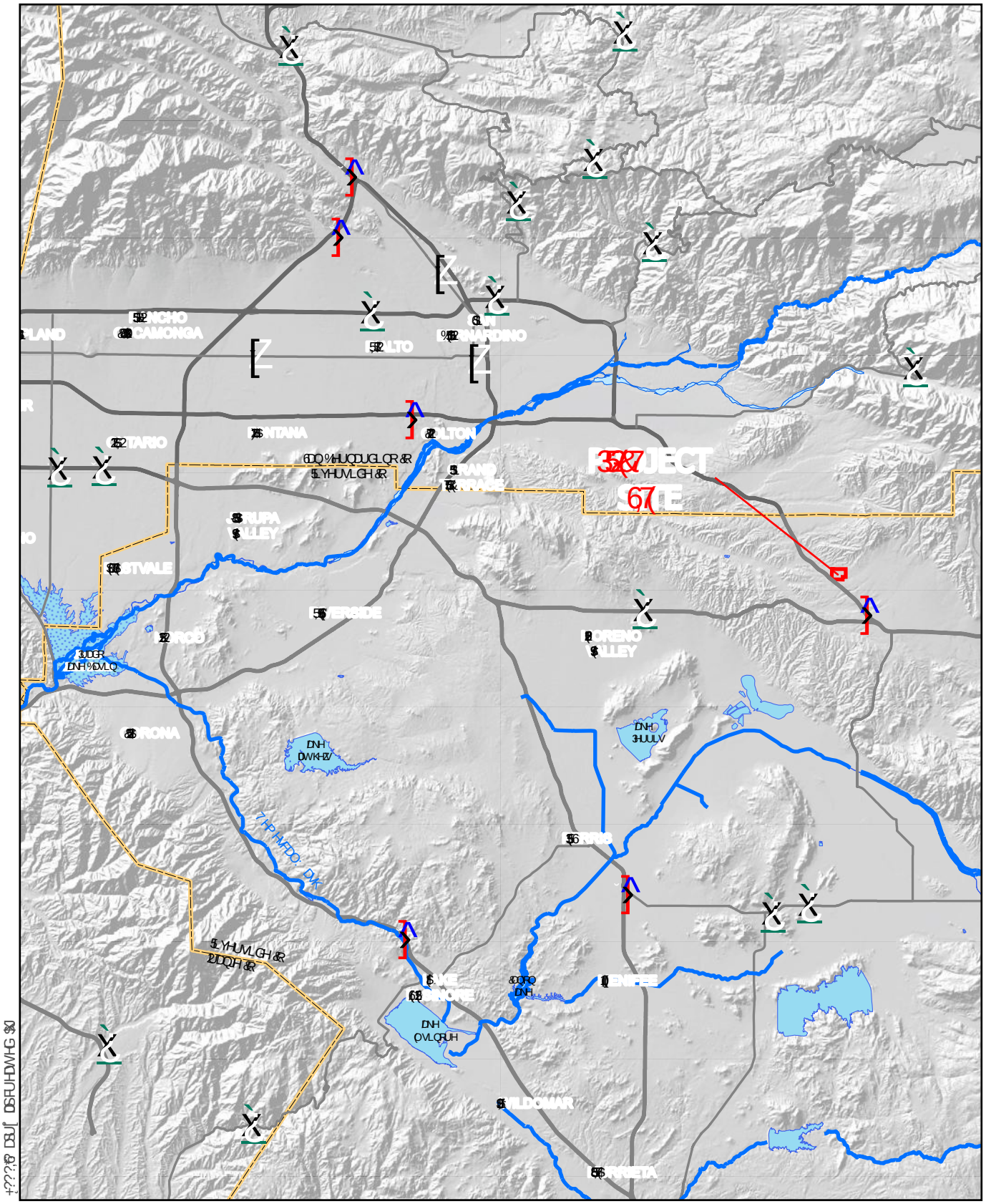

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SECTION 2 - HYDROLOGY ANALYSIS

HYDROLOGY PARAMETERS

The RCFC&WCD Hydrology Manual was used to determine several of the hydrological parameters. The following rainfall depths were utilized in the hydrology analyses, which were obtained from the NOAA Atlas 14:

Table 1 – Precipitation Values

	Duration
Storm Event	1-Hour (inches)
2-Year	0.581
100-Year	1.67

The NOAA Atlas 14 rainfall data can be found in Appendix A.

Based on the Plate C-1.18 (El Casco) in the RCFC&WCD Hydrology Manual, the project site is classified as soil type B and D. The soils map is included in Appendix A.

OVERALL SITE RATIONAL METHOD HYDROLOGY

The existing condition rational method was performed for the overall site for reference purposes. Mitigation of increased runoff for the developed condition is based on the unit hydrograph analysis for the 2-, 5-, 10- and 100-year storm events (See Section 4). The overall site was divided into two main areas. Approximately 106.4 areas of the north and west site are analyzed in the 700 series. Approximately 50.2 acres of the south and east site were analyzed in the 800 series. The undeveloped site primarily consists of undeveloped land with varying slopes. Therefore, it was analyzed as a natural channel type flow through the undeveloped sections. The site drains to the existing streambed which runs to the west along the southern border of the site. The 700 series leaves the site at the western boundary while the 800 series discharges into the streambed area at the southern boundary of the site.

In the developed condition, approximately 1.5 acres between the northern BSS project boundary and proposed right-of-way are draining to Cherry Valley Boulevard. Approximately 9.5 acres of landscaped areas along the western boundary of the BSS – Building 1 site are to drain directly offsite to the west and south of the site, as in the existing condition. These approximately 11 acres were not included in the developed condition rational method analysis and therefore create a difference in the total areas analyzed in the existing and developed conditions. These areas were included in the unit hydrograph and routing calculations for mitigation of onsite flows.

ON-SITE RATIONAL METHOD HYDROLOGY

The rational method was used to determine peak flow rates in order to adequately size the proposed subsurface storm drains and associated inlets used to convey on-site flows to the proposed CMP detention system. Approximately 42.9 acres within the project area are tributary to the CMP detention system. These areas were broken up into two major areas (the 100-Series and the 200-Series) based on the locations of proposed inlets at low points throughout the site. Each series contains its own storm drain line which discharges into the chamber system at two inlets to the system. The subareas were further

broken up into smaller areas in order to be modelled properly in the calculations. Most subareas consist of roof, landscaped areas, parking lots and drive aisles.

The 100-Series consists of approximately 32.9 acres of the eastern and southern project area. The 200-Series consists of approximately 10.0 acres of the northern project area.

Approximately 9.5 acres of the building 1 project area will flow directly offsite on the western and southern boundary due to grading constraints. Approximately 3.4 acres, consisting of a drive aisle and landscaped areas, will convey runoff to Cherry Valley Boulevard to the north. The remaining 6.1 acres are landscaped areas which slope to the natural land to the west and south of the site, consistent with existing drainage patterns for these areas. The 9.5 acres will not be treated for water quality and were not included in the rational method analysis. Although this area is included in the unit hydrograph and routing calculations for mitigation of onsite flows.

The following tables summarize the rational method results at key points:

Table 2 – Overall Project Watershed Rational Method Results

	Existing Condition			Developed Condition		
Point of Interest	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**
Node 705- Total Flows from North and West Areas	106.4	105.0	195.6	-	-	-
Node 803- Total Flows from South and East Areas	50.2	55.3	101.2	-	-	-
Node 110 – Total Building 1 Flows	-	-	-	43.0	84.1	139.3
Node 414 – Total Building 2 Flows	-	-	-	72.3	155.9	257.4
Node 603 - Total Building 3 and Parcel 4 Flows	-	-	-	30.2	54.7	95.9
Total	156.6	160.3	296.8	145.5	294.7	492.6

Table 3 – On-site Rational Method Results

Proposed Condition Point of Interest	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**
Node 109- Total 100-Series Flows Entering Chambers	33.0	65.6	108.6
Node 211- Total 200-Series Flows Entering Chambers	9.8	21.8	35.8
Node 110- Total Building 1 Onsite Flows	43.0	84.1	139.3
Building 1 Detention Chambers Mitigated Outflow*	-	16.4	41.0

*See Section 4 for the routing analysis details

The rational method output files and hydrology map have been included in Appendix A.

OFF-SITE RATIONAL METHOD HYDROLOGY

All flows entering the proposed storm drains and associated inlets are generated on-site. Cross gutters are proposed along "A", "B" and "C" Streets to prevent runoff from Cherry Valley Boulevard from entering the site. Approximately 39.4 acres to the east of BSS - Building 2 and Parcel 4 produce runoff which would flow onsite. In the existing condition, flows from the offsite area would ultimately flow into the existing stream to the south of the BSS project site. A concrete channel is proposed with the development of Buildings 2 and 3 to divert flows south towards the existing stream without impacting the project site (see the separate "Beaumont Summit Station - Building 2 Preliminary Drainage Study" for channel details). The offsite rational method analysis was performed for a total of 44.1 acres. This includes the area to the east of the project and 4.7 acres of the south of the BSS - Building 2 site which will be conveyed through a culvert across the emergency access road proposed to connect the BSS site to Brookside Avenue to the south. The following tables summarize the rational method results at key points:

Table 4 – Off-site Rational Method Results

Off-site Rational Method Point of Interest	Area (ac)	Q_{10} (cfs)	Q_{100} (cfs)
Node 3- Flows from Area East of Building 2 and Parcel 3	39.4	56.8	102.0
Node 4- Total Flows Entering Proposed Culvert	44.1	63.6	114.0

The rational method output files and hydrology map have been included in Appendix A.

SECTION 3 - HYDRAULIC ANALYSIS

ON-SITE STORM DRAIN FACILITIES

Storm drain facilities throughout the site have been preliminarily designed to convey the 100-year storm event based on the rational method analysis. Runoff generated onsite is conveyed via proposed curb and gutter and ribbon gutters towards proposed water quality treatment and mitigation systems. For the Buildings 1 site, CMP detention systems which will provide mitigation for increased runoff. Hydraulic analysis and sizing of the proposed storm drain lines are to be provided with the final engineering.

Building 1 - CMP Chambers

To mitigate for increased runoff within the BSS – Building 1 project site and hold the water quality volume, a CMP detention system is proposed to hold 400,000 cubic ft of runoff. This would require the system to consist of 12 barrels, which are 643 ft long each. The chambers are proposed to be solid chambers as the fill condition on the Building 1 site makes infiltration not feasible. The details of the CMP chamber sizing have been included in Appendix B. An outlet structure is proposed to ensure outflow does not exceed existing flow rates for each storm event. The outlet structure is proposed to consist of an orifice with the invert at the top of the water quality ponding elevation to mitigate the peak flow rate of the 2-year storm event. A weir opening is proposed at the maximum ponding level of the 2-year storm event. This weir opening in the outlet structure serves to mitigate the 5-year peak flow rate. At the maximum ponding of the 5-year storm event, a weir is proposed to mitigate the 10-year and 100-year peak flow rates. The mitigation of the storm events results in a maximum ponding depth of 7.99 ft, therefore the ponding remains within the top of the chambers. Additional information regarding these depths can be found in Section 4. A rip rap section is proposed at the outlet storm drain line of the chambers, sized per the Riverside County Standard Drawing No. 314. The lengths and thickness of the rip rap section are based on the pipe diameter and design velocity, respectively. A 16 ft long and 1.25 ft thick rip rap section of No. 2 backing rock with a 1 ft thick filter of 1" crushed rock is proposed based on preliminary sizing.

OFF-SITE STORM DRAIN FACILITIES

Emergency Access Road Culvert

A culvert is proposed south of the BSS – Building 2 site to convey flows across the proposed emergency access road which provides access from Brookside Avenue to the BSS project site. The culvert is a proposed 36" storm drain line which has been sized to convey the 100-year peak flow rate of 114 cfs across the access road to the existing stream. The rip rap section at the outlet of the culvert has been sized per the Riverside County Standard Drawing No. 314. The lengths and thickness of the rip rap section are based on the pipe diameter and design velocity, respectively. A 12 ft long and 5.4 ft thick rip rap section of 2 ton rock with a 1' thick filter of 1" crushed rock is proposed based on preliminary culvert sizing. The hydraulic model for the culvert is included in Appendix B.

SECTION 4 - DETENTION SYSTEM ANALYSIS

HYDROLOGY PARAMETERS

The RCFC&WCD Hydrology Manual was used to determine several of the hydrological parameters. The following rainfall depths were utilized in the hydrology analyses, which were obtained from the isohyetal maps provided in the RCFC&WCD Hydrology Manual:

Table 5 – Precipitation Values

	Duration			
Storm Event	1-Hour (inches)	3-Hour (inches)	6-Hour (inches)	24-Hour (inches)
2-Year	0.55	0.95	1.40	2.50
100-Year	1.25	2.05	3.00	6.50

The value for slope of intensity was determined to be 0.53. The isohyetal maps have been included in Appendix A.

Based on the Plate C-1.18 (El Casco) in the RCFC&WCD Hydrology Manual, the project site is classified as soil types B and D. The soils map is included in Appendix A.

The cover type was determined based on the existing land cover and proposed land use of the site. Hydrological computations for the existing condition were done using Natural Grass and Residential or Commercial. The Urban or Residential or Commercial cover type was used to represent the developed condition. The table below summarizes the runoff index values and the recommended values for percentage of impervious cover for each category (see Appendix C for a detailed table of areas per soil type):

Table 6 – Cover Type

Cover Type	Soil Group A	Soil Group B	Soil Group C	Soil Group D	Percentage of Impervious Cover
Existing Condition Natural Grass	-	78	-	89	12.0% (Area A) 33.0% (Area B)
Existing Residential or Commercial	-	56	-	75	
Developed Urban Residential or Commercial – Building 1	-	56	-	75	70.7%

ON-SITE UNIT HYDROGRAPH METHOD HYDROLOGY

The unit hydrograph method was used to determine the peak flow rates and volumes in order to adequately size the proposed chamber detention system to address increased runoff mitigation. Unit hydrographs were performed for both the 24-hour existing condition and developed condition only in the preliminary condition since it was assumed that the 24-hour condition will require the greatest mitigation volume. The existing condition is used to establish a baseline for comparative purposes. The developed condition is used for design purposes, it was utilized in the basin routing analysis in order to size and analyze the proposed CMP chamber detention system. The unit hydrograph analysis for both the existing

and developed condition was conducted for a total of 156.8 acres. This comprises the entirety of the proposed development with the BSS project site.

In the existing condition analysis, the overall project site has two discharge points into the existing stream to the south and was therefore broken up into two areas. Approximately 106.4 acres are labelled as Area A (700-Series in the rational method analysis) and is tributary to the existing streambed area to the west of the project site. The remaining 50.4 acres are labelled as Area B (800-Series) and are tributary to a region of the streambed to the south of the project site. In the proposed condition, Area A is divided into a West Area and North Area (corresponding to Building 1 and Building 3, respectively). The West Area consists of approximately 55.3 acres while the North area is approximately 33.8 acres. Each area will mitigate for increased runoff separately with the development of each individual building. In the developed condition, approximately 17.4 acres of area which was tributary to Area A in the existing condition have been included in the development of the South Area (part of the existing condition Area B). Therefore, the developed South Area will be over mitigating for flows as a greater area, and therefore greater discharge, is included in the developed condition analysis. While the existing condition Area A will be under mitigated once developed, the overall BSS site will be mass graded together as grading will require cut from the Building 2 area, in Area B, to be used in fill for mass grading of the Building 1 project site. Therefore, overall the BSS project will be fully mitigated once developed.

The following table summarizes the results of the unit hydrograph analysis:

Table 7 – Unit Hydrograph Results

EXISTING CONDITION - AREA A (WEST & NORTH)					DEVELOPED CONDITION - WEST				
AREA	RETURN PERIOD *(yr)*	EVENT *(hrs)*	VOL *(ac-ft)*	*PEAK (cfs)*	AREA	RETURN PERIOD *(yr)*	EVENT *(hrs)*	VOL *(ac-ft)*	*PEAK (cfs)*
EX100YRA	100	1	8.9	*235.28*	***WEST100YR***	100	1	5	*164.42*
		3	11.7	*150.79*			3	7.5	*92.35*
		6	14.5	*146.20*			6	10.6	*87.55*
		24	27.3	*70.90*			24	21.8	*41.63*
EX10YRA	10	1	5.2	*149.05*	***WEST10YR***	10	1	3.2	*107.30*
		3	6.4	*94.83*			3	4.8	*60.37*
		6	8.2	*92.02*			6	6.9	*57.27*
		24	12.4	*36.93*			24	13	*23.78*
EX5YRA	5	1	3.1	*105.39*	***WEST5YR***	5	1	2.5	*86.26*
		3	3.5	*59.58*			3	3.9	*46.71*
		6	4.5	*57.43*			6	5.6	*44.08*
		24	6.1	*10.83*			24	10.6	*17.46*
EX2YRA	2	1	2.1	*72.68*	***WEST2YR***	2	1	1.9	*64.36*
		3	2.4	*38.48*			3	3	*34.16*
		6	3.1	*36.56*			6	4.4	*32.10*
		24	2.7	*4.33*			24	7.7	*12.70*

The unit hydrograph output files and hydrology map have been included in Appendix C.

BASIN ROUTING ANALYSIS

A routing analysis was completed to demonstrate that the CMP chamber system contain substantial volume needed to mitigate flows down to existing condition peak flow rates.

Basin routing calculations were conducted for each building area (west, north and south). A stage-storage-discharge table was determined for each area. The stage-storage-discharge tables provide input data at select elevations in the basin and/or chambers which will determine the storage and discharge at each point based on the mitigation configuration of the outlet structures.

In the existing condition, the entire Area A generally drains to the southwest. Approximately 83.4% of Area A, correlates to the developed West Area (Building 1) and drains directly to the western boundary of Area A. For the developed condition West Area and North Area, a ratio of the areas was used to determine the existing peak flow rates which serve as the limits for the routing analysis of each area. An exhibit showing the portion of the existing condition Area A which flows south can be found in Appendix C.

For the BSS – Building 1 area, the proposed outlet structure consists of four 4-inch orifices with an invert set at the water quality ponding elevation of 2.4 ft above the chamber bottom. This orifice mitigates the 2-year storm event. A 1.5-ft weir is proposed at the maximum ponding depth for the 2-year, 24-hour storm (a depth of approximately 5.82 ft). This orifice mitigates for the 5-year storm event and creates a maximum ponding depth of 6.96 ft above the chamber bottom. At the 5-year ponding depth, a 7-ft weir is proposed to mitigate the 10-year and 100-year storm event. The 100-year storm produces a maximum ponding of 7.99 ft, which is below the 8 ft depth of the top of the chambers. The routing analysis produced a maximum drawdown time of 88.6 hours within the chambers. While this exceeds the 72-hour limit for above ground basins to prevent vector issues, the CMP detention system consists of underground chambers and therefore vector issues are not anticipated even with a high drawdown time.

The following tables present the result of routing analysis for the 2-, 5-, 10-, and 100-year, 24-hour storm events to demonstrate that the CMP chamber system provides the necessary storage volume needed to restrict the outflow to existing condition flow rates.

The basin routing calculations and other hydraulic calculations have been provided in Appendix C. Based on the table below, the proposed detention chambers for the BSS - Building 1 area have the capacity to mitigate for all the required HCOC and RCFC&WCD storm events. All discharge flow rates in the developed condition are lower than or within ten percent of the flow rate exiting the site in the existing condition.

Table 8 – Basin Routing Results

Storm Event		Existing Condition				Developed Condition						Basin Routing Results		
		Area A (106.4 ac)		83.4% Area A	16.6% Area A	West Area (55.3 ac)		**North Area (33.8 ac)		Combined (89.1 ac)		West Area	**North Area	Combined
		Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	*Peak Flow (cfs)
2-Year	1-Hour	2.1	**72.7**	60.6	12.1	1.9	64.4	1.2	40.0	3.1	104.3	*To be analyzed during Final Engineering*		
	3-Hour	2.4	**38.5**	32.1	6.4	3.0	34.2	1.9	21.5	4.9	55.6			
	6-Hour	3.1	**36.6**	30.5	6.1	4.4	32.1	2.8	20.3	7.2	52.4			
	24-Hour	2.7	**4.3**	3.6	0.7	7.7	12.7	5.0	8.2	12.7	20.9	*3.31*	*0.65*	***3.96***
5-Year	1-Hour	3.1	**105.4**	87.9	17.5	2.5	86.3	1.6	53.6	4.1	139.8	*To be analyzed during Final Engineering*		
	3-Hour	3.5	**59.6**	49.7	9.9	3.9	46.7	2.5	29.1	6.4	75.8			
	6-Hour	4.5	**57.4**	47.9	9.5	5.6	44.1	3.6	27.4	9.2	71.4			
	24-Hour	6.1	**10.8**	9.0	1.8	10.6	17.5	6.9	11.3	17.5	28.8	*9.37*	*1.44*	***10.81***
10-Year	1-Hour	5.2	**149.1**	124.3	24.7	3.2	107.3	1.9	66.0	5.1	173.3	*To be analyzed during Final Engineering*		
	3-Hour	6.4	**94.8**	79.1	15.7	4.8	60.4	3.0	37.0	7.8	97.4			
	6-Hour	8.2	**92.0**	76.7	15.3	6.9	57.3	4.3	34.6	11.2	91.9			
	24-Hour	12.4	**36.9**	30.8	6.1	13.0	23.8	8.3	14.4	21.3	38.2	*16.43*	*3.18*	***19.61***
100-Year	1-Hour	8.9	**235.3**	196.0	39.1	5.0	164.4	3.1	101.1	8.1	265.5	*To be analyzed during Final Engineering*		
	3-Hour	11.7	**150.8**	125.6	25.0	7.5	92.4	4.6	56.6	12.1	149.0			
	6-Hour	14.5	**146.2**	121.8	24.3	10.6	87.6	6.6	52.8	17.2	140.4			
	24-Hour	27.3	**70.9**	59.1	11.8	21.8	41.6	13.7	25.3	35.5	66.9	*40.75*	*12.18*	***52.93***

Note: ** The Combined Peak Flow describes the flows exiting the site along the western and southwestern boundary of the site. This value is the sum of the peak flow rates generated by the West and North Areas in the proposed condition which have been routed to be less than the existing condition peak flow for Area A or within 10% of this value.*

*** The North Area unit hydrograph and routing results have been included in Appendix D for reference. See the separate "Beaumont Summit Station – Building 3 Preliminary Drainage Study" for a detailed discussion and analysis of the North Area.*

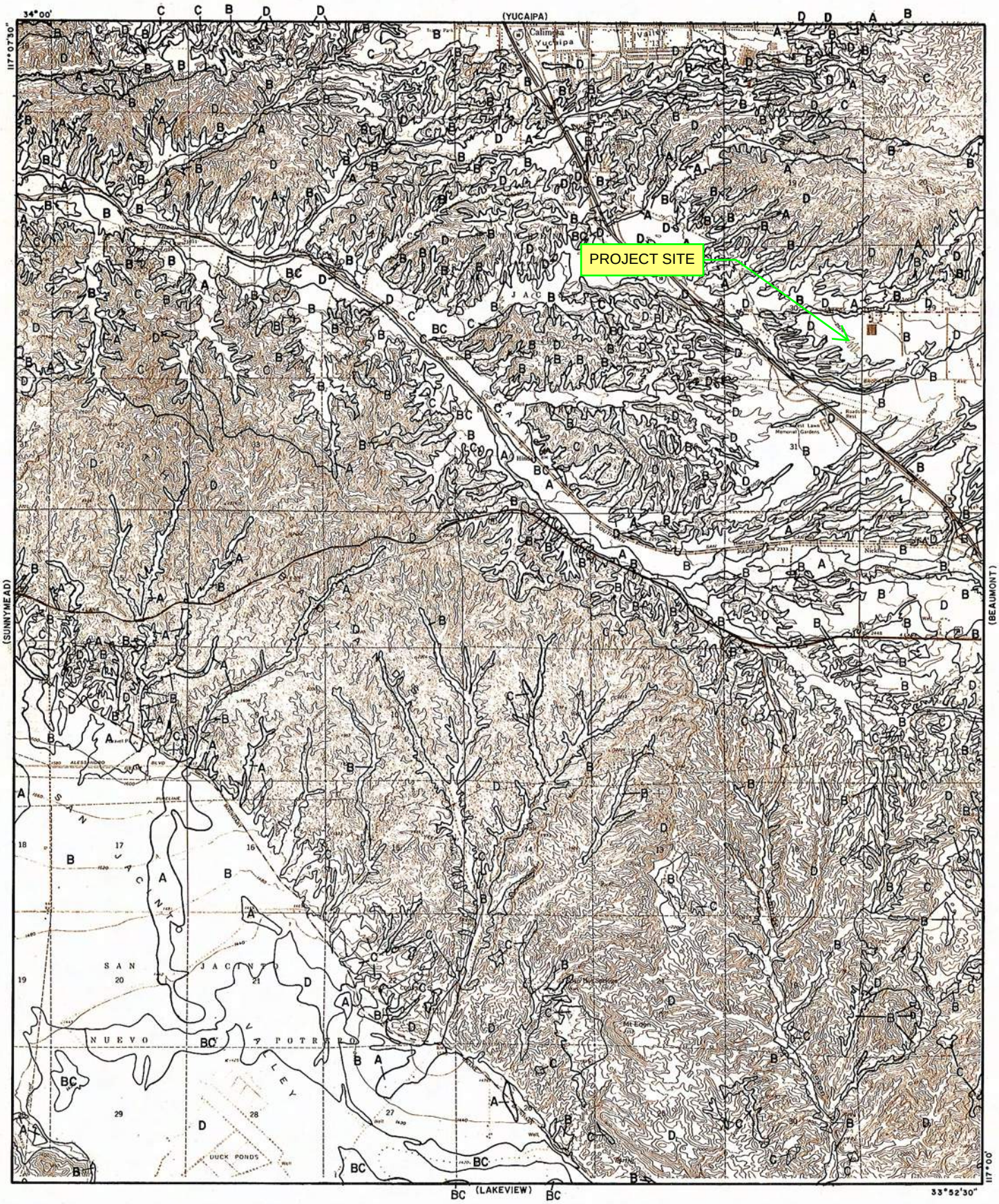
SECTION 5 - CONCLUSION

Based on the analyses and results of this report, the following conclusions were derived from the hydrology and hydraulic results:

- The proposed drainage improvements will adequately convey flows to the detention chambers and provide flood protection for the 100-year storm event.
- The proposed bioretention basin and infiltration basin will provide adequate water quality treatment.
- The proposed project will not impact flooding condition to upstream or downstream properties.

APPENDIX A – HYDROLOGY ANALYSIS

HYDROLOGIC SOILS GROUP MAP (PLATE C-1.18)



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC&WCD

HYDROLOGY MANUAL

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR EL CASCO

PLATE C-1.18

RAINFALL INTENSITY

NOAA Atlas 14, Volume 6, Version 2
Location name: Beaumont, California, USA*
Latitude: 33.9648°, Longitude: -117.0173°
Elevation: 2522.8 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.123 (0.102-0.149)	0.156 (0.130-0.189)	0.204 (0.170-0.249)	0.249 (0.205-0.305)	0.318 (0.252-0.403)	0.378 (0.294-0.491)	0.448 (0.340-0.597)	0.530 (0.391-0.726)	0.660 (0.466-0.943)	0.778 (0.530-1.15)
10-min	0.176 (0.147-0.213)	0.223 (0.186-0.271)	0.293 (0.243-0.357)	0.356 (0.293-0.438)	0.455 (0.362-0.578)	0.542 (0.422-0.704)	0.643 (0.488-0.855)	0.760 (0.560-1.04)	0.946 (0.668-1.35)	1.12 (0.760-1.65)
15-min	0.213 (0.177-0.258)	0.270 (0.225-0.328)	0.354 (0.294-0.431)	0.431 (0.355-0.529)	0.550 (0.438-0.699)	0.656 (0.510-0.852)	0.777 (0.590-1.03)	0.919 (0.677-1.26)	1.14 (0.808-1.64)	1.35 (0.919-2.00)
30-min	0.312 (0.260-0.379)	0.397 (0.330-0.482)	0.521 (0.432-0.634)	0.633 (0.521-0.778)	0.809 (0.643-1.03)	0.964 (0.750-1.25)	1.14 (0.866-1.52)	1.35 (0.995-1.85)	1.68 (1.19-2.40)	1.98 (1.35-2.93)
60-min	0.457 (0.381-0.555)	0.581 (0.483-0.705)	0.762 (0.632-0.928)	0.927 (0.763-1.14)	1.18 (0.941-1.50)	1.41 (1.10-1.83)	1.67 (1.27-2.23)	1.98 (1.46-2.71)	2.46 (1.74-3.52)	2.90 (1.98-4.29)
2-hr	0.654 (0.545-0.793)	0.815 (0.678-0.990)	1.05 (0.868-1.27)	1.25 (1.03-1.54)	1.56 (1.24-1.98)	1.82 (1.42-2.36)	2.11 (1.60-2.81)	2.43 (1.79-3.33)	2.92 (2.07-4.18)	3.35 (2.28-4.96)
3-hr	0.805 (0.671-0.976)	0.999 (0.831-1.21)	1.27 (1.06-1.55)	1.51 (1.24-1.85)	1.86 (1.48-2.36)	2.15 (1.68-2.80)	2.47 (1.88-3.29)	2.83 (2.08-3.87)	3.35 (2.36-4.79)	3.79 (2.58-5.61)
6-hr	1.17 (0.973-1.42)	1.45 (1.20-1.76)	1.83 (1.52-2.23)	2.16 (1.78-2.65)	2.63 (2.09-3.34)	3.01 (2.35-3.91)	3.42 (2.60-4.56)	3.86 (2.85-5.29)	4.50 (3.18-6.43)	5.01 (3.42-7.43)
12-hr	1.59 (1.33-1.93)	2.01 (1.67-2.44)	2.57 (2.13-3.13)	3.04 (2.50-3.73)	3.70 (2.94-4.70)	4.22 (3.28-5.47)	4.76 (3.61-6.34)	5.33 (3.93-7.30)	6.13 (4.33-8.76)	6.76 (4.61-10.0)
24-hr	2.12 (1.88-2.45)	2.76 (2.44-3.18)	3.60 (3.17-4.16)	4.29 (3.76-5.01)	5.26 (4.45-6.34)	6.01 (4.99-7.39)	6.79 (5.50-8.55)	7.60 (6.00-9.84)	8.73 (6.61-11.8)	9.61 (7.04-13.4)
2-day	2.59 (2.30-2.99)	3.43 (3.04-3.96)	4.59 (4.04-5.31)	5.56 (4.87-6.49)	6.95 (5.89-8.37)	8.07 (6.70-9.92)	9.25 (7.49-11.6)	10.5 (8.29-13.6)	12.3 (9.32-16.6)	13.8 (10.1-19.2)
3-day	2.81 (2.49-3.24)	3.76 (3.33-4.34)	5.10 (4.49-5.90)	6.25 (5.47-7.29)	7.93 (6.72-9.55)	9.31 (7.73-11.4)	10.8 (8.75-13.6)	12.4 (9.80-16.1)	14.8 (11.2-19.9)	16.7 (12.3-23.3)
4-day	3.06 (2.71-3.52)	4.11 (3.64-4.75)	5.60 (4.94-6.49)	6.90 (6.04-8.05)	8.80 (7.45-10.6)	10.4 (8.61-12.8)	12.1 (9.78-15.2)	13.9 (11.0-18.0)	16.6 (12.6-22.4)	18.9 (13.9-26.4)
7-day	3.53 (3.12-4.06)	4.75 (4.20-5.48)	6.46 (5.70-7.48)	7.94 (6.95-9.26)	10.1 (8.54-12.1)	11.8 (9.82-14.6)	13.7 (11.1-17.3)	15.8 (12.4-20.4)	18.7 (14.2-25.2)	21.2 (15.5-29.5)
10-day	3.87 (3.42-4.46)	5.21 (4.61-6.01)	7.08 (6.24-8.19)	8.68 (7.60-10.1)	11.0 (9.31-13.2)	12.9 (10.7-15.8)	14.9 (12.1-18.7)	17.0 (13.4-22.1)	20.2 (15.3-27.2)	22.7 (16.6-31.7)
20-day	4.78 (4.23-5.50)	6.49 (5.74-7.49)	8.85 (7.80-10.2)	10.8 (9.49-12.7)	13.7 (11.6-16.5)	16.0 (13.3-19.7)	18.4 (14.9-23.2)	21.0 (16.6-27.2)	24.7 (18.7-33.3)	27.7 (20.3-38.6)
30-day	5.61 (4.97-6.47)	7.66 (6.77-8.84)	10.4 (9.21-12.1)	12.8 (11.2-14.9)	16.2 (13.7-19.5)	18.8 (15.6-23.2)	21.6 (17.5-27.3)	24.6 (19.4-31.9)	28.9 (21.9-38.9)	32.3 (23.6-45.0)
45-day	6.73 (5.96-7.76)	9.18 (8.11-10.6)	12.5 (11.0-14.5)	15.3 (13.4-17.8)	19.2 (16.3-23.2)	22.4 (18.6-27.5)	25.7 (20.8-32.3)	29.2 (23.0-37.7)	34.1 (25.8-45.9)	38.0 (27.8-53.0)
60-day	7.85 (6.95-9.05)	10.7 (9.43-12.3)	14.5 (12.8-16.7)	17.7 (15.4-20.6)	22.1 (18.7-26.7)	25.7 (21.3-31.6)	29.4 (23.8-37.0)	33.4 (26.3-43.2)	38.9 (29.4-52.4)	43.3 (31.7-60.3)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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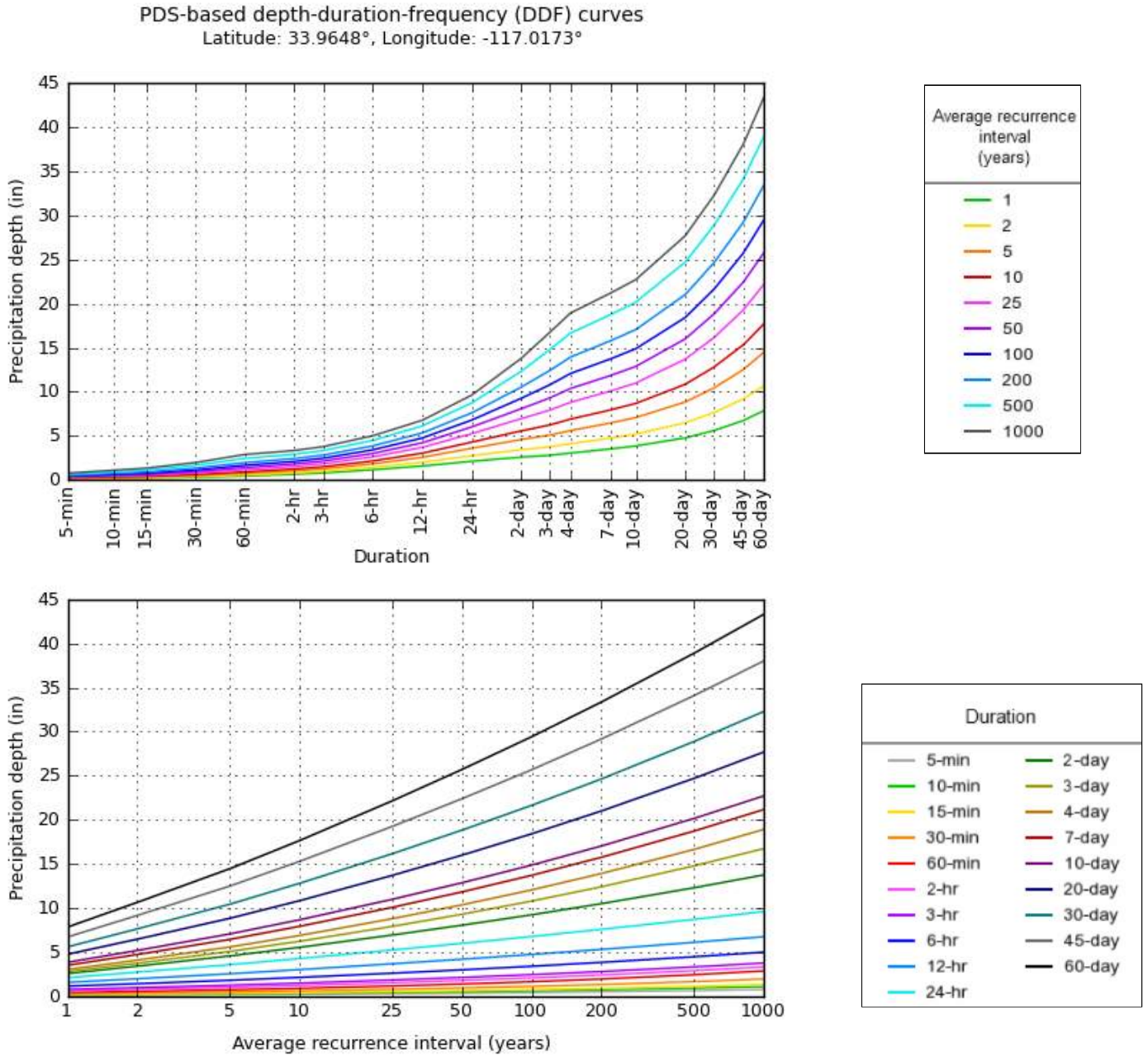
PF graphical



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Fri Dec 10 00:04:40 2021

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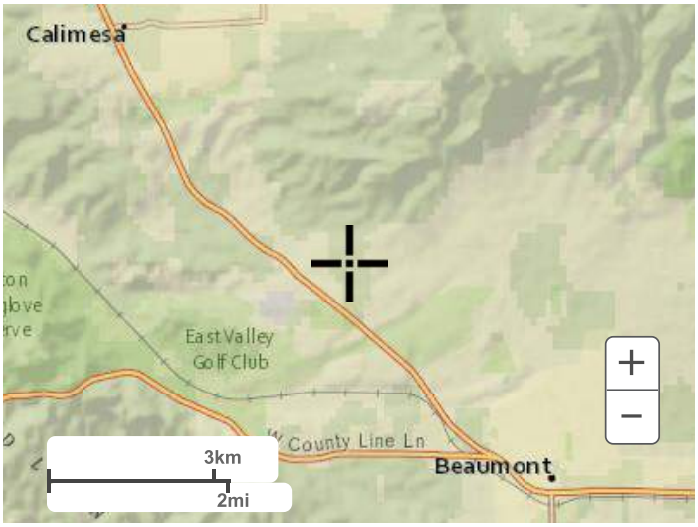
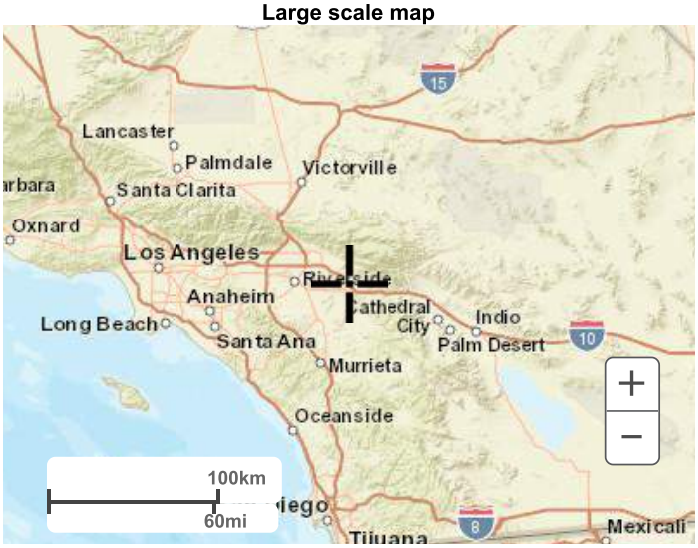
Maps & aerials

Small scale terrain



Large scale terrain

Large scale map



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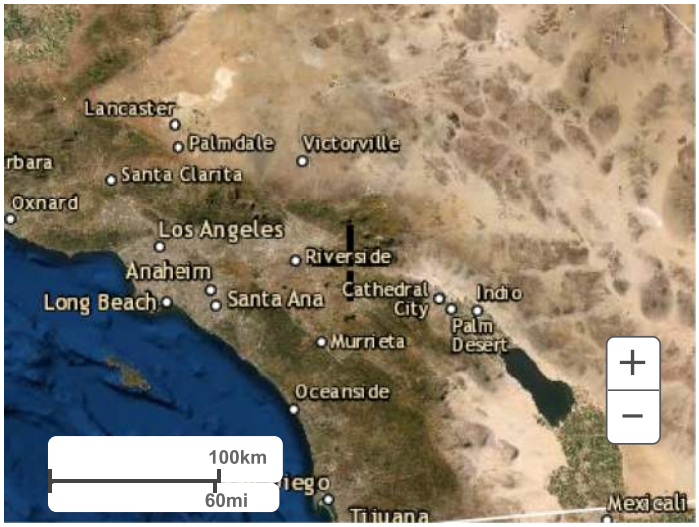

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Approximate Project Location
(i=0.55)

NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973

RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 1-HOUR PRECIPITATION

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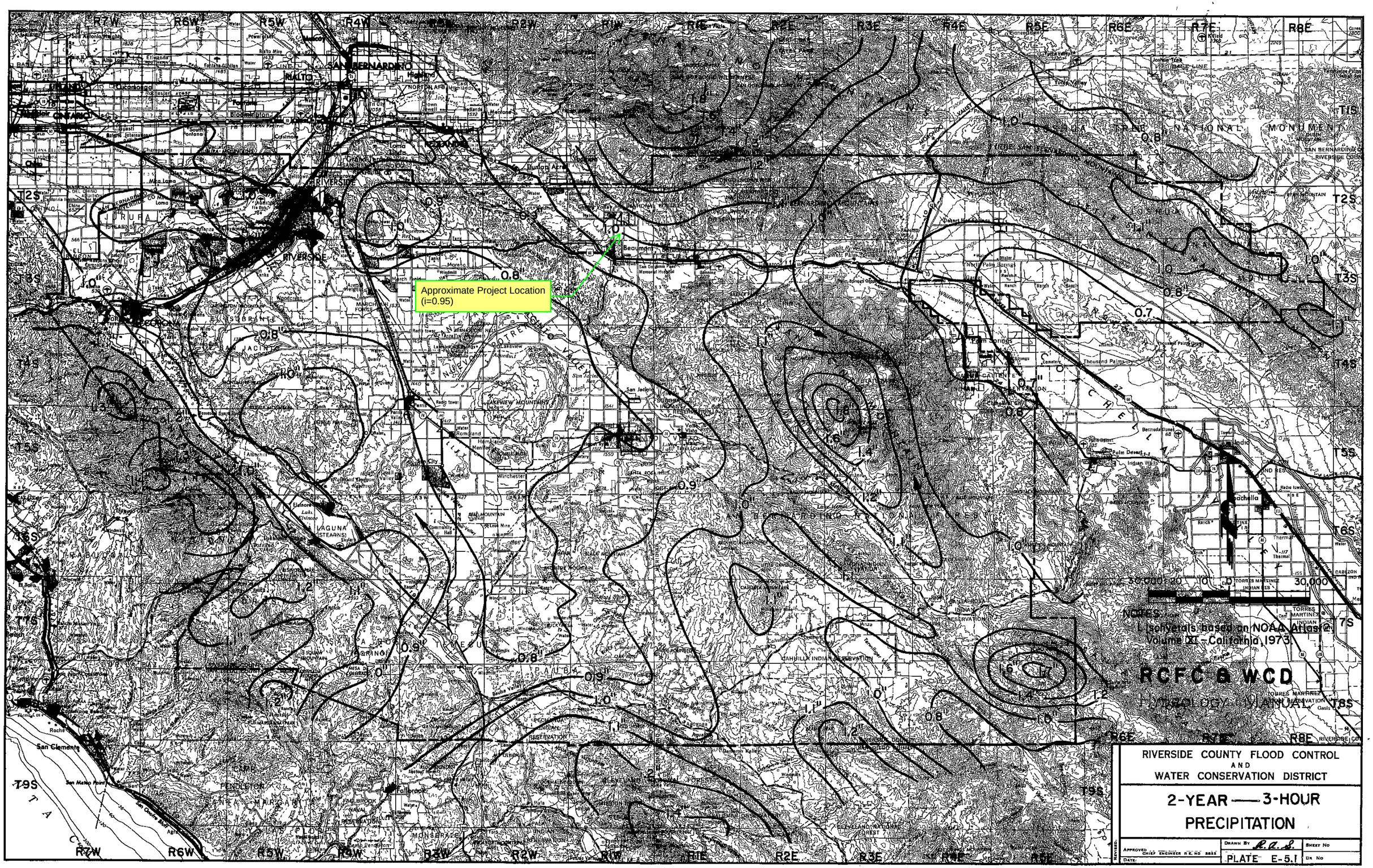
DATE	PLATE D-4.3	DR NO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RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
2-YEAR — 3-HOUR
PRECIPITATION
DRAWN BY R.A.S.
SHEET NO
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DR NO
DATE:
REVISED:

Approximate Project Location
(i=1.4)

NOTES:
1. Isohyetals from NOAA Atlas 2 Volume XI - California, 1973

RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 6-HOUR
PRECIPITATION

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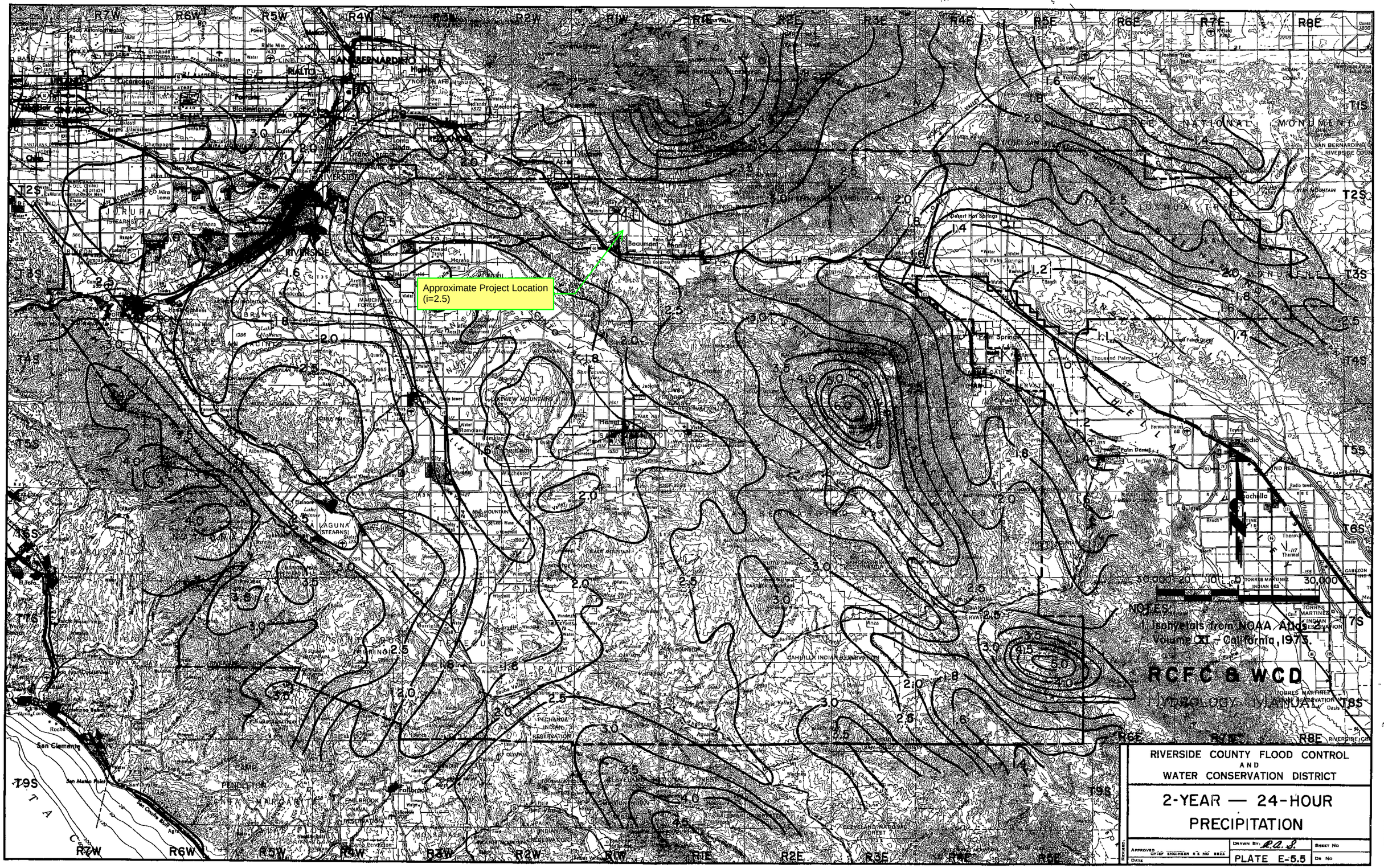

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 24-HOUR PRECIPITATION

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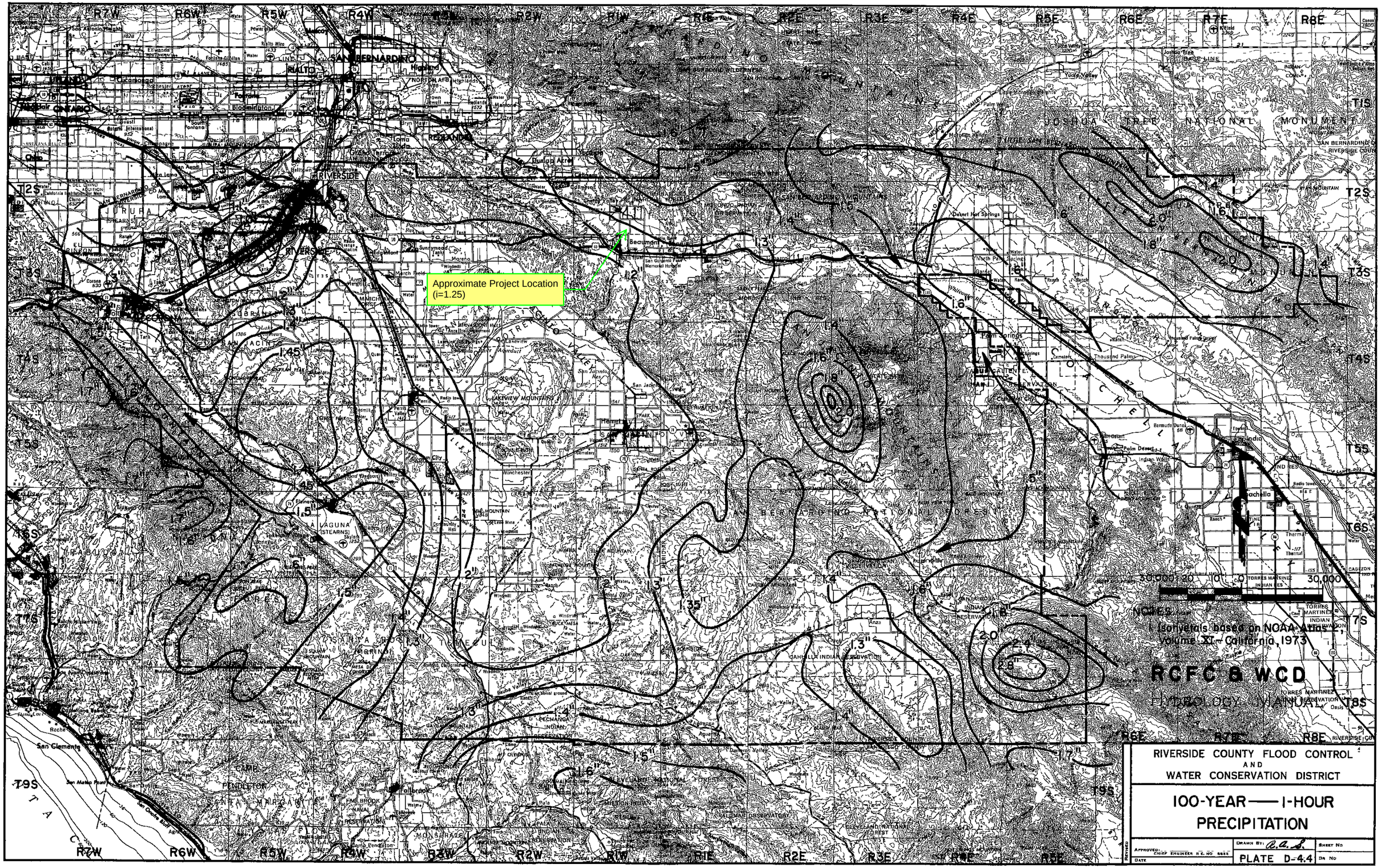
	DATE	PLATE E-5.5

SHEET NO
DR NO



RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

100-YEAR — 1-HOUR PRECIPITATION

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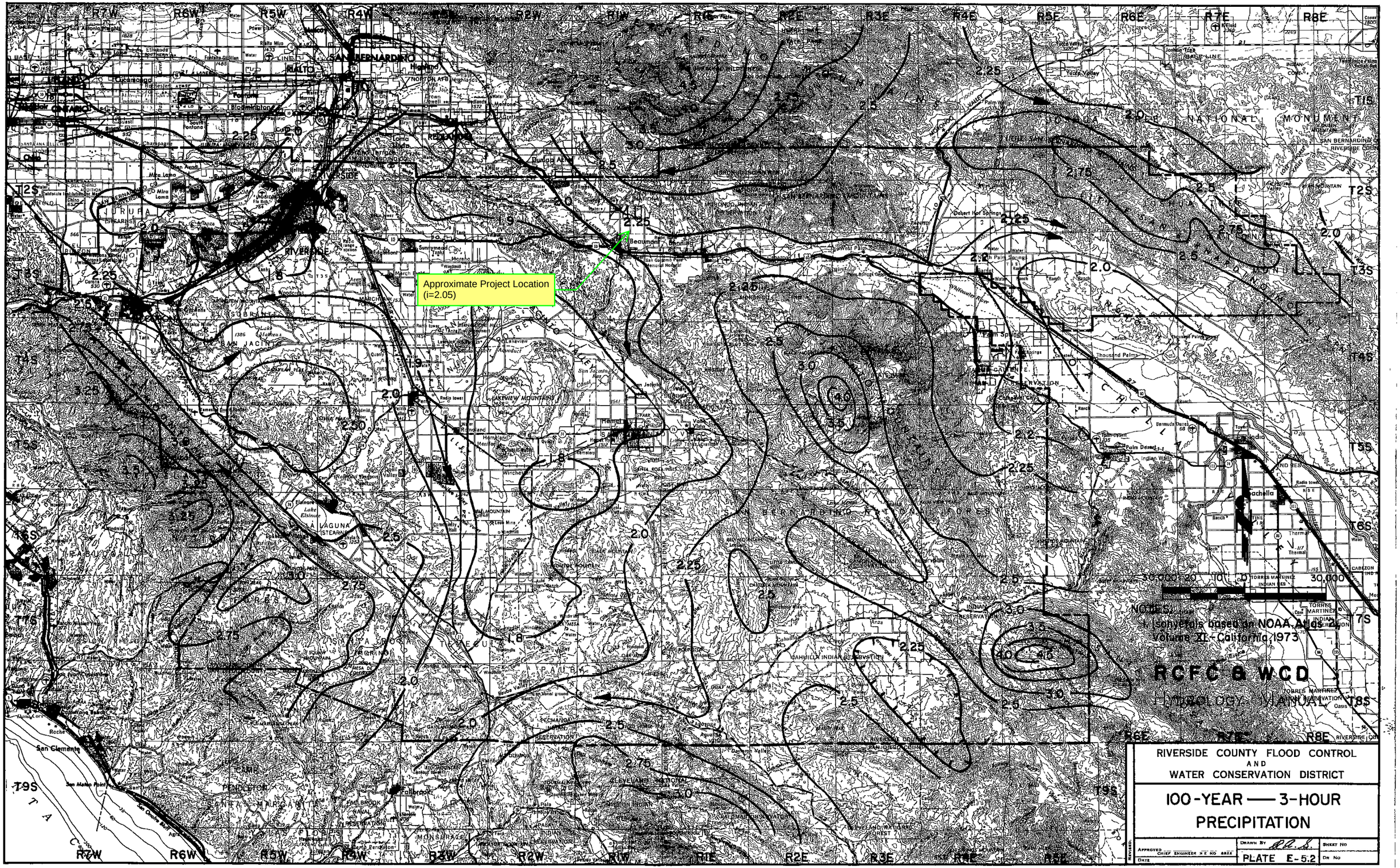
DATE	PLATE D-4.4	DR NO

REVISED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RCFC & WCD
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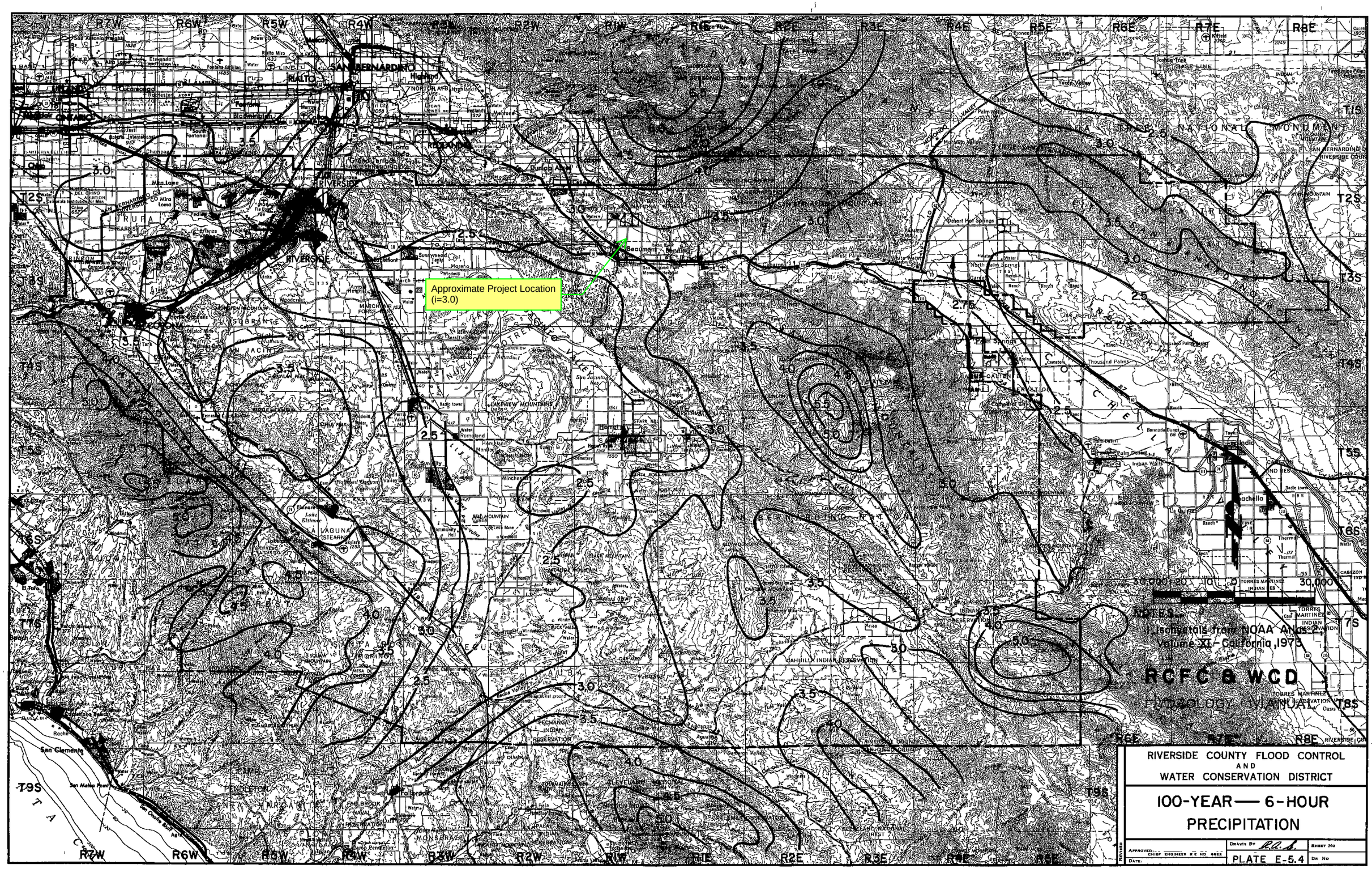
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 3-HOUR
PRECIPITATION
PLATE E-5.2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RCFC & WCD
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RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 6-HOUR
PRECIPITATION
APPROVED: CHIEF ENGINEER R E NO 4625
DATE:
DRAWN BY R.C.S.
SHEET NO
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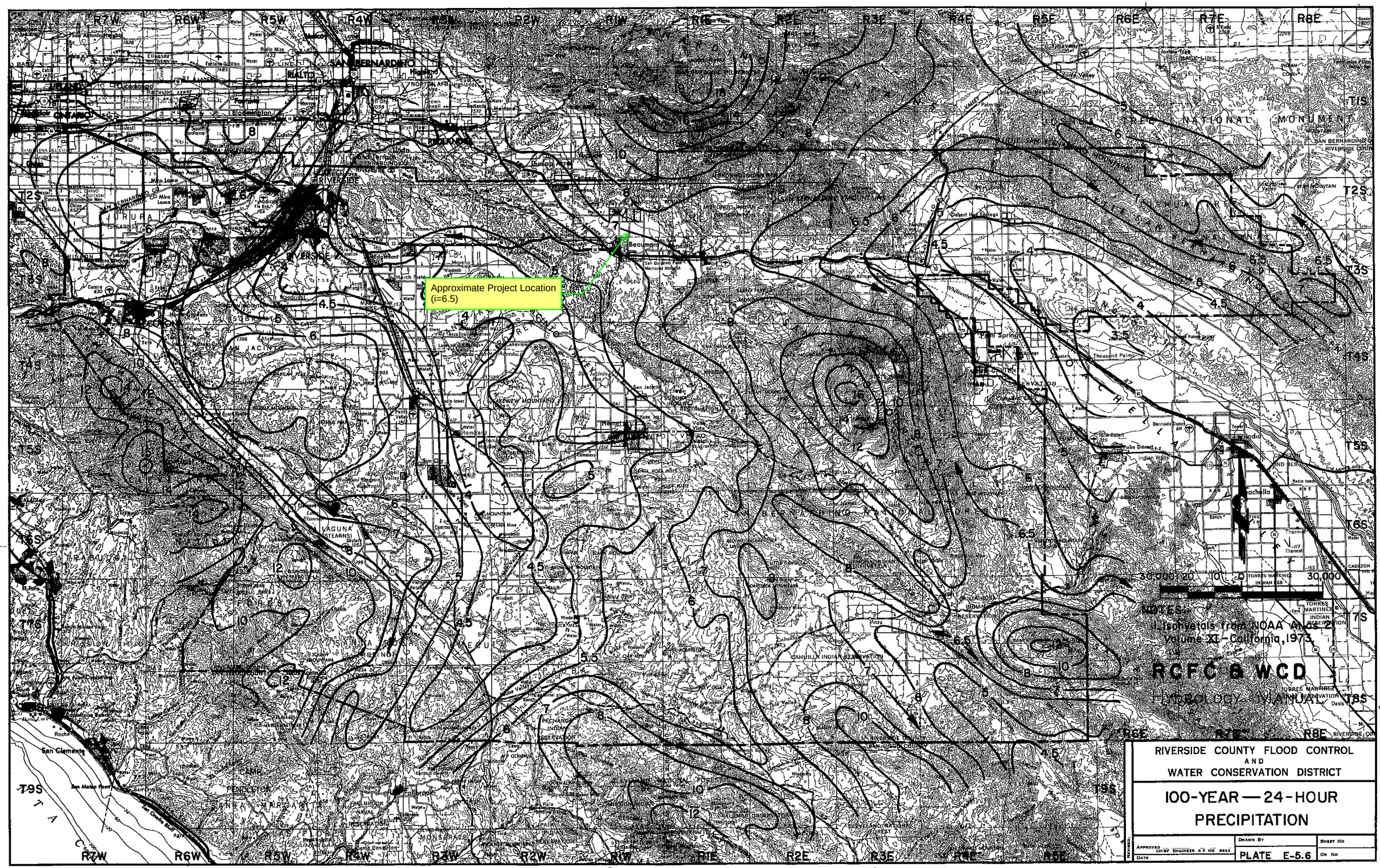
DR NO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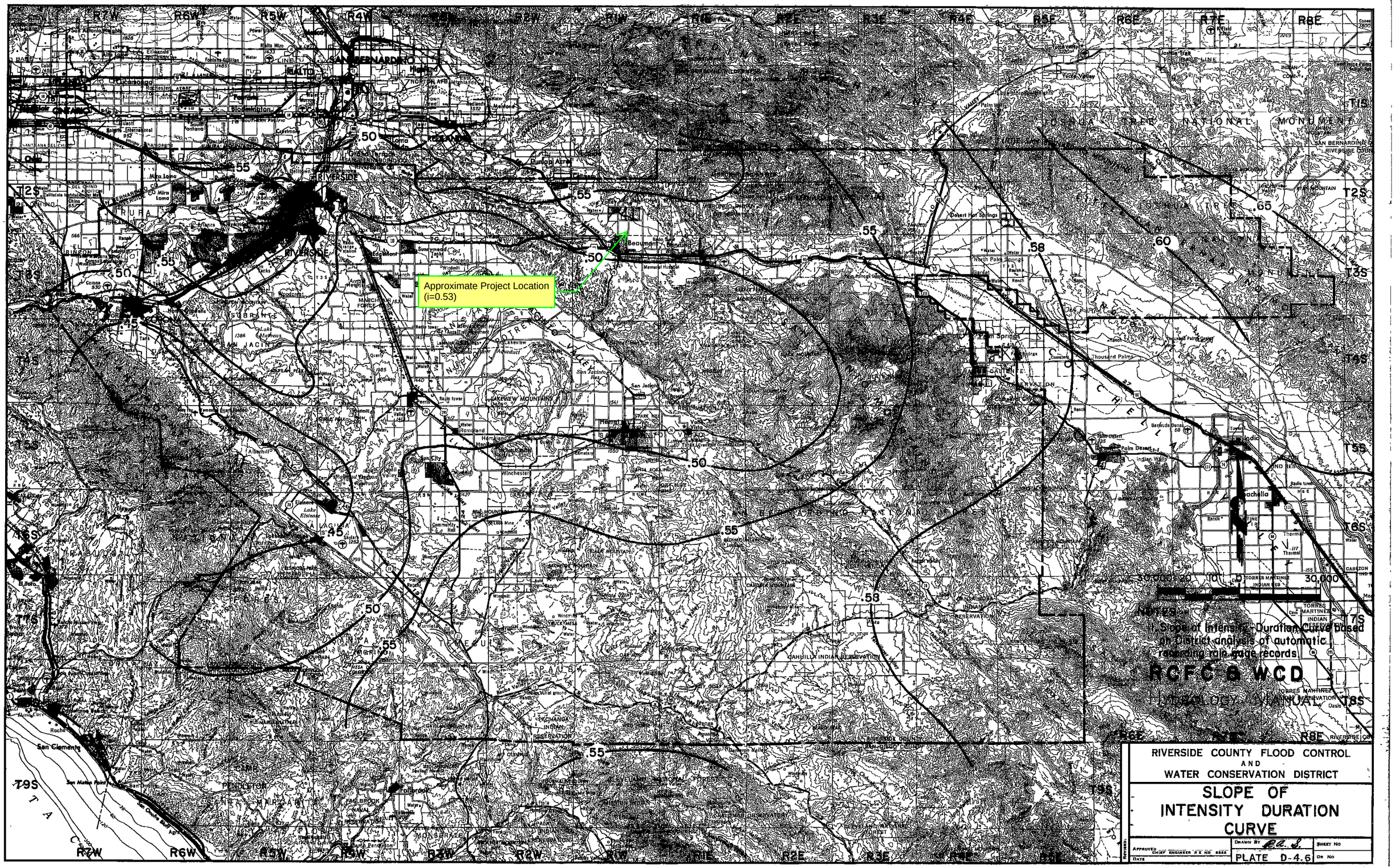
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 24-HOUR
PRECIPITATION
APPROVED
CHIEF ENGINEER R.E. NO. 8833
DATE
DRAWN BY
PLATE E-5.6
SHEET NO
DR NO
REVISED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REDLANDS
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Banning
Calimesa
Yucaipa
Desert Hot Springs
North Palm Springs
Cabazon
Thousand Palms
Palm Springs
Palm Desert
Indian Wells
La Quinta
Indio
Coachella
Mecca
Bermuda Dunes
Winchester
Hemet
San Jacinto
Elsinore
Lake Elsinore
Temecula
Murrieta
Fallbrook
Bonsall
Oceanside
San Clemente
San Mateo Point
Rancho California
Pechanga Indian Reservation
Cahuilla Indian Reservation
Torres Martinez Indian Reservation
Agua Caliente Indian Reservation
Morongo Indian Reservation
Santa Rosa Mountains
Lake Cahuilla
Salton Sea
Joshua Tree National Monument
Box Canyon
Whitewater River
Coachella Valley
San Gorgonio Pass
San Jacinto Mountains
Santa Ana River
Temecula Creek
San Luis Rey River
San Onofre Bluff
Lake Matthews
Lake Elsinore
Lake Skinner
Vail Lake
Diamond Valley Lake
Lake Perris
Lake Hemet
Lake Cahuilla
Lake Cleveland
Lake Evans
Lake Mathews
Lake Fulmor
Lake Norconian
Lake Vail
Lake Temecula
Lake Elsinore
Lake Skinner

EXISTING CONDITION 10-YEAR OVERALL SITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:700EXISTING.out

BEAUMONT SUMMIT STATION EXISTING CONDITION
700 SERIES 10-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 700.000 to Point/Station 701.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 940.000(Ft.)
Top (of initial area) elevation = 2581.200(Ft.)
Bottom (of initial area) elevation = 2547.600(Ft.)
Difference in elevation = 33.600(Ft.)
Slope = 0.03574 s(percent)= 3.57
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 21.373 min.
Rainfall intensity = 1.778(In/Hr) for a 10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.673
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 7.303(CFS)
Total initial stream area = 6.100(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 701.000 to Point/Station 702.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.600(Ft.)
End of natural channel elevation = 2528.000(Ft.)
Length of natural channel = 555.000(Ft.)
Estimated mean flow rate at midpoint of channel = 14.127(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   2.53(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0353
Corrected/adjusted channel slope =  0.0353
Travel time =    3.65 min.     TC =   25.02  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.659
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.636(In/Hr) for a    10.0 year storm
Subarea runoff =     12.285(CFS) for     11.400(Ac.)
Total runoff =     19.588(CFS)       Total area =      17.500(Ac.)


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Process from Point/Station      702.000 to Point/Station      703.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2528.000(Ft.)
End of natural channel elevation =   2503.000(Ft.)
Length of natural channel  =   715.000(Ft.)
Estimated mean flow rate at midpoint of channel =     31.844(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.30(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0350
Corrected/adjusted channel slope =  0.0350
Travel time =    3.61 min.     TC =   28.64  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.646
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.523(In/Hr) for a    10.0 year storm
Subarea runoff =     21.543(CFS) for     21.900(Ac.)
Total runoff =     41.131(CFS)       Total area =      39.400(Ac.)


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Process from Point/Station      703.000 to Point/Station      704.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2503.000(Ft.)
End of natural channel elevation =   2481.000(Ft.)
Length of natural channel  =   745.000(Ft.)
Estimated mean flow rate at midpoint of channel =     59.034(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.72(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
```

```
       Normal channel slope =  0.0295
Corrected/adjusted channel slope =  0.0295
Travel time =    3.34 min.     TC =   31.97  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.648
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  70.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.437(In/Hr) for a    10.0 year storm
Subarea runoff =     31.940(CFS) for     34.300(Ac.)
Total runoff =     73.071(CFS)       Total area =      73.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      704.000 to Point/Station      705.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2481.000(Ft.)
End of natural channel elevation =   2419.000(Ft.)
Length of natural channel  =  1000.000(Ft.)
Estimated mean flow rate at midpoint of channel =     89.281(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.42(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0620
Corrected/adjusted channel slope =  0.0620
Travel time =    1.46 min.     TC =   33.43  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.697
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  76.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.403(In/Hr) for a    10.0 year storm
Subarea runoff =     31.958(CFS) for     32.700(Ac.)
Total runoff =    105.029(CFS)       Total area =     106.400(Ac.)
End of computations, total study area =          106.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  71.8
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:800EXISTING.out

BEAUMONT SUMMIT STATION 800 SERIES
EXISTING CONDITION 10-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 800.000 to Point/Station 801.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 815.000(Ft.)
Top (of initial area) elevation = 2574.100(Ft.)
Bottom (of initial area) elevation = 2547.000(Ft.)
Difference in elevation = 27.100(Ft.)
Slope = 0.03325 s(percent)= 3.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 20.481 min.
Rainfall intensity = 1.819(In/Hr) for a 10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.677
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 12.069(CFS)
Total initial stream area = 9.800(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 801.000 to Point/Station 802.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.000(Ft.)
End of natural channel elevation = 2527.700(Ft.)
Length of natural channel = 670.000(Ft.)
Estimated mean flow rate at midpoint of channel = 21.982(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   2.65(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0288
Corrected/adjusted channel slope =  0.0288
Travel time =    4.21 min.     TC =   24.69  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.660
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.647(In/Hr) for a    10.0 year storm
Subarea runoff =     17.506(CFS) for     16.100(Ac.)
Total runoff =     29.574(CFS)       Total area =      25.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      802.000 to Point/Station      803.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2527.700(Ft.)
End of natural channel elevation =   2488.000(Ft.)
Length of natural channel  =   775.000(Ft.)
Estimated mean flow rate at midpoint of channel =     43.448(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.41(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0512
Corrected/adjusted channel slope =  0.0512
Travel time =    2.93 min.     TC =   27.62  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.681
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  72.75
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.552(In/Hr) for a    10.0 year storm
Subarea runoff =     25.687(CFS) for     24.300(Ac.)
Total runoff =     55.261(CFS)       Total area =      50.200(Ac.)
End of computations, total study area =           50.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  70.8
```

EXISTING CONDITION 100-YEAR OVERALL SITE HYDROLOGY (RATIONAL METHOD)

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                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
        Rational Hydrology Study        Date: 02/22/22  File:700EXISTING.out
------------------------------------------------------------------------
BEAUMONT SUMMIT STATION EXISTING CONDITION
700 SERIES 100-YR STORM EVENT
21-0044
2022-02-22 EP
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 4010

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.581(In.)
100 year, 1 hour precipitation =  1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.670(In/Hr)
Slope of intensity duration curve = 0.5300




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Process from Point/Station      700.000 to Point/Station      701.000
**** INITIAL AREA EVALUATION ****
____________________________________________________________________________
Initial area flow distance =   940.000(Ft.)
Top (of initial area) elevation =  2581.200(Ft.)
Bottom (of initial area) elevation =  2547.600(Ft.)
Difference in elevation =    33.600(Ft.)
Slope =    0.03574  s(percent)=       3.57
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   21.373 min.
Rainfall intensity =      2.886(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.745
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     13.121(CFS)
Total initial stream area =        6.100(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      701.000 to Point/Station      702.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
____________________________________________________________________________
Top of natural channel elevation =   2547.600(Ft.)
End of natural channel elevation =   2528.000(Ft.)
Length of natural channel  =   555.000(Ft.)
Estimated mean flow rate at midpoint of channel =     25.382(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
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```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.08(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0353
Corrected/adjusted channel slope =  0.0353
Travel time =    3.01 min.     TC =   24.38  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.736
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.692(In/Hr) for a   100.0 year storm
Subarea runoff =     22.588(CFS) for     11.400(Ac.)
Total runoff =     35.709(CFS)       Total area =      17.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      702.000 to Point/Station      703.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2528.000(Ft.)
End of natural channel elevation =   2503.000(Ft.)
Length of natural channel  =   715.000(Ft.)
Estimated mean flow rate at midpoint of channel =     58.053(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.02(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0350
Corrected/adjusted channel slope =  0.0350
Travel time =    2.96 min.     TC =   27.34  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.728
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.533(In/Hr) for a   100.0 year storm
Subarea runoff =     40.372(CFS) for     21.900(Ac.)
Total runoff =     76.081(CFS)       Total area =      39.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      703.000 to Point/Station      704.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2503.000(Ft.)
End of natural channel elevation =   2481.000(Ft.)
Length of natural channel  =   745.000(Ft.)
Estimated mean flow rate at midpoint of channel =    109.197(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.56(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
```

```
       Normal channel slope =  0.0295
Corrected/adjusted channel slope =  0.0295
Travel time =    2.72 min.     TC =   30.07  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.731
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  70.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.408(In/Hr) for a   100.0 year storm
Subarea runoff =     60.364(CFS) for     34.300(Ac.)
Total runoff =    136.445(CFS)       Total area =      73.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      704.000 to Point/Station      705.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2481.000(Ft.)
End of natural channel elevation =   2419.000(Ft.)
Length of natural channel  =  1000.000(Ft.)
Estimated mean flow rate at midpoint of channel =    166.715(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.81(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0620
Corrected/adjusted channel slope =  0.0620
Travel time =    1.21 min.     TC =   31.28  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.767
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  76.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.359(In/Hr) for a   100.0 year storm
Subarea runoff =     59.146(CFS) for     32.700(Ac.)
Total runoff =    195.591(CFS)       Total area =     106.400(Ac.)
End of computations, total study area =          106.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  71.8
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:800EXISTING.out

BEAUMONT SUMMIT STATION 800 SERIES
EXISTING CONDITION 100-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 800.000 to Point/Station 801.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 815.000(Ft.)
Top (of initial area) elevation = 2574.100(Ft.)
Bottom (of initial area) elevation = 2547.000(Ft.)
Difference in elevation = 27.100(Ft.)
Slope = 0.03325 s(percent)= 3.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 20.481 min.
Rainfall intensity = 2.952(In/Hr) for a 100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.748
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 21.644(CFS)
Total initial stream area = 9.800(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 801.000 to Point/Station 802.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.000(Ft.)
End of natural channel elevation = 2527.700(Ft.)
Length of natural channel = 670.000(Ft.)
Estimated mean flow rate at midpoint of channel = 39.424(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.22(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0288
Corrected/adjusted channel slope =  0.0288
Travel time =    3.47 min.     TC =   23.95  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.737
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.717(In/Hr) for a   100.0 year storm
Subarea runoff =     32.257(CFS) for     16.100(Ac.)
Total runoff =     53.901(CFS)       Total area =      25.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      802.000 to Point/Station      803.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2527.700(Ft.)
End of natural channel elevation =   2488.000(Ft.)
Length of natural channel  =   775.000(Ft.)
Estimated mean flow rate at midpoint of channel =     79.187(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.38(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0512
Corrected/adjusted channel slope =  0.0512
Travel time =    2.40 min.     TC =   26.36  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.754
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  72.75
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.583(In/Hr) for a   100.0 year storm
Subarea runoff =     47.331(CFS) for     24.300(Ac.)
Total runoff =    101.232(CFS)       Total area =      50.200(Ac.)
End of computations, total study area =           50.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  70.8
```

DEVELOPED CONDITION 10-YEAR ONSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 04/11/22 File:100.out

EXETER INDUSTRIAL BLDG 1 DEVELOPED CONDITION
10-YEAR STORM EVENT 100 SERIES
21-0044
07-28-2021 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

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Process from Point/Station 100.000 to Point/Station 101.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 975.000(Ft.)
Top (of initial area) elevation = 2503.900(Ft.)
Bottom (of initial area) elevation = 2485.300(Ft.)
Difference in elevation = 18.600(Ft.)
Slope = 0.01908 s(percent)= 1.91
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 10.390 min.
Rainfall intensity = 2.606(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.877
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.800
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.200
RI index for soil(AMC 2) = 59.80
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 22.857(CFS)
Total initial stream area = 10.000(Ac.)
Pervious area fraction = 0.100

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Process from Point/Station 101.000 to Point/Station 102.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2485.300(Ft.)
Downstream point elevation = 2482.100(Ft.)
Channel length thru subarea = 625.000(Ft.)
Channel base width = 0.000(Ft.)
Slope or 'Z' of left channel bank = 40.000
Slope or 'Z' of right channel bank = 100.000
Estimated mean flow rate at midpoint of channel = 31.686(CFS)

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Manning's 'N'    = 0.015
Maximum depth of channel  =    1.200(Ft.)
Flow(q) thru subarea =     31.686(CFS)
Depth of flow =   0.424(Ft.), Average velocity =   2.520(Ft/s)
Channel flow top width =   59.341(Ft.)
Flow Velocity =    2.52(Ft/s)
Travel time  =    4.13 min.
Time of concentration =   14.52 min.

Sub-Channel No. 1 Critical depth =      0.418(Ft.)
  '     '       '     Critical flow top width =     58.516(Ft.)
  '     '       '     Critical flow velocity=    2.591(Ft/s)
  '     '       '     Critical flow area =     12.229(Sq.Ft)

 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.877
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.600
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.400
RI index for soil(AMC 2)  =  63.60
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.182(In/Hr) for a    10.0 year storm
Subarea runoff =     17.602(CFS) for      9.200(Ac.)
Total runoff =     40.459(CFS)       Total area =      19.200(Ac.)
Depth of flow =   0.465(Ft.), Average velocity =   2.678(Ft/s)

Sub-Channel No. 1 Critical depth =      0.461(Ft.)
  '     '       '     Critical flow top width =     64.531(Ft.)
  '     '       '     Critical flow velocity=    2.720(Ft/s)
  '     '       '     Critical flow area =     14.872(Sq.Ft)



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Process from Point/Station      102.000 to Point/Station      106.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2479.100(Ft.)
Downstream point/station elevation =  2475.600(Ft.)
Pipe length  =  1148.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    40.459(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    40.459(CFS)
Normal flow depth in pipe =   28.59(In.)
Flow top width inside pipe =   34.50(In.)
Critical Depth =   24.28(In.)
Pipe flow velocity =      6.21(Ft/s)
Travel time through pipe =    3.08 min.
Time of concentration (TC) =    17.61 min.


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Process from Point/Station      106.000 to Point/Station      106.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     19.200(Ac.)
Runoff from this stream =     40.459(CFS)
Time of concentration =   17.61 min.
Rainfall intensity =     1.971(In/Hr)


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Process from Point/Station      107.000 to Point/Station      108.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  2492.000(Ft.)
Bottom (of initial area) elevation =  2482.800(Ft.)
Difference in elevation =     9.200(Ft.)
Slope =    0.00920  s(percent)=       0.92
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.144 min.
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Rainfall intensity =      2.400(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.877
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.660
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.340
RI index for soil(AMC 2)  =  62.46
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     16.002(CFS)
Total initial stream area =        7.600(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      108.000 to Point/Station      108.100
**** IMPROVED CHANNEL TRAVEL TIME ****
------------------------------------------------------------------------------
Upstream point elevation =  2482.800(Ft.)
Downstream point elevation =  2481.000(Ft.)
Channel length thru subarea  =   320.000(Ft.)
Channel base width     =    0.000(Ft.)
Slope or 'Z' of left channel bank =  50.000
Slope or 'Z' of right channel bank = 100.000
Estimated mean flow rate at midpoint of channel =     20.527(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    0.500(Ft.)
Flow(q) thru subarea =     20.527(CFS)
Depth of flow =   0.345(Ft.), Average velocity =   2.302(Ft/s)
Channel flow top width =   51.726(Ft.)
Flow Velocity =    2.30(Ft/s)
Travel time  =    2.32 min.
Time of concentration =   14.46 min.

Sub-Channel No. 1 Critical depth =      0.342(Ft.)
  '     '       '     Critical flow top width =     51.270(Ft.)
  '     '       '     Critical flow velocity=    2.343(Ft/s)
  '     '       '     Critical flow area =      8.762(Sq.Ft)

 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.875
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  60.75
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.187(In/Hr) for a    10.0 year storm
Subarea runoff =      8.991(CFS) for      4.700(Ac.)
Total runoff =     24.994(CFS)       Total area =      12.300(Ac.)
Depth of flow =   0.371(Ft.), Average velocity =   2.418(Ft/s)

Sub-Channel No. 1 Critical depth =      0.371(Ft.)
  '     '       '     Critical flow top width =     55.664(Ft.)
  '     '       '     Critical flow velocity=    2.420(Ft/s)
  '     '       '     Critical flow area =     10.328(Sq.Ft)



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Process from Point/Station      108.100 to Point/Station      108.100
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.880
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.400
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.600
RI index for soil(AMC 2)  =  67.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    14.46 min.
Rainfall intensity =      2.187(In/Hr) for a    10.0 year storm
Subarea runoff =      2.886(CFS) for      1.500(Ac.)
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Total runoff =     27.879(CFS)       Total area =      13.800(Ac.)


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Process from Point/Station      108.100 to Point/Station      106.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2477.000(Ft.)
Downstream point/station elevation =  2475.600(Ft.)
Pipe length  =    15.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    27.879(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    27.879(CFS)
Normal flow depth in pipe =   12.96(In.)
Flow top width inside pipe =   16.16(In.)
Critical depth could not be calculated.
Pipe flow velocity =     20.45(Ft/s)
Travel time through pipe =    0.01 min.
Time of concentration (TC) =    14.47 min.


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Process from Point/Station      106.000 to Point/Station      106.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     13.800(Ac.)
Runoff from this stream =     27.879(CFS)
Time of concentration =   14.47 min.
Rainfall intensity =     2.186(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       40.459     17.61                 1.971
2       27.879     14.47                 2.186
Largest stream flow has longer time of concentration
Qp =     40.459 + sum of
          Qb         Ia/Ib
          27.879 *    0.901 =     25.129
Qp =     65.588

Total of 2 streams to confluence:
Flow rates before confluence point:
      40.459      27.879
Area of streams before confluence:
       19.200       13.800
Results of confluence:
Total flow rate =     65.588(CFS)
Time of concentration =    17.606 min.
Effective stream area after confluence =     33.000(Ac.)


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Process from Point/Station      106.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2475.600(Ft.)
Downstream point/station elevation =  2475.000(Ft.)
Pipe length  =   200.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    65.588(CFS)
Nearest computed pipe diameter  =     45.00(In.)
Calculated individual pipe flow  =    65.588(CFS)
Normal flow depth in pipe =   36.47(In.)
Flow top width inside pipe =   35.28(In.)
Critical Depth =   29.92(In.)
Pipe flow velocity =      6.84(Ft/s)
Travel time through pipe =    0.49 min.
Time of concentration (TC) =    18.09 min.


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Process from Point/Station      109.000 to Point/Station      110.000
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**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2475.000(Ft.)
Downstream point/station elevation =  2474.000(Ft.)
Pipe length  =   125.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    65.588(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    65.588(CFS)
Normal flow depth in pipe =   28.59(In.)
Flow top width inside pipe =   34.50(In.)
Critical Depth =   30.93(In.)
Pipe flow velocity =     10.06(Ft/s)
Travel time through pipe =    0.21 min.
Time of concentration (TC) =    18.30 min.


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Process from Point/Station      110.000 to Point/Station      110.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     33.000(Ac.)
Runoff from this stream =     65.588(CFS)
Time of concentration =   18.30 min.
Rainfall intensity =     1.931(In/Hr)


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Process from Point/Station      211.000 to Point/Station      211.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
------------------------------------------------------------------------
Rainfall intensity =      2.423(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.874
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  57.90
Pervious area fraction =  0.100; Impervious fraction =  0.900
User specified values are as follows:
TC =  11.92 min.  Rain intensity =       2.42(In/Hr)
Total area =         9.80(Ac.)  Total runoff =     21.80(CFS)


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Process from Point/Station      211.000 to Point/Station      110.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2476.600(Ft.)
Downstream point/station elevation =  2474.000(Ft.)
Pipe length  =   540.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    21.800(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    21.800(CFS)
Normal flow depth in pipe =   22.50(In.)
Flow top width inside pipe =   20.12(In.)
Critical Depth =   19.62(In.)
Pipe flow velocity =      6.16(Ft/s)
Travel time through pipe =    1.46 min.
Time of concentration (TC) =    13.38 min.


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Process from Point/Station      110.000 to Point/Station      110.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      9.800(Ac.)
Runoff from this stream =     21.800(CFS)
Time of concentration =   13.38 min.
Rainfall intensity =     2.279(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
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TOTAL 200 SERIES FLOWS

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 No.       (CFS)       (min)                 (In/Hr)


1       65.588     18.30                 1.931
2       21.800     13.38                 2.279
Largest stream flow has longer time of concentration
Qp =     65.588 + sum of
          Qb          Ia/Ib
          21.800 *    0.847 =     18.467
Qp =     84.055

Total of 2 streams to confluence:
Flow rates before confluence point:
      65.588      21.800
Area of streams before confluence:
       33.000        9.800
Results of confluence:
Total flow rate =     84.055(CFS)
Time of concentration =    18.301 min.
Effective stream area after confluence =     42.800(Ac.)
End of computations, total study area =           42.80 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  61.0
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Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 04/11/22 File:200.out

EXETER INDUSTRIAL BLDG 1 DEVELOPED CONDITION
10-YEAR STORM EVENT 200 SERIES
21-0044
07-28-2021 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

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Process from Point/Station 200.000 to Point/Station 201.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 935.000(Ft.)
Top (of initial area) elevation = 2501.000(Ft.)
Bottom (of initial area) elevation = 2484.600(Ft.)
Difference in elevation = 16.400(Ft.)
Slope = 0.01754 s(percent)= 1.75
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 10.391 min.
Rainfall intensity = 2.606(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.874
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 11.392(CFS)
Total initial stream area = 5.000(Ac.)
Pervious area fraction = 0.100

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Process from Point/Station 201.000 to Point/Station 202.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 2480.600(Ft.)
Downstream point/station elevation = 2479.900(Ft.)
Pipe length = 43.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 11.392(CFS)
Nearest computed pipe diameter = 18.00(In.)
Calculated individual pipe flow = 11.392(CFS)
Normal flow depth in pipe = 12.75(In.)

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Flow top width inside pipe =   16.36(In.)
Critical Depth =   15.45(In.)
Pipe flow velocity =      8.51(Ft/s)
Travel time through pipe =    0.08 min.
Time of concentration (TC) =    10.47 min.


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Process from Point/Station      202.000 to Point/Station      202.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.000(Ac.)
Runoff from this stream =     11.392(CFS)
Time of concentration =   10.47 min.
Rainfall intensity =     2.595(In/Hr)


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Process from Point/Station      203.000 to Point/Station      204.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   180.000(Ft.)
Top (of initial area) elevation =  2488.300(Ft.)
Bottom (of initial area) elevation =  2484.300(Ft.)
Difference in elevation =     4.000(Ft.)
Slope =    0.02222  s(percent)=       2.22
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.127 min.
Rainfall intensity =      3.790(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.881
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      1.001(CFS)
Total initial stream area =        0.300(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      204.000 to Point/Station      202.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2480.300(Ft.)
Downstream point/station elevation =  2479.900(Ft.)
Pipe length  =    53.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     1.001(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     1.001(CFS)
Normal flow depth in pipe =    5.53(In.)
Flow top width inside pipe =    8.76(In.)
Critical Depth =    5.51(In.)
Pipe flow velocity =      3.52(Ft/s)
Travel time through pipe =    0.25 min.
Time of concentration (TC) =     5.38 min.


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Process from Point/Station      202.000 to Point/Station      202.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.300(Ac.)
Runoff from this stream =      1.001(CFS)
Time of concentration =    5.38 min.
Rainfall intensity =     3.695(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)
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1       11.392     10.47                 2.595
2        1.001      5.38                 3.695
Largest stream flow has longer time of concentration
Qp =     11.392 + sum of
          Qb         Ia/Ib
           1.001 *    0.702 =      0.703
Qp =     12.095

Total of 2 streams to confluence:
Flow rates before confluence point:
      11.392       1.001
Area of streams before confluence:
        5.000        0.300
Results of confluence:
Total flow rate =     12.095(CFS)
Time of concentration =    10.475 min.
Effective stream area after confluence =      5.300(Ac.)


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Process from Point/Station      202.000 to Point/Station      208.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2479.900(Ft.)
Downstream point/station elevation =  2477.300(Ft.)
Pipe length  =   415.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.095(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    12.095(CFS)
Normal flow depth in pipe =   16.57(In.)
Flow top width inside pipe =   17.13(In.)
Critical Depth =   15.55(In.)
Pipe flow velocity =      5.94(Ft/s)
Travel time through pipe =    1.16 min.
Time of concentration (TC) =    11.64 min.


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Process from Point/Station      208.000 to Point/Station      208.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.300(Ac.)
Runoff from this stream =     12.095(CFS)
Time of concentration =   11.64 min.
Rainfall intensity =     2.454(In/Hr)


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Process from Point/Station      209.000 to Point/Station      210.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   665.000(Ft.)
Top (of initial area) elevation =  2493.800(Ft.)
Bottom (of initial area) elevation =  2486.500(Ft.)
Difference in elevation =     7.300(Ft.)
Slope =    0.01098  s(percent)=       1.10
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.957 min.
Rainfall intensity =      2.666(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.877
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.800
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.200
RI index for soil(AMC 2)  =  59.80
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     10.525(CFS)
Total initial stream area =        4.500(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      210.000 to Point/Station      208.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2482.500(Ft.)
Downstream point/station elevation =  2477.300(Ft.)
Pipe length  =    40.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.525(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    10.525(CFS)
Normal flow depth in pipe =    8.26(In.)
Flow top width inside pipe =   11.11(In.)
Critical depth could not be calculated.
Pipe flow velocity =     18.25(Ft/s)
Travel time through pipe =    0.04 min.
Time of concentration (TC) =     9.99 min.


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Process from Point/Station      208.000 to Point/Station      208.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      4.500(Ac.)
Runoff from this stream =     10.525(CFS)
Time of concentration =    9.99 min.
Rainfall intensity =     2.661(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       12.095     11.64                 2.454
2       10.525      9.99                 2.661
Largest stream flow has longer time of concentration
Qp =     12.095 + sum of
          Qb         Ia/Ib
          10.525 *    0.922 =      9.708
Qp =     21.803

Total of 2 streams to confluence:
Flow rates before confluence point:
      12.095      10.525
Area of streams before confluence:
        5.300        4.500
Results of confluence:
Total flow rate =     21.803(CFS)
Time of concentration =    11.639 min.
Effective stream area after confluence =      9.800(Ac.)


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Process from Point/Station      208.000 to Point/Station      211.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2477.300(Ft.)
Downstream point/station elevation =  2476.600(Ft.)
Pipe length  =   117.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    21.803(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    21.803(CFS)
Normal flow depth in pipe =   20.20(In.)
Flow top width inside pipe =   23.44(In.)
Critical Depth =   19.62(In.)
Pipe flow velocity =      6.83(Ft/s)
Travel time through pipe =    0.29 min.
Time of concentration (TC) =    11.92 min.
End of computations, total study area =            9.80 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  57.7
```

DEVELOPED CONDITION 100-YEAR ONSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 04/07/22 File:100.out

EXETER INDUSTRIAL BLDG 1 DEVELOPED CONDITION
100-YEAR STORM EVENT 100 SERIES
21-0044
07-28-2021 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 100.000 to Point/Station 101.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 975.000(Ft.)
Top (of initial area) elevation = 2503.900(Ft.)
Bottom (of initial area) elevation = 2485.300(Ft.)
Difference in elevation = 18.600(Ft.)
Slope = 0.01908 s(percent)= 1.91
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 10.390 min.
Rainfall intensity = 4.230(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.800
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.200
RI index for soil(AMC 2) = 59.80
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 37.403(CFS)
Total initial stream area = 10.000(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 101.000 to Point/Station 102.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2485.300(Ft.)
Downstream point elevation = 2482.100(Ft.)
Channel length thru subarea = 625.000(Ft.)
Channel base width = 0.000(Ft.)
Slope or 'Z' of left channel bank = 40.000
Slope or 'Z' of right channel bank = 100.000
Estimated mean flow rate at midpoint of channel = 52.113(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    1.200(Ft.)
Flow(q) thru subarea =     52.113(CFS)
Depth of flow =   0.511(Ft.), Average velocity =   2.853(Ft/s)
Channel flow top width =   71.512(Ft.)
Flow Velocity =    2.85(Ft/s)
Travel time  =    3.65 min.
Time of concentration =   14.04 min.

Sub-Channel No. 1 Critical depth =      0.508(Ft.)
  '     '       '     Critical flow top width =     71.094(Ft.)
  '     '       '     Critical flow velocity=    2.887(Ft/s)
  '     '       '     Critical flow area =     18.051(Sq.Ft)

 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.600
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.400
RI index for soil(AMC 2)  =  63.60
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      3.606(In/Hr) for a   100.0 year storm
Subarea runoff =     29.336(CFS) for      9.200(Ac.)
Total runoff =     66.739(CFS)       Total area =      19.200(Ac.)
Depth of flow =   0.560(Ft.), Average velocity =   3.035(Ft/s)

Sub-Channel No. 1 Critical depth =      0.563(Ft.)
  '     '       '     Critical flow top width =     78.750(Ft.)
  '     '       '     Critical flow velocity=    3.013(Ft/s)
  '     '       '     Critical flow area =     22.148(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      106.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2479.100(Ft.)
Downstream point/station elevation =  2475.600(Ft.)
Pipe length  =  1148.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    66.739(CFS)
Nearest computed pipe diameter  =     45.00(In.)
Calculated individual pipe flow  =    66.739(CFS)
Normal flow depth in pipe =   36.84(In.)
Flow top width inside pipe =   34.67(In.)
Critical Depth =   30.16(In.)
Pipe flow velocity =      6.89(Ft/s)
Travel time through pipe =    2.78 min.
Time of concentration (TC) =    16.82 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      106.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     19.200(Ac.)
Runoff from this stream =     66.739(CFS)
Time of concentration =   16.82 min.
Rainfall intensity =     3.277(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      108.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  2492.000(Ft.)
Bottom (of initial area) elevation =  2482.800(Ft.)
Difference in elevation =     9.200(Ft.)
Slope =    0.00920  s(percent)=       0.92
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.144 min.
```

```
Rainfall intensity =      3.894(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.660
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.340
RI index for soil(AMC 2)  =  62.46
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     26.182(CFS)
Total initial stream area =        7.600(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.000 to Point/Station      108.100
**** IMPROVED CHANNEL TRAVEL TIME ****
------------------------------------------------------------------------------
Upstream point elevation =  2482.800(Ft.)
Downstream point elevation =  2481.000(Ft.)
Channel length thru subarea  =   320.000(Ft.)
Channel base width     =    0.000(Ft.)
Slope or 'Z' of left channel bank =  50.000
Slope or 'Z' of right channel bank = 100.000
Estimated mean flow rate at midpoint of channel =     33.660(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    0.500(Ft.)
Flow(q) thru subarea =     33.660(CFS)
Depth of flow =   0.415(Ft.), Average velocity =   2.604(Ft/s)
Channel flow top width =   62.268(Ft.)
Flow Velocity =    2.60(Ft/s)
Travel time  =    2.05 min.
Time of concentration =   14.19 min.

Sub-Channel No. 1 Critical depth =      0.418(Ft.)
  '     '       '     Critical flow top width =     62.695(Ft.)
  '     '       '     Critical flow velocity=    2.569(Ft/s)
  '     '       '     Critical flow area =     13.102(Sq.Ft)

 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.883
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  60.75
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      3.586(In/Hr) for a   100.0 year storm
Subarea runoff =     14.873(CFS) for      4.700(Ac.)
Total runoff =     41.055(CFS)       Total area =      12.300(Ac.)
Depth of flow =   0.447(Ft.), Average velocity =   2.737(Ft/s)

Sub-Channel No. 1 Critical depth =      0.449(Ft.)
  '     '       '     Critical flow top width =     67.383(Ft.)
  '     '       '     Critical flow velocity=    2.713(Ft/s)
  '     '       '     Critical flow area =     15.135(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.100 to Point/Station      108.100
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.886
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.400
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.600
RI index for soil(AMC 2)  =  67.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    14.19 min.
Rainfall intensity =      3.586(In/Hr) for a   100.0 year storm
Subarea runoff =      4.767(CFS) for      1.500(Ac.)
```

```
Total runoff =     45.822(CFS)       Total area =      13.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.100 to Point/Station      106.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2477.000(Ft.)
Downstream point/station elevation =  2475.600(Ft.)
Pipe length  =    15.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    45.822(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    45.822(CFS)
Normal flow depth in pipe =   16.29(In.)
Flow top width inside pipe =   17.52(In.)
Critical depth could not be calculated.
Pipe flow velocity =     22.90(Ft/s)
Travel time through pipe =    0.01 min.
Time of concentration (TC) =    14.20 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      106.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     13.800(Ac.)
Runoff from this stream =     45.822(CFS)
Time of concentration =   14.20 min.
Rainfall intensity =     3.584(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       66.739     16.82                 3.277
2       45.822     14.20                 3.584
Largest stream flow has longer time of concentration
Qp =     66.739 + sum of
          Qb         Ia/Ib
          45.822 *    0.914 =     41.897
Qp =    108.636

Total of 2 streams to confluence:
Flow rates before confluence point:
      66.739      45.822
Area of streams before confluence:
       19.200       13.800
Results of confluence:
Total flow rate =    108.636(CFS)
Time of concentration =    16.817 min.
Effective stream area after confluence =     33.000(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2475.600(Ft.)
Downstream point/station elevation =  2475.000(Ft.)
Pipe length  =   200.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   108.636(CFS)
Nearest computed pipe diameter  =     54.00(In.)
Calculated individual pipe flow  =   108.636(CFS)
Normal flow depth in pipe =   44.72(In.)
Flow top width inside pipe =   40.75(In.)
Critical Depth =   36.79(In.)
Pipe flow velocity =      7.72(Ft/s)
Travel time through pipe =    0.43 min.
Time of concentration (TC) =    17.25 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      109.000 to Point/Station      110.000
```

```
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2475.000(Ft.)
Downstream point/station elevation =  2474.000(Ft.)
Pipe length  =   125.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   108.636(CFS)
Nearest computed pipe diameter  =     45.00(In.)
Calculated individual pipe flow  =   108.636(CFS)
Normal flow depth in pipe =   37.03(In.)
Flow top width inside pipe =   34.36(In.)
Critical Depth =   38.07(In.)
Pipe flow velocity =     11.16(Ft/s)
Travel time through pipe =    0.19 min.
Time of concentration (TC) =    17.44 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      110.000 to Point/Station      110.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     33.000(Ac.)
Runoff from this stream =    108.636(CFS)
Time of concentration =   17.44 min.
Rainfall intensity =     3.215(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      211.000 to Point/Station      211.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
------------------------------------------------------------------------
Rainfall intensity =      3.949(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  57.90
Pervious area fraction =  0.100; Impervious fraction =  0.900
User specified values are as follows:
TC =  11.83 min.  Rain intensity =       3.95(In/Hr)
Total area =         9.80(Ac.)  Total runoff =     35.70(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      211.000 to Point/Station      110.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2476.600(Ft.)
Downstream point/station elevation =  2474.000(Ft.)
Pipe length  =   540.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    35.700(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    35.700(CFS)
Normal flow depth in pipe =   26.25(In.)
Flow top width inside pipe =   26.62(In.)
Critical Depth =   23.87(In.)
Pipe flow velocity =      7.04(Ft/s)
Travel time through pipe =    1.28 min.
Time of concentration (TC) =    13.11 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      110.000 to Point/Station      110.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      9.800(Ac.)
Runoff from this stream =     35.700(CFS)
Time of concentration =   13.11 min.
Rainfall intensity =     3.740(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
```

TOTAL FLOWS FROM 200 SERIES

```
 No.       (CFS)       (min)                 (In/Hr)


1      108.636     17.44                 3.215
2       35.700     13.11                 3.740
Largest stream flow has longer time of concentration
Qp =    108.636 + sum of
          Qb          Ia/Ib
          35.700 *    0.860 =     30.691
Qp =    139.326

Total of 2 streams to confluence:
Flow rates before confluence point:
     108.636      35.700
Area of streams before confluence:
       33.000        9.800
Results of confluence:
Total flow rate =    139.326(CFS)
Time of concentration =    17.436 min.
Effective stream area after confluence =     42.800(Ac.)
End of computations, total study area =           42.80 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  61.0
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 04/07/22 File:200.out

EXETER INDUSTRIAL BLDG 1 DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044
07-28-2021 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 200.000 to Point/Station 201.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 935.000(Ft.)
Top (of initial area) elevation = 2501.000(Ft.)
Bottom (of initial area) elevation = 2484.600(Ft.)
Difference in elevation = 16.400(Ft.)
Slope = 0.01754 s(percent)= 1.75
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 10.391 min.
Rainfall intensity = 4.230(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 18.656(CFS)
Total initial stream area = 5.000(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 201.000 to Point/Station 202.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 2480.600(Ft.)
Downstream point/station elevation = 2479.900(Ft.)
Pipe length = 43.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 18.656(CFS)
Nearest computed pipe diameter = 21.00(In.)
Calculated individual pipe flow = 18.656(CFS)
Normal flow depth in pipe = 15.91(In.)

```
Flow top width inside pipe =   17.99(In.)
Critical Depth =   18.75(In.)
Pipe flow velocity =      9.54(Ft/s)
Travel time through pipe =    0.08 min.
Time of concentration (TC) =    10.47 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      202.000 to Point/Station      202.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.000(Ac.)
Runoff from this stream =     18.656(CFS)
Time of concentration =   10.47 min.
Rainfall intensity =     4.214(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      204.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   180.000(Ft.)
Top (of initial area) elevation =  2488.300(Ft.)
Bottom (of initial area) elevation =  2484.300(Ft.)
Difference in elevation =     4.000(Ft.)
Slope =    0.02222  s(percent)=       2.22
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.127 min.
Rainfall intensity =      6.150(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.887
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      1.636(CFS)
Total initial stream area =        0.300(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      204.000 to Point/Station      202.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2480.300(Ft.)
Downstream point/station elevation =  2479.900(Ft.)
Pipe length  =    53.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     1.636(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     1.636(CFS)
Normal flow depth in pipe =    6.20(In.)
Flow top width inside pipe =   11.99(In.)
Critical Depth =    6.52(In.)
Pipe flow velocity =      4.00(Ft/s)
Travel time through pipe =    0.22 min.
Time of concentration (TC) =     5.35 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      202.000 to Point/Station      202.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.300(Ac.)
Runoff from this stream =      1.636(CFS)
Time of concentration =    5.35 min.
Rainfall intensity =     6.014(In/Hr)
Summary of stream data:

Stream    Flow rate      TC            Rainfall Intensity
 No.        (CFS)       (min)                  (In/Hr)
```

```
1       18.656     10.47                 4.214
2        1.636      5.35                 6.014
Largest stream flow has longer time of concentration
Qp =     18.656 + sum of
          Qb         Ia/Ib
           1.636 *    0.701 =      1.147
Qp =     19.803

Total of 2 streams to confluence:
Flow rates before confluence point:
      18.656       1.636
Area of streams before confluence:
        5.000        0.300
Results of confluence:
Total flow rate =     19.803(CFS)
Time of concentration =    10.466 min.
Effective stream area after confluence =      5.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      202.000 to Point/Station      208.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2479.900(Ft.)
Downstream point/station elevation =  2477.300(Ft.)
Pipe length  =   415.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    19.803(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    19.803(CFS)
Normal flow depth in pipe =   18.40(In.)
Flow top width inside pipe =   25.16(In.)
Critical Depth =   18.69(In.)
Pipe flow velocity =      6.86(Ft/s)
Travel time through pipe =    1.01 min.
Time of concentration (TC) =    11.47 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      208.000 to Point/Station      208.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.300(Ac.)
Runoff from this stream =     19.803(CFS)
Time of concentration =   11.47 min.
Rainfall intensity =     4.013(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      209.000 to Point/Station      210.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   665.000(Ft.)
Top (of initial area) elevation =  2493.800(Ft.)
Bottom (of initial area) elevation =  2486.500(Ft.)
Difference in elevation =     7.300(Ft.)
Slope =    0.01098  s(percent)=       1.10
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.957 min.
Rainfall intensity =      4.326(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.800
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.200
RI index for soil(AMC 2)  =  59.80
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     17.221(CFS)
Total initial stream area =        4.500(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      210.000 to Point/Station      208.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2482.500(Ft.)
Downstream point/station elevation =  2477.300(Ft.)
Pipe length  =    40.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    17.221(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    17.221(CFS)
Normal flow depth in pipe =    9.60(In.)
Flow top width inside pipe =   14.40(In.)
Critical depth could not be calculated.
Pipe flow velocity =     20.77(Ft/s)
Travel time through pipe =    0.03 min.
Time of concentration (TC) =     9.99 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      208.000 to Point/Station      208.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      4.500(Ac.)
Runoff from this stream =     17.221(CFS)
Time of concentration =    9.99 min.
Rainfall intensity =     4.319(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       19.803     11.47                 4.013
2       17.221      9.99                 4.319
Largest stream flow has longer time of concentration
Qp =     19.803 + sum of
          Qb         Ia/Ib
          17.221 *    0.929 =     16.002
Qp =     35.805

Total of 2 streams to confluence:
Flow rates before confluence point:
      19.803      17.221
Area of streams before confluence:
        5.300        4.500
Results of confluence:
Total flow rate =     35.805(CFS)
Time of concentration =    11.474 min.
Effective stream area after confluence =      9.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      208.000 to Point/Station      211.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2477.300(Ft.)
Downstream point/station elevation =  2476.600(Ft.)
Pipe length  =   117.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    35.805(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    35.805(CFS)
Normal flow depth in pipe =   23.91(In.)
Flow top width inside pipe =   29.49(In.)
Critical Depth =   23.90(In.)
Pipe flow velocity =      7.76(Ft/s)
Travel time through pipe =    0.25 min.
Time of concentration (TC) =    11.72 min.
End of computations, total study area =            9.80 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  57.7
```

DEVELOPED CONDITION 10-YEAR OFFSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/23/22 File:OFF.out

21-0044: EXETER INDUSTRIAL
OFFSITE RUN-ON DEVELOPED CONDITION
10-YEAR STORM EVENT
TSW

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 1.000 to Point/Station 2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 990.000(Ft.)
Top (of initial area) elevation = 2603.100(Ft.)
Bottom (of initial area) elevation = 2560.000(Ft.)
Difference in elevation = 43.100(Ft.)
Slope = 0.04354 s(percent)= 4.35
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 14.182 min.
Rainfall intensity = 2.210(In/Hr) for a 10.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.668
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 8.569(CFS)
Total initial stream area = 5.800(Ac.)
Pervious area fraction = 0.800

++
Process from Point/Station 2.000 to Point/Station 3.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2560.000(Ft.)
Downstream point elevation = 2535.000(Ft.)
Channel length thru subarea = 1175.000(Ft.)
Channel base width = 6.000(Ft.)
Slope or 'Z' of left channel bank = 2.000
Slope or 'Z' of right channel bank = 2.000
Estimated mean flow rate at midpoint of channel = 32.737(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.500(Ft.)
Flow(q) thru subarea =     32.737(CFS)
Depth of flow =   0.541(Ft.), Average velocity =   8.548(Ft/s)
Channel flow top width =    8.163(Ft.)
Flow Velocity =    8.55(Ft/s)
Travel time  =    2.29 min.
Time of concentration =   16.47 min.

Sub-Channel No. 1 Critical depth =      0.875(Ft.)
  '     '       '     Critical flow top width =      9.500(Ft.)
  '     '       '     Critical flow velocity=    4.828(Ft/s)
  '     '       '     Critical flow area =      6.781(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.703
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.970
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.030
RI index for soil(AMC 2)  =  67.70
Pervious area fraction =  0.920; Impervious fraction =  0.080
Rainfall intensity =      2.042(In/Hr) for a    10.0 year storm
Subarea runoff =     48.243(CFS) for     33.600(Ac.)
Total runoff =     56.812(CFS)       Total area =      39.400(Ac.)
Depth of flow =   0.742(Ft.), Average velocity =  10.232(Ft/s)

Sub-Channel No. 1 Critical depth =      1.219(Ft.)
  '     '       '     Critical flow top width =     10.875(Ft.)
  '     '       '     Critical flow velocity=    5.525(Ft/s)
  '     '       '     Critical flow area =     10.283(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2535.000(Ft.)
End of natural channel elevation =   2495.040(Ft.)
Length of natural channel  =   800.000(Ft.)
Estimated mean flow rate at midpoint of channel =     60.201(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.85(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0500
Corrected/adjusted channel slope =  0.0500
Travel time =    2.75 min.     TC =   19.22  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.772
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.800
RI index for soil(AMC 2)  =  81.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.881(In/Hr) for a    10.0 year storm
Subarea runoff =      6.823(CFS) for      4.700(Ac.)
Total runoff =     63.635(CFS)       Total area =      44.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2495.040(Ft.)
```

Downstream point/station elevation = 2490.000(Ft.)
Pipe length = 80.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 63.635(CFS)
Nearest computed pipe diameter = 27.00(In.)
Calculated individual pipe flow = 63.635(CFS)
Normal flow depth in pipe = 18.59(In.)
Flow top width inside pipe = 25.01(In.)
Critical depth could not be calculated.
Pipe flow velocity = 21.81(Ft/s)
Travel time through pipe = 0.06 min.
Time of concentration (TC) = 19.28 min.
End of computations, total study area = 44.10 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.913
Area averaged RI index number = 67.6

DEVELOPED CONDITION 100-YEAR OFFSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/23/22 File:off.out

21-0044: EXETER INDUSTRIAL
OFFSITE RUN-ON DEVELOPED CONDITION
100-YEAR STORM EVENT
TSW

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 1.000 to Point/Station 2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 990.000(Ft.)
Top (of initial area) elevation = 2603.100(Ft.)
Bottom (of initial area) elevation = 2560.000(Ft.)
Difference in elevation = 43.100(Ft.)
Slope = 0.04354 s(percent)= 4.35
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 14.182 min.
Rainfall intensity = 3.587(In/Hr) for a 100.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.737
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 15.338(CFS)
Total initial stream area = 5.800(Ac.)
Pervious area fraction = 0.800

++
Process from Point/Station 2.000 to Point/Station 3.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2560.000(Ft.)
Downstream point elevation = 2535.000(Ft.)
Channel length thru subarea = 1175.000(Ft.)
Channel base width = 6.000(Ft.)
Slope or 'Z' of left channel bank = 2.000
Slope or 'Z' of right channel bank = 2.000
Estimated mean flow rate at midpoint of channel = 58.684(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.500(Ft.)
Flow(q) thru subarea =     58.684(CFS)
Depth of flow =   0.756(Ft.), Average velocity =  10.339(Ft/s)
Channel flow top width =    9.023(Ft.)
Flow Velocity =   10.34(Ft/s)
Travel time  =    1.89 min.
Time of concentration =   16.08 min.

Sub-Channel No. 1 Critical depth =      1.250(Ft.)
  '     '       '     Critical flow top width =     11.000(Ft.)
  '     '       '     Critical flow velocity=    5.523(Ft/s)
  '     '       '     Critical flow area =     10.625(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.768
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.970
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.030
RI index for soil(AMC 2)  =  67.70
Pervious area fraction =  0.920; Impervious fraction =  0.080
Rainfall intensity =      3.356(In/Hr) for a   100.0 year storm
Subarea runoff =     86.617(CFS) for     33.600(Ac.)
Total runoff =    101.955(CFS)       Total area =      39.400(Ac.)
Depth of flow =   1.030(Ft.), Average velocity =  12.275(Ft/s)

Sub-Channel No. 1 Critical depth =      1.703(Ft.)
  '     '       '     Critical flow top width =     12.813(Ft.)
  '     '       '     Critical flow velocity=    6.364(Ft/s)
  '     '       '     Critical flow area =     16.020(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2535.000(Ft.)
End of natural channel elevation =   2495.040(Ft.)
Length of natural channel  =   800.000(Ft.)
Estimated mean flow rate at midpoint of channel =    108.036(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.88(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0500
Corrected/adjusted channel slope =  0.0500
Travel time =    2.27 min.     TC =   18.34  min.

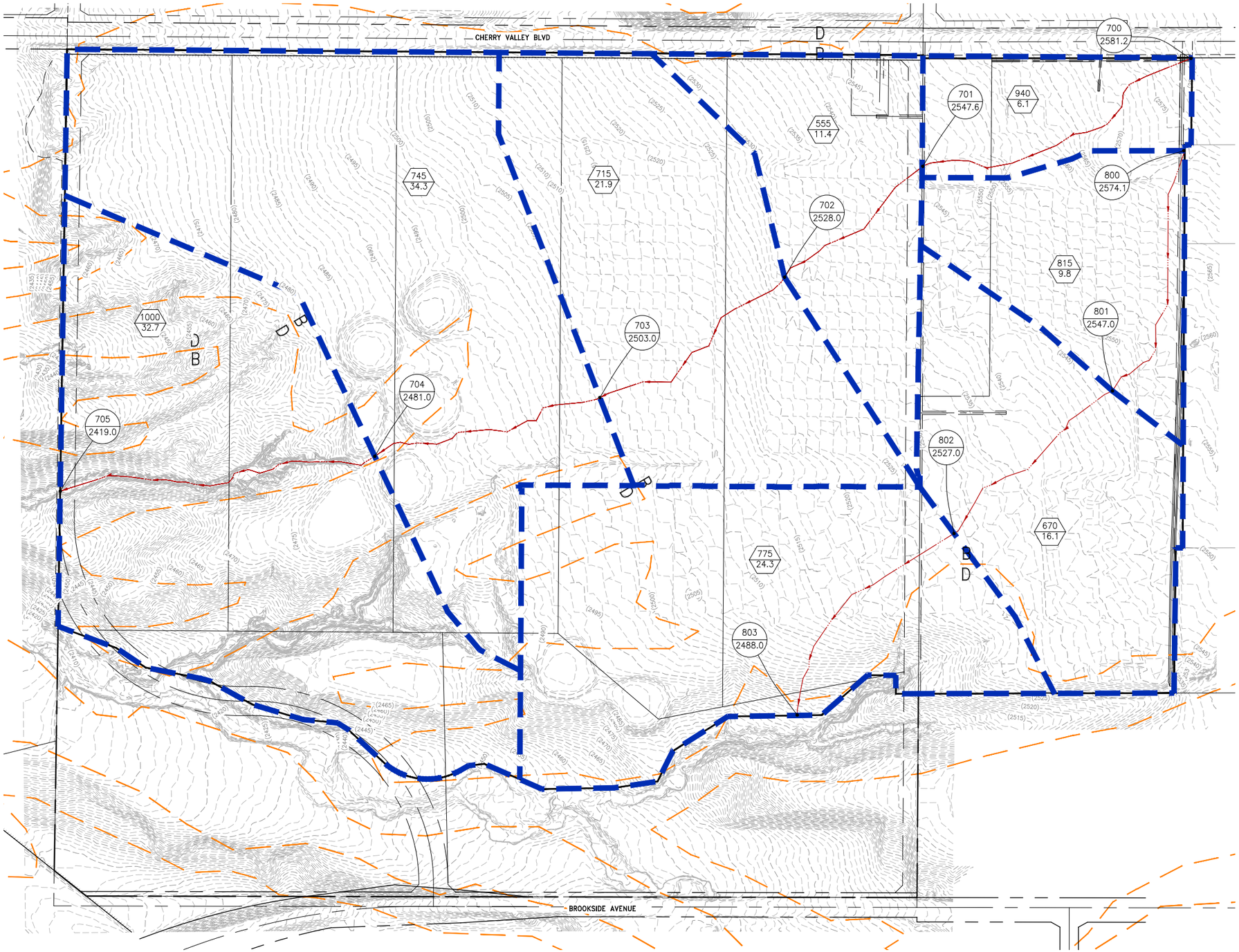

 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.800
RI index for soil(AMC 2)  =  81.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.130(In/Hr) for a   100.0 year storm
Subarea runoff =     12.036(CFS) for      4.700(Ac.)
Total runoff =    113.991(CFS)       Total area =      44.100(Ac.)

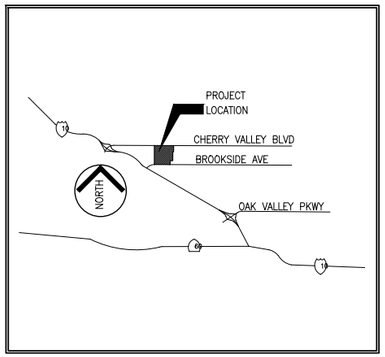

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2495.040(Ft.)
```

```
Downstream point/station elevation =  2490.000(Ft.)
Pipe length  =    80.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   113.991(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =   113.991(CFS)
Normal flow depth in pipe =   23.55(In.)
Flow top width inside pipe =   29.83(In.)
Critical depth could not be calculated.
Pipe flow velocity =     25.13(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    18.40 min.
End of computations, total study area =           44.10 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.913
Area averaged RI index number =  67.6
```

RATIONAL METHOD HYDROLOGY MAPS





VICINITY MAP
NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30

LEGEND

NODE / ELEV	– NODE NUMBER / – ELEVATION (FT)
FT / AC	– LENGTH (FT) / – AREA (AC)
	– DRAINAGE AREA BOUNDARY
	– FLOWLINE (PROPOSED)
	– PROJECT BOUNDARY
	– NRCS SOIL BOUNDARY

1" = 150'
150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION
EXHIBIT 1. OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 150'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/2/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 1
DESIGNED:	EP		OF 5 SHEETS
CHECKED:	BJV		DWG. NO.
PLN CK REF:			
F.B.			

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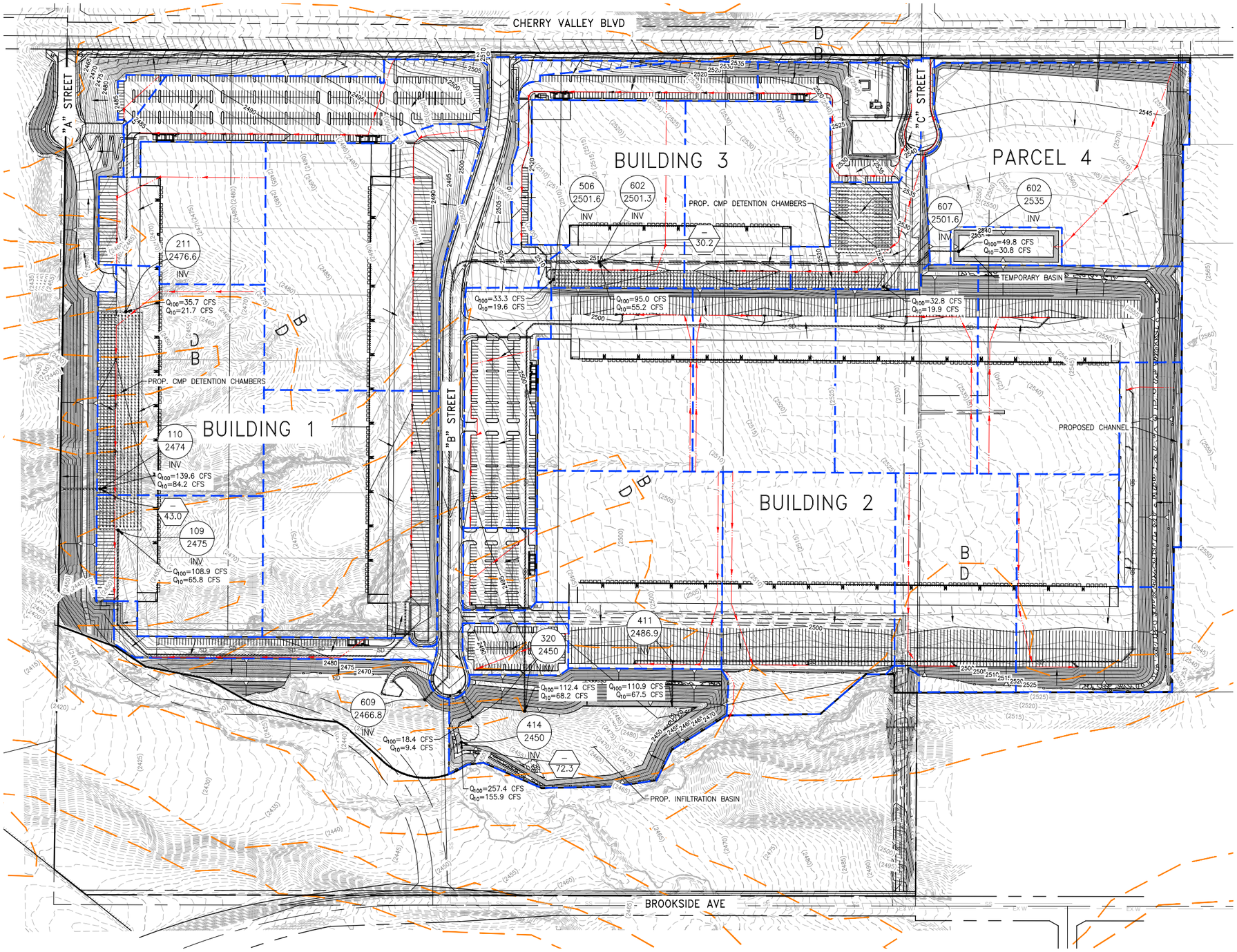

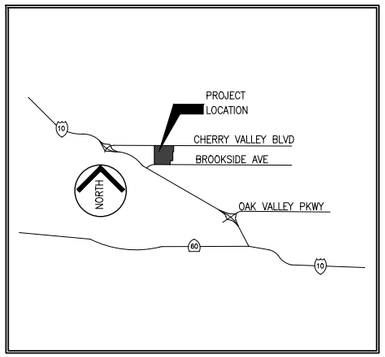

VICINITY MAP
NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- FT / AC – LENGTH (FT) / AREA (AC)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- PROJECT BOUNDARY
- NRCS SOIL BOUNDARY
- FLOW DIRECTION

N W E S WEBB

1" = 150'
150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 2. OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 150'	W.O.	21-0044
DATE:	8/2/2021	SHEET	2
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV	DWG. NO.	
PLN CK REF:			
F.B.			

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

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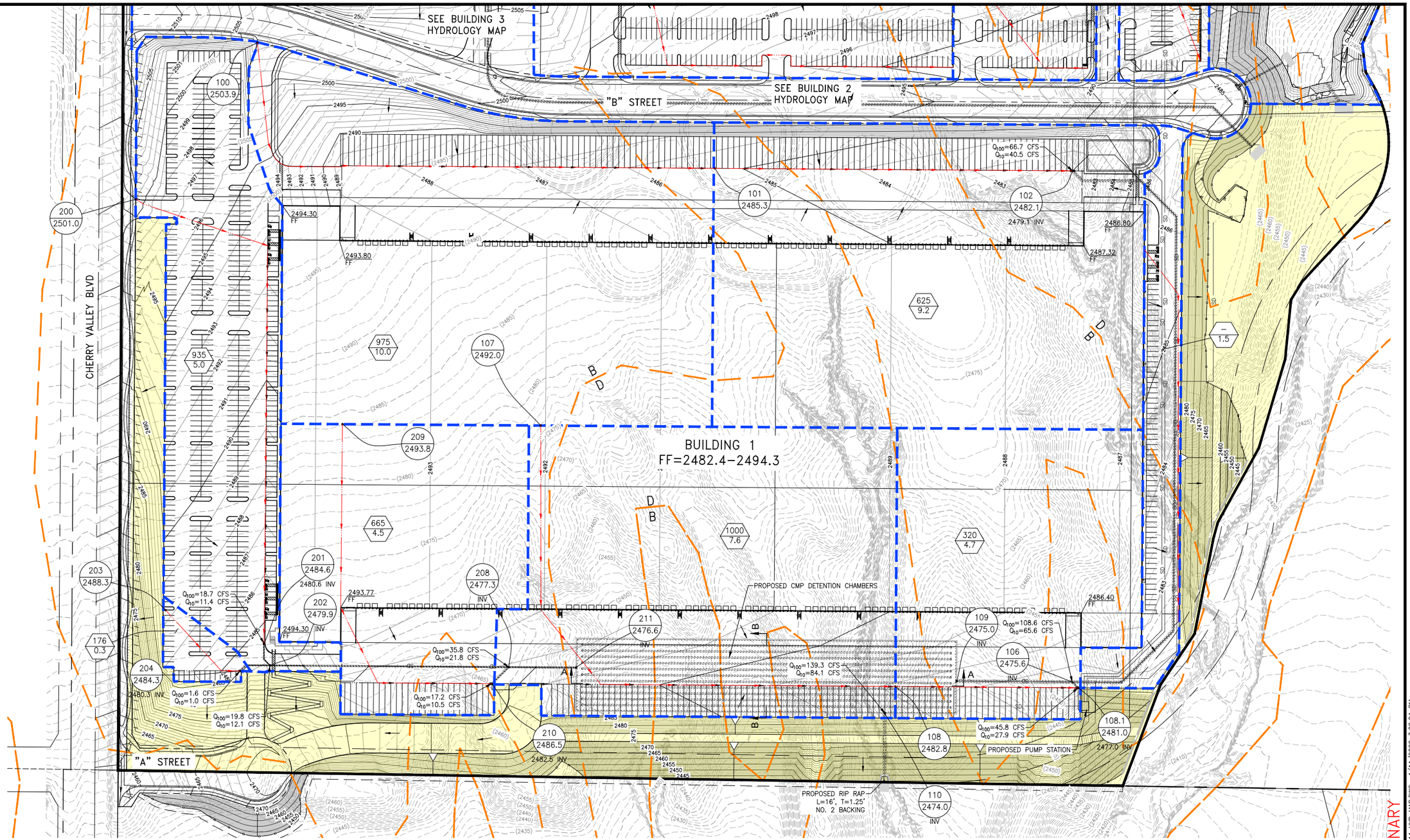

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- FT / AC – LENGTH (FT) / AREA (AC)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- PROJECT BOUNDARY
- NRCS SOIL BOUNDARY
- FLOW DIRECTION
- AREAS FLOWING OFFSITE [SELF-TREATING PER PWQMP] (APPROX. 9.5 AC)

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 3. ON-SITE BUILDING 1
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 80'	W.O.	21-0044
DATE:	8/2/2021	SHEET	3
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV	DWG. NO.	
PLN CK REF:			
F.B.			

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

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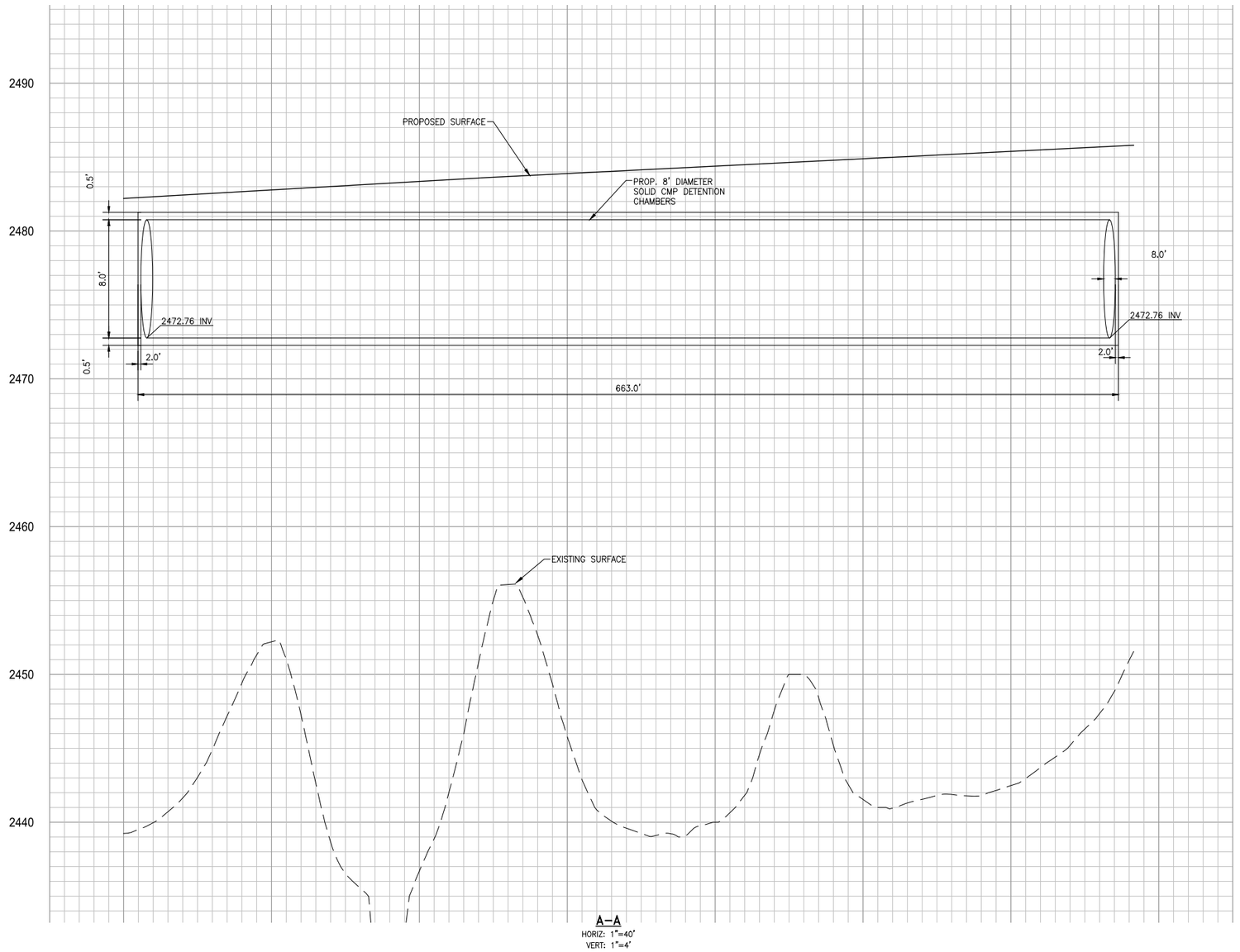
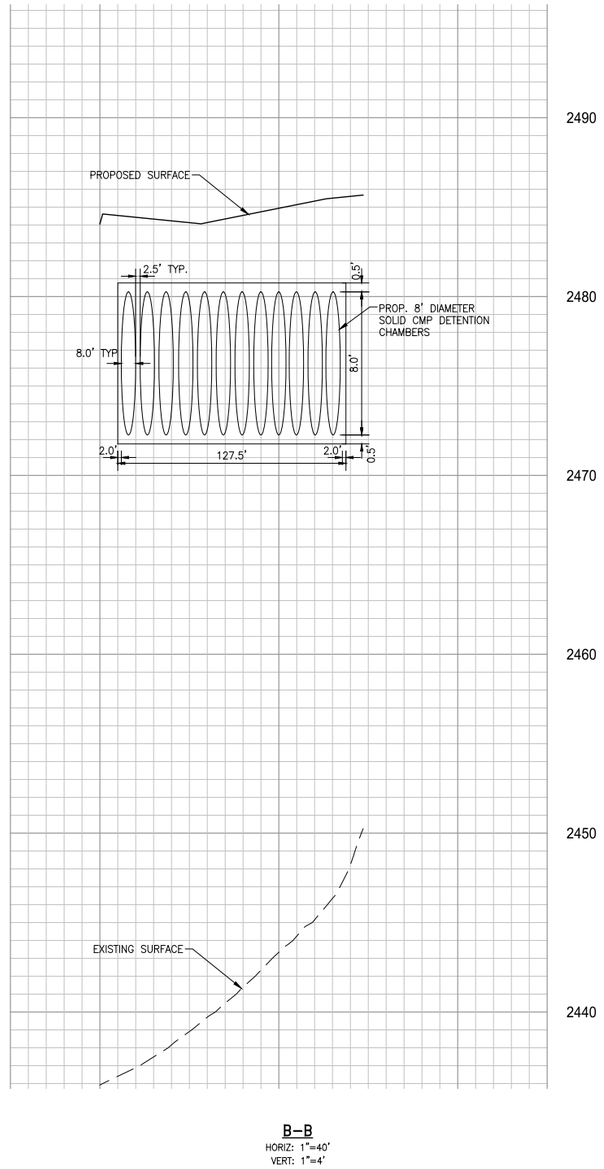


A-A
HORIZ: 1"=40'
VERT: 1"=4'



B-B
HORIZ: 1"=40'
VERT: 1"=4'

BUILDING 1- UNDERGROUND CHAMBERS

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 4. BUILDING 1 DETAILS
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
CMP CHAMBER DETAILS

SCALE:	1"=40'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/2/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 3
DESIGNED:	EP		OF 3 SHEETS
CHECKED:	BJV		
PLN CK REF:			DWG. NO.
F.B.			

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PARCEL 4

BUILDING 2

ORO GRAND

FABIAN LANE

GOODIE LANE

TROUBLE COURT

OFF-1
2603.1

990
5.8

OFF-2
2560.0
Q_{100}=15.3 CFS
Q_{10}=8.6 CFS

1,175
33.6

EXISTING SINGLE FAMILY
19.3 ACRES

OFF-3
2535.0
Q_{100}=102.0 CFS
Q_{10}=56.8 CFS

OFF-4
2495.0
Q_{100}=114.0 CFS
Q_{10}=63.6 CFS

OFF-5
2490.0

800
4.7

B
D

N
W WEBB E
S

1" = 100'
100 0 100 200 300

LEGEND

NODE / ELEV	– NODE NUMBER – ELEVATION (FT)
FT / AC	– LENGTH (FT) – AREA (AC)
	– DRAINAGE AREA BOUNDARY (OFFSITE)
	– FLOWLINE (OFFSITE)
	– NRCS SOIL BOUNDARY
	– EXISTING SINGLE FAMILY (1 AC LOTS)

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 5. OFFSITE RUN-ON
INDUSTRIAL DEVELOPMENT
EASTERLY BOUNDARY
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 100'	W.O.	21-0044
DATE:	2/17/2022	SHEET	5
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV		
PLN CK REF:		DWG. NO.	
F.B.			

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

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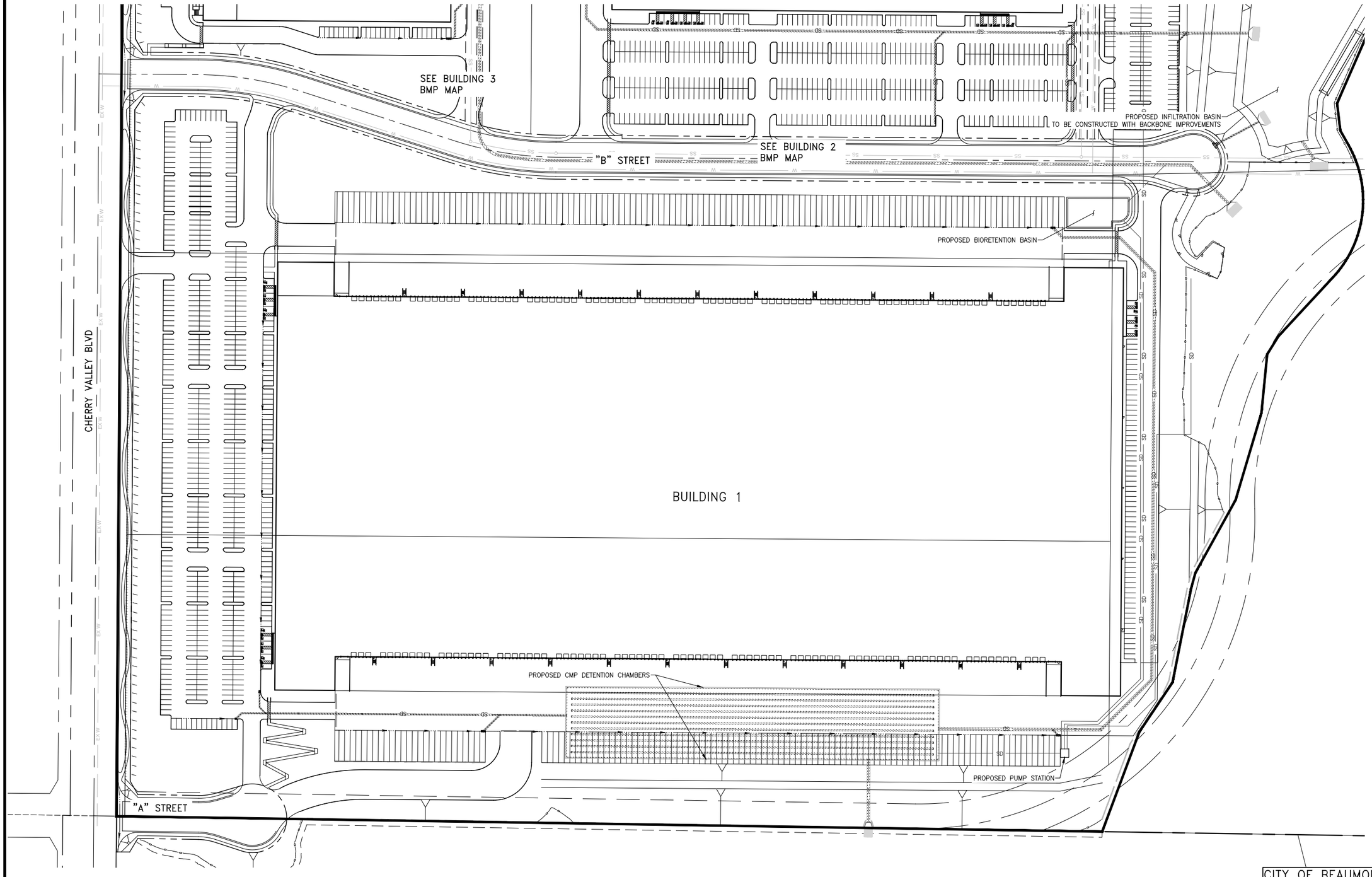


LEGEND

— PROJECT BOUNDARY

—SD— PROPOSED STORM DRAIN

1" = 80'

80 0 80 160 240

N E S W

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 6. BUILDING 1 BMP MAP
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION

SCALE:	1" = 80'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/2/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 6
DESIGNED:	EP		OF 5 SHEETS
CHECKED:	BJV		DWG. NO.
PLN CK REF:			
F.B.			

H:\2021\21-0044\DRAINAGE\HYDLDWG FOLDER\21-0044 BMP MAP.DWG 4/11/2022 5:16:28 PM

APPENDIX B – HYDRAULIC ANALYSIS

WSPG CALCULATIONS

Hydraulic calculations to be performed with the Final Drainage Study

CMP CHAMBER DETAILS

DYODS™
Design Your Own Detention System

CONTECH CMP DETENTION SYSTEMS

CONTECH CONSTRUCTION PRODUCTS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com

Project Summary

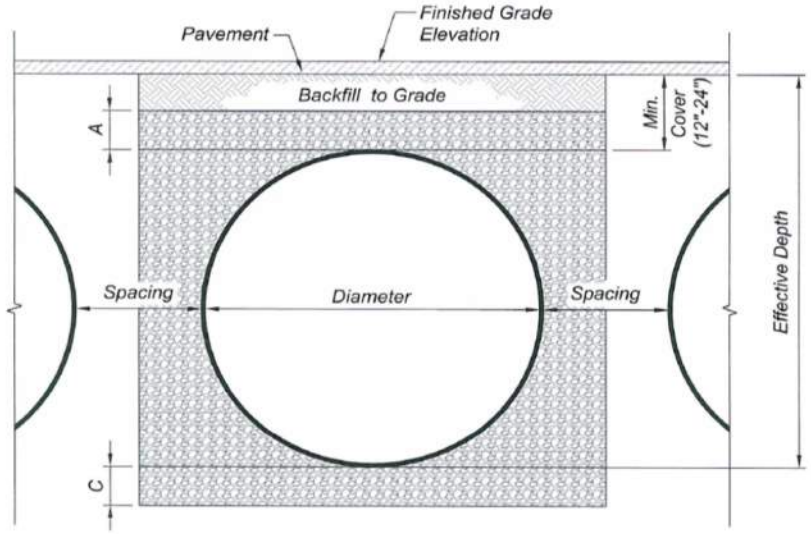
Date:	4/11/2022
Project Name:	Beaumont Summit Station - Building 1
City / County:	Calimesa
State:	CA
Designed By:	EP
Company:	Albert A. Webb Associates
Telephone:	

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	400,000
Limiting Width (ft):	130.00
Invert Depth Below Asphalt (ft):	10.00
Solid or Perforated Pipe:	Solid
Shape Or Diameter (in):	96
Number Of Headers:	2
Spacing between Barrels (ft):	2.50
Stone Width Around Perimeter of System (ft):	2
Depth A: Porous Stone Above Pipe (in):	6
Depth C: Porous Stone Below Pipe (in):	6
Stone Porosity (0 to 40%):	40

50.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	400,264	cf	
Porous Stone Storage:	0	cf	
Total Storage Provided:	400,264	cf	100.1% Of Required Storage
Number of Barrels:	12	barrels	
Length per Barrel:	643.0	ft	
Length Per Header:	123.5	ft	
Rectangular Footprint (W x L):	127.5 ft x 663.	ft	

CONTECH Materials

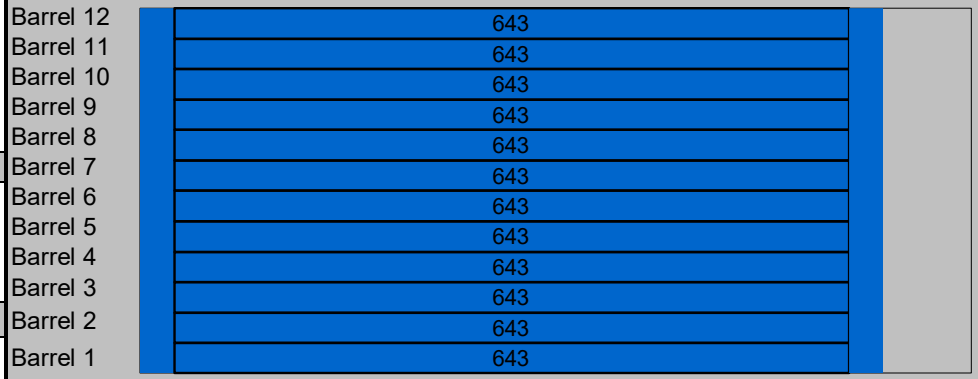
Total CMP Footage:	7,963	ft
Approximate Total Pieces:	336	pcs
Approximate Coupling Bands:	346	bands
Approximate Truckloads:	168	trucks

Construction Quantities**

Total Excavation:	31309	cy
Porous Stone Backfill For Storage:	0	cy stone
Backfill to Grade Excluding Stone:	16484	cy fill

***Construction quantities are approximate and should be verified upon final design*

System Layout



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CULVERT SIZING

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**********************************************************************
******
                  HYDRAULIC ELEMENTS - I  PROGRAM PACKAGE
          (C) Copyright 1982-2013 Advanced Engineering Software (aes)
              Ver. 20.0  Release Date: 06/01/2013  License ID 1238

                              Analysis prepared by:




 ----------------------------------------------------------------------
-------
   TIME/DATE OF STUDY: 14:27 02/23/2022

======================================================================
======
  Problem Descriptions:
   21-0044 BSS
   EMERGENCY ROAD CULVERT
   2022-02-23 EP

**********************************************************************
******
 >>>>PIPEFLOW HYDRAULIC INPUT INFORMATION<<<<
 ----------------------------------------------------------------------
-------
     PIPE SLOPE(FEET/FEET) =  0.0630
     PIPEFLOW(CFS) =       114.00
     MANNINGS FRICTION FACTOR = 0.013000
     >>>>>SOFFIT-FLOW PIPE DIAMETER(FEET) =   2.597

======================================================================
======
```

36" DIAMETER PIPE PROPOSED

APPENDIX C – DETENTION CHAMBER ANALYSIS

EXISTING CONDITION UNIT HYDROGRAPHS

AREA A

EXISTING CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (AC)**	**Impervious Area (SF)**
Undeveloped	Poor	B	GRASS	78	Existing	0	3030075	69.6	0
Undeveloped	Good	B	RESIDENTIAL OR COMMERCIAL	56	Existing	0.9	628790	14.4	565911
Undeveloped	Poor	D	GRASS	89	Existing	0	966389	22.2	0
Undeveloped	Good	D	RESIDENTIAL OR COMMERCIAL	75	Existing	0.9	9886	0.2	8897
			AVERAGE WEIGHTED RI VALUE	**77.3**		**TOTAL**	4635140	106.4	
						TOTAL % IMPERVIOUS		**12%**	
						LOW LOSS RATE		**0.80**	

EXISTING CONDITION
2-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

2-YEAR, 1-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/19/21 File: EX2YRA12.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.55	58.52

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.25	133.00

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.90 %
Adjusted average point rain = 0.549(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

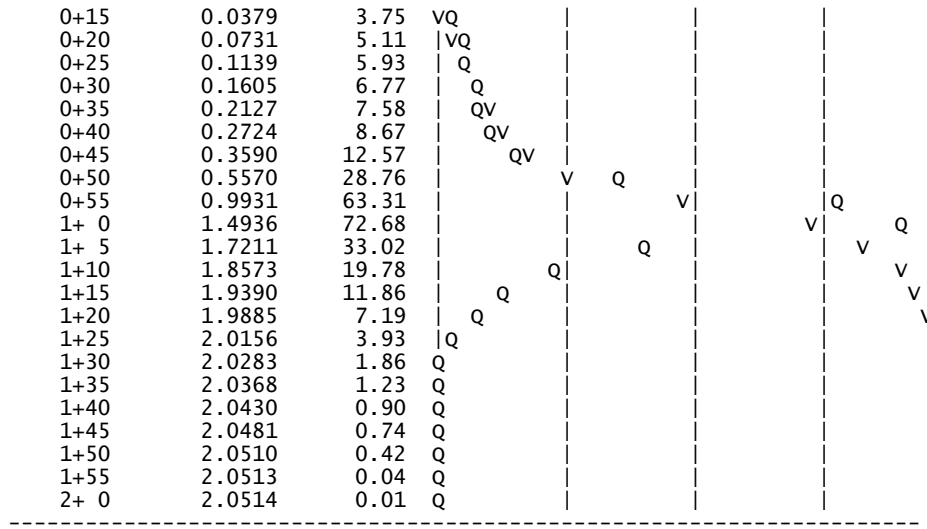
```
      77.3  59.8      0.472     0.120        0.421       1.000      0.421
                                                        Sum (F) =   0.421
      Area averaged mean soil loss (F) (In/Hr) =  0.421
      Minimum soil loss rate ((In/Hr)) =  0.211
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.800
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         53.985          4.779             5.124
          2   0.167        107.970         24.937            26.740
          3   0.250        161.956         36.901            39.569
          4   0.333        215.941         13.574            14.556
          5   0.417        269.926          7.855             8.423
          6   0.500        323.911          5.019             5.382
          7   0.583        377.896          3.120             3.345
          8   0.667        431.882          1.702             1.825
          9   0.750        485.867          0.696             0.747
         10   0.833        539.852          0.487             0.522
         11   0.917        593.837          0.367             0.393
         12   1.000        647.822          0.345             0.370
         13   1.083        701.808          0.218             0.234
                                  Sum = 100.000    Sum=     107.231
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.224       (  0.421)       0.179        0.045
   2   0.17     4.70      0.310       (  0.421)       0.248        0.062
   3   0.25     4.70      0.310       (  0.421)       0.248        0.062
   4   0.33     5.10      0.336       (  0.421)       0.269        0.067
   5   0.42     5.80      0.382       (  0.421)       0.306        0.076
   6   0.50     5.90      0.389       (  0.421)       0.311        0.078
   7   0.58     7.10      0.468       (  0.421)       0.375        0.094
   8   0.67     8.70      0.574          0.421    (  0.459)        0.152
   9   0.75    13.20      0.870          0.421    (  0.696)        0.449
  10   0.83    29.70      1.958          0.421    (  1.567)        1.537
  11   0.92     7.70      0.508       (  0.421)       0.406        0.102
  12   1.00     4.00      0.264       (  0.421)       0.211        0.053
             (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     2.8
        Flood volume = Effective rainfall      0.23(In)
         times area     106.4(Ac.)/[(In)/(Ft.)] =       2.1(Ac.Ft)
        Total soil loss =      0.32(In)
        Total soil loss =     2.821(Ac.Ft)
        Total rainfall =      0.55(In)
        Flood volume =       89358.3 Cubic Feet
        Total soil loss =      122864.5 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =     72.680(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.0      40.0      60.0      80.0
  ------------------------------------------------------------------------
    0+ 5       0.0016      0.23  Q         |         |         |         |
    0+10       0.0120      1.52  Q         |         |         |         |
```


0+15 0.0379 3.75
0+20 0.0731 5.11
0+25 0.1139 5.93
0+30 0.1605 6.77
0+35 0.2127 7.58
0+40 0.2724 8.67
0+45 0.3590 12.57
0+50 0.5570 28.76
0+55 0.9931 63.31
1+ 0 1.4936 72.68
1+ 5 1.7211 33.02
1+10 1.8573 19.78
1+15 1.9390 11.86
1+20 1.9885 7.19
1+25 2.0156 3.93
1+30 2.0283 1.86
1+35 2.0368 1.23
1+40 2.0430 0.90
1+45 2.0481 0.74
1+50 2.0510 0.42
1+55 2.0513 0.04
2+ 0 2.0514 0.01

2-YEAR, 3-HOUR STORM

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  07/19/21 File: EX2YRA32.out

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------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           0.95                101.08

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           2.05                218.12

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    2.050(In)

Point rain (area averaged) =    0.950(In)
Areal adjustment factor =   99.95 %
Adjusted average point rain =    0.950(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.148	(0.421)	0.119	0.030
2	0.17	1.30	0.148	(0.421)	0.119	0.030
3	0.25	1.10	0.125	(0.421)	0.100	0.025
4	0.33	1.50	0.171	(0.421)	0.137	0.034
5	0.42	1.50	0.171	(0.421)	0.137	0.034
6	0.50	1.80	0.205	(0.421)	0.164	0.041
7	0.58	1.50	0.171	(0.421)	0.137	0.034
8	0.67	1.80	0.205	(0.421)	0.164	0.041
9	0.75	1.80	0.205	(0.421)	0.164	0.041
10	0.83	1.50	0.171	(0.421)	0.137	0.034
11	0.92	1.60	0.182	(0.421)	0.146	0.036
12	1.00	1.80	0.205	(0.421)	0.164	0.041
13	1.08	2.20	0.251	(0.421)	0.201	0.050
14	1.17	2.20	0.251	(0.421)	0.201	0.050
15	1.25	2.20	0.251	(0.421)	0.201	0.050
16	1.33	2.00	0.228	(0.421)	0.182	0.046
17	1.42	2.60	0.296	(0.421)	0.237	0.059
18	1.50	2.70	0.308	(0.421)	0.246	0.062
19	1.58	2.40	0.273	(0.421)	0.219	0.055
20	1.67	2.70	0.308	(0.421)	0.246	0.062
21	1.75	3.30	0.376	(0.421)	0.301	0.075
22	1.83	3.10	0.353	(0.421)	0.283	0.071
23	1.92	2.90	0.330	(0.421)	0.264	0.066
24	2.00	3.00	0.342	(0.421)	0.273	0.068
25	2.08	3.10	0.353	(0.421)	0.283	0.071
26	2.17	4.20	0.479	(0.421)	0.383	0.096
27	2.25	5.00	0.570	0.421	(0.456)	0.148
28	2.33	3.50	0.399	(0.421)	0.319	0.080
29	2.42	6.80	0.775	0.421	(0.620)	0.353
30	2.50	7.30	0.832	0.421	(0.665)	0.410
31	2.58	8.20	0.934	0.421	(0.747)	0.513
32	2.67	5.90	0.672	0.421	(0.538)	0.251
33	2.75	2.00	0.228	(0.421)	0.182	0.046
34	2.83	1.80	0.205	(0.421)	0.164	0.041
35	2.92	1.80	0.205	(0.421)	0.164	0.041
36	3.00	0.60	0.068	(0.421)	0.055	0.014
		(Loss Rate Not Used)				

```
   Sum =     100.0                                    Sum =     3.2
      Flood volume = Effective rainfall      0.27(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       2.4(Ac.Ft)
      Total soil loss =      0.68(In)
      Total soil loss =     6.056(Ac.Ft)
      Total rainfall =      0.95(In)
      Flood volume =      102938.9 Cubic Feet
      Total soil loss =      263810.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     38.479(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------------
  0+ 5       0.0010      0.15  Q         |         |         |         |
  0+10       0.0076      0.94  Q         |         |         |         |
  0+15       0.0220      2.09  V Q       |         |         |         |
  0+20       0.0388      2.45  V Q       |         |         |         |
  0+25       0.0579      2.76  V Q       |         |         |         |
  0+30       0.0803      3.25  |V Q      |         |         |         |
  0+35       0.1050      3.59  |V Q      |         |         |         |
  0+40       0.1314      3.82  | VQ      |         |         |         |
  0+45       0.1582      3.89  | VQ      |         |         |         |
  0+50       0.1865      4.12  |  VQ     |         |         |         |
  0+55       0.2145      4.05  |  VQ     |         |         |         |
  1+ 0       0.2415      3.93  |  QV     |         |         |         |
  1+ 5       0.2699      4.12  |   Q     |         |         |         |
  1+10       0.3012      4.54  |   QV    |         |         |         |
  1+15       0.3354      4.96  |   QV    |         |         |         |
  1+20       0.3705      5.11  |    QV   |         |         |         |
  1+25       0.4060      5.15  |    QV   |         |         |         |
  1+30       0.4433      5.42  |    Q V  |         |         |         |
  1+35       0.4844      5.96  |    Q  V |         |         |         |
  1+40       0.5262      6.08  |     Q V |         |         |         |
  1+45       0.5689      6.19  |     Q  V|         |         |         |
  1+50       0.6156      6.79  |     Q   V         |         |         |
  1+55       0.6658      7.28  |      Q  |V        |         |         |
  2+ 0       0.7157      7.25  |      Q  | V       |         |         |
  2+ 5       0.7654      7.22  |      Q  | V       |         |         |
  2+10       0.8169      7.48  |      Q  |  V      |         |         |
  2+15       0.8757      8.54  |       Q |   V     |         |         |
  2+20       0.9490     10.63  |         Q     V   |         |         |
  2+25       1.0362     12.67  |         | Q    V  |         |         |
  2+30       1.1641     18.56  |         |       QV|         |         |
  2+35       1.3779     31.04  |         |         |  V      |Q        |
  2+40       1.6429     38.48  |         |         |     V   |       Q |
  2+45       1.9009     37.47  |         |         |         | V    Q  |
  2+50       2.0724     24.91  |         |         |   Q     |    V    |
  2+55       2.1748     14.86  |         |   Q     |         |     V   |
  3+ 0       2.2475     10.57  |         Q         |         |       V |
  3+ 5       2.2972      7.20  |       Q |         |         |       V |
  3+10       2.3254      4.11  |   Q     |         |         |        V|
  3+15       2.3404      2.18  | Q       |         |         |        V|
  3+20       2.3495      1.32  |Q        |         |         |        V|
  3+25       2.3557      0.89  Q         |         |         |        V|
  3+30       2.3595      0.56  Q         |         |         |        V|
  3+35       2.3616      0.31  Q         |         |         |        V|
  3+40       2.3625      0.12  Q         |         |         |        V|
  3+45       2.3628      0.05  Q         |         |         |        V|
  3+50       2.3630      0.03  Q         |         |         |        V|
  3+55       2.3631      0.01  Q         |         |         |        V|
  4+ 0       2.3632      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

2-YEAR, 6-HOUR STORM

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  07/19/21 File: EX2YRA62.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           1.40                148.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           3.00                319.20

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.000(In)

Point rain (area averaged) =    1.400(In)
Areal adjustment factor =   99.96 %
Adjusted average point rain =    1.399(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max		Low	Effective (In/Hr)
1	0.08	0.50	0.084	(0.421)		0.067	0.017
2	0.17	0.60	0.101	(0.421)		0.081	0.020
3	0.25	0.60	0.101	(0.421)		0.081	0.020
4	0.33	0.60	0.101	(0.421)		0.081	0.020
5	0.42	0.60	0.101	(0.421)		0.081	0.020
6	0.50	0.70	0.118	(0.421)		0.094	0.024
7	0.58	0.70	0.118	(0.421)		0.094	0.024
8	0.67	0.70	0.118	(0.421)		0.094	0.024
9	0.75	0.70	0.118	(0.421)		0.094	0.024
10	0.83	0.70	0.118	(0.421)		0.094	0.024
11	0.92	0.70	0.118	(0.421)		0.094	0.024
12	1.00	0.80	0.134	(0.421)		0.107	0.027
13	1.08	0.80	0.134	(0.421)		0.107	0.027
14	1.17	0.80	0.134	(0.421)		0.107	0.027
15	1.25	0.80	0.134	(0.421)		0.107	0.027
16	1.33	0.80	0.134	(0.421)		0.107	0.027
17	1.42	0.80	0.134	(0.421)		0.107	0.027
18	1.50	0.80	0.134	(0.421)		0.107	0.027
19	1.58	0.80	0.134	(0.421)		0.107	0.027
20	1.67	0.80	0.134	(0.421)		0.107	0.027
21	1.75	0.80	0.134	(0.421)		0.107	0.027
22	1.83	0.80	0.134	(0.421)		0.107	0.027
23	1.92	0.80	0.134	(0.421)		0.107	0.027
24	2.00	0.90	0.151	(0.421)		0.121	0.030
25	2.08	0.80	0.134	(0.421)		0.107	0.027
26	2.17	0.90	0.151	(0.421)		0.121	0.030
27	2.25	0.90	0.151	(0.421)		0.121	0.030
28	2.33	0.90	0.151	(0.421)		0.121	0.030
29	2.42	0.90	0.151	(0.421)		0.121	0.030
30	2.50	0.90	0.151	(0.421)		0.121	0.030
31	2.58	0.90	0.151	(0.421)		0.121	0.030
32	2.67	0.90	0.151	(0.421)		0.121	0.030
33	2.75	1.00	0.168	(0.421)		0.134	0.034
34	2.83	1.00	0.168	(0.421)		0.134	0.034
35	2.92	1.00	0.168	(0.421)		0.134	0.034
36	3.00	1.00	0.168	(0.421)		0.134	0.034
37	3.08	1.00	0.168	(0.421)		0.134	0.034

```
38   3.17     1.10      0.185       (  0.421)       0.148        0.037
39   3.25     1.10      0.185       (  0.421)       0.148        0.037
40   3.33     1.10      0.185       (  0.421)       0.148        0.037
41   3.42     1.20      0.202       (  0.421)       0.161        0.040
42   3.50     1.30      0.218       (  0.421)       0.175        0.044
43   3.58     1.40      0.235       (  0.421)       0.188        0.047
44   3.67     1.40      0.235       (  0.421)       0.188        0.047
45   3.75     1.50      0.252       (  0.421)       0.202        0.050
46   3.83     1.50      0.252       (  0.421)       0.202        0.050
47   3.92     1.60      0.269       (  0.421)       0.215        0.054
48   4.00     1.60      0.269       (  0.421)       0.215        0.054
49   4.08     1.70      0.285       (  0.421)       0.228        0.057
50   4.17     1.80      0.302       (  0.421)       0.242        0.060
51   4.25     1.90      0.319       (  0.421)       0.255        0.064
52   4.33     2.00      0.336       (  0.421)       0.269        0.067
53   4.42     2.10      0.353       (  0.421)       0.282        0.071
54   4.50     2.10      0.353       (  0.421)       0.282        0.071
55   4.58     2.20      0.369       (  0.421)       0.296        0.074
56   4.67     2.30      0.386       (  0.421)       0.309        0.077
57   4.75     2.40      0.403       (  0.421)       0.322        0.081
58   4.83     2.40      0.403       (  0.421)       0.322        0.081
59   4.92     2.50      0.420       (  0.421)       0.336        0.084
60   5.00     2.60      0.437       (  0.421)       0.349        0.087
61   5.08     3.10      0.521       (  0.421)       0.416        0.104
62   5.17     3.60      0.605          0.421    (  0.484)        0.183
63   5.25     3.90      0.655          0.421    (  0.524)        0.234
64   5.33     4.20      0.705          0.421    (  0.564)        0.284
65   5.42     4.70      0.789          0.421    (  0.631)        0.368
66   5.50     5.60      0.940          0.421    (  0.752)        0.519
67   5.58     1.90      0.319       (  0.421)       0.255        0.064
68   5.67     0.90      0.151       (  0.421)       0.121        0.030
69   5.75     0.60      0.101       (  0.421)       0.081        0.020
70   5.83     0.50      0.084       (  0.421)       0.067        0.017
71   5.92     0.30      0.050       (  0.421)       0.040        0.010
72   6.00     0.20      0.034       (  0.421)       0.027        0.007
            (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     4.2
     Flood volume = Effective rainfall      0.35(In)
      times area     106.4(Ac.)/[(In)/(Ft.)] =       3.1(Ac.Ft)
     Total soil loss =      1.05(In)
     Total soil loss =     9.300(Ac.Ft)
     Total rainfall =      1.40(In)
     Flood volume =      135418.5 Cubic Feet
     Total soil loss =      405108.6 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     36.557(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                         6 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
     ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------------
  0+ 5       0.0006      0.09  Q         |         |         |         |
  0+10       0.0044      0.55  Q         |         |         |         |
  0+15       0.0134      1.31  VQ        |         |         |         |
  0+20       0.0250      1.68  VQ        |         |         |         |
  0+25       0.0379      1.88  VQ        |         |         |         |
  0+30       0.0518      2.01  V Q       |         |         |         |
  0+35       0.0668      2.18  V Q       |         |         |         |
  0+40       0.0829      2.35  |VQ       |         |         |         |
  0+45       0.0996      2.42  |VQ       |         |         |         |
  0+50       0.1165      2.46  |VQ       |         |         |         |
  0+55       0.1336      2.48  |VQ       |         |         |         |
  1+ 0       0.1510      2.52  |VQ       |         |         |         |
  1+ 5       0.1690      2.62  | Q       |         |         |         |
  1+10       0.1880      2.76  | Q       |         |         |         |
  1+15       0.2074      2.81  | Q       |         |         |         |
  1+20       0.2269      2.84  | Q       |         |         |         |
  1+25       0.2466      2.86  | QV      |         |         |         |
  1+30       0.2663      2.87  | QV      |         |         |         |
  1+35       0.2861      2.88  | QV      |         |         |         |
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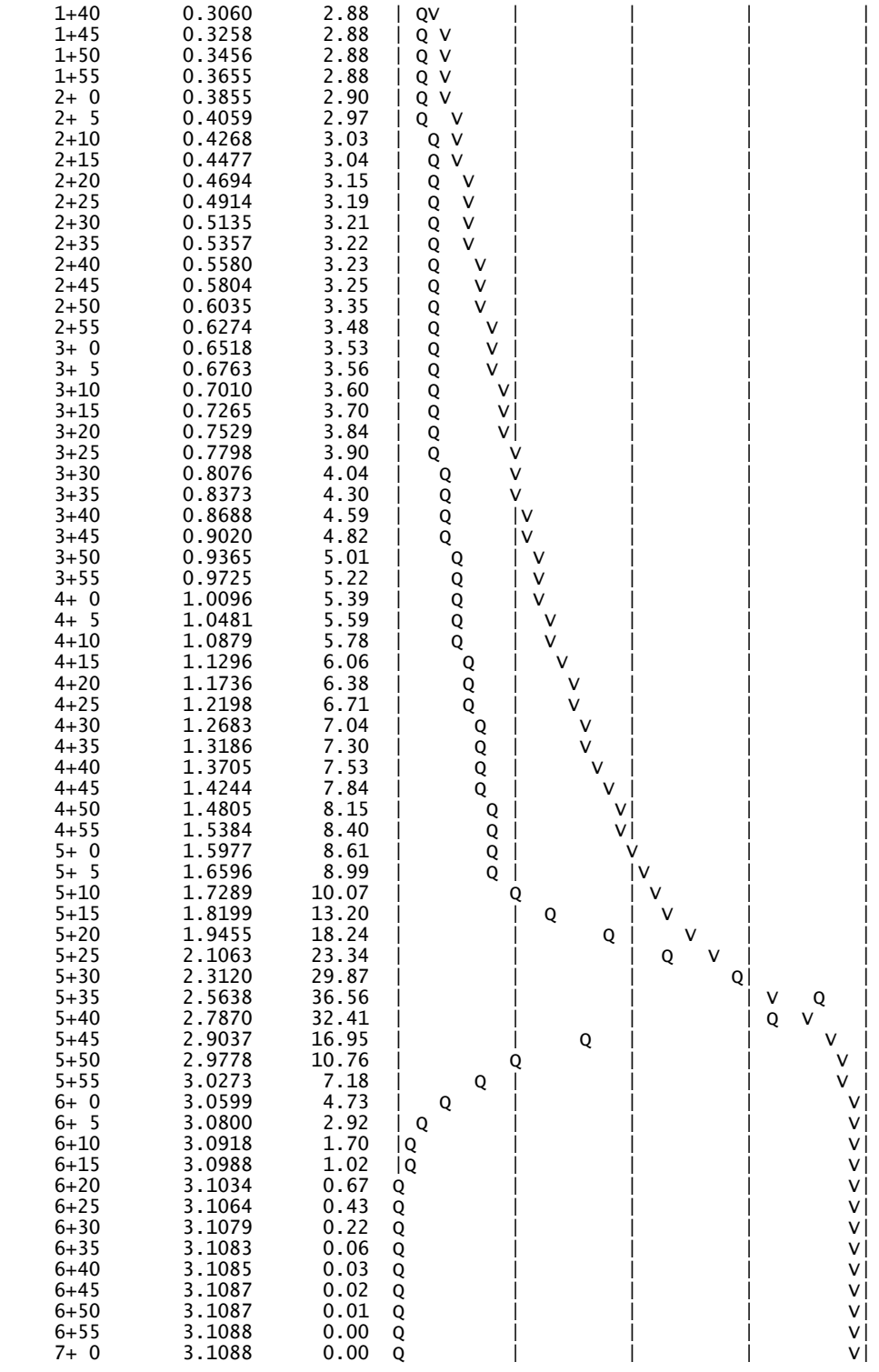
1+40 0.3060 2.88
1+45 0.3258 2.88
1+50 0.3456 2.88
1+55 0.3655 2.88
2+ 0 0.3855 2.90
2+ 5 0.4059 2.97
2+10 0.4268 3.03
2+15 0.4477 3.04
2+20 0.4694 3.15
2+25 0.4914 3.19
2+30 0.5135 3.21
2+35 0.5357 3.22
2+40 0.5580 3.23
2+45 0.5804 3.25
2+50 0.6035 3.35
2+55 0.6274 3.48
3+ 0 0.6518 3.53
3+ 5 0.6763 3.56
3+10 0.7010 3.60
3+15 0.7265 3.70
3+20 0.7529 3.84
3+25 0.7798 3.90
3+30 0.8076 4.04
3+35 0.8373 4.30
3+40 0.8688 4.59
3+45 0.9020 4.82
3+50 0.9365 5.01
3+55 0.9725 5.22
4+ 0 1.0096 5.39
4+ 5 1.0481 5.59
4+10 1.0879 5.78
4+15 1.1296 6.06
4+20 1.1736 6.38
4+25 1.2198 6.71
4+30 1.2683 7.04
4+35 1.3186 7.30
4+40 1.3705 7.53
4+45 1.4244 7.84
4+50 1.4805 8.15
4+55 1.5384 8.40
5+ 0 1.5977 8.61
5+ 5 1.6596 8.99
5+10 1.7289 10.07
5+15 1.8199 13.20
5+20 1.9455 18.24
5+25 2.1063 23.34
5+30 2.3120 29.87
5+35 2.5638 36.56
5+40 2.7870 32.41
5+45 2.9037 16.95
5+50 2.9778 10.76
5+55 3.0273 7.18
6+ 0 3.0599 4.73
6+ 5 3.0800 2.92
6+10 3.0918 1.70
6+15 3.0988 1.02
6+20 3.1034 0.67
6+25 3.1064 0.43
6+30 3.1079 0.22
6+35 3.1083 0.06
6+40 3.1085 0.03
6+45 3.1087 0.02
6+50 3.1087 0.01
6+55 3.1088 0.00
7+ 0 3.1088 0.00

2-YEAR, 24-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/19/21 File: EX2YRA242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.50	159.60

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 1.500(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	(0.747)	0.010	0.002
2	0.17	0.07	0.012	(0.744)	0.010	0.002
3	0.25	0.07	0.012	(0.741)	0.010	0.002
4	0.33	0.10	0.018	(0.738)	0.014	0.004
5	0.42	0.10	0.018	(0.736)	0.014	0.004
6	0.50	0.10	0.018	(0.733)	0.014	0.004
7	0.58	0.10	0.018	(0.730)	0.014	0.004
8	0.67	0.10	0.018	(0.727)	0.014	0.004
9	0.75	0.10	0.018	(0.724)	0.014	0.004
10	0.83	0.13	0.024	(0.721)	0.019	0.005
11	0.92	0.13	0.024	(0.718)	0.019	0.005
12	1.00	0.13	0.024	(0.716)	0.019	0.005
13	1.08	0.10	0.018	(0.713)	0.014	0.004
14	1.17	0.10	0.018	(0.710)	0.014	0.004
15	1.25	0.10	0.018	(0.707)	0.014	0.004
16	1.33	0.10	0.018	(0.704)	0.014	0.004
17	1.42	0.10	0.018	(0.702)	0.014	0.004
18	1.50	0.10	0.018	(0.699)	0.014	0.004
19	1.58	0.10	0.018	(0.696)	0.014	0.004
20	1.67	0.10	0.018	(0.693)	0.014	0.004
21	1.75	0.10	0.018	(0.690)	0.014	0.004
22	1.83	0.13	0.024	(0.688)	0.019	0.005
23	1.92	0.13	0.024	(0.685)	0.019	0.005
24	2.00	0.13	0.024	(0.682)	0.019	0.005
25	2.08	0.13	0.024	(0.679)	0.019	0.005
26	2.17	0.13	0.024	(0.677)	0.019	0.005
27	2.25	0.13	0.024	(0.674)	0.019	0.005
28	2.33	0.13	0.024	(0.671)	0.019	0.005
29	2.42	0.13	0.024	(0.668)	0.019	0.005
30	2.50	0.13	0.024	(0.666)	0.019	0.005
31	2.58	0.17	0.030	(0.663)	0.024	0.006
32	2.67	0.17	0.030	(0.660)	0.024	0.006
33	2.75	0.17	0.030	(0.657)	0.024	0.006
34	2.83	0.17	0.030	(0.655)	0.024	0.006
35	2.92	0.17	0.030	(0.652)	0.024	0.006
36	3.00	0.17	0.030	(0.649)	0.024	0.006
37	3.08	0.17	0.030	(0.647)	0.024	0.006

38	3.17	0.17	0.030	(0.644)	0.024	0.006
39	3.25	0.17	0.030	(0.641)	0.024	0.006
40	3.33	0.17	0.030	(0.639)	0.024	0.006
41	3.42	0.17	0.030	(0.636)	0.024	0.006
42	3.50	0.17	0.030	(0.633)	0.024	0.006
43	3.58	0.17	0.030	(0.631)	0.024	0.006
44	3.67	0.17	0.030	(0.628)	0.024	0.006
45	3.75	0.17	0.030	(0.625)	0.024	0.006
46	3.83	0.20	0.036	(0.623)	0.029	0.007
47	3.92	0.20	0.036	(0.620)	0.029	0.007
48	4.00	0.20	0.036	(0.617)	0.029	0.007
49	4.08	0.20	0.036	(0.615)	0.029	0.007
50	4.17	0.20	0.036	(0.612)	0.029	0.007
51	4.25	0.20	0.036	(0.610)	0.029	0.007
52	4.33	0.23	0.042	(0.607)	0.034	0.008
53	4.42	0.23	0.042	(0.604)	0.034	0.008
54	4.50	0.23	0.042	(0.602)	0.034	0.008
55	4.58	0.23	0.042	(0.599)	0.034	0.008
56	4.67	0.23	0.042	(0.597)	0.034	0.008
57	4.75	0.23	0.042	(0.594)	0.034	0.008
58	4.83	0.27	0.048	(0.592)	0.038	0.010
59	4.92	0.27	0.048	(0.589)	0.038	0.010
60	5.00	0.27	0.048	(0.586)	0.038	0.010
61	5.08	0.20	0.036	(0.584)	0.029	0.007
62	5.17	0.20	0.036	(0.581)	0.029	0.007
63	5.25	0.20	0.036	(0.579)	0.029	0.007
64	5.33	0.23	0.042	(0.576)	0.034	0.008
65	5.42	0.23	0.042	(0.574)	0.034	0.008
66	5.50	0.23	0.042	(0.571)	0.034	0.008
67	5.58	0.27	0.048	(0.569)	0.038	0.010
68	5.67	0.27	0.048	(0.566)	0.038	0.010
69	5.75	0.27	0.048	(0.564)	0.038	0.010
70	5.83	0.27	0.048	(0.561)	0.038	0.010
71	5.92	0.27	0.048	(0.559)	0.038	0.010
72	6.00	0.27	0.048	(0.556)	0.038	0.010
73	6.08	0.30	0.054	(0.554)	0.043	0.011
74	6.17	0.30	0.054	(0.551)	0.043	0.011
75	6.25	0.30	0.054	(0.549)	0.043	0.011
76	6.33	0.30	0.054	(0.546)	0.043	0.011
77	6.42	0.30	0.054	(0.544)	0.043	0.011
78	6.50	0.30	0.054	(0.542)	0.043	0.011
79	6.58	0.33	0.060	(0.539)	0.048	0.012
80	6.67	0.33	0.060	(0.537)	0.048	0.012
81	6.75	0.33	0.060	(0.534)	0.048	0.012
82	6.83	0.33	0.060	(0.532)	0.048	0.012
83	6.92	0.33	0.060	(0.529)	0.048	0.012
84	7.00	0.33	0.060	(0.527)	0.048	0.012
85	7.08	0.33	0.060	(0.525)	0.048	0.012
86	7.17	0.33	0.060	(0.522)	0.048	0.012
87	7.25	0.33	0.060	(0.520)	0.048	0.012
88	7.33	0.37	0.066	(0.518)	0.053	0.013
89	7.42	0.37	0.066	(0.515)	0.053	0.013
90	7.50	0.37	0.066	(0.513)	0.053	0.013
91	7.58	0.40	0.072	(0.510)	0.058	0.014
92	7.67	0.40	0.072	(0.508)	0.058	0.014
93	7.75	0.40	0.072	(0.506)	0.058	0.014
94	7.83	0.43	0.078	(0.503)	0.062	0.016
95	7.92	0.43	0.078	(0.501)	0.062	0.016
96	8.00	0.43	0.078	(0.499)	0.062	0.016
97	8.08	0.50	0.090	(0.496)	0.072	0.018
98	8.17	0.50	0.090	(0.494)	0.072	0.018
99	8.25	0.50	0.090	(0.492)	0.072	0.018
100	8.33	0.50	0.090	(0.490)	0.072	0.018
101	8.42	0.50	0.090	(0.487)	0.072	0.018
102	8.50	0.50	0.090	(0.485)	0.072	0.018
103	8.58	0.53	0.096	(0.483)	0.077	0.019
104	8.67	0.53	0.096	(0.480)	0.077	0.019
105	8.75	0.53	0.096	(0.478)	0.077	0.019
106	8.83	0.57	0.102	(0.476)	0.082	0.020
107	8.92	0.57	0.102	(0.474)	0.082	0.020
108	9.00	0.57	0.102	(0.471)	0.082	0.020
109	9.08	0.63	0.114	(0.469)	0.091	0.023
110	9.17	0.63	0.114	(0.467)	0.091	0.023
111	9.25	0.63	0.114	(0.465)	0.091	0.023
112	9.33	0.67	0.120	(0.462)	0.096	0.024

113	9.42	0.67	0.120	(0.460)	0.096	0.024
114	9.50	0.67	0.120	(0.458)	0.096	0.024
115	9.58	0.70	0.126	(0.456)	0.101	0.025
116	9.67	0.70	0.126	(0.454)	0.101	0.025
117	9.75	0.70	0.126	(0.452)	0.101	0.025
118	9.83	0.73	0.132	(0.449)	0.106	0.026
119	9.92	0.73	0.132	(0.447)	0.106	0.026
120	10.00	0.73	0.132	(0.445)	0.106	0.026
121	10.08	0.50	0.090	(0.443)	0.072	0.018
122	10.17	0.50	0.090	(0.441)	0.072	0.018
123	10.25	0.50	0.090	(0.439)	0.072	0.018
124	10.33	0.50	0.090	(0.436)	0.072	0.018
125	10.42	0.50	0.090	(0.434)	0.072	0.018
126	10.50	0.50	0.090	(0.432)	0.072	0.018
127	10.58	0.67	0.120	(0.430)	0.096	0.024
128	10.67	0.67	0.120	(0.428)	0.096	0.024
129	10.75	0.67	0.120	(0.426)	0.096	0.024
130	10.83	0.67	0.120	(0.424)	0.096	0.024
131	10.92	0.67	0.120	(0.422)	0.096	0.024
132	11.00	0.67	0.120	(0.420)	0.096	0.024
133	11.08	0.63	0.114	(0.418)	0.091	0.023
134	11.17	0.63	0.114	(0.416)	0.091	0.023
135	11.25	0.63	0.114	(0.413)	0.091	0.023
136	11.33	0.63	0.114	(0.411)	0.091	0.023
137	11.42	0.63	0.114	(0.409)	0.091	0.023
138	11.50	0.63	0.114	(0.407)	0.091	0.023
139	11.58	0.57	0.102	(0.405)	0.082	0.020
140	11.67	0.57	0.102	(0.403)	0.082	0.020
141	11.75	0.57	0.102	(0.401)	0.082	0.020
142	11.83	0.60	0.108	(0.399)	0.086	0.022
143	11.92	0.60	0.108	(0.397)	0.086	0.022
144	12.00	0.60	0.108	(0.395)	0.086	0.022
145	12.08	0.83	0.150	(0.393)	0.120	0.030
146	12.17	0.83	0.150	(0.391)	0.120	0.030
147	12.25	0.83	0.150	(0.389)	0.120	0.030
148	12.33	0.87	0.156	(0.388)	0.125	0.031
149	12.42	0.87	0.156	(0.386)	0.125	0.031
150	12.50	0.87	0.156	(0.384)	0.125	0.031
151	12.58	0.93	0.168	(0.382)	0.134	0.034
152	12.67	0.93	0.168	(0.380)	0.134	0.034
153	12.75	0.93	0.168	(0.378)	0.134	0.034
154	12.83	0.97	0.174	(0.376)	0.139	0.035
155	12.92	0.97	0.174	(0.374)	0.139	0.035
156	13.00	0.97	0.174	(0.372)	0.139	0.035
157	13.08	1.13	0.204	(0.370)	0.163	0.041
158	13.17	1.13	0.204	(0.368)	0.163	0.041
159	13.25	1.13	0.204	(0.367)	0.163	0.041
160	13.33	1.13	0.204	(0.365)	0.163	0.041
161	13.42	1.13	0.204	(0.363)	0.163	0.041
162	13.50	1.13	0.204	(0.361)	0.163	0.041
163	13.58	0.77	0.138	(0.359)	0.110	0.028
164	13.67	0.77	0.138	(0.357)	0.110	0.028
165	13.75	0.77	0.138	(0.355)	0.110	0.028
166	13.83	0.77	0.138	(0.354)	0.110	0.028
167	13.92	0.77	0.138	(0.352)	0.110	0.028
168	14.00	0.77	0.138	(0.350)	0.110	0.028
169	14.08	0.90	0.162	(0.348)	0.130	0.032
170	14.17	0.90	0.162	(0.346)	0.130	0.032
171	14.25	0.90	0.162	(0.345)	0.130	0.032
172	14.33	0.87	0.156	(0.343)	0.125	0.031
173	14.42	0.87	0.156	(0.341)	0.125	0.031
174	14.50	0.87	0.156	(0.339)	0.125	0.031
175	14.58	0.87	0.156	(0.338)	0.125	0.031
176	14.67	0.87	0.156	(0.336)	0.125	0.031
177	14.75	0.87	0.156	(0.334)	0.125	0.031
178	14.83	0.83	0.150	(0.333)	0.120	0.030
179	14.92	0.83	0.150	(0.331)	0.120	0.030
180	15.00	0.83	0.150	(0.329)	0.120	0.030
181	15.08	0.80	0.144	(0.327)	0.115	0.029
182	15.17	0.80	0.144	(0.326)	0.115	0.029
183	15.25	0.80	0.144	(0.324)	0.115	0.029
184	15.33	0.77	0.138	(0.322)	0.110	0.028
185	15.42	0.77	0.138	(0.321)	0.110	0.028
186	15.50	0.77	0.138	(0.319)	0.110	0.028
187	15.58	0.63	0.114	(0.318)	0.091	0.023

188	15.67	0.63	0.114	(0.316)	0.091	0.023
189	15.75	0.63	0.114	(0.314)	0.091	0.023
190	15.83	0.63	0.114	(0.313)	0.091	0.023
191	15.92	0.63	0.114	(0.311)	0.091	0.023
192	16.00	0.63	0.114	(0.309)	0.091	0.023
193	16.08	0.13	0.024	(0.308)	0.019	0.005
194	16.17	0.13	0.024	(0.306)	0.019	0.005
195	16.25	0.13	0.024	(0.305)	0.019	0.005
196	16.33	0.13	0.024	(0.303)	0.019	0.005
197	16.42	0.13	0.024	(0.302)	0.019	0.005
198	16.50	0.13	0.024	(0.300)	0.019	0.005
199	16.58	0.10	0.018	(0.299)	0.014	0.004
200	16.67	0.10	0.018	(0.297)	0.014	0.004
201	16.75	0.10	0.018	(0.296)	0.014	0.004
202	16.83	0.10	0.018	(0.294)	0.014	0.004
203	16.92	0.10	0.018	(0.293)	0.014	0.004
204	17.00	0.10	0.018	(0.291)	0.014	0.004
205	17.08	0.17	0.030	(0.290)	0.024	0.006
206	17.17	0.17	0.030	(0.288)	0.024	0.006
207	17.25	0.17	0.030	(0.287)	0.024	0.006
208	17.33	0.17	0.030	(0.285)	0.024	0.006
209	17.42	0.17	0.030	(0.284)	0.024	0.006
210	17.50	0.17	0.030	(0.282)	0.024	0.006
211	17.58	0.17	0.030	(0.281)	0.024	0.006
212	17.67	0.17	0.030	(0.280)	0.024	0.006
213	17.75	0.17	0.030	(0.278)	0.024	0.006
214	17.83	0.13	0.024	(0.277)	0.019	0.005
215	17.92	0.13	0.024	(0.275)	0.019	0.005
216	18.00	0.13	0.024	(0.274)	0.019	0.005
217	18.08	0.13	0.024	(0.273)	0.019	0.005
218	18.17	0.13	0.024	(0.271)	0.019	0.005
219	18.25	0.13	0.024	(0.270)	0.019	0.005
220	18.33	0.13	0.024	(0.269)	0.019	0.005
221	18.42	0.13	0.024	(0.267)	0.019	0.005
222	18.50	0.13	0.024	(0.266)	0.019	0.005
223	18.58	0.10	0.018	(0.265)	0.014	0.004
224	18.67	0.10	0.018	(0.264)	0.014	0.004
225	18.75	0.10	0.018	(0.262)	0.014	0.004
226	18.83	0.07	0.012	(0.261)	0.010	0.002
227	18.92	0.07	0.012	(0.260)	0.010	0.002
228	19.00	0.07	0.012	(0.259)	0.010	0.002
229	19.08	0.10	0.018	(0.257)	0.014	0.004
230	19.17	0.10	0.018	(0.256)	0.014	0.004
231	19.25	0.10	0.018	(0.255)	0.014	0.004
232	19.33	0.13	0.024	(0.254)	0.019	0.005
233	19.42	0.13	0.024	(0.253)	0.019	0.005
234	19.50	0.13	0.024	(0.251)	0.019	0.005
235	19.58	0.10	0.018	(0.250)	0.014	0.004
236	19.67	0.10	0.018	(0.249)	0.014	0.004
237	19.75	0.10	0.018	(0.248)	0.014	0.004
238	19.83	0.07	0.012	(0.247)	0.010	0.002
239	19.92	0.07	0.012	(0.246)	0.010	0.002
240	20.00	0.07	0.012	(0.245)	0.010	0.002
241	20.08	0.10	0.018	(0.244)	0.014	0.004
242	20.17	0.10	0.018	(0.243)	0.014	0.004
243	20.25	0.10	0.018	(0.242)	0.014	0.004
244	20.33	0.10	0.018	(0.240)	0.014	0.004
245	20.42	0.10	0.018	(0.239)	0.014	0.004
246	20.50	0.10	0.018	(0.238)	0.014	0.004
247	20.58	0.10	0.018	(0.237)	0.014	0.004
248	20.67	0.10	0.018	(0.236)	0.014	0.004
249	20.75	0.10	0.018	(0.235)	0.014	0.004
250	20.83	0.07	0.012	(0.234)	0.010	0.002
251	20.92	0.07	0.012	(0.234)	0.010	0.002
252	21.00	0.07	0.012	(0.233)	0.010	0.002
253	21.08	0.10	0.018	(0.232)	0.014	0.004
254	21.17	0.10	0.018	(0.231)	0.014	0.004
255	21.25	0.10	0.018	(0.230)	0.014	0.004
256	21.33	0.07	0.012	(0.229)	0.010	0.002
257	21.42	0.07	0.012	(0.228)	0.010	0.002
258	21.50	0.07	0.012	(0.227)	0.010	0.002
259	21.58	0.10	0.018	(0.226)	0.014	0.004
260	21.67	0.10	0.018	(0.226)	0.014	0.004
261	21.75	0.10	0.018	(0.225)	0.014	0.004
262	21.83	0.07	0.012	(0.224)	0.010	0.002

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263  21.92     0.07      0.012       (  0.223)       0.010        0.002
264  22.00     0.07      0.012       (  0.223)       0.010        0.002
265  22.08     0.10      0.018       (  0.222)       0.014        0.004
266  22.17     0.10      0.018       (  0.221)       0.014        0.004
267  22.25     0.10      0.018       (  0.220)       0.014        0.004
268  22.33     0.07      0.012       (  0.220)       0.010        0.002
269  22.42     0.07      0.012       (  0.219)       0.010        0.002
270  22.50     0.07      0.012       (  0.218)       0.010        0.002
271  22.58     0.07      0.012       (  0.218)       0.010        0.002
272  22.67     0.07      0.012       (  0.217)       0.010        0.002
273  22.75     0.07      0.012       (  0.217)       0.010        0.002
274  22.83     0.07      0.012       (  0.216)       0.010        0.002
275  22.92     0.07      0.012       (  0.215)       0.010        0.002
276  23.00     0.07      0.012       (  0.215)       0.010        0.002
277  23.08     0.07      0.012       (  0.214)       0.010        0.002
278  23.17     0.07      0.012       (  0.214)       0.010        0.002
279  23.25     0.07      0.012       (  0.213)       0.010        0.002
280  23.33     0.07      0.012       (  0.213)       0.010        0.002
281  23.42     0.07      0.012       (  0.213)       0.010        0.002
282  23.50     0.07      0.012       (  0.212)       0.010        0.002
283  23.58     0.07      0.012       (  0.212)       0.010        0.002
284  23.67     0.07      0.012       (  0.212)       0.010        0.002
285  23.75     0.07      0.012       (  0.211)       0.010        0.002
286  23.83     0.07      0.012       (  0.211)       0.010        0.002
287  23.92     0.07      0.012       (  0.211)       0.010        0.002
288  24.00     0.07      0.012       (  0.211)       0.010        0.002
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     3.6
      Flood volume = Effective rainfall      0.30(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       2.7(Ac.Ft)
      Total soil loss =      1.20(In)
      Total soil loss =    10.638(Ac.Ft)
      Total rainfall =      1.50(In)
      Flood volume =      115845.5 Cubic Feet
      Total soil loss =      463382.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      4.329(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0001      0.01  Q         |         |         |         |
   0+10       0.0006      0.08  Q         |         |         |         |
   0+15       0.0018      0.17  Q         |         |         |         |
   0+20       0.0033      0.21  Q         |         |         |         |
   0+25       0.0051      0.26  VQ        |         |         |         |
   0+30       0.0073      0.33  VQ        |         |         |         |
   0+35       0.0097      0.35  VQ        |         |         |         |
   0+40       0.0123      0.37  VQ        |         |         |         |
   0+45       0.0148      0.37  VQ        |         |         |         |
   0+50       0.0175      0.38  VQ        |         |         |         |
   0+55       0.0204      0.42  VQ        |         |         |         |
   1+ 0       0.0236      0.47  VQ        |         |         |         |
   1+ 5       0.0269      0.48  VQ        |         |         |         |
   1+10       0.0301      0.46  VQ        |         |         |         |
   1+15       0.0330      0.42  VQ        |         |         |         |
   1+20       0.0358      0.41  VQ        |         |         |         |
   1+25       0.0385      0.40  VQ        |         |         |         |
   1+30       0.0412      0.39  VQ        |         |         |         |
   1+35       0.0439      0.39  VQ        |         |         |         |
   1+40       0.0466      0.39  VQ        |         |         |         |
   1+45       0.0493      0.39  VQ        |         |         |         |
   1+50       0.0520      0.39  VQ        |         |         |         |
   1+55       0.0549      0.43  VQ        |         |         |         |
   2+ 0       0.0582      0.47  VQ        |         |         |         |
   2+ 5       0.0615      0.49  VQ        |         |         |         |
   2+10       0.0650      0.50  VQ        |         |         |         |
   2+15       0.0685      0.51  |VQ       |         |         |         |
   2+20       0.0720      0.51  |VQ       |         |         |         |
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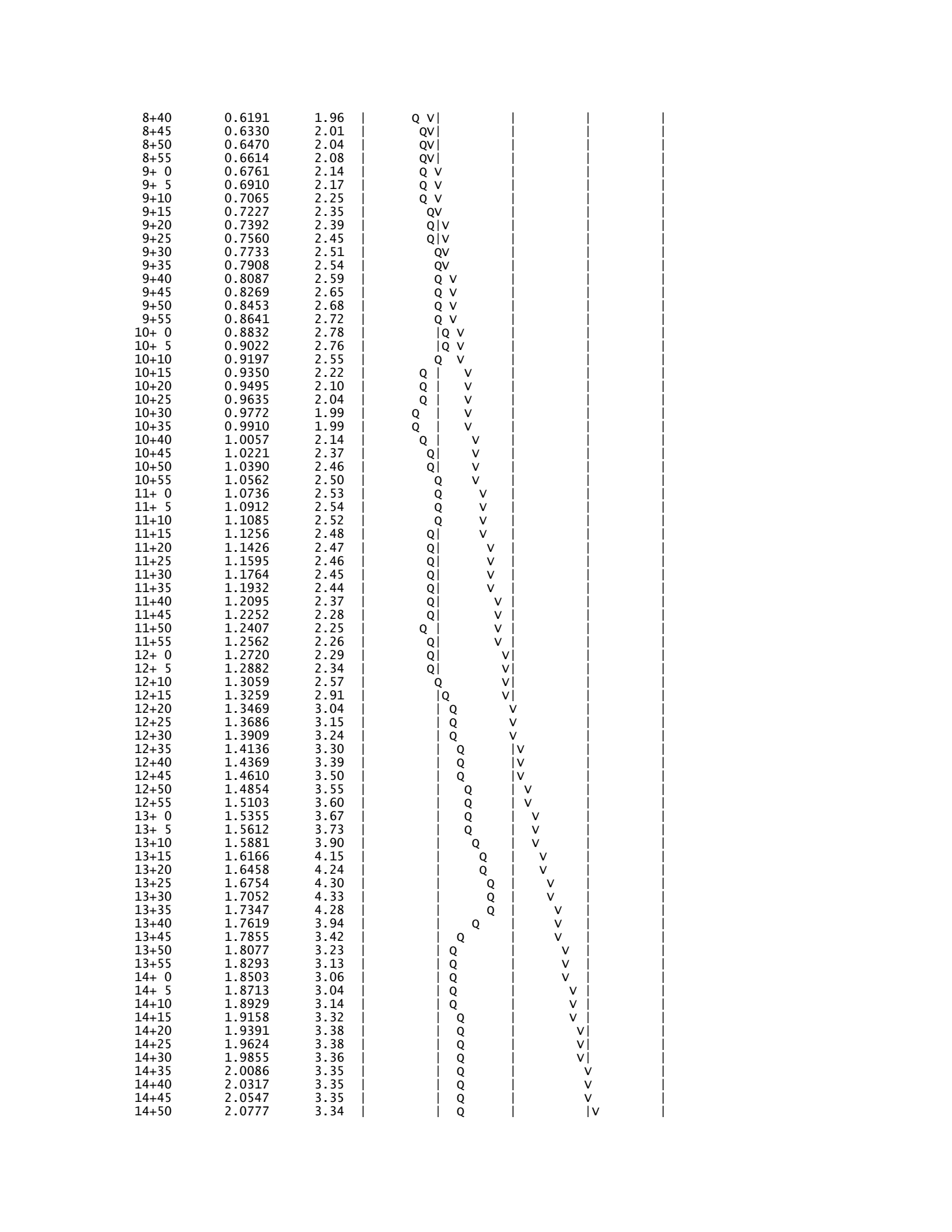
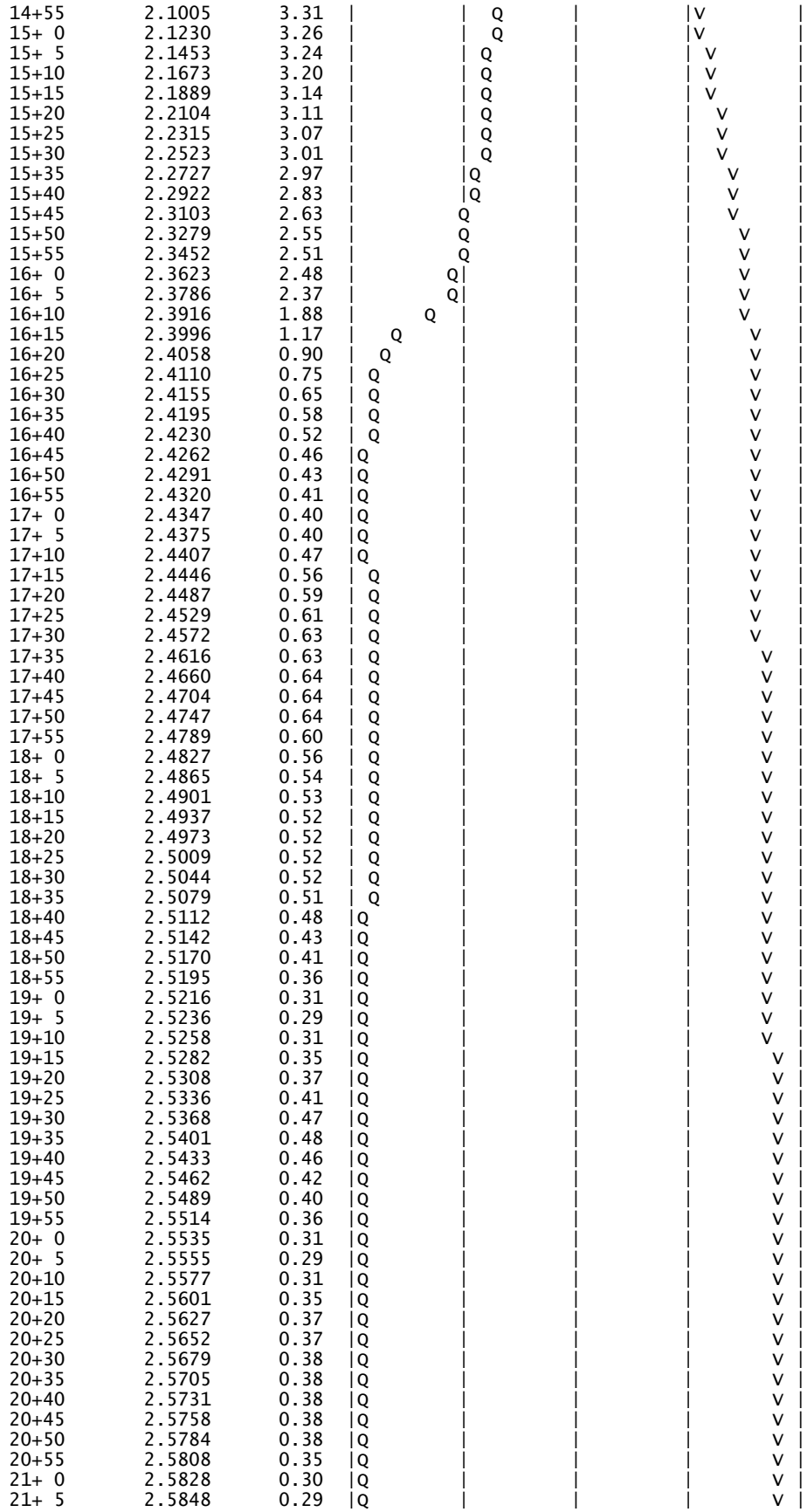
2+25	0.0755	0.51	VQ			
2+30	0.0790	0.51	VQ			
2+35	0.0826	0.52	VQ			
2+40	0.0864	0.55	VQ			
2+45	0.0905	0.60	VQ			
2+50	0.0948	0.62	VQ			
2+55	0.0991	0.63	VQ			
3+ 0	0.1035	0.63	VQ			
3+ 5	0.1079	0.64	VQ			
3+10	0.1123	0.64	VQ			
3+15	0.1167	0.64	VQ			
3+20	0.1212	0.64	VQ			
3+25	0.1256	0.64	VQ			
3+30	0.1300	0.64	VQ			
3+35	0.1345	0.64	Q			
3+40	0.1389	0.64	Q			
3+45	0.1433	0.64	Q			
3+50	0.1478	0.65	Q			
3+55	0.1525	0.68	Q			
4+ 0	0.1575	0.73	Q			
4+ 5	0.1627	0.75	Q			
4+10	0.1679	0.76	VQ			
4+15	0.1731	0.76	VQ			
4+20	0.1785	0.77	VQ			
4+25	0.1840	0.81	VQ			
4+30	0.1899	0.86	VQ			
4+35	0.1959	0.87	VQ			
4+40	0.2020	0.88	Q			
4+45	0.2082	0.89	Q			
4+50	0.2144	0.90	Q			
4+55	0.2208	0.94	Q			
5+ 0	0.2276	0.98	Q			
5+ 5	0.2344	0.99	Q			
5+10	0.2409	0.94	Q			
5+15	0.2467	0.85	Q			
5+20	0.2524	0.82	Q			
5+25	0.2582	0.84	Q			
5+30	0.2642	0.87	Q			
5+35	0.2703	0.89	QV			
5+40	0.2767	0.93	QV			
5+45	0.2835	0.98	QV			
5+50	0.2904	1.00	Q			
5+55	0.2974	1.01	Q			
6+ 0	0.3044	1.02	Q			
6+ 5	0.3115	1.03	Q			
6+10	0.3188	1.06	Q			
6+15	0.3265	1.11	Q			
6+20	0.3343	1.13	QV			
6+25	0.3422	1.14	QV			
6+30	0.3501	1.15	QV			
6+35	0.3581	1.16	QV			
6+40	0.3663	1.19	QV			
6+45	0.3748	1.24	QV			
6+50	0.3835	1.26	Q			
6+55	0.3923	1.27	Q			
7+ 0	0.4011	1.28	QV			
7+ 5	0.4099	1.28	QV			
7+10	0.4187	1.28	QV			
7+15	0.4276	1.29	QV			
7+20	0.4365	1.29	QV			
7+25	0.4456	1.32	QV			
7+30	0.4551	1.37	QV			
7+35	0.4647	1.40	QV			
7+40	0.4746	1.44	Q V			
7+45	0.4849	1.49	Q V			
7+50	0.4954	1.52	QV			
7+55	0.5061	1.56	QV			
8+ 0	0.5173	1.62	QV			
8+ 5	0.5287	1.65	QV			
8+10	0.5406	1.73	Q V			
8+15	0.5532	1.83	QV			
8+20	0.5661	1.87	QV			
8+25	0.5792	1.90	QV			
8+30	0.5923	1.91	QV			
8+35	0.6056	1.93	Q V			





```
   21+10       2.5870      0.31  |Q        |         |         |       V |
   21+15       2.5894      0.35  |Q        |         |         |       V |
   21+20       2.5919      0.36  |Q        |         |         |       V |
   21+25       2.5942      0.34  |Q        |         |         |        V|
   21+30       2.5962      0.29  |Q        |         |         |        V|
   21+35       2.5982      0.29  |Q        |         |         |        V|
   21+40       2.6003      0.31  |Q        |         |         |        V|
   21+45       2.6027      0.35  |Q        |         |         |        V|
   21+50       2.6052      0.36  |Q        |         |         |        V|
   21+55       2.6075      0.33  |Q        |         |         |        V|
   22+ 0       2.6095      0.29  |Q        |         |         |        V|
   22+ 5       2.6115      0.29  |Q        |         |         |        V|
   22+10       2.6136      0.31  |Q        |         |         |        V|
   22+15       2.6160      0.35  |Q        |         |         |        V|
   22+20       2.6185      0.36  |Q        |         |         |        V|
   22+25       2.6208      0.33  |Q        |         |         |        V|
   22+30       2.6228      0.29  |Q        |         |         |        V|
   22+35       2.6247      0.28  |Q        |         |         |        V|
   22+40       2.6266      0.27  |Q        |         |         |        V|
   22+45       2.6284      0.26  |Q        |         |         |        V|
   22+50       2.6302      0.26  |Q        |         |         |        V|
   22+55       2.6320      0.26  |Q        |         |         |        V|
   23+ 0       2.6338      0.26  |Q        |         |         |        V|
   23+ 5       2.6356      0.26  |Q        |         |         |        V|
   23+10       2.6373      0.26  |Q        |         |         |        V|
   23+15       2.6391      0.26  |Q        |         |         |        V|
   23+20       2.6409      0.26  |Q        |         |         |        V|
   23+25       2.6427      0.26  |Q        |         |         |        V|
   23+30       2.6444      0.26  |Q        |         |         |        V|
   23+35       2.6462      0.26  |Q        |         |         |        V|
   23+40       2.6480      0.26  |Q        |         |         |        V|
   23+45       2.6498      0.26  |Q        |         |         |        V|
   23+50       2.6515      0.26  |Q        |         |         |        V|
   23+55       2.6533      0.26  |Q        |         |         |        V|
   24+ 0       2.6551      0.26  |Q        |         |         |        V|
   24+ 5       2.6568      0.25  Q         |         |         |        V|
   24+10       2.6580      0.18  Q         |         |         |        V|
   24+15       2.6586      0.09  Q         |         |         |        V|
   24+20       2.6590      0.05  Q         |         |         |        V|
   24+25       2.6592      0.03  Q         |         |         |        V|
   24+30       2.6593      0.02  Q         |         |         |        V|
   24+35       2.6594      0.01  Q         |         |         |        V|
   24+40       2.6594      0.01  Q         |         |         |        V|
   24+45       2.6594      0.00  Q         |         |         |        V|
   24+50       2.6594      0.00  Q         |         |         |        V|
   24+55       2.6594      0.00  Q         |         |         |        V|
   25+ 0       2.6594      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

EXISTING CONDITION
5-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

5-YEAR, 1-HOUR STORM

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  07/20/21 File: EX5YRA15.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           0.55                 58.52

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           1.25                133.00

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.550(In)
Area Averaged 100-Year Rainfall =    1.250(In)

Point rain (area averaged) =    0.714(In)
Areal adjustment factor =   99.90 %
Adjusted average point rain =    0.713(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

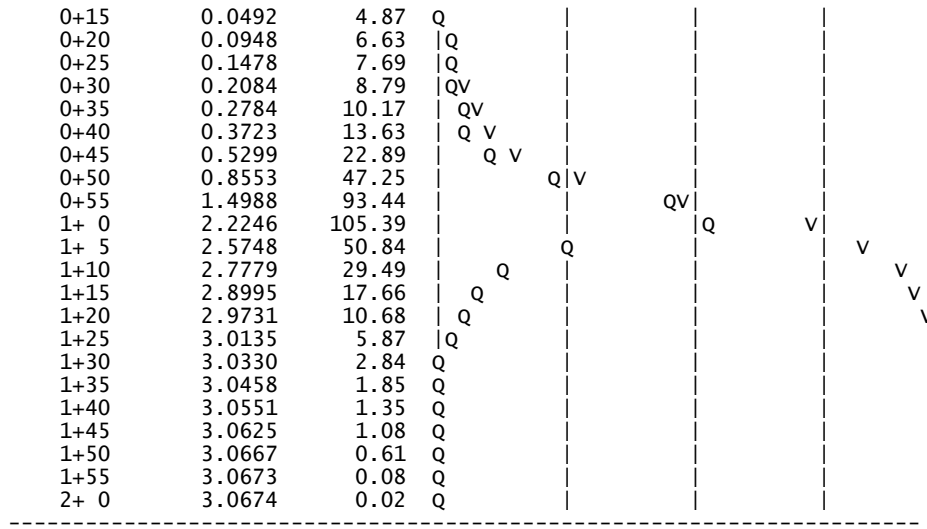
```
      77.3  59.8      0.472     0.120        0.421       1.000      0.421
                                                        Sum (F) =   0.421
      Area averaged mean soil loss (F) (In/Hr) =  0.421
      Minimum soil loss rate ((In/Hr)) =  0.211
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.800
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         53.985          4.779             5.124
          2   0.167        107.970         24.937            26.740
          3   0.250        161.956         36.901            39.569
          4   0.333        215.941         13.574            14.556
          5   0.417        269.926          7.855             8.423
          6   0.500        323.911          5.019             5.382
          7   0.583        377.896          3.120             3.345
          8   0.667        431.882          1.702             1.825
          9   0.750        485.867          0.696             0.747
         10   0.833        539.852          0.487             0.522
         11   0.917        593.837          0.367             0.393
         12   1.000        647.822          0.345             0.370
         13   1.083        701.808          0.218             0.234
                                  Sum = 100.000    Sum=     107.231
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.291       (  0.421)       0.233        0.058
   2   0.17     4.70      0.402       (  0.421)       0.322        0.080
   3   0.25     4.70      0.402       (  0.421)       0.322        0.080
   4   0.33     5.10      0.437       (  0.421)       0.349        0.087
   5   0.42     5.80      0.496       (  0.421)       0.397        0.099
   6   0.50     5.90      0.505       (  0.421)       0.404        0.101
   7   0.58     7.10      0.608          0.421    (  0.486)        0.186
   8   0.67     8.70      0.745          0.421    (  0.596)        0.323
   9   0.75    13.20      1.130          0.421    (  0.904)        0.708
  10   0.83    29.70      2.542          0.421    (  2.034)        2.121
  11   0.92     7.70      0.659          0.421    (  0.527)        0.238
  12   1.00     4.00      0.342       (  0.421)       0.274        0.068
              (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     4.2
        Flood volume = Effective rainfall      0.35(In)
         times area     106.4(Ac.)/[(In)/(Ft.)] =       3.1(Ac.Ft)
        Total soil loss =      0.37(In)
        Total soil loss =     3.257(Ac.Ft)
        Total rainfall =      0.71(In)
        Flood volume =      133616.5 Cubic Feet
        Total soil loss =      141870.6 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =    105.388(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ------------------------------------------------------------------------
    0+ 5       0.0021      0.30  Q         |         |         |         |
    0+10       0.0156      1.97  Q         |         |         |         |
```


0+15 0.0492 4.87
0+20 0.0948 6.63
0+25 0.1478 7.69
0+30 0.2084 8.79
0+35 0.2784 10.17
0+40 0.3723 13.63
0+45 0.5299 22.89
0+50 0.8553 47.25
0+55 1.4988 93.44
1+ 0 2.2246 105.39
1+ 5 2.5748 50.84
1+10 2.7779 29.49
1+15 2.8995 17.66
1+20 2.9731 10.68
1+25 3.0135 5.87
1+30 3.0330 2.84
1+35 3.0458 1.85
1+40 3.0551 1.35
1+45 3.0625 1.08
1+50 3.0667 0.61
1+55 3.0673 0.08
2+ 0 3.0674 0.02

5-YEAR, 3-HOUR STORM

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  07/20/21 File: EX5YRA35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           0.95                101.08

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           2.05                218.12

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    2.050(In)

Point rain (area averaged) =    1.208(In)
Areal adjustment factor =   99.95 %
Adjusted average point rain =    1.207(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.188	(0.421)	0.151	0.038
2	0.17	1.30	0.188	(0.421)	0.151	0.038
3	0.25	1.10	0.159	(0.421)	0.127	0.032
4	0.33	1.50	0.217	(0.421)	0.174	0.043
5	0.42	1.50	0.217	(0.421)	0.174	0.043
6	0.50	1.80	0.261	(0.421)	0.209	0.052
7	0.58	1.50	0.217	(0.421)	0.174	0.043
8	0.67	1.80	0.261	(0.421)	0.209	0.052
9	0.75	1.80	0.261	(0.421)	0.209	0.052
10	0.83	1.50	0.217	(0.421)	0.174	0.043
11	0.92	1.60	0.232	(0.421)	0.185	0.046
12	1.00	1.80	0.261	(0.421)	0.209	0.052
13	1.08	2.20	0.319	(0.421)	0.255	0.064
14	1.17	2.20	0.319	(0.421)	0.255	0.064
15	1.25	2.20	0.319	(0.421)	0.255	0.064
16	1.33	2.00	0.290	(0.421)	0.232	0.058
17	1.42	2.60	0.377	(0.421)	0.301	0.075
18	1.50	2.70	0.391	(0.421)	0.313	0.078
19	1.58	2.40	0.348	(0.421)	0.278	0.070
20	1.67	2.70	0.391	(0.421)	0.313	0.078
21	1.75	3.30	0.478	(0.421)	0.382	0.096
22	1.83	3.10	0.449	(0.421)	0.359	0.090
23	1.92	2.90	0.420	(0.421)	0.336	0.084
24	2.00	3.00	0.435	(0.421)	0.348	0.087
25	2.08	3.10	0.449	(0.421)	0.359	0.090
26	2.17	4.20	0.608	0.421	(0.487)	0.187
27	2.25	5.00	0.724	0.421	(0.579)	0.303
28	2.33	3.50	0.507	(0.421)	0.406	0.101
29	2.42	6.80	0.985	0.421	(0.788)	0.564
30	2.50	7.30	1.057	0.421	(0.846)	0.636
31	2.58	8.20	1.188	0.421	(0.950)	0.766
32	2.67	5.90	0.855	0.421	(0.684)	0.433
33	2.75	2.00	0.290	(0.421)	0.232	0.058
34	2.83	1.80	0.261	(0.421)	0.209	0.052
35	2.92	1.80	0.261	(0.421)	0.209	0.052
36	3.00	0.60	0.087	(0.421)	0.070	0.017
		(Loss Rate Not Used)				

```
   Sum =     100.0                                    Sum =     4.7
      Flood volume = Effective rainfall      0.39(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       3.5(Ac.Ft)
      Total soil loss =      0.82(In)
      Total soil loss =     7.228(Ac.Ft)
      Total rainfall =      1.21(In)
      Flood volume =      151350.7 Cubic Feet
      Total soil loss =      314864.0 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     59.582(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0013      0.19  Q         |         |         |         |
  0+10       0.0096      1.20  Q         |         |         |         |
  0+15       0.0279      2.66  VQ        |         |         |         |
  0+20       0.0494      3.11  V Q       |         |         |         |
  0+25       0.0736      3.51  V Q       |         |         |         |
  0+30       0.1021      4.13  |VQ       |         |         |         |
  0+35       0.1335      4.57  |V Q      |         |         |         |
  0+40       0.1670      4.86  |V Q      |         |         |         |
  0+45       0.2010      4.95  | VQ      |         |         |         |
  0+50       0.2371      5.24  | VQ      |         |         |         |
  0+55       0.2726      5.15  |  Q      |         |         |         |
  1+ 0       0.3070      4.99  |  Q      |         |         |         |
  1+ 5       0.3431      5.24  |  Q      |         |         |         |
  1+10       0.3829      5.77  |  QV     |         |         |         |
  1+15       0.4263      6.31  |   Q     |         |         |         |
  1+20       0.4710      6.49  |   QV    |         |         |         |
  1+25       0.5162      6.55  |   QV    |         |         |         |
  1+30       0.5636      6.89  |   Q V   |         |         |         |
  1+35       0.6157      7.57  |    Q V  |         |         |         |
  1+40       0.6689      7.73  |    Q V  |         |         |         |
  1+45       0.7232      7.87  |    Q  V |         |         |         |
  1+50       0.7826      8.63  |    Q   V|         |         |         |
  1+55       0.8464      9.26  |     Q  V|         |         |         |
  2+ 0       0.9098      9.21  |     Q   V         |         |         |
  2+ 5       0.9730      9.17  |     Q   |V        |         |         |
  2+10       1.0408      9.84  |     Q   |V        |         |         |
  2+15       1.1316     13.19  |       Q |  V      |         |         |
  2+20       1.2636     19.16  |         | Q V     |         |         |
  2+25       1.4162     22.17  |         |   Q V   |         |         |
  2+30       1.6191     29.46  |         |       VQ|         |         |
  2+35       1.9562     48.94  |         |         | V       | Q       |
  2+40       2.3665     59.58  |         |         |     V   |        Q|
  2+45       2.7683     58.34  |         |         |       V |V      Q |
  2+50       3.0416     39.69  |         |         |    Q    |   V     |
  2+55       3.1975     22.63  |         |   Q     |         |    V    |
  3+ 0       3.3055     15.69  |         Q         |         |       V |
  3+ 5       3.3780     10.52  |       Q |         |         |       V |
  3+10       3.4194      6.01  |   Q     |         |         |        V|
  3+15       3.4414      3.19  | Q       |         |         |        V|
  3+20       3.4546      1.91  |Q        |         |         |        V|
  3+25       3.4636      1.30  Q         |         |         |        V|
  3+30       3.4692      0.83  Q         |         |         |        V|
  3+35       3.4724      0.46  Q         |         |         |        V|
  3+40       3.4737      0.18  Q         |         |         |        V|
  3+45       3.4741      0.06  Q         |         |         |        V|
  3+50       3.4744      0.04  Q         |         |         |        V|
  3+55       3.4745      0.02  Q         |         |         |        V|
  4+ 0       3.4745      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

5-YEAR, 6-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX5YRA65.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.40	148.96

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	3.00	319.20

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.775(In)
Areal adjustment factor = 99.96 %
Adjusted average point rain = 1.774(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

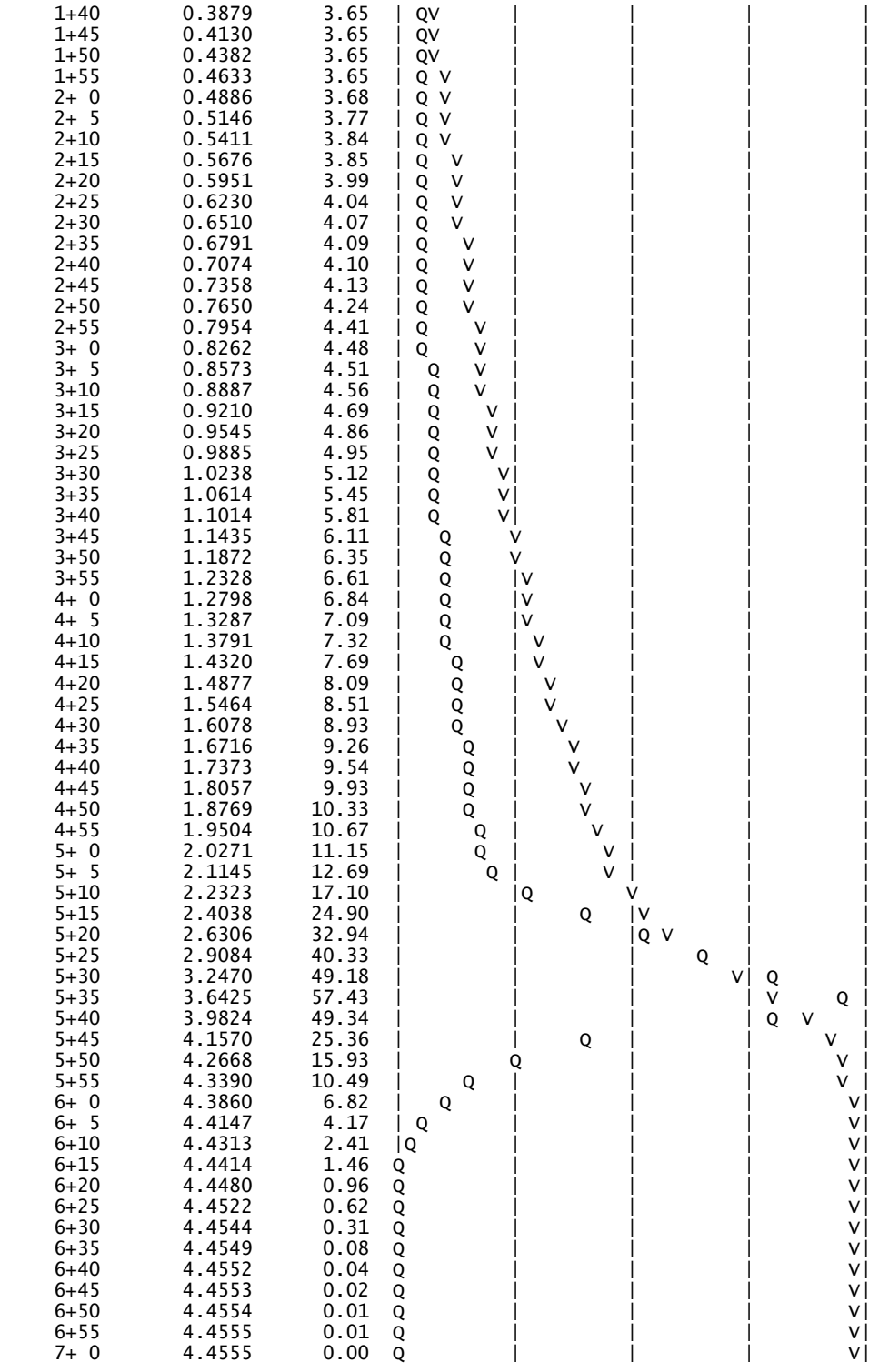
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.106	(0.421)	0.085	0.021
2	0.17	0.60	0.128	(0.421)	0.102	0.026
3	0.25	0.60	0.128	(0.421)	0.102	0.026
4	0.33	0.60	0.128	(0.421)	0.102	0.026
5	0.42	0.60	0.128	(0.421)	0.102	0.026
6	0.50	0.70	0.149	(0.421)	0.119	0.030
7	0.58	0.70	0.149	(0.421)	0.119	0.030
8	0.67	0.70	0.149	(0.421)	0.119	0.030
9	0.75	0.70	0.149	(0.421)	0.119	0.030
10	0.83	0.70	0.149	(0.421)	0.119	0.030
11	0.92	0.70	0.149	(0.421)	0.119	0.030
12	1.00	0.80	0.170	(0.421)	0.136	0.034
13	1.08	0.80	0.170	(0.421)	0.136	0.034
14	1.17	0.80	0.170	(0.421)	0.136	0.034
15	1.25	0.80	0.170	(0.421)	0.136	0.034
16	1.33	0.80	0.170	(0.421)	0.136	0.034
17	1.42	0.80	0.170	(0.421)	0.136	0.034
18	1.50	0.80	0.170	(0.421)	0.136	0.034
19	1.58	0.80	0.170	(0.421)	0.136	0.034
20	1.67	0.80	0.170	(0.421)	0.136	0.034
21	1.75	0.80	0.170	(0.421)	0.136	0.034
22	1.83	0.80	0.170	(0.421)	0.136	0.034
23	1.92	0.80	0.170	(0.421)	0.136	0.034
24	2.00	0.90	0.192	(0.421)	0.153	0.038
25	2.08	0.80	0.170	(0.421)	0.136	0.034
26	2.17	0.90	0.192	(0.421)	0.153	0.038
27	2.25	0.90	0.192	(0.421)	0.153	0.038
28	2.33	0.90	0.192	(0.421)	0.153	0.038
29	2.42	0.90	0.192	(0.421)	0.153	0.038
30	2.50	0.90	0.192	(0.421)	0.153	0.038
31	2.58	0.90	0.192	(0.421)	0.153	0.038
32	2.67	0.90	0.192	(0.421)	0.153	0.038
33	2.75	1.00	0.213	(0.421)	0.170	0.043
34	2.83	1.00	0.213	(0.421)	0.170	0.043
35	2.92	1.00	0.213	(0.421)	0.170	0.043
36	3.00	1.00	0.213	(0.421)	0.170	0.043
37	3.08	1.00	0.213	(0.421)	0.170	0.043

```
38   3.17     1.10      0.234       (  0.421)       0.187        0.047
39   3.25     1.10      0.234       (  0.421)       0.187        0.047
40   3.33     1.10      0.234       (  0.421)       0.187        0.047
41   3.42     1.20      0.255       (  0.421)       0.204        0.051
42   3.50     1.30      0.277       (  0.421)       0.221        0.055
43   3.58     1.40      0.298       (  0.421)       0.238        0.060
44   3.67     1.40      0.298       (  0.421)       0.238        0.060
45   3.75     1.50      0.319       (  0.421)       0.255        0.064
46   3.83     1.50      0.319       (  0.421)       0.255        0.064
47   3.92     1.60      0.341       (  0.421)       0.273        0.068
48   4.00     1.60      0.341       (  0.421)       0.273        0.068
49   4.08     1.70      0.362       (  0.421)       0.290        0.072
50   4.17     1.80      0.383       (  0.421)       0.307        0.077
51   4.25     1.90      0.404       (  0.421)       0.324        0.081
52   4.33     2.00      0.426       (  0.421)       0.341        0.085
53   4.42     2.10      0.447       (  0.421)       0.358        0.089
54   4.50     2.10      0.447       (  0.421)       0.358        0.089
55   4.58     2.20      0.468       (  0.421)       0.375        0.094
56   4.67     2.30      0.490       (  0.421)       0.392        0.098
57   4.75     2.40      0.511       (  0.421)       0.409        0.102
58   4.83     2.40      0.511       (  0.421)       0.409        0.102
59   4.92     2.50      0.532          0.421    (  0.426)       0.111
60   5.00     2.60      0.554          0.421    (  0.443)       0.132
61   5.08     3.10      0.660          0.421    (  0.528)       0.239
62   5.17     3.60      0.766          0.421    (  0.613)       0.345
63   5.25     3.90      0.830          0.421    (  0.664)       0.409
64   5.33     4.20      0.894          0.421    (  0.715)       0.473
65   5.42     4.70      1.001          0.421    (  0.800)       0.579
66   5.50     5.60      1.192          0.421    (  0.954)       0.771
67   5.58     1.90      0.404       (  0.421)       0.324        0.081
68   5.67     0.90      0.192       (  0.421)       0.153        0.038
69   5.75     0.60      0.128       (  0.421)       0.102        0.026
70   5.83     0.50      0.106       (  0.421)       0.085        0.021
71   5.92     0.30      0.064       (  0.421)       0.051        0.013
72   6.00     0.20      0.043       (  0.421)       0.034        0.009
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     6.0
      Flood volume = Effective rainfall      0.50(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       4.5(Ac.Ft)
      Total soil loss =      1.27(In)
      Total soil loss =    11.275(Ac.Ft)
      Total rainfall =      1.77(In)
      Flood volume =      194080.7 Cubic Feet
      Total soil loss =      491137.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     57.427(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0008      0.11  Q         |         |         |         |
  0+10       0.0056      0.70  Q         |         |         |         |
  0+15       0.0170      1.66  VQ        |         |         |         |
  0+20       0.0317      2.14  VQ        |         |         |         |
  0+25       0.0481      2.38  VQ        |         |         |         |
  0+30       0.0656      2.55  VQ        |         |         |         |
  0+35       0.0846      2.76  VQ        |         |         |         |
  0+40       0.1051      2.98  VQ        |         |         |         |
  0+45       0.1263      3.07  |VQ       |         |         |         |
  0+50       0.1477      3.12  |VQ       |         |         |         |
  0+55       0.1694      3.15  |VQ       |         |         |         |
  1+ 0       0.1914      3.19  |VQ       |         |         |         |
  1+ 5       0.2143      3.32  |VQ       |         |         |         |
  1+10       0.2384      3.50  | Q       |         |         |         |
  1+15       0.2629      3.56  | Q       |         |         |         |
  1+20       0.2876      3.60  | Q       |         |         |         |
  1+25       0.3126      3.62  | Q       |         |         |         |
  1+30       0.3376      3.64  | QV      |         |         |         |
  1+35       0.3627      3.64  | QV      |         |         |         |
```


1+40 0.3879 3.65
1+45 0.4130 3.65
1+50 0.4382 3.65
1+55 0.4633 3.65
2+ 0 0.4886 3.68
2+ 5 0.5146 3.77
2+10 0.5411 3.84
2+15 0.5676 3.85
2+20 0.5951 3.99
2+25 0.6230 4.04
2+30 0.6510 4.07
2+35 0.6791 4.09
2+40 0.7074 4.10
2+45 0.7358 4.13
2+50 0.7650 4.24
2+55 0.7954 4.41
3+ 0 0.8262 4.48
3+ 5 0.8573 4.51
3+10 0.8887 4.56
3+15 0.9210 4.69
3+20 0.9545 4.86
3+25 0.9885 4.95
3+30 1.0238 5.12
3+35 1.0614 5.45
3+40 1.1014 5.81
3+45 1.1435 6.11
3+50 1.1872 6.35
3+55 1.2328 6.61
4+ 0 1.2798 6.84
4+ 5 1.3287 7.09
4+10 1.3791 7.32
4+15 1.4320 7.69
4+20 1.4877 8.09
4+25 1.5464 8.51
4+30 1.6078 8.93
4+35 1.6716 9.26
4+40 1.7373 9.54
4+45 1.8057 9.93
4+50 1.8769 10.33
4+55 1.9504 10.67
5+ 0 2.0271 11.15
5+ 5 2.1145 12.69
5+10 2.2323 17.10
5+15 2.4038 24.90
5+20 2.6306 32.94
5+25 2.9084 40.33
5+30 3.2470 49.18
5+35 3.6425 57.43
5+40 3.9824 49.34
5+45 4.1570 25.36
5+50 4.2668 15.93
5+55 4.3390 10.49
6+ 0 4.3860 6.82
6+ 5 4.4147 4.17
6+10 4.4313 2.41
6+15 4.4414 1.46
6+20 4.4480 0.96
6+25 4.4522 0.62
6+30 4.4544 0.31
6+35 4.4549 0.08
6+40 4.4552 0.04
6+45 4.4553 0.02
6+50 4.4554 0.01
6+55 4.4555 0.01
7+ 0 4.4555 0.00

5-YEAR, 24-HOUR STORM

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       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
              Study date  07/20/21 File: EX5YRA245.out

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------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           2.50                266.00

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           6.50                691.60

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    2.500(In)
Area Averaged 100-Year Rainfall =    6.500(In)

Point rain (area averaged) =    3.437(In)
Areal adjustment factor =   99.98 %
Adjusted average point rain =    3.436(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	(0.747)	0.022	0.005
2	0.17	0.07	0.027	(0.744)	0.022	0.005
3	0.25	0.07	0.027	(0.741)	0.022	0.005
4	0.33	0.10	0.041	(0.738)	0.033	0.008
5	0.42	0.10	0.041	(0.736)	0.033	0.008
6	0.50	0.10	0.041	(0.733)	0.033	0.008
7	0.58	0.10	0.041	(0.730)	0.033	0.008
8	0.67	0.10	0.041	(0.727)	0.033	0.008
9	0.75	0.10	0.041	(0.724)	0.033	0.008
10	0.83	0.13	0.055	(0.721)	0.044	0.011
11	0.92	0.13	0.055	(0.718)	0.044	0.011
12	1.00	0.13	0.055	(0.716)	0.044	0.011
13	1.08	0.10	0.041	(0.713)	0.033	0.008
14	1.17	0.10	0.041	(0.710)	0.033	0.008
15	1.25	0.10	0.041	(0.707)	0.033	0.008
16	1.33	0.10	0.041	(0.704)	0.033	0.008
17	1.42	0.10	0.041	(0.702)	0.033	0.008
18	1.50	0.10	0.041	(0.699)	0.033	0.008
19	1.58	0.10	0.041	(0.696)	0.033	0.008
20	1.67	0.10	0.041	(0.693)	0.033	0.008
21	1.75	0.10	0.041	(0.690)	0.033	0.008
22	1.83	0.13	0.055	(0.688)	0.044	0.011
23	1.92	0.13	0.055	(0.685)	0.044	0.011
24	2.00	0.13	0.055	(0.682)	0.044	0.011
25	2.08	0.13	0.055	(0.679)	0.044	0.011
26	2.17	0.13	0.055	(0.677)	0.044	0.011
27	2.25	0.13	0.055	(0.674)	0.044	0.011
28	2.33	0.13	0.055	(0.671)	0.044	0.011
29	2.42	0.13	0.055	(0.668)	0.044	0.011
30	2.50	0.13	0.055	(0.666)	0.044	0.011
31	2.58	0.17	0.069	(0.663)	0.055	0.014
32	2.67	0.17	0.069	(0.660)	0.055	0.014
33	2.75	0.17	0.069	(0.657)	0.055	0.014
34	2.83	0.17	0.069	(0.655)	0.055	0.014
35	2.92	0.17	0.069	(0.652)	0.055	0.014
36	3.00	0.17	0.069	(0.649)	0.055	0.014
37	3.08	0.17	0.069	(0.647)	0.055	0.014

38	3.17	0.17	0.069	(0.644)	0.055	0.014
39	3.25	0.17	0.069	(0.641)	0.055	0.014
40	3.33	0.17	0.069	(0.639)	0.055	0.014
41	3.42	0.17	0.069	(0.636)	0.055	0.014
42	3.50	0.17	0.069	(0.633)	0.055	0.014
43	3.58	0.17	0.069	(0.631)	0.055	0.014
44	3.67	0.17	0.069	(0.628)	0.055	0.014
45	3.75	0.17	0.069	(0.625)	0.055	0.014
46	3.83	0.20	0.082	(0.623)	0.066	0.016
47	3.92	0.20	0.082	(0.620)	0.066	0.016
48	4.00	0.20	0.082	(0.617)	0.066	0.016
49	4.08	0.20	0.082	(0.615)	0.066	0.016
50	4.17	0.20	0.082	(0.612)	0.066	0.016
51	4.25	0.20	0.082	(0.610)	0.066	0.016
52	4.33	0.23	0.096	(0.607)	0.077	0.019
53	4.42	0.23	0.096	(0.604)	0.077	0.019
54	4.50	0.23	0.096	(0.602)	0.077	0.019
55	4.58	0.23	0.096	(0.599)	0.077	0.019
56	4.67	0.23	0.096	(0.597)	0.077	0.019
57	4.75	0.23	0.096	(0.594)	0.077	0.019
58	4.83	0.27	0.110	(0.592)	0.088	0.022
59	4.92	0.27	0.110	(0.589)	0.088	0.022
60	5.00	0.27	0.110	(0.586)	0.088	0.022
61	5.08	0.20	0.082	(0.584)	0.066	0.016
62	5.17	0.20	0.082	(0.581)	0.066	0.016
63	5.25	0.20	0.082	(0.579)	0.066	0.016
64	5.33	0.23	0.096	(0.576)	0.077	0.019
65	5.42	0.23	0.096	(0.574)	0.077	0.019
66	5.50	0.23	0.096	(0.571)	0.077	0.019
67	5.58	0.27	0.110	(0.569)	0.088	0.022
68	5.67	0.27	0.110	(0.566)	0.088	0.022
69	5.75	0.27	0.110	(0.564)	0.088	0.022
70	5.83	0.27	0.110	(0.561)	0.088	0.022
71	5.92	0.27	0.110	(0.559)	0.088	0.022
72	6.00	0.27	0.110	(0.556)	0.088	0.022
73	6.08	0.30	0.124	(0.554)	0.099	0.025
74	6.17	0.30	0.124	(0.551)	0.099	0.025
75	6.25	0.30	0.124	(0.549)	0.099	0.025
76	6.33	0.30	0.124	(0.546)	0.099	0.025
77	6.42	0.30	0.124	(0.544)	0.099	0.025
78	6.50	0.30	0.124	(0.542)	0.099	0.025
79	6.58	0.33	0.137	(0.539)	0.110	0.027
80	6.67	0.33	0.137	(0.537)	0.110	0.027
81	6.75	0.33	0.137	(0.534)	0.110	0.027
82	6.83	0.33	0.137	(0.532)	0.110	0.027
83	6.92	0.33	0.137	(0.529)	0.110	0.027
84	7.00	0.33	0.137	(0.527)	0.110	0.027
85	7.08	0.33	0.137	(0.525)	0.110	0.027
86	7.17	0.33	0.137	(0.522)	0.110	0.027
87	7.25	0.33	0.137	(0.520)	0.110	0.027
88	7.33	0.37	0.151	(0.518)	0.121	0.030
89	7.42	0.37	0.151	(0.515)	0.121	0.030
90	7.50	0.37	0.151	(0.513)	0.121	0.030
91	7.58	0.40	0.165	(0.510)	0.132	0.033
92	7.67	0.40	0.165	(0.508)	0.132	0.033
93	7.75	0.40	0.165	(0.506)	0.132	0.033
94	7.83	0.43	0.179	(0.503)	0.143	0.036
95	7.92	0.43	0.179	(0.501)	0.143	0.036
96	8.00	0.43	0.179	(0.499)	0.143	0.036
97	8.08	0.50	0.206	(0.496)	0.165	0.041
98	8.17	0.50	0.206	(0.494)	0.165	0.041
99	8.25	0.50	0.206	(0.492)	0.165	0.041
100	8.33	0.50	0.206	(0.490)	0.165	0.041
101	8.42	0.50	0.206	(0.487)	0.165	0.041
102	8.50	0.50	0.206	(0.485)	0.165	0.041
103	8.58	0.53	0.220	(0.483)	0.176	0.044
104	8.67	0.53	0.220	(0.480)	0.176	0.044
105	8.75	0.53	0.220	(0.478)	0.176	0.044
106	8.83	0.57	0.234	(0.476)	0.187	0.047
107	8.92	0.57	0.234	(0.474)	0.187	0.047
108	9.00	0.57	0.234	(0.471)	0.187	0.047
109	9.08	0.63	0.261	(0.469)	0.209	0.052
110	9.17	0.63	0.261	(0.467)	0.209	0.052
111	9.25	0.63	0.261	(0.465)	0.209	0.052
112	9.33	0.67	0.275	(0.462)	0.220	0.055

113	9.42	0.67	0.275	(0.460)	0.220	0.055
114	9.50	0.67	0.275	(0.458)	0.220	0.055
115	9.58	0.70	0.289	(0.456)	0.231	0.058
116	9.67	0.70	0.289	(0.454)	0.231	0.058
117	9.75	0.70	0.289	(0.452)	0.231	0.058
118	9.83	0.73	0.302	(0.449)	0.242	0.060
119	9.92	0.73	0.302	(0.447)	0.242	0.060
120	10.00	0.73	0.302	(0.445)	0.242	0.060
121	10.08	0.50	0.206	(0.443)	0.165	0.041
122	10.17	0.50	0.206	(0.441)	0.165	0.041
123	10.25	0.50	0.206	(0.439)	0.165	0.041
124	10.33	0.50	0.206	(0.436)	0.165	0.041
125	10.42	0.50	0.206	(0.434)	0.165	0.041
126	10.50	0.50	0.206	(0.432)	0.165	0.041
127	10.58	0.67	0.275	(0.430)	0.220	0.055
128	10.67	0.67	0.275	(0.428)	0.220	0.055
129	10.75	0.67	0.275	(0.426)	0.220	0.055
130	10.83	0.67	0.275	(0.424)	0.220	0.055
131	10.92	0.67	0.275	(0.422)	0.220	0.055
132	11.00	0.67	0.275	(0.420)	0.220	0.055
133	11.08	0.63	0.261	(0.418)	0.209	0.052
134	11.17	0.63	0.261	(0.416)	0.209	0.052
135	11.25	0.63	0.261	(0.413)	0.209	0.052
136	11.33	0.63	0.261	(0.411)	0.209	0.052
137	11.42	0.63	0.261	(0.409)	0.209	0.052
138	11.50	0.63	0.261	(0.407)	0.209	0.052
139	11.58	0.57	0.234	(0.405)	0.187	0.047
140	11.67	0.57	0.234	(0.403)	0.187	0.047
141	11.75	0.57	0.234	(0.401)	0.187	0.047
142	11.83	0.60	0.247	(0.399)	0.198	0.049
143	11.92	0.60	0.247	(0.397)	0.198	0.049
144	12.00	0.60	0.247	(0.395)	0.198	0.049
145	12.08	0.83	0.344	(0.393)	0.275	0.069
146	12.17	0.83	0.344	(0.391)	0.275	0.069
147	12.25	0.83	0.344	(0.389)	0.275	0.069
148	12.33	0.87	0.357	(0.388)	0.286	0.071
149	12.42	0.87	0.357	(0.386)	0.286	0.071
150	12.50	0.87	0.357	(0.384)	0.286	0.071
151	12.58	0.93	0.385	(0.382)	0.308	0.077
152	12.67	0.93	0.385	(0.380)	0.308	0.077
153	12.75	0.93	0.385	(0.378)	0.308	0.077
154	12.83	0.97	0.399	(0.376)	0.319	0.080
155	12.92	0.97	0.399	(0.374)	0.319	0.080
156	13.00	0.97	0.399	(0.372)	0.319	0.080
157	13.08	1.13	0.467	0.370	(0.374)	0.097
158	13.17	1.13	0.467	0.368	(0.374)	0.099
159	13.25	1.13	0.467	0.367	(0.374)	0.101
160	13.33	1.13	0.467	0.365	(0.374)	0.103
161	13.42	1.13	0.467	0.363	(0.374)	0.105
162	13.50	1.13	0.467	0.361	(0.374)	0.106
163	13.58	0.77	0.316	(0.359)	0.253	0.063
164	13.67	0.77	0.316	(0.357)	0.253	0.063
165	13.75	0.77	0.316	(0.355)	0.253	0.063
166	13.83	0.77	0.316	(0.354)	0.253	0.063
167	13.92	0.77	0.316	(0.352)	0.253	0.063
168	14.00	0.77	0.316	(0.350)	0.253	0.063
169	14.08	0.90	0.371	(0.348)	0.297	0.074
170	14.17	0.90	0.371	(0.346)	0.297	0.074
171	14.25	0.90	0.371	(0.345)	0.297	0.074
172	14.33	0.87	0.357	(0.343)	0.286	0.071
173	14.42	0.87	0.357	(0.341)	0.286	0.071
174	14.50	0.87	0.357	(0.339)	0.286	0.071
175	14.58	0.87	0.357	(0.338)	0.286	0.071
176	14.67	0.87	0.357	(0.336)	0.286	0.071
177	14.75	0.87	0.357	(0.334)	0.286	0.071
178	14.83	0.83	0.344	(0.333)	0.275	0.069
179	14.92	0.83	0.344	(0.331)	0.275	0.069
180	15.00	0.83	0.344	(0.329)	0.275	0.069
181	15.08	0.80	0.330	(0.327)	0.264	0.066
182	15.17	0.80	0.330	(0.326)	0.264	0.066
183	15.25	0.80	0.330	(0.324)	0.264	0.066
184	15.33	0.77	0.316	(0.322)	0.253	0.063
185	15.42	0.77	0.316	(0.321)	0.253	0.063
186	15.50	0.77	0.316	(0.319)	0.253	0.063
187	15.58	0.63	0.261	(0.318)	0.209	0.052

188	15.67	0.63	0.261	(0.316)	0.209	0.052
189	15.75	0.63	0.261	(0.314)	0.209	0.052
190	15.83	0.63	0.261	(0.313)	0.209	0.052
191	15.92	0.63	0.261	(0.311)	0.209	0.052
192	16.00	0.63	0.261	(0.309)	0.209	0.052
193	16.08	0.13	0.055	(0.308)	0.044	0.011
194	16.17	0.13	0.055	(0.306)	0.044	0.011
195	16.25	0.13	0.055	(0.305)	0.044	0.011
196	16.33	0.13	0.055	(0.303)	0.044	0.011
197	16.42	0.13	0.055	(0.302)	0.044	0.011
198	16.50	0.13	0.055	(0.300)	0.044	0.011
199	16.58	0.10	0.041	(0.299)	0.033	0.008
200	16.67	0.10	0.041	(0.297)	0.033	0.008
201	16.75	0.10	0.041	(0.296)	0.033	0.008
202	16.83	0.10	0.041	(0.294)	0.033	0.008
203	16.92	0.10	0.041	(0.293)	0.033	0.008
204	17.00	0.10	0.041	(0.291)	0.033	0.008
205	17.08	0.17	0.069	(0.290)	0.055	0.014
206	17.17	0.17	0.069	(0.288)	0.055	0.014
207	17.25	0.17	0.069	(0.287)	0.055	0.014
208	17.33	0.17	0.069	(0.285)	0.055	0.014
209	17.42	0.17	0.069	(0.284)	0.055	0.014
210	17.50	0.17	0.069	(0.282)	0.055	0.014
211	17.58	0.17	0.069	(0.281)	0.055	0.014
212	17.67	0.17	0.069	(0.280)	0.055	0.014
213	17.75	0.17	0.069	(0.278)	0.055	0.014
214	17.83	0.13	0.055	(0.277)	0.044	0.011
215	17.92	0.13	0.055	(0.275)	0.044	0.011
216	18.00	0.13	0.055	(0.274)	0.044	0.011
217	18.08	0.13	0.055	(0.273)	0.044	0.011
218	18.17	0.13	0.055	(0.271)	0.044	0.011
219	18.25	0.13	0.055	(0.270)	0.044	0.011
220	18.33	0.13	0.055	(0.269)	0.044	0.011
221	18.42	0.13	0.055	(0.267)	0.044	0.011
222	18.50	0.13	0.055	(0.266)	0.044	0.011
223	18.58	0.10	0.041	(0.265)	0.033	0.008
224	18.67	0.10	0.041	(0.264)	0.033	0.008
225	18.75	0.10	0.041	(0.262)	0.033	0.008
226	18.83	0.07	0.027	(0.261)	0.022	0.005
227	18.92	0.07	0.027	(0.260)	0.022	0.005
228	19.00	0.07	0.027	(0.259)	0.022	0.005
229	19.08	0.10	0.041	(0.257)	0.033	0.008
230	19.17	0.10	0.041	(0.256)	0.033	0.008
231	19.25	0.10	0.041	(0.255)	0.033	0.008
232	19.33	0.13	0.055	(0.254)	0.044	0.011
233	19.42	0.13	0.055	(0.253)	0.044	0.011
234	19.50	0.13	0.055	(0.251)	0.044	0.011
235	19.58	0.10	0.041	(0.250)	0.033	0.008
236	19.67	0.10	0.041	(0.249)	0.033	0.008
237	19.75	0.10	0.041	(0.248)	0.033	0.008
238	19.83	0.07	0.027	(0.247)	0.022	0.005
239	19.92	0.07	0.027	(0.246)	0.022	0.005
240	20.00	0.07	0.027	(0.245)	0.022	0.005
241	20.08	0.10	0.041	(0.244)	0.033	0.008
242	20.17	0.10	0.041	(0.243)	0.033	0.008
243	20.25	0.10	0.041	(0.242)	0.033	0.008
244	20.33	0.10	0.041	(0.240)	0.033	0.008
245	20.42	0.10	0.041	(0.239)	0.033	0.008
246	20.50	0.10	0.041	(0.238)	0.033	0.008
247	20.58	0.10	0.041	(0.237)	0.033	0.008
248	20.67	0.10	0.041	(0.236)	0.033	0.008
249	20.75	0.10	0.041	(0.235)	0.033	0.008
250	20.83	0.07	0.027	(0.234)	0.022	0.005
251	20.92	0.07	0.027	(0.234)	0.022	0.005
252	21.00	0.07	0.027	(0.233)	0.022	0.005
253	21.08	0.10	0.041	(0.232)	0.033	0.008
254	21.17	0.10	0.041	(0.231)	0.033	0.008
255	21.25	0.10	0.041	(0.230)	0.033	0.008
256	21.33	0.07	0.027	(0.229)	0.022	0.005
257	21.42	0.07	0.027	(0.228)	0.022	0.005
258	21.50	0.07	0.027	(0.227)	0.022	0.005
259	21.58	0.10	0.041	(0.226)	0.033	0.008
260	21.67	0.10	0.041	(0.226)	0.033	0.008
261	21.75	0.10	0.041	(0.225)	0.033	0.008
262	21.83	0.07	0.027	(0.224)	0.022	0.005

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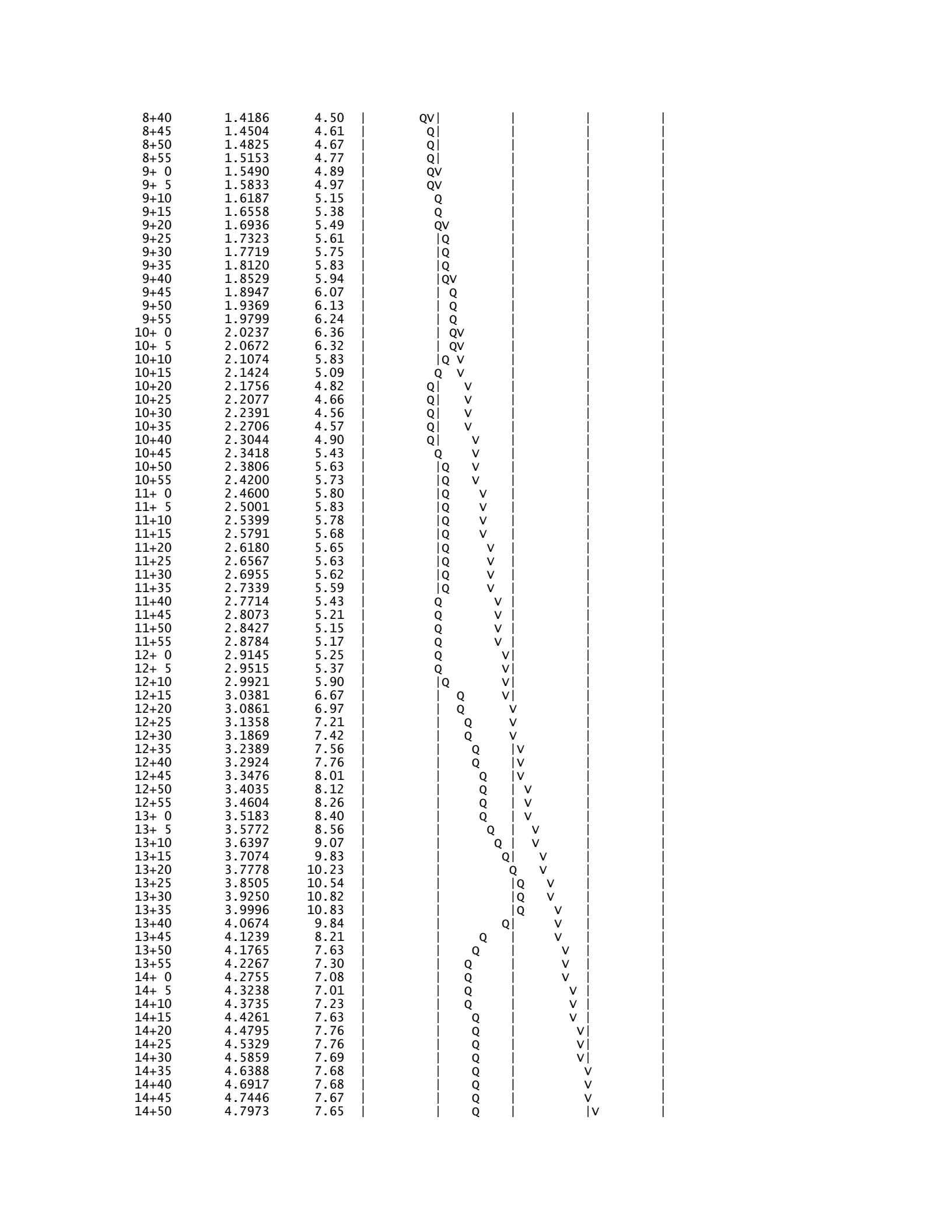
263  21.92     0.07      0.027       (  0.223)       0.022        0.005
264  22.00     0.07      0.027       (  0.223)       0.022        0.005
265  22.08     0.10      0.041       (  0.222)       0.033        0.008
266  22.17     0.10      0.041       (  0.221)       0.033        0.008
267  22.25     0.10      0.041       (  0.220)       0.033        0.008
268  22.33     0.07      0.027       (  0.220)       0.022        0.005
269  22.42     0.07      0.027       (  0.219)       0.022        0.005
270  22.50     0.07      0.027       (  0.218)       0.022        0.005
271  22.58     0.07      0.027       (  0.218)       0.022        0.005
272  22.67     0.07      0.027       (  0.217)       0.022        0.005
273  22.75     0.07      0.027       (  0.217)       0.022        0.005
274  22.83     0.07      0.027       (  0.216)       0.022        0.005
275  22.92     0.07      0.027       (  0.215)       0.022        0.005
276  23.00     0.07      0.027       (  0.215)       0.022        0.005
277  23.08     0.07      0.027       (  0.214)       0.022        0.005
278  23.17     0.07      0.027       (  0.214)       0.022        0.005
279  23.25     0.07      0.027       (  0.213)       0.022        0.005
280  23.33     0.07      0.027       (  0.213)       0.022        0.005
281  23.42     0.07      0.027       (  0.213)       0.022        0.005
282  23.50     0.07      0.027       (  0.212)       0.022        0.005
283  23.58     0.07      0.027       (  0.212)       0.022        0.005
284  23.67     0.07      0.027       (  0.212)       0.022        0.005
285  23.75     0.07      0.027       (  0.211)       0.022        0.005
286  23.83     0.07      0.027       (  0.211)       0.022        0.005
287  23.92     0.07      0.027       (  0.211)       0.022        0.005
288  24.00     0.07      0.027       (  0.211)       0.022        0.005
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     8.3
      Flood volume = Effective rainfall      0.69(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       6.1(Ac.Ft)
      Total soil loss =      2.74(In)
      Total soil loss =    24.337(Ac.Ft)
      Total rainfall =      3.44(In)
      Flood volume =      267027.8 Cubic Feet
      Total soil loss =     1060136.0 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     10.833(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0002      0.03  Q         |         |         |         |
   0+10       0.0014      0.18  Q         |         |         |         |
   0+15       0.0041      0.39  Q         |         |         |         |
   0+20       0.0075      0.49  Q         |         |         |         |
   0+25       0.0116      0.61  VQ        |         |         |         |
   0+30       0.0168      0.75  VQ        |         |         |         |
   0+35       0.0223      0.80  VQ        |         |         |         |
   0+40       0.0281      0.84  VQ        |         |         |         |
   0+45       0.0340      0.86  VQ        |         |         |         |
   0+50       0.0400      0.88  VQ        |         |         |         |
   0+55       0.0467      0.96  VQ        |         |         |         |
   1+ 0       0.0541      1.08  V Q       |         |         |         |
   1+ 5       0.0617      1.10  V Q       |         |         |         |
   1+10       0.0690      1.06  V Q       |         |         |         |
   1+15       0.0756      0.96  VQ        |         |         |         |
   1+20       0.0820      0.93  VQ        |         |         |         |
   1+25       0.0883      0.91  VQ        |         |         |         |
   1+30       0.0945      0.90  VQ        |         |         |         |
   1+35       0.1007      0.89  VQ        |         |         |         |
   1+40       0.1068      0.89  VQ        |         |         |         |
   1+45       0.1129      0.89  VQ        |         |         |         |
   1+50       0.1191      0.90  VQ        |         |         |         |
   1+55       0.1258      0.97  VQ        |         |         |         |
   2+ 0       0.1333      1.08  V Q       |         |         |         |
   2+ 5       0.1410      1.12  V Q       |         |         |         |
   2+10       0.1489      1.14  V Q       |         |         |         |
   2+15       0.1569      1.16  |VQ       |         |         |         |
   2+20       0.1649      1.17  |VQ       |         |         |         |
```

2+25	0.1730	1.17	VQ			
2+30	0.1811	1.18	VQ			
2+35	0.1893	1.19	VQ			
2+40	0.1980	1.27	VQ			
2+45	0.2075	1.38	VQ			
2+50	0.2172	1.42	VQ			
2+55	0.2271	1.44	VQ			
3+ 0	0.2372	1.45	VQ			
3+ 5	0.2472	1.46	VQ			
3+10	0.2573	1.47	VQ			
3+15	0.2675	1.47	VQ			
3+20	0.2776	1.47	VQ			
3+25	0.2878	1.47	VQ			
3+30	0.2979	1.47	VQ			
3+35	0.3081	1.47	Q			
3+40	0.3182	1.47	Q			
3+45	0.3284	1.47	Q			
3+50	0.3386	1.49	Q			
3+55	0.3494	1.56	VQ			
4+ 0	0.3609	1.67	VQ			
4+ 5	0.3727	1.71	VQ			
4+10	0.3846	1.73	VQ			
4+15	0.3967	1.75	VQ			
4+20	0.4089	1.77	VQ			
4+25	0.4216	1.85	VQ			
4+30	0.4351	1.96	VQ			
4+35	0.4489	2.00	V Q			
4+40	0.4629	2.03	VQ			
4+45	0.4770	2.04	VQ			
4+50	0.4912	2.07	VQ			
4+55	0.5060	2.15	VQ			
5+ 0	0.5215	2.26	VQ			
5+ 5	0.5372	2.27	VQ			
5+10	0.5519	2.15	VQ			
5+15	0.5653	1.95	Q			
5+20	0.5784	1.89	Q			
5+25	0.5916	1.92	Q			
5+30	0.6054	2.00	VQ			
5+35	0.6194	2.04	Q			
5+40	0.6341	2.13	Q			
5+45	0.6496	2.25	Q			
5+50	0.6654	2.30	Q			
5+55	0.6814	2.32	Q			
6+ 0	0.6975	2.34	Q			
6+ 5	0.7137	2.36	Q			
6+10	0.7305	2.44	Q			
6+15	0.7481	2.55	VQ			
6+20	0.7659	2.59	VQ			
6+25	0.7840	2.62	Q			
6+30	0.8021	2.63	Q			
6+35	0.8204	2.66	Q			
6+40	0.8392	2.74	Q			
6+45	0.8588	2.85	Q			
6+50	0.8787	2.89	Q			
6+55	0.8988	2.91	Q			
7+ 0	0.9190	2.93	Q			
7+ 5	0.9392	2.94	QV			
7+10	0.9595	2.94	QV			
7+15	0.9797	2.95	QV			
7+20	1.0001	2.96	QV			
7+25	1.0210	3.04	Q			
7+30	1.0427	3.15	Q			
7+35	1.0647	3.20	Q			
7+40	1.0874	3.30	QV			
7+45	1.1110	3.42	QV			
7+50	1.1350	3.48	QV			
7+55	1.1597	3.59	Q			
8+ 0	1.1852	3.71	Q			
8+ 5	1.2113	3.79	Q			
8+10	1.2386	3.97	QV			
8+15	1.2676	4.20	Q			
8+20	1.2971	4.29	Q			
8+25	1.3271	4.35	Q			
8+30	1.3572	4.38	Q			
8+35	1.3876	4.41	QV			



14+55	4.8495	7.58	|	Q	|	V |
15+ 0	4.9009	7.47	|	Q	|	V |
15+ 5	4.9520	7.42	|	Q	|	V |
15+10	5.0025	7.32	|	Q	|	V |
15+15	5.0520	7.20	|	Q	|	V |
15+20	5.1012	7.13	|	Q	|	V |
15+25	5.1496	7.03	|	Q	|	V |
15+30	5.1972	6.91	|	Q	|	V |
15+35	5.2440	6.80	|	Q	|	V |
15+40	5.2886	6.48	|	Q	|	V |
15+45	5.3301	6.02	|	Q	|	V |
15+50	5.3704	5.85	|	Q	|	V |
15+55	5.4100	5.75	|	Q	|	V |
16+ 0	5.4492	5.69	|	Q	|	V |
16+ 5	5.4866	5.44	|	Q	|	V |
16+10	5.5164	4.32	|	Q	|	V |
16+15	5.5348	2.67	|	Q	|	V |
16+20	5.5490	2.07	|	Q	|	V |
16+25	5.5608	1.72	|	Q	|	V |
16+30	5.5711	1.49	| Q	|	|	V |
16+35	5.5803	1.33	| Q	|	|	V |
16+40	5.5884	1.19	| Q	|	|	V |
16+45	5.5956	1.05	| Q	|	|	V |
16+50	5.6024	0.98	|Q	|	|	V |
16+55	5.6089	0.94	|Q	|	|	V |
17+ 0	5.6152	0.91	|Q	|	|	V |
17+ 5	5.6216	0.92	|Q	|	|	V |
17+10	5.6289	1.07	| Q	|	|	V |
17+15	5.6378	1.28	| Q	|	|	V |
17+20	5.6471	1.36	| Q	|	|	V |
17+25	5.6568	1.41	| Q	|	|	V |
17+30	5.6667	1.43	| Q	|	|	V |
17+35	5.6767	1.45	| Q	|	|	V |
17+40	5.6868	1.46	| Q	|	|	V |
17+45	5.6969	1.47	| Q	|	|	V |
17+50	5.7069	1.46	| Q	|	|	V |
17+55	5.7164	1.38	| Q	|	|	V |
18+ 0	5.7252	1.28	| Q	|	|	V |
18+ 5	5.7337	1.24	| Q	|	|	V |
18+10	5.7421	1.21	| Q	|	|	V |
18+15	5.7504	1.20	| Q	|	|	V |
18+20	5.7586	1.19	| Q	|	|	V |
18+25	5.7667	1.19	| Q	|	|	V |
18+30	5.7749	1.18	| Q	|	|	V |
18+35	5.7829	1.17	| Q	|	|	V |
18+40	5.7905	1.09	| Q	|	|	V |
18+45	5.7973	0.98	|Q	|	|	V |
18+50	5.8037	0.93	|Q	|	|	V |
18+55	5.8094	0.83	|Q	|	|	V |
19+ 0	5.8143	0.71	|Q	|	|	V |
19+ 5	5.8189	0.67	|Q	|	|	V |
19+10	5.8239	0.72	|Q	|	|	V |
19+15	5.8294	0.81	|Q	|	|	V |
19+20	5.8353	0.85	|Q	|	|	V |
19+25	5.8418	0.95	|Q	|	|	V |
19+30	5.8492	1.07	| Q	|	|	V |
19+35	5.8567	1.10	| Q	|	|	V |
19+40	5.8640	1.05	| Q	|	|	V |
19+45	5.8706	0.96	|Q	|	|	V |
19+50	5.8769	0.92	|Q	|	|	V |
19+55	5.8826	0.82	|Q	|	|	V |
20+ 0	5.8874	0.70	|Q	|	|	V |
20+ 5	5.8920	0.67	|Q	|	|	V |
20+10	5.8970	0.72	|Q	|	|	V |
20+15	5.9026	0.81	|Q	|	|	V |
20+20	5.9084	0.84	|Q	|	|	V |
20+25	5.9143	0.86	|Q	|	|	V |
20+30	5.9202	0.87	|Q	|	|	V |
20+35	5.9263	0.88	|Q	|	|	V |
20+40	5.9323	0.88	|Q	|	|	V |
20+45	5.9384	0.88	|Q	|	|	V |
20+50	5.9444	0.87	|Q	|	|	V |
20+55	5.9499	0.80	|Q	|	|	V |
21+ 0	5.9546	0.69	|Q	|	|	V |
21+ 5	5.9592	0.66	|Q	|	|	V |

```
  21+10       5.9641      0.71  |Q        |         |         |       V |
  21+15       5.9696      0.81  |Q        |         |         |       V |
  21+20       5.9753      0.82  |Q        |         |         |       V |
  21+25       5.9806      0.77  |Q        |         |         |        V|
  21+30       5.9852      0.67  |Q        |         |         |        V|
  21+35       5.9897      0.65  |Q        |         |         |        V|
  21+40       5.9946      0.71  |Q        |         |         |        V|
  21+45       6.0001      0.80  |Q        |         |         |        V|
  21+50       6.0058      0.82  |Q        |         |         |        V|
  21+55       6.0111      0.77  |Q        |         |         |        V|
  22+ 0       6.0157      0.67  |Q        |         |         |        V|
  22+ 5       6.0202      0.65  |Q        |         |         |        V|
  22+10       6.0251      0.71  |Q        |         |         |        V|
  22+15       6.0306      0.80  |Q        |         |         |        V|
  22+20       6.0362      0.82  |Q        |         |         |        V|
  22+25       6.0415      0.77  |Q        |         |         |        V|
  22+30       6.0462      0.67  |Q        |         |         |        V|
  22+35       6.0506      0.64  |Q        |         |         |        V|
  22+40       6.0548      0.62  |Q        |         |         |        V|
  22+45       6.0590      0.61  |Q        |         |         |        V|
  22+50       6.0631      0.60  |Q        |         |         |        V|
  22+55       6.0672      0.59  |Q        |         |         |        V|
  23+ 0       6.0713      0.59  |Q        |         |         |        V|
  23+ 5       6.0754      0.59  |Q        |         |         |        V|
  23+10       6.0795      0.59  |Q        |         |         |        V|
  23+15       6.0835      0.59  |Q        |         |         |        V|
  23+20       6.0876      0.59  |Q        |         |         |        V|
  23+25       6.0917      0.59  |Q        |         |         |        V|
  23+30       6.0957      0.59  |Q        |         |         |        V|
  23+35       6.0998      0.59  |Q        |         |         |        V|
  23+40       6.1038      0.59  |Q        |         |         |        V|
  23+45       6.1079      0.59  |Q        |         |         |        V|
  23+50       6.1120      0.59  |Q        |         |         |        V|
  23+55       6.1160      0.59  |Q        |         |         |        V|
  24+ 0       6.1201      0.59  |Q        |         |         |        V|
  24+ 5       6.1240      0.56  |Q        |         |         |        V|
  24+10       6.1268      0.41  Q         |         |         |        V|
  24+15       6.1282      0.20  Q         |         |         |        V|
  24+20       6.1290      0.12  Q         |         |         |        V|
  24+25       6.1295      0.07  Q         |         |         |        V|
  24+30       6.1297      0.04  Q         |         |         |        V|
  24+35       6.1299      0.02  Q         |         |         |        V|
  24+40       6.1300      0.01  Q         |         |         |        V|
  24+45       6.1300      0.01  Q         |         |         |        V|
  24+50       6.1301      0.01  Q         |         |         |        V|
  24+55       6.1301      0.00  Q         |         |         |        V|
  25+ 0       6.1301      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

EXISTING CONDITION
10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

10-YEAR, 1-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRA110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.55	58.52

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.25	133.00

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.838(In)
Areal adjustment factor = 99.90 %
Adjusted average point rain = 0.837(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

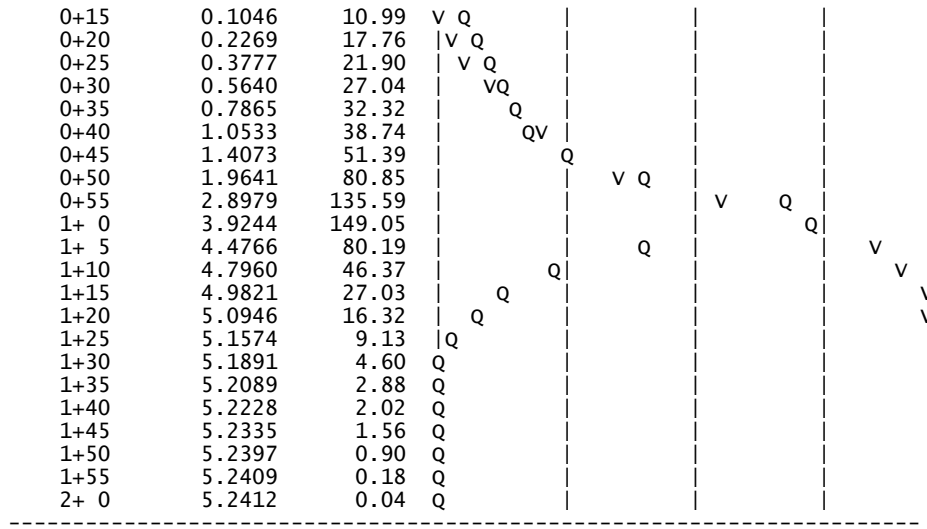
```
      77.3  77.3      0.276     0.120        0.246       1.000      0.246
                                                        Sum (F) =   0.246
      Area averaged mean soil loss (F) (In/Hr) =  0.246
      Minimum soil loss rate ((In/Hr)) =  0.123
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.800
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                   U n i t  H y d r o g r a p h
                          FOOTHILL S-Curve
      ------------------------------------------------------------------------
                   Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         53.985          4.779             5.124
          2   0.167        107.970         24.937            26.740
          3   0.250        161.956         36.901            39.569
          4   0.333        215.941         13.574            14.556
          5   0.417        269.926          7.855             8.423
          6   0.500        323.911          5.019             5.382
          7   0.583        377.896          3.120             3.345
          8   0.667        431.882          1.702             1.825
          9   0.750        485.867          0.696             0.747
         10   0.833        539.852          0.487             0.522
         11   0.917        593.837          0.367             0.393
         12   1.000        647.822          0.345             0.370
         13   1.083        701.808          0.218             0.234
                                  Sum = 100.000    Sum=     107.231
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.342          0.246    (  0.273)        0.096
   2   0.17     4.70      0.472          0.246    (  0.378)        0.226
   3   0.25     4.70      0.472          0.246    (  0.378)        0.226
   4   0.33     5.10      0.512          0.246    (  0.410)        0.266
   5   0.42     5.80      0.583          0.246    (  0.466)        0.337
   6   0.50     5.90      0.593          0.246    (  0.474)        0.347
   7   0.58     7.10      0.713          0.246    (  0.571)        0.467
   8   0.67     8.70      0.874          0.246    (  0.699)        0.628
   9   0.75    13.20      1.326          0.246    (  1.061)        1.080
  10   0.83    29.70      2.984          0.246    (  2.387)        2.738
  11   0.92     7.70      0.774          0.246    (  0.619)        0.527
  12   1.00     4.00      0.402          0.246    (  0.321)        0.156
             (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     7.1
        Flood volume = Effective rainfall      0.59(In)
         times area     106.4(Ac.)/[(In)/(Ft.)] =       5.2(Ac.Ft)
        Total soil loss =      0.25(In)
        Total soil loss =     2.182(Ac.Ft)
        Total rainfall =      0.84(In)
        Flood volume =      228305.8 Cubic Feet
        Total soil loss =       95039.0 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =    149.045(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ------------------------------------------------------------------------
    0+ 5       0.0034      0.49  Q         |         |         |         |
    0+10       0.0290      3.71  Q         |         |         |         |
```


0+15 0.1046 10.99
0+20 0.2269 17.76
0+25 0.3777 21.90
0+30 0.5640 27.04
0+35 0.7865 32.32
0+40 1.0533 38.74
0+45 1.4073 51.39
0+50 1.9641 80.85
0+55 2.8979 135.59
1+ 0 3.9244 149.05
1+ 5 4.4766 80.19
1+10 4.7960 46.37
1+15 4.9821 27.03
1+20 5.0946 16.32
1+25 5.1574 9.13
1+30 5.1891 4.60
1+35 5.2089 2.88
1+40 5.2228 2.02
1+45 5.2335 1.56
1+50 5.2397 0.90
1+55 5.2409 0.18
2+ 0 5.2412 0.04

10-YEAR, 3-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRA310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.95	101.08

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	2.05	218.12

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.403(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 1.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.219	(0.246)	0.175	0.044
2	0.17	1.30	0.219	(0.246)	0.175	0.044
3	0.25	1.10	0.185	(0.246)	0.148	0.037
4	0.33	1.50	0.252	(0.246)	0.202	0.050
5	0.42	1.50	0.252	(0.246)	0.202	0.050
6	0.50	1.80	0.303	(0.246)	0.242	0.061
7	0.58	1.50	0.252	(0.246)	0.202	0.050
8	0.67	1.80	0.303	(0.246)	0.242	0.061
9	0.75	1.80	0.303	(0.246)	0.242	0.061
10	0.83	1.50	0.252	(0.246)	0.202	0.050
11	0.92	1.60	0.269	(0.246)	0.215	0.054
12	1.00	1.80	0.303	(0.246)	0.242	0.061
13	1.08	2.20	0.370	0.246	(0.296)	0.124
14	1.17	2.20	0.370	0.246	(0.296)	0.124
15	1.25	2.20	0.370	0.246	(0.296)	0.124
16	1.33	2.00	0.336	0.246	(0.269)	0.090
17	1.42	2.60	0.437	0.246	(0.350)	0.191
18	1.50	2.70	0.454	0.246	(0.363)	0.208
19	1.58	2.40	0.404	0.246	(0.323)	0.158
20	1.67	2.70	0.454	0.246	(0.363)	0.208
21	1.75	3.30	0.555	0.246	(0.444)	0.309
22	1.83	3.10	0.522	0.246	(0.417)	0.275
23	1.92	2.90	0.488	0.246	(0.390)	0.242
24	2.00	3.00	0.505	0.246	(0.404)	0.259
25	2.08	3.10	0.522	0.246	(0.417)	0.275
26	2.17	4.20	0.707	0.246	(0.565)	0.460
27	2.25	5.00	0.841	0.246	(0.673)	0.595
28	2.33	3.50	0.589	0.246	(0.471)	0.343
29	2.42	6.80	1.144	0.246	(0.915)	0.898
30	2.50	7.30	1.228	0.246	(0.982)	0.982
31	2.58	8.20	1.379	0.246	(1.104)	1.133
32	2.67	5.90	0.993	0.246	(0.794)	0.746
33	2.75	2.00	0.336	0.246	(0.269)	0.090
34	2.83	1.80	0.303	(0.246)	0.242	0.061
35	2.92	1.80	0.303	(0.246)	0.242	0.061
36	3.00	0.60	0.101	(0.246)	0.081	0.020
		(Loss Rate Not Used)				

```
   Sum =     100.0                                    Sum =     8.6
      Flood volume = Effective rainfall      0.72(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       6.4(Ac.Ft)
      Total soil loss =      0.69(In)
      Total soil loss =     6.075(Ac.Ft)
      Total rainfall =      1.40(In)
      Flood volume =      276810.2 Cubic Feet
      Total soil loss =      264646.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     94.831(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       25.0      50.0      75.0     100.0
-------------------------------------------------------------------------
  0+ 5       0.0015      0.22  Q         |         |         |         |
  0+10       0.0111      1.39  Q         |         |         |         |
  0+15       0.0324      3.09  VQ        |         |         |         |
  0+20       0.0574      3.62  VQ        |         |         |         |
  0+25       0.0855      4.08  VQ        |         |         |         |
  0+30       0.1185      4.80  VQ        |         |         |         |
  0+35       0.1551      5.31  V Q       |         |         |         |
  0+40       0.1939      5.64  |VQ       |         |         |         |
  0+45       0.2335      5.74  |VQ       |         |         |         |
  0+50       0.2754      6.09  |VQ       |         |         |         |
  0+55       0.3166      5.99  |VQ       |         |         |         |
  1+ 0       0.3566      5.80  | Q       |         |         |         |
  1+ 5       0.4003      6.34  | Q       |         |         |         |
  1+10       0.4574      8.30  | VQ      |         |         |         |
  1+15       0.5325     10.90  |  VQ     |         |         |         |
  1+20       0.6131     11.70  |  VQ     |         |         |         |
  1+25       0.6950     11.89  |   Q     |         |         |         |
  1+30       0.7894     13.71  |   VQ    |         |         |         |
  1+35       0.9108     17.63  |    V Q  |         |         |         |
  1+40       1.0383     18.51  |     VQ  |         |         |         |
  1+45       1.1716     19.35  |      Q  |         |         |         |
  1+50       1.3351     23.74  |       VQ|         |         |         |
  1+55       1.5236     27.37  |        VQ         |         |         |
  2+ 0       1.7102     27.09  |         Q         |         |         |
  2+ 5       1.8952     26.86  |         QV        |         |         |
  2+10       2.0937     28.83  |         |Q V      |         |         |
  2+15       2.3371     35.34  |         |   Q     |         |         |
  2+20       2.6491     45.30  |         |     V Q |         |         |
  2+25       2.9906     49.59  |         |       VQ|         |         |
  2+30       3.3936     58.52  |         |         |V Q      |         |
  2+35       3.9589     82.07  |         |         |   V     | Q       |
  2+40       4.6120     94.83  |         |         |        V|      Q  |
  2+45       5.2488     92.46  |         |         |         |  V  Q   |
  2+50       5.6956     64.88  |         |         |    Q    |    V    |
  2+55       5.9421     35.80  |         |   Q     |         |      V  |
  3+ 0       6.1051     23.67  |        Q|         |         |       V |
  3+ 5       6.2119     15.51  |      Q  |         |         |        V|
  3+10       6.2733      8.91  |  Q      |         |         |        V|
  3+15       6.3062      4.78  |Q        |         |         |        V|
  3+20       6.3255      2.81  |Q        |         |         |        V|
  3+25       6.3386      1.90  Q         |         |         |        V|
  3+30       6.3470      1.21  Q         |         |         |        V|
  3+35       6.3517      0.69  Q         |         |         |        V|
  3+40       6.3537      0.28  Q         |         |         |        V|
  3+45       6.3542      0.08  Q         |         |         |        V|
  3+50       6.3545      0.04  Q         |         |         |        V|
  3+55       6.3547      0.02  Q         |         |         |        V|
  4+ 0       6.3547      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

10-YEAR, 6-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRA610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.40	148.96

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	3.00	319.20

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 2.058(In)
Areal adjustment factor = 99.96 %
Adjusted average point rain = 2.058(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

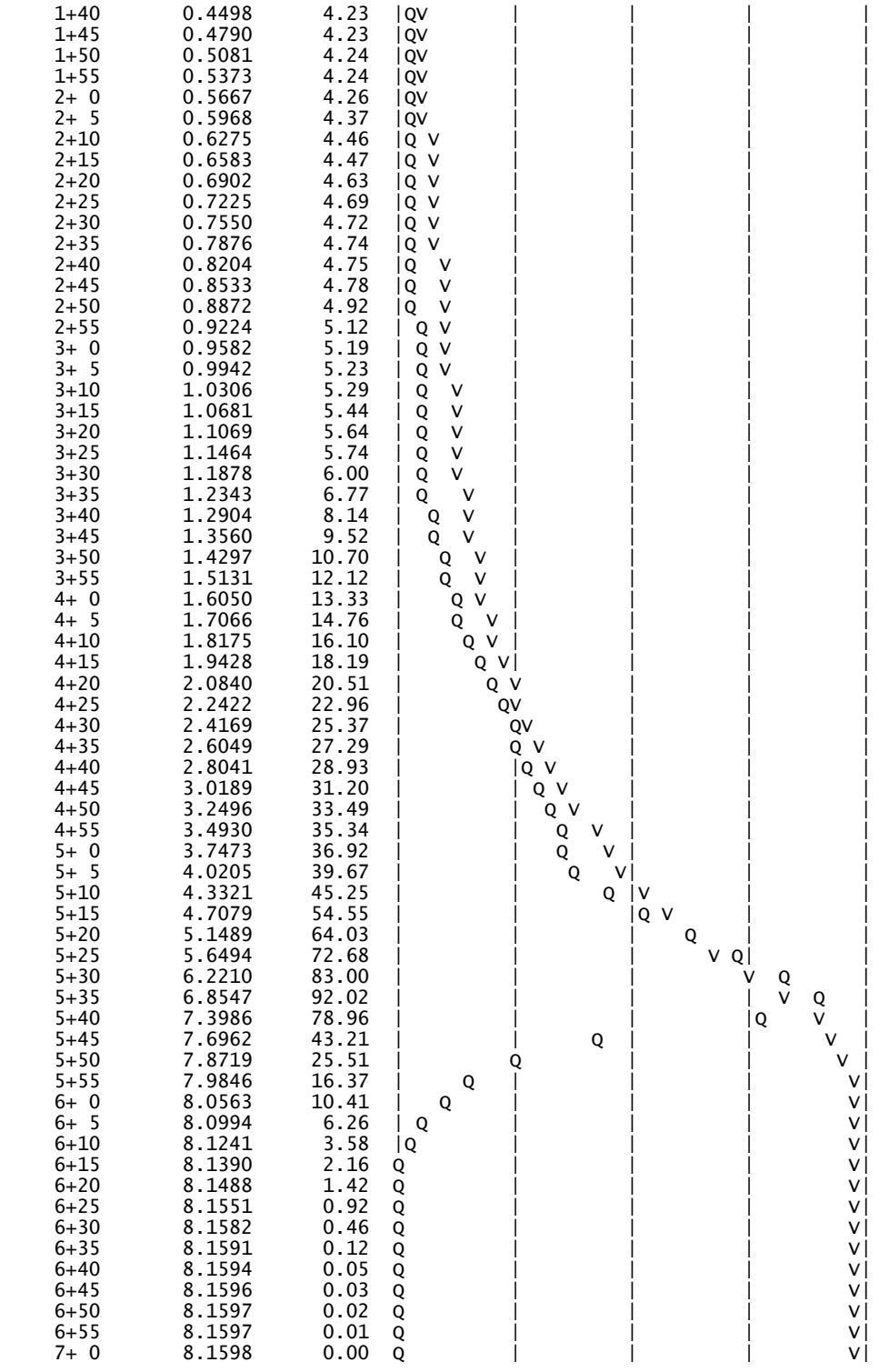
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.123	(0.246)	0.099	0.025
2	0.17	0.60	0.148	(0.246)	0.119	0.030
3	0.25	0.60	0.148	(0.246)	0.119	0.030
4	0.33	0.60	0.148	(0.246)	0.119	0.030
5	0.42	0.60	0.148	(0.246)	0.119	0.030
6	0.50	0.70	0.173	(0.246)	0.138	0.035
7	0.58	0.70	0.173	(0.246)	0.138	0.035
8	0.67	0.70	0.173	(0.246)	0.138	0.035
9	0.75	0.70	0.173	(0.246)	0.138	0.035
10	0.83	0.70	0.173	(0.246)	0.138	0.035
11	0.92	0.70	0.173	(0.246)	0.138	0.035
12	1.00	0.80	0.198	(0.246)	0.158	0.040
13	1.08	0.80	0.198	(0.246)	0.158	0.040
14	1.17	0.80	0.198	(0.246)	0.158	0.040
15	1.25	0.80	0.198	(0.246)	0.158	0.040
16	1.33	0.80	0.198	(0.246)	0.158	0.040
17	1.42	0.80	0.198	(0.246)	0.158	0.040
18	1.50	0.80	0.198	(0.246)	0.158	0.040
19	1.58	0.80	0.198	(0.246)	0.158	0.040
20	1.67	0.80	0.198	(0.246)	0.158	0.040
21	1.75	0.80	0.198	(0.246)	0.158	0.040
22	1.83	0.80	0.198	(0.246)	0.158	0.040
23	1.92	0.80	0.198	(0.246)	0.158	0.040
24	2.00	0.90	0.222	(0.246)	0.178	0.044
25	2.08	0.80	0.198	(0.246)	0.158	0.040
26	2.17	0.90	0.222	(0.246)	0.178	0.044
27	2.25	0.90	0.222	(0.246)	0.178	0.044
28	2.33	0.90	0.222	(0.246)	0.178	0.044
29	2.42	0.90	0.222	(0.246)	0.178	0.044
30	2.50	0.90	0.222	(0.246)	0.178	0.044
31	2.58	0.90	0.222	(0.246)	0.178	0.044
32	2.67	0.90	0.222	(0.246)	0.178	0.044
33	2.75	1.00	0.247	(0.246)	0.198	0.049
34	2.83	1.00	0.247	(0.246)	0.198	0.049
35	2.92	1.00	0.247	(0.246)	0.198	0.049
36	3.00	1.00	0.247	(0.246)	0.198	0.049
37	3.08	1.00	0.247	(0.246)	0.198	0.049

```
38   3.17     1.10     0.272       (  0.246)       0.217        0.054
39   3.25     1.10     0.272       (  0.246)       0.217        0.054
40   3.33     1.10     0.272       (  0.246)       0.217        0.054
41   3.42     1.20     0.296       (  0.246)       0.237        0.059
42   3.50     1.30     0.321          0.246    (  0.257)        0.075
43   3.58     1.40     0.346          0.246    (  0.277)        0.100
44   3.67     1.40     0.346          0.246    (  0.277)        0.100
45   3.75     1.50     0.370          0.246    (  0.296)        0.124
46   3.83     1.50     0.370          0.246    (  0.296)        0.124
47   3.92     1.60     0.395          0.246    (  0.316)        0.149
48   4.00     1.60     0.395          0.246    (  0.316)        0.149
49   4.08     1.70     0.420          0.246    (  0.336)        0.174
50   4.17     1.80     0.444          0.246    (  0.356)        0.198
51   4.25     1.90     0.469          0.246    (  0.375)        0.223
52   4.33     2.00     0.494          0.246    (  0.395)        0.248
53   4.42     2.10     0.518          0.246    (  0.415)        0.272
54   4.50     2.10     0.518          0.246    (  0.415)        0.272
55   4.58     2.20     0.543          0.246    (  0.435)        0.297
56   4.67     2.30     0.568          0.246    (  0.454)        0.322
57   4.75     2.40     0.593          0.246    (  0.474)        0.346
58   4.83     2.40     0.593          0.246    (  0.474)        0.346
59   4.92     2.50     0.617          0.246    (  0.494)        0.371
60   5.00     2.60     0.642          0.246    (  0.514)        0.396
61   5.08     3.10     0.765          0.246    (  0.612)        0.519
62   5.17     3.60     0.889          0.246    (  0.711)        0.643
63   5.25     3.90     0.963          0.246    (  0.770)        0.717
64   5.33     4.20     1.037          0.246    (  0.830)        0.791
65   5.42     4.70     1.160          0.246    (  0.928)        0.914
66   5.50     5.60     1.383          0.246    (  1.106)        1.137
67   5.58     1.90     0.469          0.246    (  0.375)        0.223
68   5.67     0.90     0.222       (  0.246)       0.178        0.044
69   5.75     0.60     0.148       (  0.246)       0.119        0.030
70   5.83     0.50     0.123       (  0.246)       0.099        0.025
71   5.92     0.30     0.074       (  0.246)       0.059        0.015
72   6.00     0.20     0.049       (  0.246)       0.040        0.010
            (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    11.0
     Flood volume = Effective rainfall      0.92(In)
      times area     106.4(Ac.)/[(In)/(Ft.)] =       8.2(Ac.Ft)
     Total soil loss =      1.14(In)
     Total soil loss =    10.083(Ac.Ft)
     Total rainfall =      2.06(In)
     Flood volume =      355438.8 Cubic Feet
     Total soil loss =      439233.6 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     92.016(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                         6 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
     ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       25.0      50.0      75.0     100.0
-------------------------------------------------------------------------
  0+ 5       0.0009      0.13  Q         |         |         |         |
  0+10       0.0065      0.81  Q         |         |         |         |
  0+15       0.0197      1.92  Q         |         |         |         |
  0+20       0.0368      2.48  Q         |         |         |         |
  0+25       0.0558      2.76  VQ        |         |         |         |
  0+30       0.0761      2.96  VQ        |         |         |         |
  0+35       0.0981      3.20  VQ        |         |         |         |
  0+40       0.1219      3.46  VQ        |         |         |         |
  0+45       0.1464      3.55  VQ        |         |         |         |
  0+50       0.1713      3.61  VQ        |         |         |         |
  0+55       0.1965      3.65  VQ        |         |         |         |
  1+ 0       0.2220      3.70  |Q        |         |         |         |
  1+ 5       0.2485      3.85  |Q        |         |         |         |
  1+10       0.2764      4.05  |Q        |         |         |         |
  1+15       0.3049      4.13  |Q        |         |         |         |
  1+20       0.3336      4.17  |Q        |         |         |         |
  1+25       0.3625      4.20  |Q        |         |         |         |
  1+30       0.3916      4.22  |Q        |         |         |         |
  1+35       0.4207      4.23  |QV       |         |         |         |
```



10-YEAR, 24-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRA2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	2.50	266.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 4.145(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	(0.436)	0.027	0.007
2	0.17	0.07	0.033	(0.435)	0.027	0.007
3	0.25	0.07	0.033	(0.433)	0.027	0.007
4	0.33	0.10	0.050	(0.431)	0.040	0.010
5	0.42	0.10	0.050	(0.429)	0.040	0.010
6	0.50	0.10	0.050	(0.428)	0.040	0.010
7	0.58	0.10	0.050	(0.426)	0.040	0.010
8	0.67	0.10	0.050	(0.424)	0.040	0.010
9	0.75	0.10	0.050	(0.423)	0.040	0.010
10	0.83	0.13	0.066	(0.421)	0.053	0.013
11	0.92	0.13	0.066	(0.419)	0.053	0.013
12	1.00	0.13	0.066	(0.418)	0.053	0.013
13	1.08	0.10	0.050	(0.416)	0.040	0.010
14	1.17	0.10	0.050	(0.415)	0.040	0.010
15	1.25	0.10	0.050	(0.413)	0.040	0.010
16	1.33	0.10	0.050	(0.411)	0.040	0.010
17	1.42	0.10	0.050	(0.410)	0.040	0.010
18	1.50	0.10	0.050	(0.408)	0.040	0.010
19	1.58	0.10	0.050	(0.406)	0.040	0.010
20	1.67	0.10	0.050	(0.405)	0.040	0.010
21	1.75	0.10	0.050	(0.403)	0.040	0.010
22	1.83	0.13	0.066	(0.401)	0.053	0.013
23	1.92	0.13	0.066	(0.400)	0.053	0.013
24	2.00	0.13	0.066	(0.398)	0.053	0.013
25	2.08	0.13	0.066	(0.397)	0.053	0.013
26	2.17	0.13	0.066	(0.395)	0.053	0.013
27	2.25	0.13	0.066	(0.393)	0.053	0.013
28	2.33	0.13	0.066	(0.392)	0.053	0.013
29	2.42	0.13	0.066	(0.390)	0.053	0.013
30	2.50	0.13	0.066	(0.389)	0.053	0.013
31	2.58	0.17	0.083	(0.387)	0.066	0.017
32	2.67	0.17	0.083	(0.385)	0.066	0.017
33	2.75	0.17	0.083	(0.384)	0.066	0.017
34	2.83	0.17	0.083	(0.382)	0.066	0.017
35	2.92	0.17	0.083	(0.381)	0.066	0.017
36	3.00	0.17	0.083	(0.379)	0.066	0.017
37	3.08	0.17	0.083	(0.378)	0.066	0.017

38	3.17	0.17	0.083	(0.376)	0.066	0.017
39	3.25	0.17	0.083	(0.374)	0.066	0.017
40	3.33	0.17	0.083	(0.373)	0.066	0.017
41	3.42	0.17	0.083	(0.371)	0.066	0.017
42	3.50	0.17	0.083	(0.370)	0.066	0.017
43	3.58	0.17	0.083	(0.368)	0.066	0.017
44	3.67	0.17	0.083	(0.367)	0.066	0.017
45	3.75	0.17	0.083	(0.365)	0.066	0.017
46	3.83	0.20	0.099	(0.364)	0.080	0.020
47	3.92	0.20	0.099	(0.362)	0.080	0.020
48	4.00	0.20	0.099	(0.361)	0.080	0.020
49	4.08	0.20	0.099	(0.359)	0.080	0.020
50	4.17	0.20	0.099	(0.357)	0.080	0.020
51	4.25	0.20	0.099	(0.356)	0.080	0.020
52	4.33	0.23	0.116	(0.354)	0.093	0.023
53	4.42	0.23	0.116	(0.353)	0.093	0.023
54	4.50	0.23	0.116	(0.351)	0.093	0.023
55	4.58	0.23	0.116	(0.350)	0.093	0.023
56	4.67	0.23	0.116	(0.348)	0.093	0.023
57	4.75	0.23	0.116	(0.347)	0.093	0.023
58	4.83	0.27	0.133	(0.345)	0.106	0.027
59	4.92	0.27	0.133	(0.344)	0.106	0.027
60	5.00	0.27	0.133	(0.342)	0.106	0.027
61	5.08	0.20	0.099	(0.341)	0.080	0.020
62	5.17	0.20	0.099	(0.339)	0.080	0.020
63	5.25	0.20	0.099	(0.338)	0.080	0.020
64	5.33	0.23	0.116	(0.336)	0.093	0.023
65	5.42	0.23	0.116	(0.335)	0.093	0.023
66	5.50	0.23	0.116	(0.334)	0.093	0.023
67	5.58	0.27	0.133	(0.332)	0.106	0.027
68	5.67	0.27	0.133	(0.331)	0.106	0.027
69	5.75	0.27	0.133	(0.329)	0.106	0.027
70	5.83	0.27	0.133	(0.328)	0.106	0.027
71	5.92	0.27	0.133	(0.326)	0.106	0.027
72	6.00	0.27	0.133	(0.325)	0.106	0.027
73	6.08	0.30	0.149	(0.323)	0.119	0.030
74	6.17	0.30	0.149	(0.322)	0.119	0.030
75	6.25	0.30	0.149	(0.320)	0.119	0.030
76	6.33	0.30	0.149	(0.319)	0.119	0.030
77	6.42	0.30	0.149	(0.318)	0.119	0.030
78	6.50	0.30	0.149	(0.316)	0.119	0.030
79	6.58	0.33	0.166	(0.315)	0.133	0.033
80	6.67	0.33	0.166	(0.313)	0.133	0.033
81	6.75	0.33	0.166	(0.312)	0.133	0.033
82	6.83	0.33	0.166	(0.311)	0.133	0.033
83	6.92	0.33	0.166	(0.309)	0.133	0.033
84	7.00	0.33	0.166	(0.308)	0.133	0.033
85	7.08	0.33	0.166	(0.306)	0.133	0.033
86	7.17	0.33	0.166	(0.305)	0.133	0.033
87	7.25	0.33	0.166	(0.304)	0.133	0.033
88	7.33	0.37	0.182	(0.302)	0.146	0.036
89	7.42	0.37	0.182	(0.301)	0.146	0.036
90	7.50	0.37	0.182	(0.299)	0.146	0.036
91	7.58	0.40	0.199	(0.298)	0.159	0.040
92	7.67	0.40	0.199	(0.297)	0.159	0.040
93	7.75	0.40	0.199	(0.295)	0.159	0.040
94	7.83	0.43	0.216	(0.294)	0.172	0.043
95	7.92	0.43	0.216	(0.293)	0.172	0.043
96	8.00	0.43	0.216	(0.291)	0.172	0.043
97	8.08	0.50	0.249	(0.290)	0.199	0.050
98	8.17	0.50	0.249	(0.289)	0.199	0.050
99	8.25	0.50	0.249	(0.287)	0.199	0.050
100	8.33	0.50	0.249	(0.286)	0.199	0.050
101	8.42	0.50	0.249	(0.284)	0.199	0.050
102	8.50	0.50	0.249	(0.283)	0.199	0.050
103	8.58	0.53	0.265	(0.282)	0.212	0.053
104	8.67	0.53	0.265	(0.281)	0.212	0.053
105	8.75	0.53	0.265	(0.279)	0.212	0.053
106	8.83	0.57	0.282	(0.278)	0.225	0.056
107	8.92	0.57	0.282	(0.277)	0.225	0.056
108	9.00	0.57	0.282	(0.275)	0.225	0.056
109	9.08	0.63	0.315	(0.274)	0.252	0.063
110	9.17	0.63	0.315	(0.273)	0.252	0.063
111	9.25	0.63	0.315	(0.271)	0.252	0.063
112	9.33	0.67	0.332	(0.270)	0.265	0.066

113	9.42	0.67	0.332	(	0.269)	0.265	0.066
114	9.50	0.67	0.332	(	0.267)	0.265	0.066
115	9.58	0.70	0.348		0.266	(0.279)	0.082
116	9.67	0.70	0.348		0.265	(0.279)	0.083
117	9.75	0.70	0.348		0.264	(0.279)	0.085
118	9.83	0.73	0.365		0.262	(0.292)	0.102
119	9.92	0.73	0.365		0.261	(0.292)	0.104
120	10.00	0.73	0.365		0.260	(0.292)	0.105
121	10.08	0.50	0.249	(	0.259)	0.199	0.050
122	10.17	0.50	0.249	(	0.257)	0.199	0.050
123	10.25	0.50	0.249	(	0.256)	0.199	0.050
124	10.33	0.50	0.249	(	0.255)	0.199	0.050
125	10.42	0.50	0.249	(	0.254)	0.199	0.050
126	10.50	0.50	0.249	(	0.252)	0.199	0.050
127	10.58	0.67	0.332		0.251	(0.265)	0.080
128	10.67	0.67	0.332		0.250	(0.265)	0.082
129	10.75	0.67	0.332		0.249	(0.265)	0.083
130	10.83	0.67	0.332		0.247	(0.265)	0.084
131	10.92	0.67	0.332		0.246	(0.265)	0.085
132	11.00	0.67	0.332		0.245	(0.265)	0.087
133	11.08	0.63	0.315		0.244	(0.252)	0.071
134	11.17	0.63	0.315		0.243	(0.252)	0.072
135	11.25	0.63	0.315		0.241	(0.252)	0.074
136	11.33	0.63	0.315		0.240	(0.252)	0.075
137	11.42	0.63	0.315		0.239	(0.252)	0.076
138	11.50	0.63	0.315		0.238	(0.252)	0.077
139	11.58	0.57	0.282	(	0.237)	0.225	0.056
140	11.67	0.57	0.282	(	0.236)	0.225	0.056
141	11.75	0.57	0.282	(	0.234)	0.225	0.056
142	11.83	0.60	0.298		0.233	(0.239)	0.065
143	11.92	0.60	0.298		0.232	(0.239)	0.066
144	12.00	0.60	0.298		0.231	(0.239)	0.068
145	12.08	0.83	0.414		0.230	(0.332)	0.185
146	12.17	0.83	0.414		0.229	(0.332)	0.186
147	12.25	0.83	0.414		0.227	(0.332)	0.187
148	12.33	0.87	0.431		0.226	(0.345)	0.205
149	12.42	0.87	0.431		0.225	(0.345)	0.206
150	12.50	0.87	0.431		0.224	(0.345)	0.207
151	12.58	0.93	0.464		0.223	(0.371)	0.241
152	12.67	0.93	0.464		0.222	(0.371)	0.242
153	12.75	0.93	0.464		0.221	(0.371)	0.244
154	12.83	0.97	0.481		0.220	(0.385)	0.261
155	12.92	0.97	0.481		0.218	(0.385)	0.262
156	13.00	0.97	0.481		0.217	(0.385)	0.263
157	13.08	1.13	0.564		0.216	(0.451)	0.347
158	13.17	1.13	0.564		0.215	(0.451)	0.349
159	13.25	1.13	0.564		0.214	(0.451)	0.350
160	13.33	1.13	0.564		0.213	(0.451)	0.351
161	13.42	1.13	0.564		0.212	(0.451)	0.352
162	13.50	1.13	0.564		0.211	(0.451)	0.353
163	13.58	0.77	0.381		0.210	(0.305)	0.172
164	13.67	0.77	0.381		0.209	(0.305)	0.173
165	13.75	0.77	0.381		0.208	(0.305)	0.174
166	13.83	0.77	0.381		0.206	(0.305)	0.175
167	13.92	0.77	0.381		0.205	(0.305)	0.176
168	14.00	0.77	0.381		0.204	(0.305)	0.177
169	14.08	0.90	0.448		0.203	(0.358)	0.244
170	14.17	0.90	0.448		0.202	(0.358)	0.245
171	14.25	0.90	0.448		0.201	(0.358)	0.246
172	14.33	0.87	0.431		0.200	(0.345)	0.231
173	14.42	0.87	0.431		0.199	(0.345)	0.232
174	14.50	0.87	0.431		0.198	(0.345)	0.233
175	14.58	0.87	0.431		0.197	(0.345)	0.234
176	14.67	0.87	0.431		0.196	(0.345)	0.235
177	14.75	0.87	0.431		0.195	(0.345)	0.236
178	14.83	0.83	0.414		0.194	(0.332)	0.220
179	14.92	0.83	0.414		0.193	(0.332)	0.221
180	15.00	0.83	0.414		0.192	(0.332)	0.222
181	15.08	0.80	0.398		0.191	(0.318)	0.207
182	15.17	0.80	0.398		0.190	(0.318)	0.208
183	15.25	0.80	0.398		0.189	(0.318)	0.209
184	15.33	0.77	0.381		0.188	(0.305)	0.193
185	15.42	0.77	0.381		0.187	(0.305)	0.194
186	15.50	0.77	0.381		0.186	(0.305)	0.195
187	15.58	0.63	0.315		0.185	(0.252)	0.130

188	15.67	0.63	0.315	0.184	(0.252)	0.131
189	15.75	0.63	0.315	0.184	(0.252)	0.132
190	15.83	0.63	0.315	0.183	(0.252)	0.132
191	15.92	0.63	0.315	0.182	(0.252)	0.133
192	16.00	0.63	0.315	0.181	(0.252)	0.134
193	16.08	0.13	0.066	(0.180)	0.053	0.013
194	16.17	0.13	0.066	(0.179)	0.053	0.013
195	16.25	0.13	0.066	(0.178)	0.053	0.013
196	16.33	0.13	0.066	(0.177)	0.053	0.013
197	16.42	0.13	0.066	(0.176)	0.053	0.013
198	16.50	0.13	0.066	(0.175)	0.053	0.013
199	16.58	0.10	0.050	(0.174)	0.040	0.010
200	16.67	0.10	0.050	(0.173)	0.040	0.010
201	16.75	0.10	0.050	(0.173)	0.040	0.010
202	16.83	0.10	0.050	(0.172)	0.040	0.010
203	16.92	0.10	0.050	(0.171)	0.040	0.010
204	17.00	0.10	0.050	(0.170)	0.040	0.010
205	17.08	0.17	0.083	(0.169)	0.066	0.017
206	17.17	0.17	0.083	(0.168)	0.066	0.017
207	17.25	0.17	0.083	(0.167)	0.066	0.017
208	17.33	0.17	0.083	(0.167)	0.066	0.017
209	17.42	0.17	0.083	(0.166)	0.066	0.017
210	17.50	0.17	0.083	(0.165)	0.066	0.017
211	17.58	0.17	0.083	(0.164)	0.066	0.017
212	17.67	0.17	0.083	(0.163)	0.066	0.017
213	17.75	0.17	0.083	(0.162)	0.066	0.017
214	17.83	0.13	0.066	(0.162)	0.053	0.013
215	17.92	0.13	0.066	(0.161)	0.053	0.013
216	18.00	0.13	0.066	(0.160)	0.053	0.013
217	18.08	0.13	0.066	(0.159)	0.053	0.013
218	18.17	0.13	0.066	(0.158)	0.053	0.013
219	18.25	0.13	0.066	(0.158)	0.053	0.013
220	18.33	0.13	0.066	(0.157)	0.053	0.013
221	18.42	0.13	0.066	(0.156)	0.053	0.013
222	18.50	0.13	0.066	(0.155)	0.053	0.013
223	18.58	0.10	0.050	(0.155)	0.040	0.010
224	18.67	0.10	0.050	(0.154)	0.040	0.010
225	18.75	0.10	0.050	(0.153)	0.040	0.010
226	18.83	0.07	0.033	(0.152)	0.027	0.007
227	18.92	0.07	0.033	(0.152)	0.027	0.007
228	19.00	0.07	0.033	(0.151)	0.027	0.007
229	19.08	0.10	0.050	(0.150)	0.040	0.010
230	19.17	0.10	0.050	(0.150)	0.040	0.010
231	19.25	0.10	0.050	(0.149)	0.040	0.010
232	19.33	0.13	0.066	(0.148)	0.053	0.013
233	19.42	0.13	0.066	(0.147)	0.053	0.013
234	19.50	0.13	0.066	(0.147)	0.053	0.013
235	19.58	0.10	0.050	(0.146)	0.040	0.010
236	19.67	0.10	0.050	(0.145)	0.040	0.010
237	19.75	0.10	0.050	(0.145)	0.040	0.010
238	19.83	0.07	0.033	(0.144)	0.027	0.007
239	19.92	0.07	0.033	(0.144)	0.027	0.007
240	20.00	0.07	0.033	(0.143)	0.027	0.007
241	20.08	0.10	0.050	(0.142)	0.040	0.010
242	20.17	0.10	0.050	(0.142)	0.040	0.010
243	20.25	0.10	0.050	(0.141)	0.040	0.010
244	20.33	0.10	0.050	(0.140)	0.040	0.010
245	20.42	0.10	0.050	(0.140)	0.040	0.010
246	20.50	0.10	0.050	(0.139)	0.040	0.010
247	20.58	0.10	0.050	(0.139)	0.040	0.010
248	20.67	0.10	0.050	(0.138)	0.040	0.010
249	20.75	0.10	0.050	(0.137)	0.040	0.010
250	20.83	0.07	0.033	(0.137)	0.027	0.007
251	20.92	0.07	0.033	(0.136)	0.027	0.007
252	21.00	0.07	0.033	(0.136)	0.027	0.007
253	21.08	0.10	0.050	(0.135)	0.040	0.010
254	21.17	0.10	0.050	(0.135)	0.040	0.010
255	21.25	0.10	0.050	(0.134)	0.040	0.010
256	21.33	0.07	0.033	(0.134)	0.027	0.007
257	21.42	0.07	0.033	(0.133)	0.027	0.007
258	21.50	0.07	0.033	(0.133)	0.027	0.007
259	21.58	0.10	0.050	(0.132)	0.040	0.010
260	21.67	0.10	0.050	(0.132)	0.040	0.010
261	21.75	0.10	0.050	(0.131)	0.040	0.010
262	21.83	0.07	0.033	(0.131)	0.027	0.007

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263  21.92     0.07      0.033       (  0.130)       0.027        0.007
264  22.00     0.07      0.033       (  0.130)       0.027        0.007
265  22.08     0.10      0.050       (  0.129)       0.040        0.010
266  22.17     0.10      0.050       (  0.129)       0.040        0.010
267  22.25     0.10      0.050       (  0.129)       0.040        0.010
268  22.33     0.07      0.033       (  0.128)       0.027        0.007
269  22.42     0.07      0.033       (  0.128)       0.027        0.007
270  22.50     0.07      0.033       (  0.127)       0.027        0.007
271  22.58     0.07      0.033       (  0.127)       0.027        0.007
272  22.67     0.07      0.033       (  0.127)       0.027        0.007
273  22.75     0.07      0.033       (  0.126)       0.027        0.007
274  22.83     0.07      0.033       (  0.126)       0.027        0.007
275  22.92     0.07      0.033       (  0.126)       0.027        0.007
276  23.00     0.07      0.033       (  0.125)       0.027        0.007
277  23.08     0.07      0.033       (  0.125)       0.027        0.007
278  23.17     0.07      0.033       (  0.125)       0.027        0.007
279  23.25     0.07      0.033       (  0.125)       0.027        0.007
280  23.33     0.07      0.033       (  0.124)       0.027        0.007
281  23.42     0.07      0.033       (  0.124)       0.027        0.007
282  23.50     0.07      0.033       (  0.124)       0.027        0.007
283  23.58     0.07      0.033       (  0.124)       0.027        0.007
284  23.67     0.07      0.033       (  0.124)       0.027        0.007
285  23.75     0.07      0.033       (  0.123)       0.027        0.007
286  23.83     0.07      0.033       (  0.123)       0.027        0.007
287  23.92     0.07      0.033       (  0.123)       0.027        0.007
288  24.00     0.07      0.033       (  0.123)       0.027        0.007
              (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    16.8
      Flood volume = Effective rainfall      1.40(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =      12.4(Ac.Ft)
      Total soil loss =      2.74(In)
      Total soil loss =    24.325(Ac.Ft)
      Total rainfall =      4.14(In)
      Flood volume =      541243.3 Cubic Feet
      Total soil loss =     1059599.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     36.928(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
---------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0017      0.21  Q         |         |         |         |
  0+15       0.0050      0.47  Q         |         |         |         |
  0+20       0.0090      0.59  Q         |         |         |         |
  0+25       0.0140      0.73  Q         |         |         |         |
  0+30       0.0202      0.90  Q         |         |         |         |
  0+35       0.0269      0.97  Q         |         |         |         |
  0+40       0.0339      1.01  VQ        |         |         |         |
  0+45       0.0410      1.03  VQ        |         |         |         |
  0+50       0.0483      1.06  VQ        |         |         |         |
  0+55       0.0563      1.16  VQ        |         |         |         |
  1+ 0       0.0652      1.30  VQ        |         |         |         |
  1+ 5       0.0744      1.33  VQ        |         |         |         |
  1+10       0.0832      1.27  VQ        |         |         |         |
  1+15       0.0912      1.16  VQ        |         |         |         |
  1+20       0.0989      1.12  VQ        |         |         |         |
  1+25       0.1065      1.10  VQ        |         |         |         |
  1+30       0.1140      1.09  VQ        |         |         |         |
  1+35       0.1214      1.08  VQ        |         |         |         |
  1+40       0.1288      1.07  VQ        |         |         |         |
  1+45       0.1362      1.07  VQ        |         |         |         |
  1+50       0.1437      1.09  VQ        |         |         |         |
  1+55       0.1518      1.17  VQ        |         |         |         |
  2+ 0       0.1607      1.30  VQ        |         |         |         |
  2+ 5       0.1701      1.35  VQ        |         |         |         |
  2+10       0.1796      1.38  VQ        |         |         |         |
  2+15       0.1892      1.40  VQ        |         |         |         |
  2+20       0.1989      1.41  VQ        |         |         |         |
```
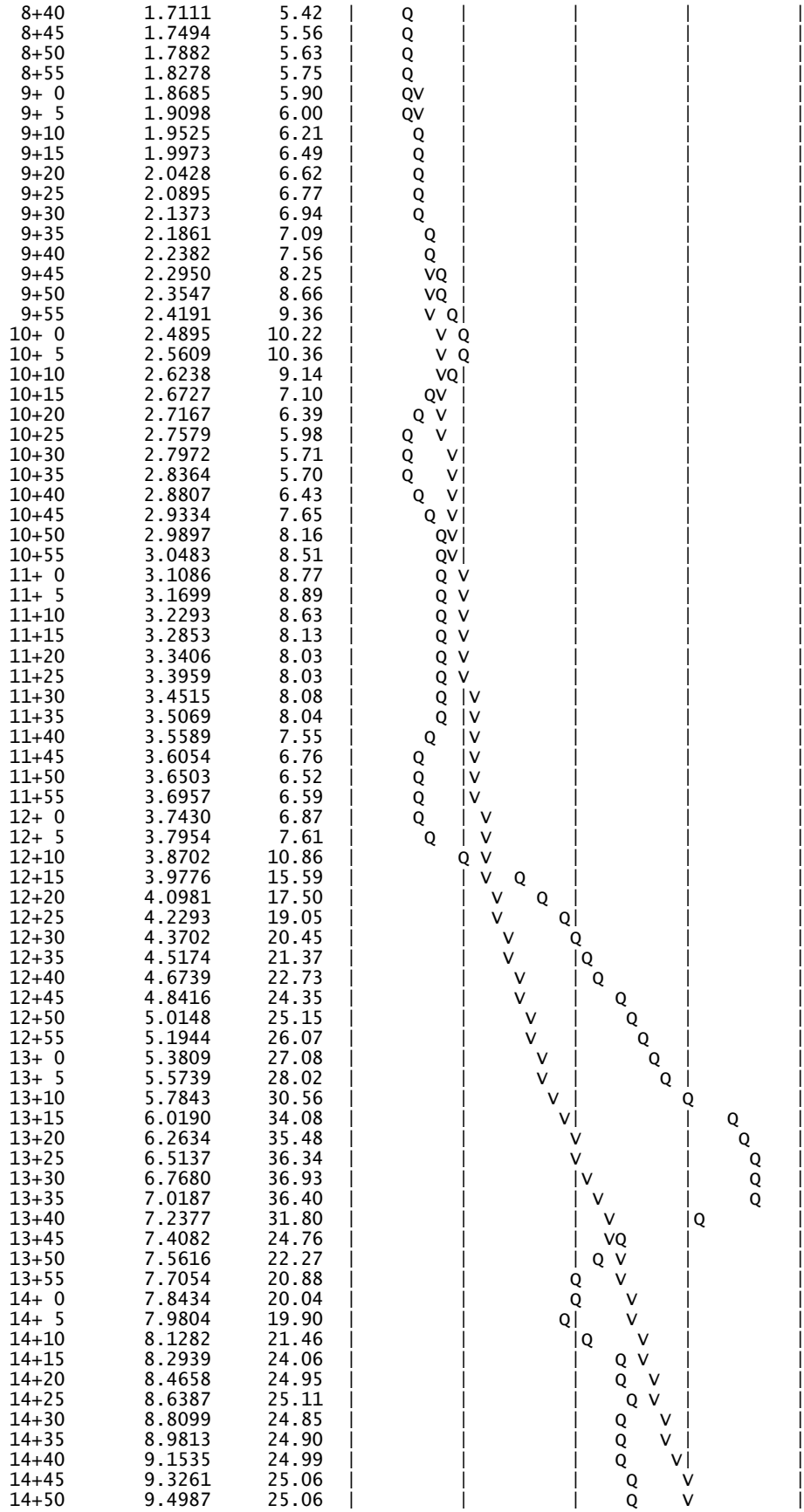
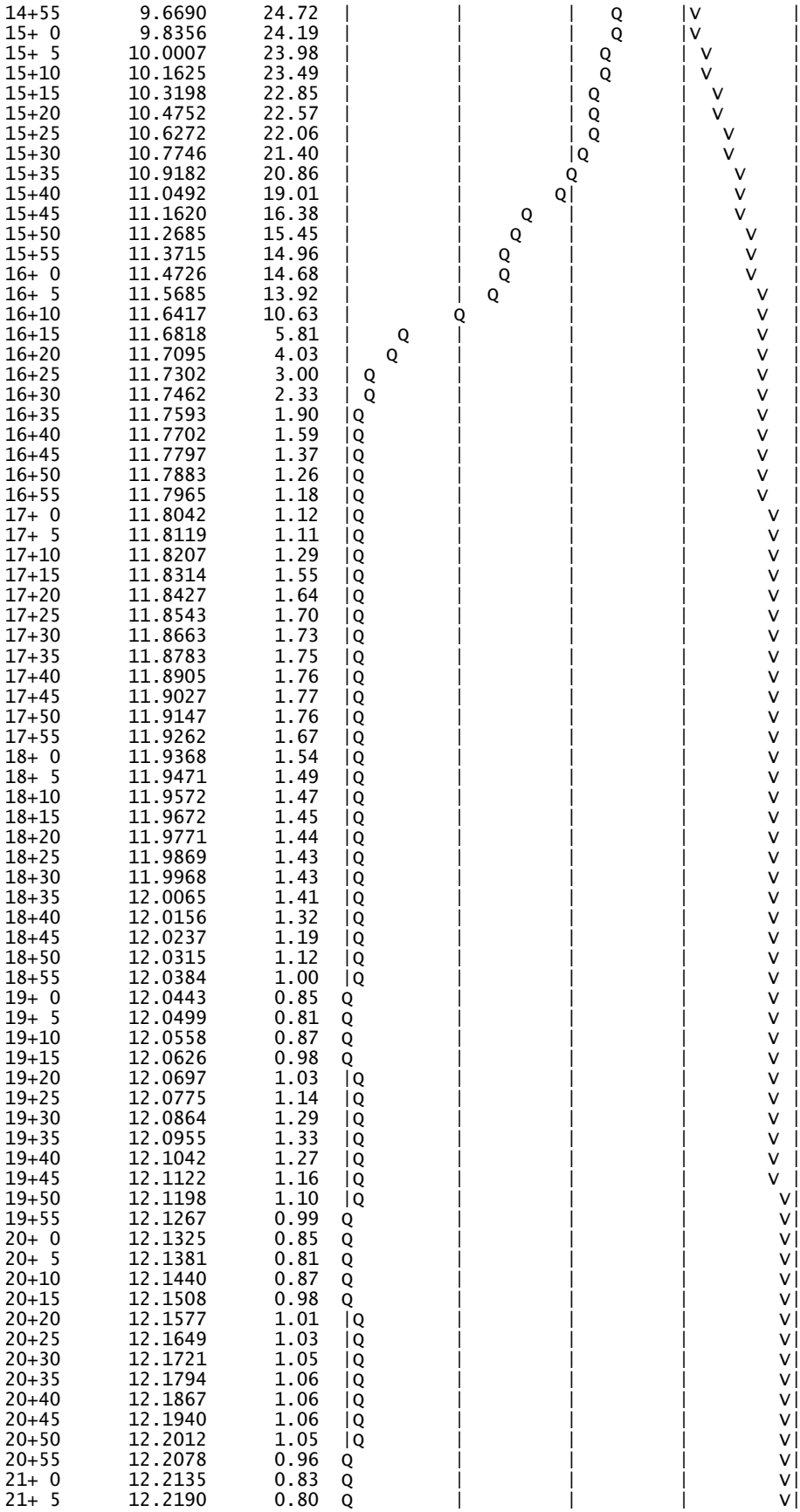

```
2+25       0.2087      1.42  VQ        |         |         |         |
2+30       0.2184      1.42  VQ        |         |         |         |
2+35       0.2283      1.44  VQ        |         |         |         |
2+40       0.2388      1.53  VQ        |         |         |         |
2+45       0.2503      1.66  VQ        |         |         |         |
2+50       0.2620      1.71  VQ        |         |         |         |
2+55       0.2740      1.74  VQ        |         |         |         |
3+ 0       0.2861      1.75  VQ        |         |         |         |
3+ 5       0.2982      1.77  VQ        |         |         |         |
3+10       0.3104      1.77  VQ        |         |         |         |
3+15       0.3226      1.77  |Q        |         |         |         |
3+20       0.3349      1.78  |Q        |         |         |         |
3+25       0.3471      1.78  |Q        |         |         |         |
3+30       0.3593      1.78  |Q        |         |         |         |
3+35       0.3716      1.78  |Q        |         |         |         |
3+40       0.3838      1.78  |Q        |         |         |         |
3+45       0.3961      1.78  |Q        |         |         |         |
3+50       0.4085      1.80  |Q        |         |         |         |
3+55       0.4214      1.88  |Q        |         |         |         |
4+ 0       0.4353      2.02  |VQ       |         |         |         |
4+ 5       0.4495      2.06  |VQ       |         |         |         |
4+10       0.4639      2.09  |VQ       |         |         |         |
4+15       0.4785      2.11  |VQ       |         |         |         |
4+20       0.4932      2.14  |VQ       |         |         |         |
4+25       0.5086      2.23  |VQ       |         |         |         |
4+30       0.5249      2.37  |VQ       |         |         |         |
4+35       0.5415      2.42  |VQ       |         |         |         |
4+40       0.5584      2.45  |VQ       |         |         |         |
4+45       0.5753      2.46  |VQ       |         |         |         |
4+50       0.5925      2.49  |VQ       |         |         |         |
4+55       0.6103      2.59  |VQ       |         |         |         |
5+ 0       0.6291      2.72  | Q       |         |         |         |
5+ 5       0.6479      2.74  | Q       |         |         |         |
5+10       0.6658      2.59  | Q       |         |         |         |
5+15       0.6819      2.35  | Q       |         |         |         |
5+20       0.6976      2.28  | Q       |         |         |         |
5+25       0.7136      2.32  | Q       |         |         |         |
5+30       0.7302      2.42  | Q       |         |         |         |
5+35       0.7472      2.46  | Q       |         |         |         |
5+40       0.7648      2.57  | Q       |         |         |         |
5+45       0.7835      2.71  | Q       |         |         |         |
5+50       0.8026      2.77  | Q       |         |         |         |
5+55       0.8219      2.80  | Q       |         |         |         |
6+ 0       0.8413      2.82  | Q       |         |         |         |
6+ 5       0.8609      2.85  | Q       |         |         |         |
6+10       0.8811      2.94  | Q       |         |         |         |
6+15       0.9023      3.08  | VQ      |         |         |         |
6+20       0.9239      3.13  | VQ      |         |         |         |
6+25       0.9456      3.16  |  Q      |         |         |         |
6+30       0.9675      3.18  |  Q      |         |         |         |
6+35       0.9896      3.21  |  Q      |         |         |         |
6+40       1.0123      3.30  |  Q      |         |         |         |
6+45       1.0359      3.43  |  Q      |         |         |         |
6+50       1.0599      3.48  |  Q      |         |         |         |
6+55       1.0841      3.51  |  Q      |         |         |         |
7+ 0       1.1085      3.53  |  Q      |         |         |         |
7+ 5       1.1329      3.54  |  Q      |         |         |         |
7+10       1.1573      3.55  |  Q      |         |         |         |
7+15       1.1818      3.55  |  Q      |         |         |         |
7+20       1.2064      3.57  |  Q      |         |         |         |
7+25       1.2316      3.66  |  Q      |         |         |         |
7+30       1.2577      3.79  |  QV     |         |         |         |
7+35       1.2843      3.86  |  QV     |         |         |         |
7+40       1.3117      3.98  |  QV     |         |         |         |
7+45       1.3401      4.13  |   Q     |         |         |         |
7+50       1.3690      4.20  |   Q     |         |         |         |
7+55       1.3988      4.32  |   Q     |         |         |         |
8+ 0       1.4296      4.48  |   Q     |         |         |         |
8+ 5       1.4611      4.57  |   Q     |         |         |         |
8+10       1.4941      4.78  |   Q     |         |         |         |
8+15       1.5290      5.07  |   VQ    |         |         |         |
8+20       1.5646      5.18  |    Q    |         |         |         |
8+25       1.6007      5.24  |    Q    |         |         |         |
8+30       1.6371      5.28  |    Q    |         |         |         |
8+35       1.6738      5.32  |    Q    |         |         |         |
```





```
  21+10      12.2250      0.86  Q          |          |          |         v|
  21+15      12.2317      0.97  Q          |          |          |         v|
  21+20      12.2385      0.99  Q          |          |          |         v|
  21+25      12.2449      0.93  Q          |          |          |         v|
  21+30      12.2505      0.81  Q          |          |          |         v|
  21+35      12.2559      0.79  Q          |          |          |         v|
  21+40      12.2618      0.85  Q          |          |          |         v|
  21+45      12.2684      0.97  Q          |          |          |         v|
  21+50      12.2753      0.99  Q          |          |          |         v|
  21+55      12.2816      0.92  Q          |          |          |         v|
  22+ 0      12.2872      0.81  Q          |          |          |         v|
  22+ 5      12.2926      0.79  Q          |          |          |         v|
  22+10      12.2985      0.85  Q          |          |          |         v|
  22+15      12.3052      0.97  Q          |          |          |         v|
  22+20      12.3120      0.99  Q          |          |          |         v|
  22+25      12.3184      0.92  Q          |          |          |         v|
  22+30      12.3240      0.81  Q          |          |          |         v|
  22+35      12.3293      0.77  Q          |          |          |         v|
  22+40      12.3344      0.75  Q          |          |          |         v|
  22+45      12.3395      0.73  Q          |          |          |         v|
  22+50      12.3444      0.72  Q          |          |          |         v|
  22+55      12.3494      0.72  Q          |          |          |         v|
  23+ 0      12.3543      0.72  Q          |          |          |         v|
  23+ 5      12.3592      0.71  Q          |          |          |         v|
  23+10      12.3641      0.71  Q          |          |          |         v|
  23+15      12.3691      0.71  Q          |          |          |         v|
  23+20      12.3740      0.71  Q          |          |          |         v|
  23+25      12.3789      0.71  Q          |          |          |         v|
  23+30      12.3838      0.71  Q          |          |          |         v|
  23+35      12.3887      0.71  Q          |          |          |         v|
  23+40      12.3936      0.71  Q          |          |          |         v|
  23+45      12.3985      0.71  Q          |          |          |         v|
  23+50      12.4034      0.71  Q          |          |          |         v|
  23+55      12.4083      0.71  Q          |          |          |         v|
  24+ 0      12.4132      0.71  Q          |          |          |         v|
  24+ 5      12.4178      0.68  Q          |          |          |         v|
  24+10      12.4213      0.50  Q          |          |          |         v|
  24+15      12.4229      0.24  Q          |          |          |         v|
  24+20      12.4239      0.14  Q          |          |          |         v|
  24+25      12.4245      0.09  Q          |          |          |         v|
  24+30      12.4248      0.05  Q          |          |          |         v|
  24+35      12.4250      0.03  Q          |          |          |         v|
  24+40      12.4251      0.02  Q          |          |          |         v|
  24+45      12.4252      0.01  Q          |          |          |         v|
  24+50      12.4252      0.01  Q          |          |          |         v|
  24+55      12.4252      0.00  Q          |          |          |         v|
  25+ 0      12.4252      0.00  Q          |          |          |          v
-------------------------------------------------------------------------------
```

EXISTING CONDITION
100-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

100-YEAR, 1-HOUR STORM EVENT

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: EX100YRA1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING CONDITION AREA A
100-YR STORM EVENT
21-0044
2022-02-10 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.55	58.52

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.25	133.00

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 1.250(In)
Areal adjustment factor = 99.90 %
Adjusted average point rain = 1.249(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

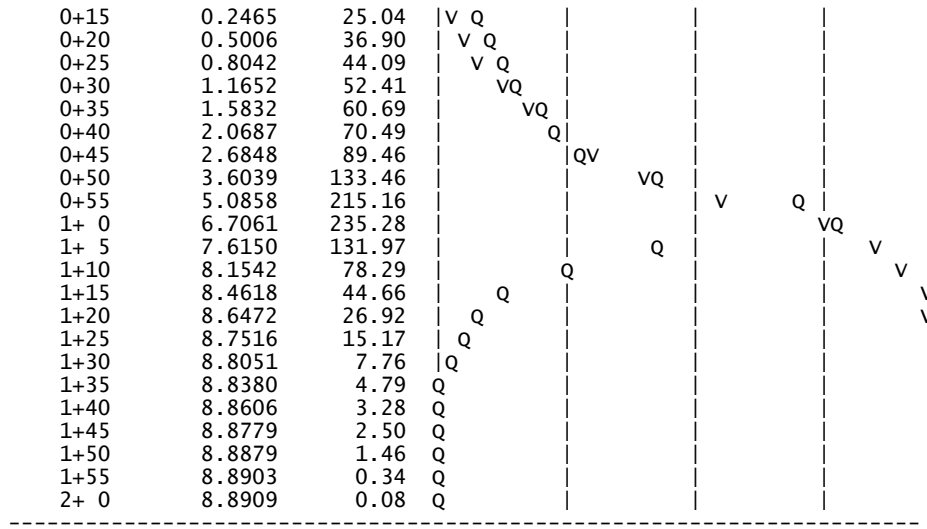
```
      77.3  77.3      0.276     0.120        0.246       1.000      0.246
                                                        Sum (F) =   0.246
      Area averaged mean soil loss (F) (In/Hr) =  0.246
      Minimum soil loss rate ((In/Hr)) =  0.123
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.800
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         53.985          4.779             5.124
          2   0.167        107.970         24.937            26.740
          3   0.250        161.956         36.901            39.569
          4   0.333        215.941         13.574            14.556
          5   0.417        269.926          7.855             8.423
          6   0.500        323.911          5.019             5.382
          7   0.583        377.896          3.120             3.345
          8   0.667        431.882          1.702             1.825
          9   0.750        485.867          0.696             0.747
         10   0.833        539.852          0.487             0.522
         11   0.917        593.837          0.367             0.393
         12   1.000        647.822          0.345             0.370
         13   1.083        701.808          0.218             0.234
                                  Sum = 100.000    Sum=     107.231
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.510          0.246    (  0.408)        0.263
   2   0.17     4.70      0.704          0.246    (  0.563)        0.458
   3   0.25     4.70      0.704          0.246    (  0.563)        0.458
   4   0.33     5.10      0.764          0.246    (  0.611)        0.518
   5   0.42     5.80      0.869          0.246    (  0.695)        0.623
   6   0.50     5.90      0.884          0.246    (  0.707)        0.638
   7   0.58     7.10      1.064          0.246    (  0.851)        0.818
   8   0.67     8.70      1.304          0.246    (  1.043)        1.058
   9   0.75    13.20      1.978          0.246    (  1.582)        1.732
  10   0.83    29.70      4.451          0.246    (  3.561)        4.205
  11   0.92     7.70      1.154          0.246    (  0.923)        0.908
  12   1.00     4.00      0.599          0.246    (  0.480)        0.353
             (Loss Rate Not Used)
     Sum =     100.0                                  Sum =    12.0
       Flood volume = Effective rainfall      1.00(In)
        times area     106.4(Ac.)/[(In)/(Ft.)] =       8.9(Ac.Ft)
       Total soil loss =      0.25(In)
       Total soil loss =     2.182(Ac.Ft)
       Total rainfall =      1.25(In)
       Flood volume =      387285.5 Cubic Feet
       Total soil loss =       95039.0 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =    235.278(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
       ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       75.0     150.0     225.0     300.0
  ------------------------------------------------------------------------
    0+ 5       0.0093      1.35  Q         |         |         |         |
    0+10       0.0740      9.40  VQ        |         |         |         |
```


0+15 0.2465 25.04
0+20 0.5006 36.90
0+25 0.8042 44.09
0+30 1.1652 52.41
0+35 1.5832 60.69
0+40 2.0687 70.49
0+45 2.6848 89.46
0+50 3.6039 133.46
0+55 5.0858 215.16
1+ 0 6.7061 235.28
1+ 5 7.6150 131.97
1+10 8.1542 78.29
1+15 8.4618 44.66
1+20 8.6472 26.92
1+25 8.7516 15.17
1+30 8.8051 7.76
1+35 8.8380 4.79
1+40 8.8606 3.28
1+45 8.8779 2.50
1+50 8.8879 1.46
1+55 8.8903 0.34
2+ 0 8.8909 0.08

100-YEAR, 3-HOUR STORM EVENT

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: EX100YRA3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING CONDITION AREA A
100-YR STORM EVENT
21-0044
2022-02-10 EP

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Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
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Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.95	101.08

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	2.05	218.12

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 2.050(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 2.049(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.320	0.246	(0.256)	0.074
2	0.17	1.30	0.320	0.246	(0.256)	0.074
3	0.25	1.10	0.270	(0.246)	0.216	0.054
4	0.33	1.50	0.369	0.246	(0.295)	0.123
5	0.42	1.50	0.369	0.246	(0.295)	0.123
6	0.50	1.80	0.443	0.246	(0.354)	0.197
7	0.58	1.50	0.369	0.246	(0.295)	0.123
8	0.67	1.80	0.443	0.246	(0.354)	0.197
9	0.75	1.80	0.443	0.246	(0.354)	0.197
10	0.83	1.50	0.369	0.246	(0.295)	0.123
11	0.92	1.60	0.393	0.246	(0.315)	0.147
12	1.00	1.80	0.443	0.246	(0.354)	0.197
13	1.08	2.20	0.541	0.246	(0.433)	0.295
14	1.17	2.20	0.541	0.246	(0.433)	0.295
15	1.25	2.20	0.541	0.246	(0.433)	0.295
16	1.33	2.00	0.492	0.246	(0.393)	0.246
17	1.42	2.60	0.639	0.246	(0.511)	0.393
18	1.50	2.70	0.664	0.246	(0.531)	0.418
19	1.58	2.40	0.590	0.246	(0.472)	0.344
20	1.67	2.70	0.664	0.246	(0.531)	0.418
21	1.75	3.30	0.811	0.246	(0.649)	0.565
22	1.83	3.10	0.762	0.246	(0.610)	0.516
23	1.92	2.90	0.713	0.246	(0.570)	0.467
24	2.00	3.00	0.738	0.246	(0.590)	0.492
25	2.08	3.10	0.762	0.246	(0.610)	0.516
26	2.17	4.20	1.033	0.246	(0.826)	0.787
27	2.25	5.00	1.229	0.246	(0.984)	0.983
28	2.33	3.50	0.861	0.246	(0.688)	0.615
29	2.42	6.80	1.672	0.246	(1.338)	1.426
30	2.50	7.30	1.795	0.246	(1.436)	1.549
31	2.58	8.20	2.016	0.246	(1.613)	1.770
32	2.67	5.90	1.451	0.246	(1.161)	1.205
33	2.75	2.00	0.492	0.246	(0.393)	0.246
34	2.83	1.80	0.443	0.246	(0.354)	0.197
35	2.92	1.80	0.443	0.246	(0.354)	0.197
36	3.00	0.60	0.148	(0.246)	0.118	0.030
		(Loss Rate Not Used)				

```
   Sum =     100.0                                    Sum =    15.9
      Flood volume = Effective rainfall      1.32(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =      11.7(Ac.Ft)
      Total soil loss =      0.73(In)
      Total soil loss =     6.429(Ac.Ft)
      Total rainfall =      2.05(In)
      Flood volume =      511366.7 Cubic Feet
      Total soil loss =      280040.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =    150.794(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
-------------------------------------------------------------------------
  0+ 5       0.0026      0.38  Q         |         |         |         |
  0+10       0.0188      2.35  Q         |         |         |         |
  0+15       0.0543      5.16  VQ        |         |         |         |
  0+20       0.0960      6.06  VQ        |         |         |         |
  0+25       0.1494      7.75  VQ        |         |         |         |
  0+30       0.2248     10.96  V Q       |         |         |         |
  0+35       0.3187     13.63  |VQ       |         |         |         |
  0+40       0.4259     15.57  |V Q      |         |         |         |
  0+45       0.5365     16.05  |V Q      |         |         |         |
  0+50       0.6631     18.38  | VQ      |         |         |         |
  0+55       0.7837     17.52  | VQ      |         |         |         |
  1+ 0       0.8942     16.05  |  Q      |         |         |         |
  1+ 5       1.0189     18.10  |  Q      |         |         |         |
  1+10       1.1745     22.60  |   Q     |         |         |         |
  1+15       1.3615     27.16  |   VQ    |         |         |         |
  1+20       1.5592     28.70  |    Q    |         |         |         |
  1+25       1.7604     29.22  |    Q    |         |         |         |
  1+30       1.9811     32.05  |     Q   |         |         |         |
  1+35       2.2419     37.86  |      Q  |         |         |         |
  1+40       2.5118     39.19  |      QV |         |         |         |
  1+45       2.7901     40.42  |       QV|         |         |         |
  1+50       3.1129     46.86  |        QV         |         |         |
  1+55       3.4723     52.18  |         QV        |         |         |
  2+ 0       3.8289     51.78  |         Q  V      |         |         |
  2+ 5       4.1832     51.45  |         Q   V     |         |         |
  2+10       4.5573     54.32  |         Q    V    |         |         |
  2+15       4.9970     63.84  |          | Q    V |         |         |
  2+20       5.5369     78.40  |          |    Q  V |         |         |
  2+25       6.1200     84.66  |          |     Q   V         |         |
  2+30       6.7930     97.72  |          |         Q|  V      |         |
  2+35       7.7031    132.14  |          |          |     Q   |         |
  2+40       8.7416    150.79  |          |          |        VQ         |
  2+45       9.7563    147.33  |          |          |        Q|  V      |
  2+50      10.4931    106.98  |          |          |Q         |    V    |
  2+55      10.9361     64.33  |          | Q        |          |      V  |
  3+ 0      11.2517     45.83  |        Q|          |          |       V |
  3+ 5      11.4648     30.93  |      Q   |          |          |        V|
  3+10      11.5816     16.97  |  Q       |          |          |        V|
  3+15      11.6458      9.32  |Q         |          |          |        V|
  3+20      11.6838      5.52  |Q         |          |          |        V|
  3+25      11.7085      3.59  Q          |          |          |        V|
  3+30      11.7238      2.23  Q          |          |          |        V|
  3+35      11.7325      1.26  Q          |          |          |        V|
  3+40      11.7365      0.57  Q          |          |          |        V|
  3+45      11.7380      0.22  Q          |          |          |        V|
  3+50      11.7389      0.13  Q          |          |          |        V|
  3+55      11.7393      0.06  Q          |          |          |        V|
  4+ 0      11.7394      0.01  Q          |          |          |        V|
-------------------------------------------------------------------------
```

100-YEAR, 6-HOUR STORM EVENT

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  02/10/22 File: EX100YRA6100.out

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------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXISTING CONDITION AREA A
100-YR STORM EVENT
21-0044
2022-02-10 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           1.40                148.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           3.00                319.20

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.000(In)

Point rain (area averaged) =    3.000(In)
Areal adjustment factor =   99.96 %
Adjusted average point rain =    2.999(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

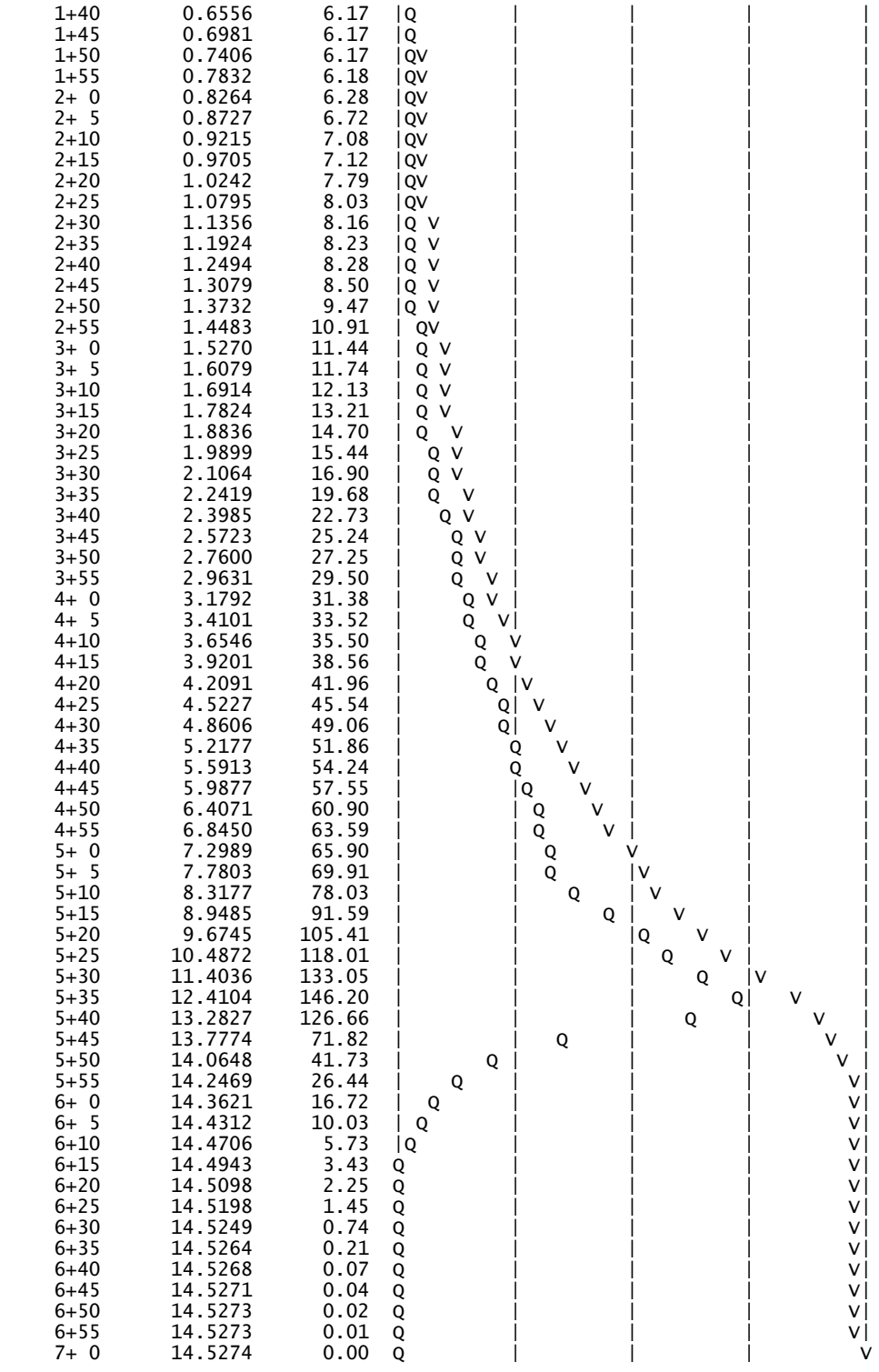
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max		Low	Effective (In/Hr)
1	0.08	0.50	0.180	(0.246)		0.144	0.036
2	0.17	0.60	0.216	(0.246)		0.173	0.043
3	0.25	0.60	0.216	(0.246)		0.173	0.043
4	0.33	0.60	0.216	(0.246)		0.173	0.043
5	0.42	0.60	0.216	(0.246)		0.173	0.043
6	0.50	0.70	0.252	(0.246)		0.202	0.050
7	0.58	0.70	0.252	(0.246)		0.202	0.050
8	0.67	0.70	0.252	(0.246)		0.202	0.050
9	0.75	0.70	0.252	(0.246)		0.202	0.050
10	0.83	0.70	0.252	(0.246)		0.202	0.050
11	0.92	0.70	0.252	(0.246)		0.202	0.050
12	1.00	0.80	0.288	(0.246)		0.230	0.058
13	1.08	0.80	0.288	(0.246)		0.230	0.058
14	1.17	0.80	0.288	(0.246)		0.230	0.058
15	1.25	0.80	0.288	(0.246)		0.230	0.058
16	1.33	0.80	0.288	(0.246)		0.230	0.058
17	1.42	0.80	0.288	(0.246)		0.230	0.058
18	1.50	0.80	0.288	(0.246)		0.230	0.058
19	1.58	0.80	0.288	(0.246)		0.230	0.058
20	1.67	0.80	0.288	(0.246)		0.230	0.058
21	1.75	0.80	0.288	(0.246)		0.230	0.058
22	1.83	0.80	0.288	(0.246)		0.230	0.058
23	1.92	0.80	0.288	(0.246)		0.230	0.058
24	2.00	0.90	0.324	0.246	(	0.259)	0.078
25	2.08	0.80	0.288	(0.246)		0.230	0.058
26	2.17	0.90	0.324	0.246	(	0.259)	0.078
27	2.25	0.90	0.324	0.246	(	0.259)	0.078
28	2.33	0.90	0.324	0.246	(	0.259)	0.078
29	2.42	0.90	0.324	0.246	(	0.259)	0.078
30	2.50	0.90	0.324	0.246	(	0.259)	0.078
31	2.58	0.90	0.324	0.246	(	0.259)	0.078
32	2.67	0.90	0.324	0.246	(	0.259)	0.078
33	2.75	1.00	0.360	0.246	(	0.288)	0.114
34	2.83	1.00	0.360	0.246	(	0.288)	0.114
35	2.92	1.00	0.360	0.246	(	0.288)	0.114
36	3.00	1.00	0.360	0.246	(	0.288)	0.114
37	3.08	1.00	0.360	0.246	(	0.288)	0.114

```
38   3.17     1.10      0.396          0.246    (  0.317)        0.150
39   3.25     1.10      0.396          0.246    (  0.317)        0.150
40   3.33     1.10      0.396          0.246    (  0.317)        0.150
41   3.42     1.20      0.432          0.246    (  0.345)        0.186
42   3.50     1.30      0.468          0.246    (  0.374)        0.222
43   3.58     1.40      0.504          0.246    (  0.403)        0.258
44   3.67     1.40      0.504          0.246    (  0.403)        0.258
45   3.75     1.50      0.540          0.246    (  0.432)        0.294
46   3.83     1.50      0.540          0.246    (  0.432)        0.294
47   3.92     1.60      0.576          0.246    (  0.461)        0.330
48   4.00     1.60      0.576          0.246    (  0.461)        0.330
49   4.08     1.70      0.612          0.246    (  0.489)        0.366
50   4.17     1.80      0.648          0.246    (  0.518)        0.402
51   4.25     1.90      0.684          0.246    (  0.547)        0.438
52   4.33     2.00      0.720          0.246    (  0.576)        0.474
53   4.42     2.10      0.756          0.246    (  0.605)        0.510
54   4.50     2.10      0.756          0.246    (  0.605)        0.510
55   4.58     2.20      0.792          0.246    (  0.633)        0.546
56   4.67     2.30      0.828          0.246    (  0.662)        0.582
57   4.75     2.40      0.864          0.246    (  0.691)        0.618
58   4.83     2.40      0.864          0.246    (  0.691)        0.618
59   4.92     2.50      0.900          0.246    (  0.720)        0.654
60   5.00     2.60      0.936          0.246    (  0.749)        0.690
61   5.08     3.10      1.116          0.246    (  0.892)        0.870
62   5.17     3.60      1.296          0.246    (  1.036)        1.049
63   5.25     3.90      1.403          0.246    (  1.123)        1.157
64   5.33     4.20      1.511          0.246    (  1.209)        1.265
65   5.42     4.70      1.691          0.246    (  1.353)        1.445
66   5.50     5.60      2.015          0.246    (  1.612)        1.769
67   5.58     1.90      0.684          0.246    (  0.547)        0.438
68   5.67     0.90      0.324          0.246    (  0.259)        0.078
69   5.75     0.60      0.216       (  0.246)       0.173        0.043
70   5.83     0.50      0.180       (  0.246)       0.144        0.036
71   5.92     0.30      0.108       (  0.246)       0.086        0.022
72   6.00     0.20      0.072       (  0.246)       0.058        0.014
              (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    19.7
      Flood volume = Effective rainfall      1.64(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =      14.5(Ac.Ft)
      Total soil loss =      1.36(In)
      Total soil loss =    12.063(Ac.Ft)
      Total rainfall =      3.00(In)
      Flood volume =      632811.9 Cubic Feet
      Total soil loss =      525460.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =    146.196(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
-------------------------------------------------------------------------
  0+ 5       0.0013      0.18  Q         |         |         |         |
  0+10       0.0094      1.18  Q         |         |         |         |
  0+15       0.0287      2.80  Q         |         |         |         |
  0+20       0.0536      3.61  Q         |         |         |         |
  0+25       0.0813      4.02  Q         |         |         |         |
  0+30       0.1109      4.31  Q         |         |         |         |
  0+35       0.1430      4.66  Q         |         |         |         |
  0+40       0.1777      5.04  VQ        |         |         |         |
  0+45       0.2134      5.18  VQ        |         |         |         |
  0+50       0.2497      5.27  VQ        |         |         |         |
  0+55       0.2863      5.32  VQ        |         |         |         |
  1+ 0       0.3235      5.40  VQ        |         |         |         |
  1+ 5       0.3622      5.62  VQ        |         |         |         |
  1+10       0.4029      5.91  |Q        |         |         |         |
  1+15       0.4444      6.02  |Q        |         |         |         |
  1+20       0.4862      6.08  |Q        |         |         |         |
  1+25       0.5284      6.12  |Q        |         |         |         |
  1+30       0.5707      6.15  |Q        |         |         |         |
  1+35       0.6132      6.16  |Q        |         |         |         |
```



100-YEAR, 24-HOUR STORM EVENT

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: EX100YRA24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING CONDITION AREA A
100-YR STORM EVENT
21-0044
2022-02-10 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	2.50	266.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 6.500(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 6.499(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.052	(0.436)	0.042	0.010
2	0.17	0.07	0.052	(0.435)	0.042	0.010
3	0.25	0.07	0.052	(0.433)	0.042	0.010
4	0.33	0.10	0.078	(0.431)	0.062	0.016
5	0.42	0.10	0.078	(0.429)	0.062	0.016
6	0.50	0.10	0.078	(0.428)	0.062	0.016
7	0.58	0.10	0.078	(0.426)	0.062	0.016
8	0.67	0.10	0.078	(0.424)	0.062	0.016
9	0.75	0.10	0.078	(0.423)	0.062	0.016
10	0.83	0.13	0.104	(0.421)	0.083	0.021
11	0.92	0.13	0.104	(0.419)	0.083	0.021
12	1.00	0.13	0.104	(0.418)	0.083	0.021
13	1.08	0.10	0.078	(0.416)	0.062	0.016
14	1.17	0.10	0.078	(0.415)	0.062	0.016
15	1.25	0.10	0.078	(0.413)	0.062	0.016
16	1.33	0.10	0.078	(0.411)	0.062	0.016
17	1.42	0.10	0.078	(0.410)	0.062	0.016
18	1.50	0.10	0.078	(0.408)	0.062	0.016
19	1.58	0.10	0.078	(0.406)	0.062	0.016
20	1.67	0.10	0.078	(0.405)	0.062	0.016
21	1.75	0.10	0.078	(0.403)	0.062	0.016
22	1.83	0.13	0.104	(0.401)	0.083	0.021
23	1.92	0.13	0.104	(0.400)	0.083	0.021
24	2.00	0.13	0.104	(0.398)	0.083	0.021
25	2.08	0.13	0.104	(0.397)	0.083	0.021
26	2.17	0.13	0.104	(0.395)	0.083	0.021
27	2.25	0.13	0.104	(0.393)	0.083	0.021
28	2.33	0.13	0.104	(0.392)	0.083	0.021
29	2.42	0.13	0.104	(0.390)	0.083	0.021
30	2.50	0.13	0.104	(0.389)	0.083	0.021
31	2.58	0.17	0.130	(0.387)	0.104	0.026
32	2.67	0.17	0.130	(0.385)	0.104	0.026
33	2.75	0.17	0.130	(0.384)	0.104	0.026
34	2.83	0.17	0.130	(0.382)	0.104	0.026
35	2.92	0.17	0.130	(0.381)	0.104	0.026
36	3.00	0.17	0.130	(0.379)	0.104	0.026
37	3.08	0.17	0.130	(0.378)	0.104	0.026

38	3.17	0.17	0.130	(	0.376)	0.104		0.026
39	3.25	0.17	0.130	(	0.374)	0.104		0.026
40	3.33	0.17	0.130	(	0.373)	0.104		0.026
41	3.42	0.17	0.130	(	0.371)	0.104		0.026
42	3.50	0.17	0.130	(	0.370)	0.104		0.026
43	3.58	0.17	0.130	(	0.368)	0.104		0.026
44	3.67	0.17	0.130	(	0.367)	0.104		0.026
45	3.75	0.17	0.130	(	0.365)	0.104		0.026
46	3.83	0.20	0.156	(	0.364)	0.125		0.031
47	3.92	0.20	0.156	(	0.362)	0.125		0.031
48	4.00	0.20	0.156	(	0.361)	0.125		0.031
49	4.08	0.20	0.156	(	0.359)	0.125		0.031
50	4.17	0.20	0.156	(	0.357)	0.125		0.031
51	4.25	0.20	0.156	(	0.356)	0.125		0.031
52	4.33	0.23	0.182	(	0.354)	0.146		0.036
53	4.42	0.23	0.182	(	0.353)	0.146		0.036
54	4.50	0.23	0.182	(	0.351)	0.146		0.036
55	4.58	0.23	0.182	(	0.350)	0.146		0.036
56	4.67	0.23	0.182	(	0.348)	0.146		0.036
57	4.75	0.23	0.182	(	0.347)	0.146		0.036
58	4.83	0.27	0.208	(	0.345)	0.166		0.042
59	4.92	0.27	0.208	(	0.344)	0.166		0.042
60	5.00	0.27	0.208	(	0.342)	0.166		0.042
61	5.08	0.20	0.156	(	0.341)	0.125		0.031
62	5.17	0.20	0.156	(	0.339)	0.125		0.031
63	5.25	0.20	0.156	(	0.338)	0.125		0.031
64	5.33	0.23	0.182	(	0.336)	0.146		0.036
65	5.42	0.23	0.182	(	0.335)	0.146		0.036
66	5.50	0.23	0.182	(	0.334)	0.146		0.036
67	5.58	0.27	0.208	(	0.332)	0.166		0.042
68	5.67	0.27	0.208	(	0.331)	0.166		0.042
69	5.75	0.27	0.208	(	0.329)	0.166		0.042
70	5.83	0.27	0.208	(	0.328)	0.166		0.042
71	5.92	0.27	0.208	(	0.326)	0.166		0.042
72	6.00	0.27	0.208	(	0.325)	0.166		0.042
73	6.08	0.30	0.234	(	0.323)	0.187		0.047
74	6.17	0.30	0.234	(	0.322)	0.187		0.047
75	6.25	0.30	0.234	(	0.320)	0.187		0.047
76	6.33	0.30	0.234	(	0.319)	0.187		0.047
77	6.42	0.30	0.234	(	0.318)	0.187		0.047
78	6.50	0.30	0.234	(	0.316)	0.187		0.047
79	6.58	0.33	0.260	(	0.315)	0.208		0.052
80	6.67	0.33	0.260	(	0.313)	0.208		0.052
81	6.75	0.33	0.260	(	0.312)	0.208		0.052
82	6.83	0.33	0.260	(	0.311)	0.208		0.052
83	6.92	0.33	0.260	(	0.309)	0.208		0.052
84	7.00	0.33	0.260	(	0.308)	0.208		0.052
85	7.08	0.33	0.260	(	0.306)	0.208		0.052
86	7.17	0.33	0.260	(	0.305)	0.208		0.052
87	7.25	0.33	0.260	(	0.304)	0.208		0.052
88	7.33	0.37	0.286	(	0.302)	0.229		0.057
89	7.42	0.37	0.286	(	0.301)	0.229		0.057
90	7.50	0.37	0.286	(	0.299)	0.229		0.057
91	7.58	0.40	0.312	(	0.298)	0.250		0.062
92	7.67	0.40	0.312	(	0.297)	0.250		0.062
93	7.75	0.40	0.312	(	0.295)	0.250		0.062
94	7.83	0.43	0.338	(	0.294)	0.270		0.068
95	7.92	0.43	0.338	(	0.293)	0.270		0.068
96	8.00	0.43	0.338	(	0.291)	0.270		0.068
97	8.08	0.50	0.390		0.290	(	0.312)	0.100
98	8.17	0.50	0.390		0.289	(	0.312)	0.101
99	8.25	0.50	0.390		0.287	(	0.312)	0.103
100	8.33	0.50	0.390		0.286	(	0.312)	0.104
101	8.42	0.50	0.390		0.284	(	0.312)	0.105
102	8.50	0.50	0.390		0.283	(	0.312)	0.107
103	8.58	0.53	0.416		0.282	(	0.333)	0.134
104	8.67	0.53	0.416		0.281	(	0.333)	0.135
105	8.75	0.53	0.416		0.279	(	0.333)	0.137
106	8.83	0.57	0.442		0.278	(	0.354)	0.164
107	8.92	0.57	0.442		0.277	(	0.354)	0.165
108	9.00	0.57	0.442		0.275	(	0.354)	0.167
109	9.08	0.63	0.494		0.274	(	0.395)	0.220
110	9.17	0.63	0.494		0.273	(	0.395)	0.221
111	9.25	0.63	0.494		0.271	(	0.395)	0.223
112	9.33	0.67	0.520		0.270	(	0.416)	0.250

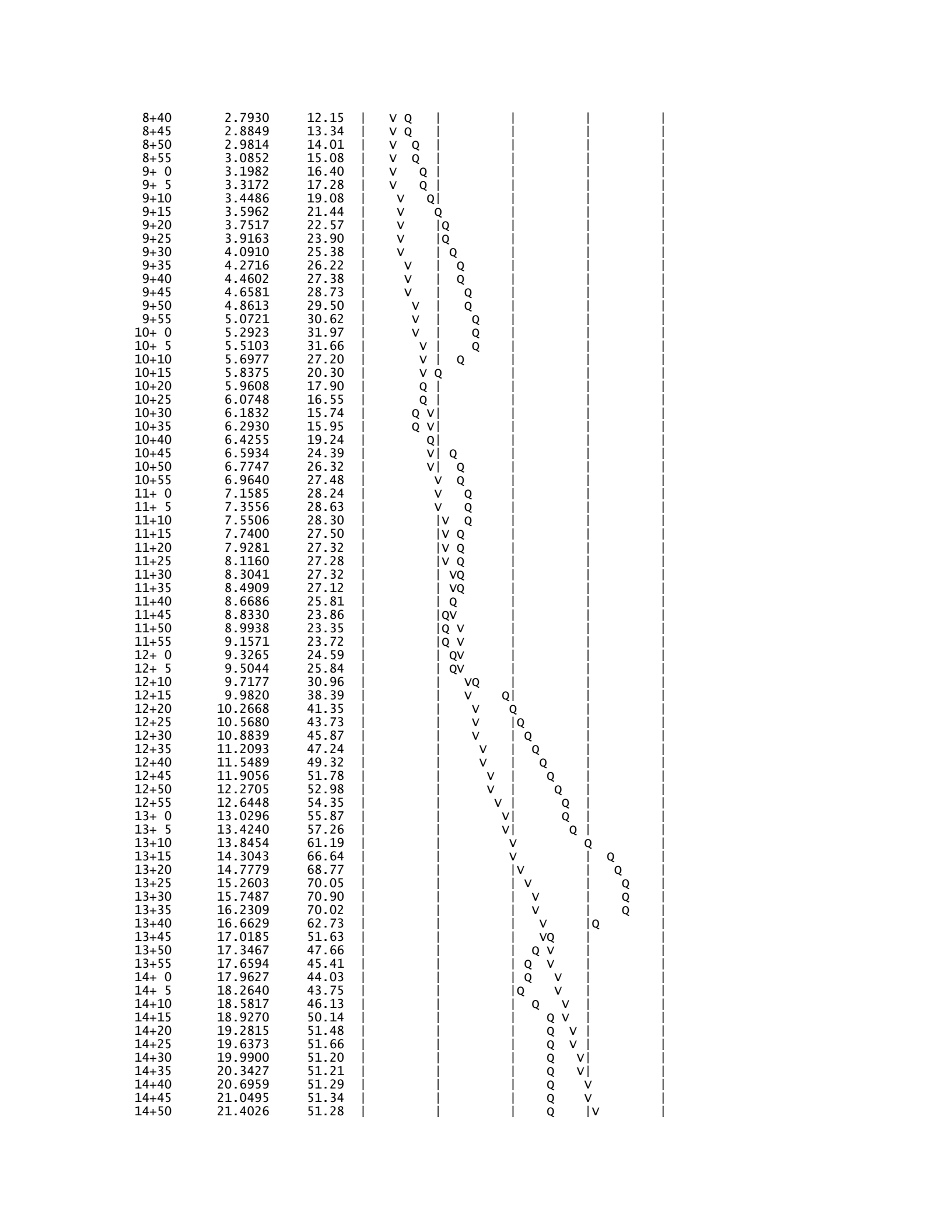
113	9.42	0.67	0.520	0.269	(	0.416)	0.251
114	9.50	0.67	0.520	0.267	(	0.416)	0.252
115	9.58	0.70	0.546	0.266	(	0.437)	0.280
116	9.67	0.70	0.546	0.265	(	0.437)	0.281
117	9.75	0.70	0.546	0.264	(	0.437)	0.282
118	9.83	0.73	0.572	0.262	(	0.458)	0.310
119	9.92	0.73	0.572	0.261	(	0.458)	0.311
120	10.00	0.73	0.572	0.260	(	0.458)	0.312
121	10.08	0.50	0.390	0.259	(	0.312)	0.131
122	10.17	0.50	0.390	0.257	(	0.312)	0.133
123	10.25	0.50	0.390	0.256	(	0.312)	0.134
124	10.33	0.50	0.390	0.255	(	0.312)	0.135
125	10.42	0.50	0.390	0.254	(	0.312)	0.136
126	10.50	0.50	0.390	0.252	(	0.312)	0.138
127	10.58	0.67	0.520	0.251	(	0.416)	0.269
128	10.67	0.67	0.520	0.250	(	0.416)	0.270
129	10.75	0.67	0.520	0.249	(	0.416)	0.271
130	10.83	0.67	0.520	0.247	(	0.416)	0.272
131	10.92	0.67	0.520	0.246	(	0.416)	0.274
132	11.00	0.67	0.520	0.245	(	0.416)	0.275
133	11.08	0.63	0.494	0.244	(	0.395)	0.250
134	11.17	0.63	0.494	0.243	(	0.395)	0.251
135	11.25	0.63	0.494	0.241	(	0.395)	0.252
136	11.33	0.63	0.494	0.240	(	0.395)	0.254
137	11.42	0.63	0.494	0.239	(	0.395)	0.255
138	11.50	0.63	0.494	0.238	(	0.395)	0.256
139	11.58	0.57	0.442	0.237	(	0.354)	0.205
140	11.67	0.57	0.442	0.236	(	0.354)	0.206
141	11.75	0.57	0.442	0.234	(	0.354)	0.208
142	11.83	0.60	0.468	0.233	(	0.374)	0.235
143	11.92	0.60	0.468	0.232	(	0.374)	0.236
144	12.00	0.60	0.468	0.231	(	0.374)	0.237
145	12.08	0.83	0.650	0.230	(	0.520)	0.420
146	12.17	0.83	0.650	0.229	(	0.520)	0.421
147	12.25	0.83	0.650	0.227	(	0.520)	0.422
148	12.33	0.87	0.676	0.226	(	0.541)	0.450
149	12.42	0.87	0.676	0.225	(	0.541)	0.451
150	12.50	0.87	0.676	0.224	(	0.541)	0.452
151	12.58	0.93	0.728	0.223	(	0.582)	0.505
152	12.67	0.93	0.728	0.222	(	0.582)	0.506
153	12.75	0.93	0.728	0.221	(	0.582)	0.507
154	12.83	0.97	0.754	0.220	(	0.603)	0.534
155	12.92	0.97	0.754	0.218	(	0.603)	0.535
156	13.00	0.97	0.754	0.217	(	0.603)	0.537
157	13.08	1.13	0.884	0.216	(	0.707)	0.668
158	13.17	1.13	0.884	0.215	(	0.707)	0.669
159	13.25	1.13	0.884	0.214	(	0.707)	0.670
160	13.33	1.13	0.884	0.213	(	0.707)	0.671
161	13.42	1.13	0.884	0.212	(	0.707)	0.672
162	13.50	1.13	0.884	0.211	(	0.707)	0.673
163	13.58	0.77	0.598	0.210	(	0.478)	0.388
164	13.67	0.77	0.598	0.209	(	0.478)	0.389
165	13.75	0.77	0.598	0.208	(	0.478)	0.390
166	13.83	0.77	0.598	0.206	(	0.478)	0.391
167	13.92	0.77	0.598	0.205	(	0.478)	0.392
168	14.00	0.77	0.598	0.204	(	0.478)	0.393
169	14.08	0.90	0.702	0.203	(	0.561)	0.499
170	14.17	0.90	0.702	0.202	(	0.561)	0.500
171	14.25	0.90	0.702	0.201	(	0.561)	0.501
172	14.33	0.87	0.676	0.200	(	0.541)	0.476
173	14.42	0.87	0.676	0.199	(	0.541)	0.477
174	14.50	0.87	0.676	0.198	(	0.541)	0.478
175	14.58	0.87	0.676	0.197	(	0.541)	0.479
176	14.67	0.87	0.676	0.196	(	0.541)	0.480
177	14.75	0.87	0.676	0.195	(	0.541)	0.481
178	14.83	0.83	0.650	0.194	(	0.520)	0.456
179	14.92	0.83	0.650	0.193	(	0.520)	0.457
180	15.00	0.83	0.650	0.192	(	0.520)	0.458
181	15.08	0.80	0.624	0.191	(	0.499)	0.433
182	15.17	0.80	0.624	0.190	(	0.499)	0.434
183	15.25	0.80	0.624	0.189	(	0.499)	0.435
184	15.33	0.77	0.598	0.188	(	0.478)	0.410
185	15.42	0.77	0.598	0.187	(	0.478)	0.411
186	15.50	0.77	0.598	0.186	(	0.478)	0.412
187	15.58	0.63	0.494	0.185	(	0.395)	0.309

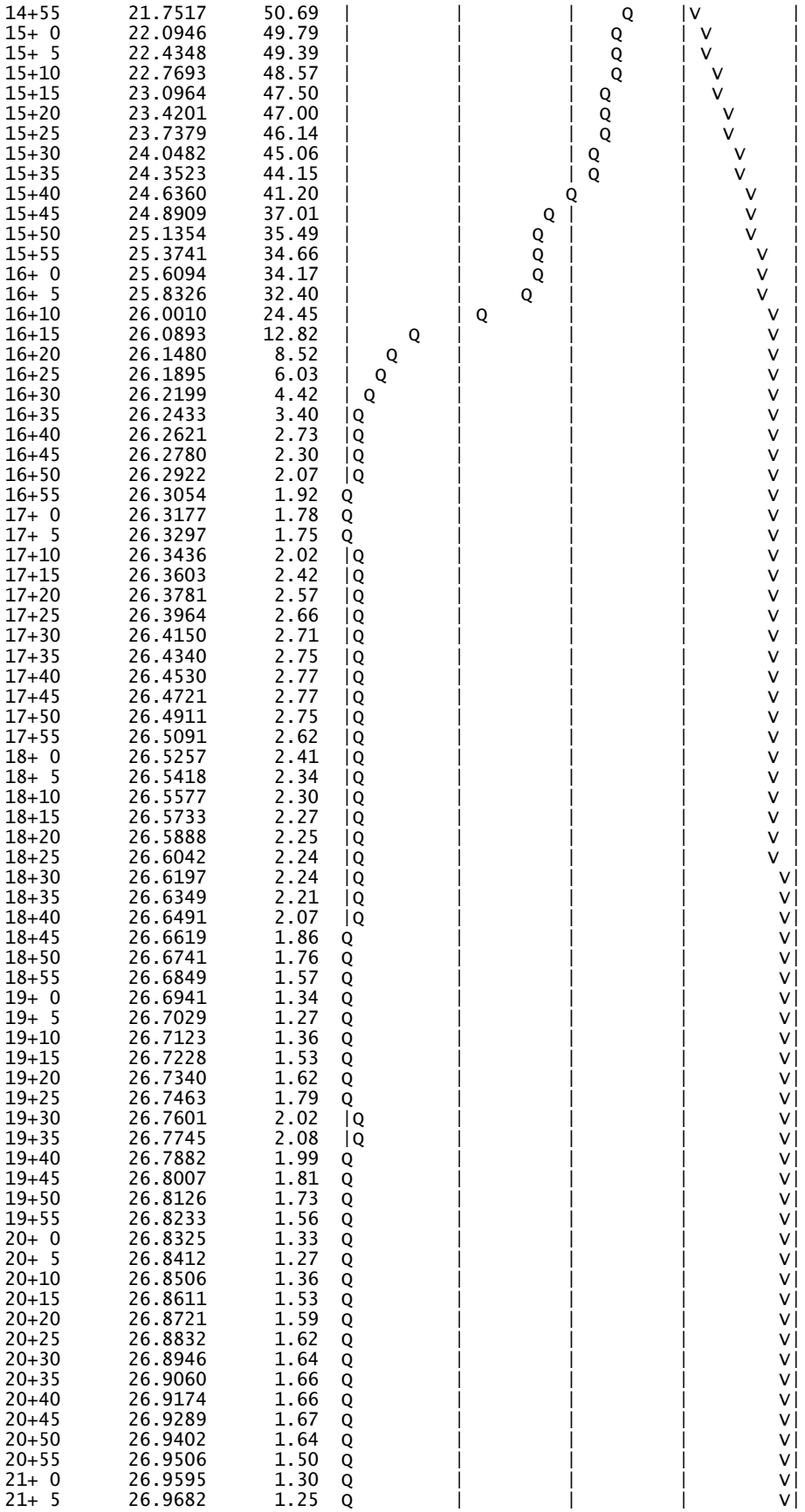
188	15.67	0.63	0.494	0.184	(0.395)	0.309
189	15.75	0.63	0.494	0.184	(0.395)	0.310
190	15.83	0.63	0.494	0.183	(0.395)	0.311
191	15.92	0.63	0.494	0.182	(0.395)	0.312
192	16.00	0.63	0.494	0.181	(0.395)	0.313
193	16.08	0.13	0.104	(0.180)	0.083	0.021
194	16.17	0.13	0.104	(0.179)	0.083	0.021
195	16.25	0.13	0.104	(0.178)	0.083	0.021
196	16.33	0.13	0.104	(0.177)	0.083	0.021
197	16.42	0.13	0.104	(0.176)	0.083	0.021
198	16.50	0.13	0.104	(0.175)	0.083	0.021
199	16.58	0.10	0.078	(0.174)	0.062	0.016
200	16.67	0.10	0.078	(0.173)	0.062	0.016
201	16.75	0.10	0.078	(0.173)	0.062	0.016
202	16.83	0.10	0.078	(0.172)	0.062	0.016
203	16.92	0.10	0.078	(0.171)	0.062	0.016
204	17.00	0.10	0.078	(0.170)	0.062	0.016
205	17.08	0.17	0.130	(0.169)	0.104	0.026
206	17.17	0.17	0.130	(0.168)	0.104	0.026
207	17.25	0.17	0.130	(0.167)	0.104	0.026
208	17.33	0.17	0.130	(0.167)	0.104	0.026
209	17.42	0.17	0.130	(0.166)	0.104	0.026
210	17.50	0.17	0.130	(0.165)	0.104	0.026
211	17.58	0.17	0.130	(0.164)	0.104	0.026
212	17.67	0.17	0.130	(0.163)	0.104	0.026
213	17.75	0.17	0.130	(0.162)	0.104	0.026
214	17.83	0.13	0.104	(0.162)	0.083	0.021
215	17.92	0.13	0.104	(0.161)	0.083	0.021
216	18.00	0.13	0.104	(0.160)	0.083	0.021
217	18.08	0.13	0.104	(0.159)	0.083	0.021
218	18.17	0.13	0.104	(0.158)	0.083	0.021
219	18.25	0.13	0.104	(0.158)	0.083	0.021
220	18.33	0.13	0.104	(0.157)	0.083	0.021
221	18.42	0.13	0.104	(0.156)	0.083	0.021
222	18.50	0.13	0.104	(0.155)	0.083	0.021
223	18.58	0.10	0.078	(0.155)	0.062	0.016
224	18.67	0.10	0.078	(0.154)	0.062	0.016
225	18.75	0.10	0.078	(0.153)	0.062	0.016
226	18.83	0.07	0.052	(0.152)	0.042	0.010
227	18.92	0.07	0.052	(0.152)	0.042	0.010
228	19.00	0.07	0.052	(0.151)	0.042	0.010
229	19.08	0.10	0.078	(0.150)	0.062	0.016
230	19.17	0.10	0.078	(0.150)	0.062	0.016
231	19.25	0.10	0.078	(0.149)	0.062	0.016
232	19.33	0.13	0.104	(0.148)	0.083	0.021
233	19.42	0.13	0.104	(0.147)	0.083	0.021
234	19.50	0.13	0.104	(0.147)	0.083	0.021
235	19.58	0.10	0.078	(0.146)	0.062	0.016
236	19.67	0.10	0.078	(0.145)	0.062	0.016
237	19.75	0.10	0.078	(0.145)	0.062	0.016
238	19.83	0.07	0.052	(0.144)	0.042	0.010
239	19.92	0.07	0.052	(0.144)	0.042	0.010
240	20.00	0.07	0.052	(0.143)	0.042	0.010
241	20.08	0.10	0.078	(0.142)	0.062	0.016
242	20.17	0.10	0.078	(0.142)	0.062	0.016
243	20.25	0.10	0.078	(0.141)	0.062	0.016
244	20.33	0.10	0.078	(0.140)	0.062	0.016
245	20.42	0.10	0.078	(0.140)	0.062	0.016
246	20.50	0.10	0.078	(0.139)	0.062	0.016
247	20.58	0.10	0.078	(0.139)	0.062	0.016
248	20.67	0.10	0.078	(0.138)	0.062	0.016
249	20.75	0.10	0.078	(0.137)	0.062	0.016
250	20.83	0.07	0.052	(0.137)	0.042	0.010
251	20.92	0.07	0.052	(0.136)	0.042	0.010
252	21.00	0.07	0.052	(0.136)	0.042	0.010
253	21.08	0.10	0.078	(0.135)	0.062	0.016
254	21.17	0.10	0.078	(0.135)	0.062	0.016
255	21.25	0.10	0.078	(0.134)	0.062	0.016
256	21.33	0.07	0.052	(0.134)	0.042	0.010
257	21.42	0.07	0.052	(0.133)	0.042	0.010
258	21.50	0.07	0.052	(0.133)	0.042	0.010
259	21.58	0.10	0.078	(0.132)	0.062	0.016
260	21.67	0.10	0.078	(0.132)	0.062	0.016
261	21.75	0.10	0.078	(0.131)	0.062	0.016
262	21.83	0.07	0.052	(0.131)	0.042	0.010

```
263  21.92     0.07      0.052       (  0.130)       0.042        0.010
264  22.00     0.07      0.052       (  0.130)       0.042        0.010
265  22.08     0.10      0.078       (  0.129)       0.062        0.016
266  22.17     0.10      0.078       (  0.129)       0.062        0.016
267  22.25     0.10      0.078       (  0.129)       0.062        0.016
268  22.33     0.07      0.052       (  0.128)       0.042        0.010
269  22.42     0.07      0.052       (  0.128)       0.042        0.010
270  22.50     0.07      0.052       (  0.127)       0.042        0.010
271  22.58     0.07      0.052       (  0.127)       0.042        0.010
272  22.67     0.07      0.052       (  0.127)       0.042        0.010
273  22.75     0.07      0.052       (  0.126)       0.042        0.010
274  22.83     0.07      0.052       (  0.126)       0.042        0.010
275  22.92     0.07      0.052       (  0.126)       0.042        0.010
276  23.00     0.07      0.052       (  0.125)       0.042        0.010
277  23.08     0.07      0.052       (  0.125)       0.042        0.010
278  23.17     0.07      0.052       (  0.125)       0.042        0.010
279  23.25     0.07      0.052       (  0.125)       0.042        0.010
280  23.33     0.07      0.052       (  0.124)       0.042        0.010
281  23.42     0.07      0.052       (  0.124)       0.042        0.010
282  23.50     0.07      0.052       (  0.124)       0.042        0.010
283  23.58     0.07      0.052       (  0.124)       0.042        0.010
284  23.67     0.07      0.052       (  0.124)       0.042        0.010
285  23.75     0.07      0.052       (  0.123)       0.042        0.010
286  23.83     0.07      0.052       (  0.123)       0.042        0.010
287  23.92     0.07      0.052       (  0.123)       0.042        0.010
288  24.00     0.07      0.052       (  0.123)       0.042        0.010
              (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    36.9
      Flood volume = Effective rainfall      3.08(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =      27.3(Ac.Ft)
      Total soil loss =      3.42(In)
      Total soil loss =    30.330(Ac.Ft)
      Total rainfall =      6.50(In)
      Flood volume =     1188816.4 Cubic Feet
      Total soil loss =     1321169.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     70.904(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.0      40.0      60.0      80.0
---------------------------------------------------------------------------
  0+ 5       0.0004      0.05  Q         |         |         |         |
  0+10       0.0027      0.33  Q         |         |         |         |
  0+15       0.0078      0.74  Q         |         |         |         |
  0+20       0.0141      0.92  Q         |         |         |         |
  0+25       0.0220      1.15  Q         |         |         |         |
  0+30       0.0317      1.41  Q         |         |         |         |
  0+35       0.0422      1.52  Q         |         |         |         |
  0+40       0.0531      1.58  Q         |         |         |         |
  0+45       0.0642      1.62  Q         |         |         |         |
  0+50       0.0757      1.67  Q         |         |         |         |
  0+55       0.0883      1.82  Q         |         |         |         |
  1+ 0       0.1023      2.03  VQ        |         |         |         |
  1+ 5       0.1167      2.09  VQ        |         |         |         |
  1+10       0.1304      2.00  Q         |         |         |         |
  1+15       0.1430      1.82  Q         |         |         |         |
  1+20       0.1551      1.76  Q         |         |         |         |
  1+25       0.1670      1.73  Q         |         |         |         |
  1+30       0.1787      1.70  Q         |         |         |         |
  1+35       0.1904      1.69  Q         |         |         |         |
  1+40       0.2019      1.68  Q         |         |         |         |
  1+45       0.2135      1.68  Q         |         |         |         |
  1+50       0.2253      1.71  Q         |         |         |         |
  1+55       0.2380      1.84  Q         |         |         |         |
  2+ 0       0.2520      2.05  VQ        |         |         |         |
  2+ 5       0.2666      2.12  VQ        |         |         |         |
  2+10       0.2816      2.16  VQ        |         |         |         |
  2+15       0.2967      2.19  VQ        |         |         |         |
  2+20       0.3119      2.21  VQ        |         |         |         |
```

```
2+25       0.3272      2.22  VQ        |         |         |         |
2+30       0.3425      2.22  VQ        |         |         |         |
2+35       0.3580      2.25  VQ        |         |         |         |
2+40       0.3745      2.39  VQ        |         |         |         |
2+45       0.3924      2.60  VQ        |         |         |         |
2+50       0.4108      2.68  VQ        |         |         |         |
2+55       0.4296      2.72  VQ        |         |         |         |
3+ 0       0.4485      2.75  VQ        |         |         |         |
3+ 5       0.4676      2.77  VQ        |         |         |         |
3+10       0.4867      2.78  VQ        |         |         |         |
3+15       0.5059      2.78  VQ        |         |         |         |
3+20       0.5250      2.78  VQ        |         |         |         |
3+25       0.5442      2.79  VQ        |         |         |         |
3+30       0.5634      2.79  VQ        |         |         |         |
3+35       0.5826      2.79  VQ        |         |         |         |
3+40       0.6018      2.79  VQ        |         |         |         |
3+45       0.6210      2.79  VQ        |         |         |         |
3+50       0.6404      2.82  VQ        |         |         |         |
3+55       0.6608      2.95  VQ        |         |         |         |
4+ 0       0.6825      3.16  |Q        |         |         |         |
4+ 5       0.7048      3.24  |Q        |         |         |         |
4+10       0.7274      3.28  |Q        |         |         |         |
4+15       0.7502      3.31  |Q        |         |         |         |
4+20       0.7733      3.35  |Q        |         |         |         |
4+25       0.7974      3.50  |Q        |         |         |         |
4+30       0.8229      3.71  |Q        |         |         |         |
4+35       0.8490      3.79  |Q        |         |         |         |
4+40       0.8754      3.83  |Q        |         |         |         |
4+45       0.9021      3.86  |Q        |         |         |         |
4+50       0.9290      3.91  |Q        |         |         |         |
4+55       0.9569      4.06  |VQ       |         |         |         |
5+ 0       0.9863      4.27  |VQ       |         |         |         |
5+ 5       1.0159      4.29  |VQ       |         |         |         |
5+10       1.0439      4.06  |VQ       |         |         |         |
5+15       1.0692      3.68  |Q        |         |         |         |
5+20       1.0938      3.57  |Q        |         |         |         |
5+25       1.1188      3.63  |Q        |         |         |         |
5+30       1.1449      3.79  |Q        |         |         |         |
5+35       1.1715      3.86  |Q        |         |         |         |
5+40       1.1992      4.02  |VQ       |         |         |         |
5+45       1.2285      4.25  |VQ       |         |         |         |
5+50       1.2584      4.34  |VQ       |         |         |         |
5+55       1.2886      4.39  |VQ       |         |         |         |
6+ 0       1.3191      4.42  |VQ       |         |         |         |
6+ 5       1.3498      4.46  |VQ       |         |         |         |
6+10       1.3816      4.61  | Q       |         |         |         |
6+15       1.4148      4.82  | Q       |         |         |         |
6+20       1.4486      4.90  | Q       |         |         |         |
6+25       1.4827      4.95  | Q       |         |         |         |
6+30       1.5169      4.98  | Q       |         |         |         |
6+35       1.5516      5.03  | Q       |         |         |         |
6+40       1.5872      5.17  | Q       |         |         |         |
6+45       1.6243      5.38  | Q       |         |         |         |
6+50       1.6619      5.46  | Q       |         |         |         |
6+55       1.6998      5.51  | Q       |         |         |         |
7+ 0       1.7380      5.54  | Q       |         |         |         |
7+ 5       1.7762      5.56  | Q       |         |         |         |
7+10       1.8146      5.57  | Q       |         |         |         |
7+15       1.8529      5.57  | Q       |         |         |         |
7+20       1.8915      5.60  | Q       |         |         |         |
7+25       1.9310      5.74  | Q       |         |         |         |
7+30       1.9720      5.95  | Q       |         |         |         |
7+35       2.0137      6.05  | VQ      |         |         |         |
7+40       2.0566      6.23  |  Q      |         |         |         |
7+45       2.1011      6.47  |  Q      |         |         |         |
7+50       2.1465      6.59  |  Q      |         |         |         |
7+55       2.1932      6.78  |  Q      |         |         |         |
8+ 0       2.2416      7.02  |  Q      |         |         |         |
8+ 5       2.2917      7.28  |  Q      |         |         |         |
8+10       2.3482      8.21  |  VQ     |         |         |         |
8+15       2.4142      9.57  |  VQ     |         |         |         |
8+20       2.4842     10.16  |  V Q    |         |         |         |
8+25       2.5570     10.57  |  V Q    |         |         |         |
8+30       2.6318     10.87  |  V Q    |         |         |         |
8+35       2.7093     11.25  |  V Q    |         |         |         |
```





```
  21+10      26.9774      1.35  Q         |         |         |         V|
  21+15      26.9879      1.53  Q         |         |         |         V|
  21+20      26.9987      1.56  Q         |         |         |         V|
  21+25      27.0087      1.45  Q         |         |         |         V|
  21+30      27.0174      1.27  Q         |         |         |         V|
  21+35      27.0260      1.24  Q         |         |         |         V|
  21+40      27.0352      1.34  Q         |         |         |         V|
  21+45      27.0456      1.52  Q         |         |         |         V|
  21+50      27.0563      1.55  Q         |         |         |         V|
  21+55      27.0663      1.45  Q         |         |         |         V|
  22+ 0      27.0751      1.27  Q         |         |         |         V|
  22+ 5      27.0836      1.24  Q         |         |         |         V|
  22+10      27.0928      1.34  Q         |         |         |         V|
  22+15      27.1033      1.52  Q         |         |         |         V|
  22+20      27.1139      1.55  Q         |         |         |         V|
  22+25      27.1239      1.45  Q         |         |         |         V|
  22+30      27.1327      1.27  Q         |         |         |         V|
  22+35      27.1410      1.21  Q         |         |         |         V|
  22+40      27.1491      1.17  Q         |         |         |         V|
  22+45      27.1570      1.15  Q         |         |         |         V|
  22+50      27.1648      1.13  Q         |         |         |         V|
  22+55      27.1725      1.12  Q         |         |         |         V|
  23+ 0      27.1803      1.12  Q         |         |         |         V|
  23+ 5      27.1880      1.12  Q         |         |         |         V|
  23+10      27.1957      1.12  Q         |         |         |         V|
  23+15      27.2034      1.12  Q         |         |         |         V|
  23+20      27.2111      1.12  Q         |         |         |         V|
  23+25      27.2187      1.12  Q         |         |         |         V|
  23+30      27.2264      1.12  Q         |         |         |         V|
  23+35      27.2341      1.12  Q         |         |         |         V|
  23+40      27.2418      1.12  Q         |         |         |         V|
  23+45      27.2495      1.12  Q         |         |         |         V|
  23+50      27.2572      1.12  Q         |         |         |         V|
  23+55      27.2648      1.12  Q         |         |         |         V|
  24+ 0      27.2725      1.12  Q         |         |         |         V|
  24+ 5      27.2798      1.06  Q         |         |         |         V|
  24+10      27.2852      0.78  Q         |         |         |         V|
  24+15      27.2878      0.37  Q         |         |         |         V|
  24+20      27.2893      0.22  Q         |         |         |         V|
  24+25      27.2902      0.13  Q         |         |         |         V|
  24+30      27.2908      0.08  Q         |         |         |         V|
  24+35      27.2911      0.04  Q         |         |         |         V|
  24+40      27.2912      0.02  Q         |         |         |         V|
  24+45      27.2913      0.02  Q         |         |         |         V|
  24+50      27.2914      0.01  Q         |         |         |         V|
  24+55      27.2915      0.01  Q         |         |         |         V|
  25+ 0      27.2915      0.00  Q         |         |         |          V
-------------------------------------------------------------------------
```

PROPOSED CONDITION UNIT HYDROGRAPHS

BUILDING 1 (ONSITE) - DEVELOPED CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (AC)**	**Impervious Area (SF)**
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Streets/Conc	0.9	623119	14.30	560807
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Landscape	0	304335	6.99	0
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Roof	0.9	644289	14.79	579860
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Streets/Conc	0.9	287703	6.60	258933
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Landscape	0	212158	4.87	0
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Roof	0.9	335211	7.70	301690
			AVERAGE WEIGHTED RI VALUE	**62.6**		**TOTAL**	2406815	55.3	
						TOTAL % IMPERVIOUS		**70.7%**	
						LOW LOSS RATE		**0.335**	

PROPOSED CONDITION
2-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: WEST2YR12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.55	30.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.25	69.13

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

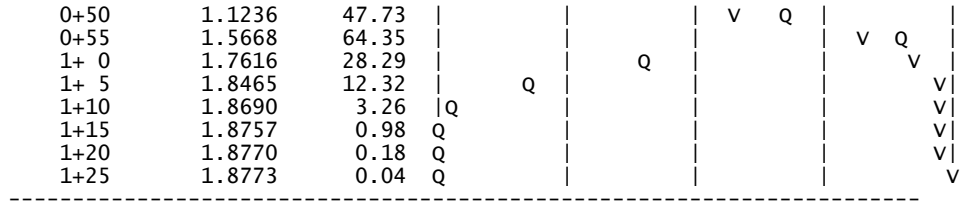
```
      62.6  42.6      0.645     0.710        0.233       1.000      0.233
                                                        Sum (F) =   0.233
      Area averaged mean soil loss (F) (In/Hr) =  0.233
      Minimum soil loss rate ((In/Hr)) =  0.116
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.330
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083        131.015         24.971             13.917
          2   0.167        262.030         55.588             30.980
          3   0.250        393.045         14.152              7.887
          4   0.333        524.061          3.839              2.140
          5   0.417        655.076          1.026              0.572
          6   0.500        786.091          0.425              0.237
                                   Sum = 100.000    Sum=      55.732
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.224       (  0.233)       0.074        0.150
   2   0.17     4.70      0.310       (  0.233)       0.102        0.208
   3   0.25     4.70      0.310       (  0.233)       0.102        0.208
   4   0.33     5.10      0.336       (  0.233)       0.111        0.225
   5   0.42     5.80      0.383       (  0.233)       0.126        0.256
   6   0.50     5.90      0.389       (  0.233)       0.128        0.261
   7   0.58     7.10      0.468       (  0.233)       0.155        0.314
   8   0.67     8.70      0.574       (  0.233)       0.189        0.385
   9   0.75    13.20      0.871          0.233    (  0.287)        0.638
  10   0.83    29.70      1.959          0.233    (  0.647)        1.727
  11   0.92     7.70      0.508       (  0.233)       0.168        0.340
  12   1.00     4.00      0.264       (  0.233)       0.087        0.177
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     4.9
       Flood volume = Effective rainfall      0.41(In)
        times area      55.3(Ac.)/[(In)/(Ft.)] =       1.9(Ac.Ft)
       Total soil loss =      0.14(In)
       Total soil loss =     0.656(Ac.Ft)
       Total rainfall =      0.55(In)
       Flood volume =       81773.3 Cubic Feet
       Total soil loss =       28577.8 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =     64.355(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
       ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       17.5      35.0      52.5      70.0
  ------------------------------------------------------------------------
    0+ 5       0.0144      2.09  VQ        |         |         |         |
    0+10       0.0664      7.55  |V  Q     |         |         |         |
    0+15       0.1388     10.52  | V   Q   |         |         |         |
    0+20       0.2183     11.54  |   V Q   |         |         |         |
    0+25       0.3060     12.73  |     VQ  |         |         |         |
    0+30       0.4021     13.95  |      QV |         |         |         |
    0+35       0.5062     15.13  |       Q V         |         |         |
    0+40       0.6293     17.87  |         Q  V      |         |         |
    0+45       0.7948     24.04  |         |  Q  V   |         |         |
```


0+50 1.1236 47.73
0+55 1.5668 64.35
1+ 0 1.7616 28.29
1+ 5 1.8465 12.32
1+10 1.8690 3.26
1+15 1.8757 0.98
1+20 1.8770 0.18
1+25 1.8773 0.04
Q
V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST2YR32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 0.950(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 0.950(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.148	(0.233)	0.049	0.099
2	0.17	1.30	0.148	(0.233)	0.049	0.099
3	0.25	1.10	0.125	(0.233)	0.041	0.084
4	0.33	1.50	0.171	(0.233)	0.056	0.115
5	0.42	1.50	0.171	(0.233)	0.056	0.115
6	0.50	1.80	0.205	(0.233)	0.068	0.137
7	0.58	1.50	0.171	(0.233)	0.056	0.115
8	0.67	1.80	0.205	(0.233)	0.068	0.137
9	0.75	1.80	0.205	(0.233)	0.068	0.137
10	0.83	1.50	0.171	(0.233)	0.056	0.115
11	0.92	1.60	0.182	(0.233)	0.060	0.122
12	1.00	1.80	0.205	(0.233)	0.068	0.137
13	1.08	2.20	0.251	(0.233)	0.083	0.168
14	1.17	2.20	0.251	(0.233)	0.083	0.168
15	1.25	2.20	0.251	(0.233)	0.083	0.168
16	1.33	2.00	0.228	(0.233)	0.075	0.153
17	1.42	2.60	0.296	(0.233)	0.098	0.199
18	1.50	2.70	0.308	(0.233)	0.102	0.206
19	1.58	2.40	0.274	(0.233)	0.090	0.183
20	1.67	2.70	0.308	(0.233)	0.102	0.206
21	1.75	3.30	0.376	(0.233)	0.124	0.252
22	1.83	3.10	0.353	(0.233)	0.117	0.237
23	1.92	2.90	0.331	(0.233)	0.109	0.221
24	2.00	3.00	0.342	(0.233)	0.113	0.229
25	2.08	3.10	0.353	(0.233)	0.117	0.237
26	2.17	4.20	0.479	(0.233)	0.158	0.321
27	2.25	5.00	0.570	(0.233)	0.188	0.382
28	2.33	3.50	0.399	(0.233)	0.132	0.267
29	2.42	6.80	0.775	0.233	(0.256)	0.542
30	2.50	7.30	0.832	0.233	(0.275)	0.599
31	2.58	8.20	0.935	0.233	(0.308)	0.702
32	2.67	5.90	0.672	(0.233)	0.222	0.451
33	2.75	2.00	0.228	(0.233)	0.075	0.153
34	2.83	1.80	0.205	(0.233)	0.068	0.137
35	2.92	1.80	0.205	(0.233)	0.068	0.137
36	3.00	0.60	0.068	(0.233)	0.023	0.046
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	7.8

Flood volume = Effective rainfall 0.65(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)
Total soil loss = 0.30(In)
Total soil loss = 1.390(Ac.Ft)
Total rainfall = 0.95(In)
Flood volume = 130093.3 Cubic Feet

Total soil loss = 60562.7 Cubic Feet

Peak flow rate of this hydrograph = 34.163(CFS)

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3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 10.0 20.0 30.0 40.0
0+ 5	0.0095	1.38	VQ | | | |
0+10	0.0402	4.46	V Q | | | |
0+15	0.0749	5.03	|V Q | | | |
0+20	0.1106	5.19	|V Q | | | |
0+25	0.1525	6.08	| V Q | | | |
0+30	0.1981	6.63	| V Q | | | |
0+35	0.2469	7.08	| V Q | | | |
0+40	0.2943	6.88	| V Q | | | |
0+45	0.3457	7.47	| V Q | | | |
0+50	0.3959	7.29	| V Q | | | |
0+55	0.4422	6.73	| VQ | | | |
1+ 0	0.4905	7.00	| VQ | | | |
1+ 5	0.5450	7.92	| Q | | | |
1+10	0.6069	8.99	| Q | | | |
1+15	0.6707	9.26	| VQ| | | |
1+20	0.7336	9.13	| Q| | | |
1+25	0.7977	9.31	| QV | | |
1+30	0.8716	10.73	| QV | | |
1+35	0.9472	10.97	| Q V | | |
1+40	1.0211	10.73	| Q V | | |
1+45	1.1033	11.94	| |Q V | | |
1+50	1.1948	13.29	| Q V | | |
1+55	1.2844	13.00	| Q V | | |
2+ 0	1.3713	12.62	| Q V | | |
2+ 5	1.4597	12.84	| Q V| | |
2+10	1.5581	14.28	| Q V | |
2+15	1.6807	17.80	| Q | V | |
2+20	1.8100	18.78	| Q | V | |
2+25	1.9458	19.72	| Q| V | |
2+30	2.1409	28.32	| | Q | |
2+35	2.3716	33.50	| | |V Q |
2+40	2.6069	34.16	| | Q |
2+45	2.7672	23.29	| Q | V |
2+50	2.8511	12.18	| Q | | V |
2+55	2.9123	8.89	| Q | | V|
3+ 0	2.9587	6.73	| Q | | V|
3+ 5	2.9793	2.99	| Q | | V|
3+10	2.9846	0.77	Q | | V|
3+15	2.9861	0.21	Q | | V|
3+20	2.9865	0.06	Q | | V|
3+25	2.9865	0.01	Q | | V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST2YR32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 0.950(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 0.950(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.148	(0.233)	0.049	0.099
2	0.17	1.30	0.148	(0.233)	0.049	0.099
3	0.25	1.10	0.125	(0.233)	0.041	0.084
4	0.33	1.50	0.171	(0.233)	0.056	0.115
5	0.42	1.50	0.171	(0.233)	0.056	0.115
6	0.50	1.80	0.205	(0.233)	0.068	0.137
7	0.58	1.50	0.171	(0.233)	0.056	0.115
8	0.67	1.80	0.205	(0.233)	0.068	0.137
9	0.75	1.80	0.205	(0.233)	0.068	0.137
10	0.83	1.50	0.171	(0.233)	0.056	0.115
11	0.92	1.60	0.182	(0.233)	0.060	0.122
12	1.00	1.80	0.205	(0.233)	0.068	0.137
13	1.08	2.20	0.251	(0.233)	0.083	0.168
14	1.17	2.20	0.251	(0.233)	0.083	0.168
15	1.25	2.20	0.251	(0.233)	0.083	0.168
16	1.33	2.00	0.228	(0.233)	0.075	0.153
17	1.42	2.60	0.296	(0.233)	0.098	0.199
18	1.50	2.70	0.308	(0.233)	0.102	0.206
19	1.58	2.40	0.274	(0.233)	0.090	0.183
20	1.67	2.70	0.308	(0.233)	0.102	0.206
21	1.75	3.30	0.376	(0.233)	0.124	0.252
22	1.83	3.10	0.353	(0.233)	0.117	0.237
23	1.92	2.90	0.331	(0.233)	0.109	0.221
24	2.00	3.00	0.342	(0.233)	0.113	0.229
25	2.08	3.10	0.353	(0.233)	0.117	0.237
26	2.17	4.20	0.479	(0.233)	0.158	0.321
27	2.25	5.00	0.570	(0.233)	0.188	0.382
28	2.33	3.50	0.399	(0.233)	0.132	0.267
29	2.42	6.80	0.775	0.233	(0.256)	0.542
30	2.50	7.30	0.832	0.233	(0.275)	0.599
31	2.58	8.20	0.935	0.233	(0.308)	0.702
32	2.67	5.90	0.672	(0.233)	0.222	0.451
33	2.75	2.00	0.228	(0.233)	0.075	0.153
34	2.83	1.80	0.205	(0.233)	0.068	0.137
35	2.92	1.80	0.205	(0.233)	0.068	0.137
36	3.00	0.60	0.068	(0.233)	0.023	0.046
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	7.8

Flood volume = Effective rainfall 0.65(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)
Total soil loss = 0.30(In)
Total soil loss = 1.390(Ac.Ft)
Total rainfall = 0.95(In)
Flood volume = 130093.3 Cubic Feet

```
Total soil loss =       60562.7 Cubic Feet
------------------------------------------------------------------
 Peak flow rate of this hydrograph =     34.163(CFS)
------------------------------------------------------------------
++++++++++++++++++++++++
       U n i t   H y d r o g r a p h    A n a l y s i s

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              Study date  07/20/21 File: WEST2YR62.out


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------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------
EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP
------------------------------------------------------------------
Drainage Area =      55.30(Ac.)  =      0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      55.30(Ac.)  =      0.086 Sq. Mi.
Length along longest watercourse =    2375.00(Ft.)
Length along longest watercourse measured to centroid =    1715.00(Ft.)
Length along longest watercourse =      0.450 Mi.
Length along longest watercourse measured to centroid =      0.325 Mi.
Difference in elevation =      88.00(Ft.)
Slope along watercourse =    195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.064 Hr.
Lag time =     3.82 Min.
25% of lag time =     0.95 Min.
40% of lag time =     1.53 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       55.30           1.40                 77.42

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       55.30           3.00                165.90

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.000(In)

Point rain (area averaged) =    1.400(In)
Areal adjustment factor =   99.98 %
Adjusted average point rain =    1.400(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    55.300           62.60         0.710
 Total Area Entered =     55.30(Ac.)
```

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
62.6	42.6	0.645	0.710	0.233	1.000	0.233
					Sum (F) =	0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.084	(0.233)	0.028	0.056
2	0.17	0.60	0.101	(0.233)	0.033	0.068
3	0.25	0.60	0.101	(0.233)	0.033	0.068
4	0.33	0.60	0.101	(0.233)	0.033	0.068
5	0.42	0.60	0.101	(0.233)	0.033	0.068
6	0.50	0.70	0.118	(0.233)	0.039	0.079
7	0.58	0.70	0.118	(0.233)	0.039	0.079
8	0.67	0.70	0.118	(0.233)	0.039	0.079
9	0.75	0.70	0.118	(0.233)	0.039	0.079
10	0.83	0.70	0.118	(0.233)	0.039	0.079
11	0.92	0.70	0.118	(0.233)	0.039	0.079
12	1.00	0.80	0.134	(0.233)	0.044	0.090
13	1.08	0.80	0.134	(0.233)	0.044	0.090
14	1.17	0.80	0.134	(0.233)	0.044	0.090
15	1.25	0.80	0.134	(0.233)	0.044	0.090
16	1.33	0.80	0.134	(0.233)	0.044	0.090
17	1.42	0.80	0.134	(0.233)	0.044	0.090
18	1.50	0.80	0.134	(0.233)	0.044	0.090
19	1.58	0.80	0.134	(0.233)	0.044	0.090
20	1.67	0.80	0.134	(0.233)	0.044	0.090
21	1.75	0.80	0.134	(0.233)	0.044	0.090
22	1.83	0.80	0.134	(0.233)	0.044	0.090
23	1.92	0.80	0.134	(0.233)	0.044	0.090
24	2.00	0.90	0.151	(0.233)	0.050	0.101
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26	2.17	0.90	0.151	(0.233)	0.050	0.101
27	2.25	0.90	0.151	(0.233)	0.050	0.101
28	2.33	0.90	0.151	(0.233)	0.050	0.101
29	2.42	0.90	0.151	(0.233)	0.050	0.101
30	2.50	0.90	0.151	(0.233)	0.050	0.101
31	2.58	0.90	0.151	(0.233)	0.050	0.101
32	2.67	0.90	0.151	(0.233)	0.050	0.101
33	2.75	1.00	0.168	(0.233)	0.055	0.113
34	2.83	1.00	0.168	(0.233)	0.055	0.113
35	2.92	1.00	0.168	(0.233)	0.055	0.113
36	3.00	1.00	0.168	(0.233)	0.055	0.113
37	3.08	1.00	0.168	(0.233)	0.055	0.113
38	3.17	1.10	0.185	(0.233)	0.061	0.124
39	3.25	1.10	0.185	(0.233)	0.061	0.124
40	3.33	1.10	0.185	(0.233)	0.061	0.124

```
41   3.42     1.20     0.202       (  0.233)       0.067        0.135
42   3.50     1.30     0.218       (  0.233)       0.072        0.146
43   3.58     1.40     0.235       (  0.233)       0.078        0.158
44   3.67     1.40     0.235       (  0.233)       0.078        0.158
45   3.75     1.50     0.252       (  0.233)       0.083        0.169
46   3.83     1.50     0.252       (  0.233)       0.083        0.169
47   3.92     1.60     0.269       (  0.233)       0.089        0.180
48   4.00     1.60     0.269       (  0.233)       0.089        0.180
49   4.08     1.70     0.286       (  0.233)       0.094        0.191
50   4.17     1.80     0.302       (  0.233)       0.100        0.203
51   4.25     1.90     0.319       (  0.233)       0.105        0.214
52   4.33     2.00     0.336       (  0.233)       0.111        0.225
53   4.42     2.10     0.353       (  0.233)       0.116        0.236
54   4.50     2.10     0.353       (  0.233)       0.116        0.236
55   4.58     2.20     0.370       (  0.233)       0.122        0.248
56   4.67     2.30     0.386       (  0.233)       0.127        0.259
57   4.75     2.40     0.403       (  0.233)       0.133        0.270
58   4.83     2.40     0.403       (  0.233)       0.133        0.270
59   4.92     2.50     0.420       (  0.233)       0.139        0.281
60   5.00     2.60     0.437       (  0.233)       0.144        0.293
61   5.08     3.10     0.521       (  0.233)       0.172        0.349
62   5.17     3.60     0.605       (  0.233)       0.200        0.405
63   5.25     3.90     0.655       (  0.233)       0.216        0.439
64   5.33     4.20     0.705          0.233    (  0.233)       0.473
65   5.42     4.70     0.789          0.233    (  0.261)       0.557
66   5.50     5.60     0.941          0.233    (  0.310)       0.708
67   5.58     1.90     0.319       (  0.233)       0.105        0.214
68   5.67     0.90     0.151       (  0.233)       0.050        0.101
69   5.75     0.60     0.101       (  0.233)       0.033        0.068
70   5.83     0.50     0.084       (  0.233)       0.028        0.056
71   5.92     0.30     0.050       (  0.233)       0.017        0.034
72   6.00     0.20     0.034       (  0.233)       0.011        0.023
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    11.4
     Flood volume = Effective rainfall      0.95(In)
      times area      55.3(Ac.)/[(In)/(Ft.)] =       4.4(Ac.Ft)
     Total soil loss =      0.45(In)
     Total soil loss =     2.088(Ac.Ft)
     Total rainfall =      1.40(In)
     Flood volume =      190025.8 Cubic Feet
     Total soil loss =       90955.4 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     32.100(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        6 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
     ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------------
  0+ 5       0.0054      0.78  Q         |         |         |         |
  0+10       0.0239      2.68  V Q       |         |         |         |
  0+15       0.0478      3.48  V  Q      |         |         |         |
  0+20       0.0732      3.69  V  Q      |         |         |         |
  0+25       0.0990      3.74  V  Q      |         |         |         |
  0+30       0.1260      3.92  |V Q      |         |         |         |
  0+35       0.1554      4.27  |V  Q     |         |         |         |
  0+40       0.1854      4.36  |V  Q     |         |         |         |
  0+45       0.2156      4.38  |V  Q     |         |         |         |
  0+50       0.2458      4.39  | V Q     |         |         |         |
  0+55       0.2761      4.39  | V Q     |         |         |         |
  1+ 0       0.3074      4.55  | V Q     |         |         |         |
  1+ 5       0.3412      4.90  |  VQ     |         |         |         |
  1+10       0.3755      4.99  |  VQ     |         |         |         |
  1+15       0.4100      5.01  |  V Q    |         |         |         |
  1+20       0.4446      5.02  |   VQ    |         |         |         |
  1+25       0.4792      5.02  |   VQ    |         |         |         |
  1+30       0.5137      5.02  |   VQ    |         |         |         |
  1+35       0.5483      5.02  |    Q    |         |         |         |
  1+40       0.5829      5.02  |    Q    |         |         |         |
  1+45       0.6175      5.02  |    Q    |         |         |         |
  1+50       0.6520      5.02  |    Q    |         |         |         |
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   1+55       0.6866      5.02  |    QV   |         |         |         |
   2+ 0       0.7223      5.18  |    QV   |         |         |         |
   2+ 5       0.7592      5.37  |    QV   |         |         |         |
   2+10       0.7955      5.27  |    Q V  |         |         |         |
   2+15       0.8337      5.55  |    Q V  |         |         |         |
   2+20       0.8724      5.62  |    Q V  |         |         |         |
   2+25       0.9113      5.64  |    Q  V |         |         |         |
   2+30       0.9502      5.65  |    Q  V |         |         |         |
   2+35       0.9891      5.65  |    Q   V|         |         |         |
   2+40       1.0280      5.65  |    Q   V|         |         |         |
   2+45       1.0679      5.80  |    Q   V|         |         |         |
   2+50       1.1103      6.15  |     Q   V         |         |         |
   2+55       1.1533      6.24  |     Q   V         |         |         |
   3+ 0       1.1964      6.27  |     Q   V         |         |         |
   3+ 5       1.2396      6.27  |     Q   |V        |         |         |
   3+10       1.2839      6.43  |     Q   |V        |         |         |
   3+15       1.3306      6.78  |     Q   | V       |         |         |
   3+20       1.3780      6.87  |     Q   | V       |         |         |
   3+25       1.4265      7.05  |      Q  |  V      |         |         |
   3+30       1.4786      7.56  |      Q  |  V      |         |         |
   3+35       1.5348      8.16  |       Q |   V     |         |         |
   3+40       1.5942      8.62  |       Q |   V     |         |         |
   3+45       1.6554      8.90  |       Q |    V    |         |         |
   3+50       1.7193      9.28  |        Q|    V    |         |         |
   3+55       1.7850      9.53  |        Q|     V   |         |         |
   4+ 0       1.8532      9.91  |        Q|     V   |         |         |
   4+ 5       1.9232     10.16  |         Q      V  |         |         |
   4+10       1.9969     10.69  |         Q       V |         |         |
   4+15       2.0747     11.29  |          |Q       V|         |         |
   4+20       2.1567     11.92  |          |Q       V|         |         |
   4+25       2.2431     12.54  |          | Q       V         |         |
   4+30       2.3327     13.01  |          |  Q      |V        |         |
   4+35       2.4242     13.29  |          |  Q      | V       |         |
   4+40       2.5195     13.83  |          |  Q      |  V      |         |
   4+45       2.6189     14.43  |          |   Q     |   V     |         |
   4+50       2.7214     14.90  |          |   Q     |   V     |         |
   4+55       2.8259     15.17  |          |    Q    |    V    |         |
   5+ 0       2.9341     15.71  |          |    Q    |     V   |         |
   5+ 5       3.0508     16.94  |          |     Q   |      V  |         |
   5+10       3.1857     19.58  |          |        Q|       V |         |
   5+15       3.3391     22.27  |          |         | Q       V         |
   5+20       3.5069     24.37  |          |         |   Q     | V       |
   5+25       3.6929     27.01  |          |         |     Q   |  V      |
   5+30       3.9140     32.10  |          |         |         | Q  V    |
   5+35       4.1252     30.67  |          |         |         Q      V  |
   5+40       4.2298     15.19  |          |    Q    |         |       V |
   5+45       4.2830      7.71  |       Q  |         |         |        V|
   5+50       4.3151      4.67  |    Q     |         |         |        V|
   5+55       4.3375      3.25  |   Q      |         |         |        V|
   6+ 0       4.3517      2.06  |  Q       |         |         |        V|
   6+ 5       4.3596      1.15  | Q        |         |         |        V|
   6+10       4.3617      0.30  |Q         |         |         |        V|
   6+15       4.3622      0.08  Q          |         |         |        V|
   6+20       4.3624      0.02  Q          |         |         |        V|
   6+25       4.3624      0.01  Q          |         |         |        V|
-------------------------------------------------------------------------
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++++++++++++++++++++++++++++++++++++++++++++
                3 - H O U R    S T O R M
            R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
  ------------------------------------------------------------------------
    0+ 5       0.0095      1.38  VQ        |         |         |         |
    0+10       0.0402      4.46  V   Q     |         |         |         |
    0+15       0.0749      5.03  |V   Q    |         |         |         |
    0+20       0.1106      5.19  |V   Q    |         |         |         |
    0+25       0.1525      6.08  | V   Q   |         |         |         |
    0+30       0.1981      6.63  | V   Q   |         |         |         |
    0+35       0.2469      7.08  |  V   Q  |         |         |         |
    0+40       0.2943      6.88  |  V  Q   |         |         |         |
```

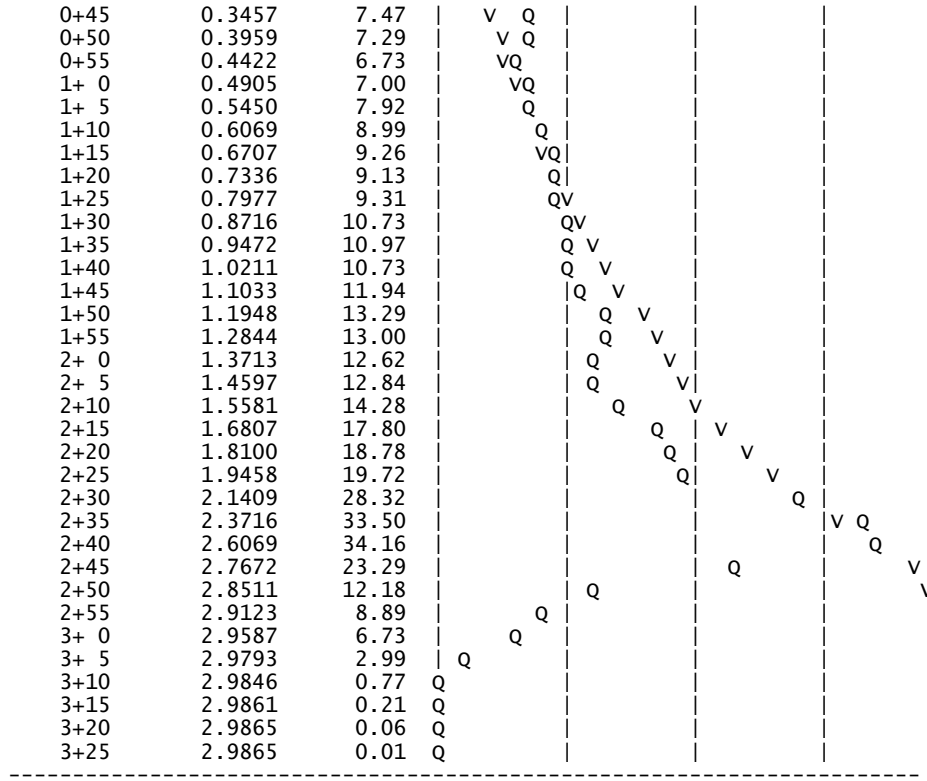
0+45 0.3457 7.47
0+50 0.3959 7.29
0+55 0.4422 6.73
1+ 0 0.4905 7.00
1+ 5 0.5450 7.92
1+10 0.6069 8.99
1+15 0.6707 9.26
1+20 0.7336 9.13
1+25 0.7977 9.31
1+30 0.8716 10.73
1+35 0.9472 10.97
1+40 1.0211 10.73
1+45 1.1033 11.94
1+50 1.1948 13.29
1+55 1.2844 13.00
2+ 0 1.3713 12.62
2+ 5 1.4597 12.84
2+10 1.5581 14.28
2+15 1.6807 17.80
2+20 1.8100 18.78
2+25 1.9458 19.72
2+30 2.1409 28.32
2+35 2.3716 33.50
2+40 2.6069 34.16
2+45 2.7672 23.29
2+50 2.8511 12.18
2+55 2.9123 8.89
3+ 0 2.9587 6.73
3+ 5 2.9793 2.99
3+10 2.9846 0.77
3+15 2.9861 0.21
3+20 2.9865 0.06
3+25 2.9865 0.01

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.412)	0.007	0.013
2	0.17	0.07	0.020	(0.411)	0.007	0.013
3	0.25	0.07	0.020	(0.409)	0.007	0.013
4	0.33	0.10	0.030	(0.408)	0.010	0.020
5	0.42	0.10	0.030	(0.406)	0.010	0.020
6	0.50	0.10	0.030	(0.405)	0.010	0.020
7	0.58	0.10	0.030	(0.403)	0.010	0.020
8	0.67	0.10	0.030	(0.401)	0.010	0.020
9	0.75	0.10	0.030	(0.400)	0.010	0.020
10	0.83	0.13	0.040	(0.398)	0.013	0.027
11	0.92	0.13	0.040	(0.397)	0.013	0.027
12	1.00	0.13	0.040	(0.395)	0.013	0.027
13	1.08	0.10	0.030	(0.394)	0.010	0.020
14	1.17	0.10	0.030	(0.392)	0.010	0.020
15	1.25	0.10	0.030	(0.390)	0.010	0.020
16	1.33	0.10	0.030	(0.389)	0.010	0.020
17	1.42	0.10	0.030	(0.387)	0.010	0.020
18	1.50	0.10	0.030	(0.386)	0.010	0.020
19	1.58	0.10	0.030	(0.384)	0.010	0.020
20	1.67	0.10	0.030	(0.383)	0.010	0.020
21	1.75	0.10	0.030	(0.381)	0.010	0.020
22	1.83	0.13	0.040	(0.380)	0.013	0.027
23	1.92	0.13	0.040	(0.378)	0.013	0.027
24	2.00	0.13	0.040	(0.377)	0.013	0.027
25	2.08	0.13	0.040	(0.375)	0.013	0.027
26	2.17	0.13	0.040	(0.374)	0.013	0.027
27	2.25	0.13	0.040	(0.372)	0.013	0.027
28	2.33	0.13	0.040	(0.370)	0.013	0.027
29	2.42	0.13	0.040	(0.369)	0.013	0.027
30	2.50	0.13	0.040	(0.367)	0.013	0.027
31	2.58	0.17	0.050	(0.366)	0.016	0.033
32	2.67	0.17	0.050	(0.364)	0.016	0.033
33	2.75	0.17	0.050	(0.363)	0.016	0.033
34	2.83	0.17	0.050	(0.361)	0.016	0.033
35	2.92	0.17	0.050	(0.360)	0.016	0.033
36	3.00	0.17	0.050	(0.358)	0.016	0.033
37	3.08	0.17	0.050	(0.357)	0.016	0.033
38	3.17	0.17	0.050	(0.356)	0.016	0.033
39	3.25	0.17	0.050	(0.354)	0.016	0.033
40	3.33	0.17	0.050	(0.353)	0.016	0.033
41	3.42	0.17	0.050	(0.351)	0.016	0.033
42	3.50	0.17	0.050	(0.350)	0.016	0.033
43	3.58	0.17	0.050	(0.348)	0.016	0.033
44	3.67	0.17	0.050	(0.347)	0.016	0.033

45	3.75	0.17	0.050	(0.345)	0.016	0.033
46	3.83	0.20	0.060	(0.344)	0.020	0.040
47	3.92	0.20	0.060	(0.342)	0.020	0.040
48	4.00	0.20	0.060	(0.341)	0.020	0.040
49	4.08	0.20	0.060	(0.339)	0.020	0.040
50	4.17	0.20	0.060	(0.338)	0.020	0.040
51	4.25	0.20	0.060	(0.337)	0.020	0.040
52	4.33	0.23	0.070	(0.335)	0.023	0.047
53	4.42	0.23	0.070	(0.334)	0.023	0.047
54	4.50	0.23	0.070	(0.332)	0.023	0.047
55	4.58	0.23	0.070	(0.331)	0.023	0.047
56	4.67	0.23	0.070	(0.329)	0.023	0.047
57	4.75	0.23	0.070	(0.328)	0.023	0.047
58	4.83	0.27	0.080	(0.327)	0.026	0.054
59	4.92	0.27	0.080	(0.325)	0.026	0.054
60	5.00	0.27	0.080	(0.324)	0.026	0.054
61	5.08	0.20	0.060	(0.322)	0.020	0.040
62	5.17	0.20	0.060	(0.321)	0.020	0.040
63	5.25	0.20	0.060	(0.320)	0.020	0.040
64	5.33	0.23	0.070	(0.318)	0.023	0.047
65	5.42	0.23	0.070	(0.317)	0.023	0.047
66	5.50	0.23	0.070	(0.315)	0.023	0.047
67	5.58	0.27	0.080	(0.314)	0.026	0.054
68	5.67	0.27	0.080	(0.313)	0.026	0.054
69	5.75	0.27	0.080	(0.311)	0.026	0.054
70	5.83	0.27	0.080	(0.310)	0.026	0.054
71	5.92	0.27	0.080	(0.308)	0.026	0.054
72	6.00	0.27	0.080	(0.307)	0.026	0.054
73	6.08	0.30	0.090	(0.306)	0.030	0.060
74	6.17	0.30	0.090	(0.304)	0.030	0.060
75	6.25	0.30	0.090	(0.303)	0.030	0.060
76	6.33	0.30	0.090	(0.302)	0.030	0.060
77	6.42	0.30	0.090	(0.300)	0.030	0.060
78	6.50	0.30	0.090	(0.299)	0.030	0.060
79	6.58	0.33	0.100	(0.298)	0.033	0.067
80	6.67	0.33	0.100	(0.296)	0.033	0.067
81	6.75	0.33	0.100	(0.295)	0.033	0.067
82	6.83	0.33	0.100	(0.294)	0.033	0.067
83	6.92	0.33	0.100	(0.292)	0.033	0.067
84	7.00	0.33	0.100	(0.291)	0.033	0.067
85	7.08	0.33	0.100	(0.290)	0.033	0.067
86	7.17	0.33	0.100	(0.288)	0.033	0.067
87	7.25	0.33	0.100	(0.287)	0.033	0.067
88	7.33	0.37	0.110	(0.286)	0.036	0.074
89	7.42	0.37	0.110	(0.284)	0.036	0.074
90	7.50	0.37	0.110	(0.283)	0.036	0.074
91	7.58	0.40	0.120	(0.282)	0.040	0.080
92	7.67	0.40	0.120	(0.281)	0.040	0.080
93	7.75	0.40	0.120	(0.279)	0.040	0.080
94	7.83	0.43	0.130	(0.278)	0.043	0.087
95	7.92	0.43	0.130	(0.277)	0.043	0.087
96	8.00	0.43	0.130	(0.275)	0.043	0.087
97	8.08	0.50	0.150	(0.274)	0.049	0.100
98	8.17	0.50	0.150	(0.273)	0.049	0.100
99	8.25	0.50	0.150	(0.272)	0.049	0.100
100	8.33	0.50	0.150	(0.270)	0.049	0.100
101	8.42	0.50	0.150	(0.269)	0.049	0.100
102	8.50	0.50	0.150	(0.268)	0.049	0.100
103	8.58	0.53	0.160	(0.266)	0.053	0.107
104	8.67	0.53	0.160	(0.265)	0.053	0.107
105	8.75	0.53	0.160	(0.264)	0.053	0.107
106	8.83	0.57	0.170	(0.263)	0.056	0.114
107	8.92	0.57	0.170	(0.261)	0.056	0.114
108	9.00	0.57	0.170	(0.260)	0.056	0.114
109	9.08	0.63	0.190	(0.259)	0.063	0.127
110	9.17	0.63	0.190	(0.258)	0.063	0.127
111	9.25	0.63	0.190	(0.257)	0.063	0.127
112	9.33	0.67	0.200	(0.255)	0.066	0.134
113	9.42	0.67	0.200	(0.254)	0.066	0.134
114	9.50	0.67	0.200	(0.253)	0.066	0.134
115	9.58	0.70	0.210	(0.252)	0.069	0.141
116	9.67	0.70	0.210	(0.250)	0.069	0.141
117	9.75	0.70	0.210	(0.249)	0.069	0.141
118	9.83	0.73	0.220	(0.248)	0.073	0.147
119	9.92	0.73	0.220	(0.247)	0.073	0.147

120	10.00	0.73	0.220	(0.246)	0.073	0.147
121	10.08	0.50	0.150	(0.245)	0.049	0.100
122	10.17	0.50	0.150	(0.243)	0.049	0.100
123	10.25	0.50	0.150	(0.242)	0.049	0.100
124	10.33	0.50	0.150	(0.241)	0.049	0.100
125	10.42	0.50	0.150	(0.240)	0.049	0.100
126	10.50	0.50	0.150	(0.239)	0.049	0.100
127	10.58	0.67	0.200	(0.237)	0.066	0.134
128	10.67	0.67	0.200	(0.236)	0.066	0.134
129	10.75	0.67	0.200	(0.235)	0.066	0.134
130	10.83	0.67	0.200	(0.234)	0.066	0.134
131	10.92	0.67	0.200	(0.233)	0.066	0.134
132	11.00	0.67	0.200	(0.232)	0.066	0.134
133	11.08	0.63	0.190	(0.231)	0.063	0.127
134	11.17	0.63	0.190	(0.229)	0.063	0.127
135	11.25	0.63	0.190	(0.228)	0.063	0.127
136	11.33	0.63	0.190	(0.227)	0.063	0.127
137	11.42	0.63	0.190	(0.226)	0.063	0.127
138	11.50	0.63	0.190	(0.225)	0.063	0.127
139	11.58	0.57	0.170	(0.224)	0.056	0.114
140	11.67	0.57	0.170	(0.223)	0.056	0.114
141	11.75	0.57	0.170	(0.222)	0.056	0.114
142	11.83	0.60	0.180	(0.220)	0.059	0.121
143	11.92	0.60	0.180	(0.219)	0.059	0.121
144	12.00	0.60	0.180	(0.218)	0.059	0.121
145	12.08	0.83	0.250	(0.217)	0.082	0.167
146	12.17	0.83	0.250	(0.216)	0.082	0.167
147	12.25	0.83	0.250	(0.215)	0.082	0.167
148	12.33	0.87	0.260	(0.214)	0.086	0.174
149	12.42	0.87	0.260	(0.213)	0.086	0.174
150	12.50	0.87	0.260	(0.212)	0.086	0.174
151	12.58	0.93	0.280	(0.211)	0.092	0.188
152	12.67	0.93	0.280	(0.210)	0.092	0.188
153	12.75	0.93	0.280	(0.209)	0.092	0.188
154	12.83	0.97	0.290	(0.208)	0.096	0.194
155	12.92	0.97	0.290	(0.207)	0.096	0.194
156	13.00	0.97	0.290	(0.205)	0.096	0.194
157	13.08	1.13	0.340	(0.204)	0.112	0.228
158	13.17	1.13	0.340	(0.203)	0.112	0.228
159	13.25	1.13	0.340	(0.202)	0.112	0.228
160	13.33	1.13	0.340	(0.201)	0.112	0.228
161	13.42	1.13	0.340	(0.200)	0.112	0.228
162	13.50	1.13	0.340	(0.199)	0.112	0.228
163	13.58	0.77	0.230	(0.198)	0.076	0.154
164	13.67	0.77	0.230	(0.197)	0.076	0.154
165	13.75	0.77	0.230	(0.196)	0.076	0.154
166	13.83	0.77	0.230	(0.195)	0.076	0.154
167	13.92	0.77	0.230	(0.194)	0.076	0.154
168	14.00	0.77	0.230	(0.193)	0.076	0.154
169	14.08	0.90	0.270	(0.192)	0.089	0.181
170	14.17	0.90	0.270	(0.191)	0.089	0.181
171	14.25	0.90	0.270	(0.190)	0.089	0.181
172	14.33	0.87	0.260	(0.189)	0.086	0.174
173	14.42	0.87	0.260	(0.188)	0.086	0.174
174	14.50	0.87	0.260	(0.187)	0.086	0.174
175	14.58	0.87	0.260	(0.186)	0.086	0.174
176	14.67	0.87	0.260	(0.185)	0.086	0.174
177	14.75	0.87	0.260	(0.185)	0.086	0.174
178	14.83	0.83	0.250	(0.184)	0.082	0.167
179	14.92	0.83	0.250	(0.183)	0.082	0.167
180	15.00	0.83	0.250	(0.182)	0.082	0.167
181	15.08	0.80	0.240	(0.181)	0.079	0.161
182	15.17	0.80	0.240	(0.180)	0.079	0.161
183	15.25	0.80	0.240	(0.179)	0.079	0.161
184	15.33	0.77	0.230	(0.178)	0.076	0.154
185	15.42	0.77	0.230	(0.177)	0.076	0.154
186	15.50	0.77	0.230	(0.176)	0.076	0.154
187	15.58	0.63	0.190	(0.175)	0.063	0.127
188	15.67	0.63	0.190	(0.174)	0.063	0.127
189	15.75	0.63	0.190	(0.174)	0.063	0.127
190	15.83	0.63	0.190	(0.173)	0.063	0.127
191	15.92	0.63	0.190	(0.172)	0.063	0.127
192	16.00	0.63	0.190	(0.171)	0.063	0.127
193	16.08	0.13	0.040	(0.170)	0.013	0.027
194	16.17	0.13	0.040	(0.169)	0.013	0.027

195	16.25	0.13	0.040	(0.168)	0.013	0.027
196	16.33	0.13	0.040	(0.167)	0.013	0.027
197	16.42	0.13	0.040	(0.167)	0.013	0.027
198	16.50	0.13	0.040	(0.166)	0.013	0.027
199	16.58	0.10	0.030	(0.165)	0.010	0.020
200	16.67	0.10	0.030	(0.164)	0.010	0.020
201	16.75	0.10	0.030	(0.163)	0.010	0.020
202	16.83	0.10	0.030	(0.162)	0.010	0.020
203	16.92	0.10	0.030	(0.162)	0.010	0.020
204	17.00	0.10	0.030	(0.161)	0.010	0.020
205	17.08	0.17	0.050	(0.160)	0.016	0.033
206	17.17	0.17	0.050	(0.159)	0.016	0.033
207	17.25	0.17	0.050	(0.158)	0.016	0.033
208	17.33	0.17	0.050	(0.158)	0.016	0.033
209	17.42	0.17	0.050	(0.157)	0.016	0.033
210	17.50	0.17	0.050	(0.156)	0.016	0.033
211	17.58	0.17	0.050	(0.155)	0.016	0.033
212	17.67	0.17	0.050	(0.154)	0.016	0.033
213	17.75	0.17	0.050	(0.154)	0.016	0.033
214	17.83	0.13	0.040	(0.153)	0.013	0.027
215	17.92	0.13	0.040	(0.152)	0.013	0.027
216	18.00	0.13	0.040	(0.151)	0.013	0.027
217	18.08	0.13	0.040	(0.151)	0.013	0.027
218	18.17	0.13	0.040	(0.150)	0.013	0.027
219	18.25	0.13	0.040	(0.149)	0.013	0.027
220	18.33	0.13	0.040	(0.148)	0.013	0.027
221	18.42	0.13	0.040	(0.148)	0.013	0.027
222	18.50	0.13	0.040	(0.147)	0.013	0.027
223	18.58	0.10	0.030	(0.146)	0.010	0.020
224	18.67	0.10	0.030	(0.146)	0.010	0.020
225	18.75	0.10	0.030	(0.145)	0.010	0.020
226	18.83	0.07	0.020	(0.144)	0.007	0.013
227	18.92	0.07	0.020	(0.143)	0.007	0.013
228	19.00	0.07	0.020	(0.143)	0.007	0.013
229	19.08	0.10	0.030	(0.142)	0.010	0.020
230	19.17	0.10	0.030	(0.141)	0.010	0.020
231	19.25	0.10	0.030	(0.141)	0.010	0.020
232	19.33	0.13	0.040	(0.140)	0.013	0.027
233	19.42	0.13	0.040	(0.139)	0.013	0.027
234	19.50	0.13	0.040	(0.139)	0.013	0.027
235	19.58	0.10	0.030	(0.138)	0.010	0.020
236	19.67	0.10	0.030	(0.138)	0.010	0.020
237	19.75	0.10	0.030	(0.137)	0.010	0.020
238	19.83	0.07	0.020	(0.136)	0.007	0.013
239	19.92	0.07	0.020	(0.136)	0.007	0.013
240	20.00	0.07	0.020	(0.135)	0.007	0.013
241	20.08	0.10	0.030	(0.135)	0.010	0.020
242	20.17	0.10	0.030	(0.134)	0.010	0.020
243	20.25	0.10	0.030	(0.133)	0.010	0.020
244	20.33	0.10	0.030	(0.133)	0.010	0.020
245	20.42	0.10	0.030	(0.132)	0.010	0.020
246	20.50	0.10	0.030	(0.132)	0.010	0.020
247	20.58	0.10	0.030	(0.131)	0.010	0.020
248	20.67	0.10	0.030	(0.131)	0.010	0.020
249	20.75	0.10	0.030	(0.130)	0.010	0.020
250	20.83	0.07	0.020	(0.129)	0.007	0.013
251	20.92	0.07	0.020	(0.129)	0.007	0.013
252	21.00	0.07	0.020	(0.128)	0.007	0.013
253	21.08	0.10	0.030	(0.128)	0.010	0.020
254	21.17	0.10	0.030	(0.127)	0.010	0.020
255	21.25	0.10	0.030	(0.127)	0.010	0.020
256	21.33	0.07	0.020	(0.126)	0.007	0.013
257	21.42	0.07	0.020	(0.126)	0.007	0.013
258	21.50	0.07	0.020	(0.125)	0.007	0.013
259	21.58	0.10	0.030	(0.125)	0.010	0.020
260	21.67	0.10	0.030	(0.125)	0.010	0.020
261	21.75	0.10	0.030	(0.124)	0.010	0.020
262	21.83	0.07	0.020	(0.124)	0.007	0.013
263	21.92	0.07	0.020	(0.123)	0.007	0.013
264	22.00	0.07	0.020	(0.123)	0.007	0.013
265	22.08	0.10	0.030	(0.122)	0.010	0.020
266	22.17	0.10	0.030	(0.122)	0.010	0.020
267	22.25	0.10	0.030	(0.122)	0.010	0.020
268	22.33	0.07	0.020	(0.121)	0.007	0.013
269	22.42	0.07	0.020	(0.121)	0.007	0.013

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270  22.50     0.07      0.020       (  0.121)       0.007        0.013
271  22.58     0.07      0.020       (  0.120)       0.007        0.013
272  22.67     0.07      0.020       (  0.120)       0.007        0.013
273  22.75     0.07      0.020       (  0.120)       0.007        0.013
274  22.83     0.07      0.020       (  0.119)       0.007        0.013
275  22.92     0.07      0.020       (  0.119)       0.007        0.013
276  23.00     0.07      0.020       (  0.119)       0.007        0.013
277  23.08     0.07      0.020       (  0.118)       0.007        0.013
278  23.17     0.07      0.020       (  0.118)       0.007        0.013
279  23.25     0.07      0.020       (  0.118)       0.007        0.013
280  23.33     0.07      0.020       (  0.118)       0.007        0.013
281  23.42     0.07      0.020       (  0.117)       0.007        0.013
282  23.50     0.07      0.020       (  0.117)       0.007        0.013
283  23.58     0.07      0.020       (  0.117)       0.007        0.013
284  23.67     0.07      0.020       (  0.117)       0.007        0.013
285  23.75     0.07      0.020       (  0.117)       0.007        0.013
286  23.83     0.07      0.020       (  0.117)       0.007        0.013
287  23.92     0.07      0.020       (  0.116)       0.007        0.013
288  24.00     0.07      0.020       (  0.116)       0.007        0.013
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    20.1
      Flood volume = Effective rainfall      1.67(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =       7.7(Ac.Ft)
      Total soil loss =      0.82(In)
      Total soil loss =     3.801(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =      336201.5 Cubic Feet
      Total soil loss =      165591.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     12.701(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0013      0.19  Q          |          |          |          |
   0+10       0.0054      0.60  VQ         |          |          |          |
   0+15       0.0103      0.71  VQ         |          |          |          |
   0+20       0.0160      0.83  VQ         |          |          |          |
   0+25       0.0232      1.04  V Q        |          |          |          |
   0+30       0.0308      1.10  V Q        |          |          |          |
   0+35       0.0385      1.12  V Q        |          |          |          |
   0+40       0.0462      1.12  V Q        |          |          |          |
   0+45       0.0539      1.12  V Q        |          |          |          |
   0+50       0.0623      1.21  V Q        |          |          |          |
   0+55       0.0721      1.42  V Q        |          |          |          |
   1+ 0       0.0822      1.47  V Q        |          |          |          |
   1+ 5       0.0918      1.40  V Q        |          |          |          |
   1+10       0.1000      1.19  V Q        |          |          |          |
   1+15       0.1079      1.14  V Q        |          |          |          |
   1+20       0.1156      1.13  V Q        |          |          |          |
   1+25       0.1234      1.12  V Q        |          |          |          |
   1+30       0.1311      1.12  V Q        |          |          |          |
   1+35       0.1388      1.12  V Q        |          |          |          |
   1+40       0.1465      1.12  V Q        |          |          |          |
   1+45       0.1542      1.12  V Q        |          |          |          |
   1+50       0.1626      1.21  V Q        |          |          |          |
   1+55       0.1724      1.42  V Q        |          |          |          |
   2+ 0       0.1825      1.47  V Q        |          |          |          |
   2+ 5       0.1928      1.49  V Q        |          |          |          |
   2+10       0.2031      1.49  |VQ        |          |          |          |
   2+15       0.2134      1.49  |VQ        |          |          |          |
   2+20       0.2237      1.49  |VQ        |          |          |          |
   2+25       0.2339      1.49  |VQ        |          |          |          |
   2+30       0.2442      1.49  |VQ        |          |          |          |
   2+35       0.2552      1.59  |V Q       |          |          |          |
   2+40       0.2675      1.80  |V Q       |          |          |          |
   2+45       0.2803      1.85  |V Q       |          |          |          |
   2+50       0.2931      1.86  |V Q       |          |          |          |
   2+55       0.3059      1.87  |V Q       |          |          |          |
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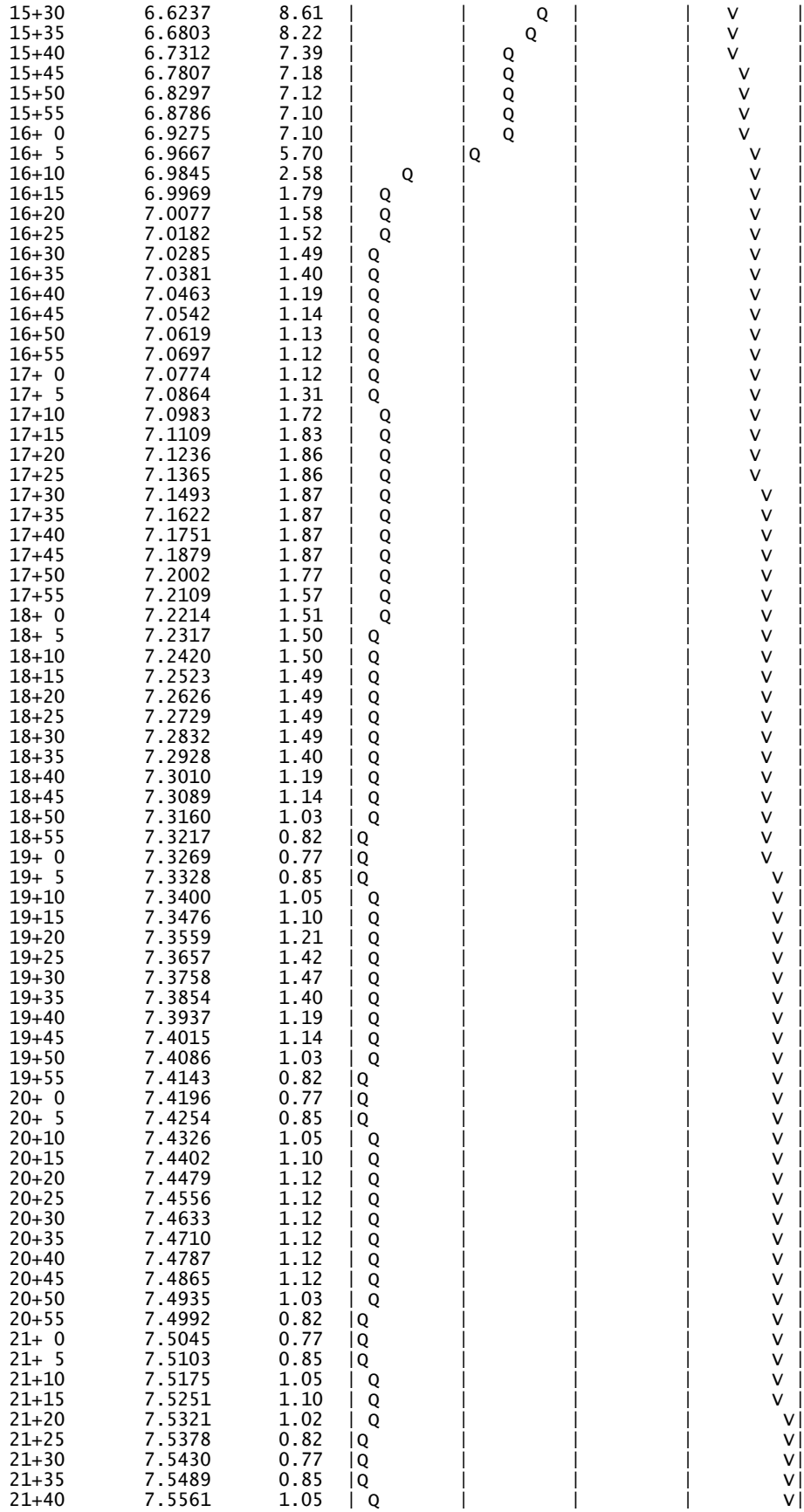
3+ 0       0.3188      1.87  |V Q       |          |          |          |
3+ 5       0.3317      1.87  |V Q       |          |          |          |
3+10       0.3445      1.87  |V Q       |          |          |          |
3+15       0.3574      1.87  |V Q       |          |          |          |
3+20       0.3703      1.87  |V Q       |          |          |          |
3+25       0.3831      1.87  |V Q       |          |          |          |
3+30       0.3960      1.87  | VQ       |          |          |          |
3+35       0.4089      1.87  | VQ       |          |          |          |
3+40       0.4217      1.87  | VQ       |          |          |          |
3+45       0.4346      1.87  | VQ       |          |          |          |
3+50       0.4481      1.96  | VQ       |          |          |          |
3+55       0.4630      2.17  | V Q      |          |          |          |
4+ 0       0.4783      2.22  | V Q      |          |          |          |
4+ 5       0.4937      2.24  | V Q      |          |          |          |
4+10       0.5091      2.24  | V Q      |          |          |          |
4+15       0.5246      2.24  | V Q      |          |          |          |
4+20       0.5407      2.33  | V Q      |          |          |          |
4+25       0.5582      2.54  | V  Q     |          |          |          |
4+30       0.5760      2.60  | V  Q     |          |          |          |
4+35       0.5940      2.61  |  V Q     |          |          |          |
4+40       0.6120      2.61  |  V Q     |          |          |          |
4+45       0.6300      2.61  |  V Q     |          |          |          |
4+50       0.6487      2.71  |  V Q     |          |          |          |
4+55       0.6688      2.92  |  V Q     |          |          |          |
5+ 0       0.6892      2.97  |  V Q     |          |          |          |
5+ 5       0.7085      2.80  |  V Q     |          |          |          |
5+10       0.7249      2.39  |  VQ      |          |          |          |
5+15       0.7406      2.28  |  VQ      |          |          |          |
5+20       0.7567      2.35  |  VQ      |          |          |          |
5+25       0.7743      2.55  |   VQ     |          |          |          |
5+30       0.7921      2.60  |   VQ     |          |          |          |
5+35       0.8108      2.70  |   VQ     |          |          |          |
5+40       0.8308      2.91  |   VQ     |          |          |          |
5+45       0.8513      2.97  |   VQ     |          |          |          |
5+50       0.8718      2.98  |   VQ     |          |          |          |
5+55       0.8924      2.99  |   VQ     |          |          |          |
6+ 0       0.9130      2.99  |   VQ     |          |          |          |
6+ 5       0.9342      3.08  |   V Q    |          |          |          |
6+10       0.9569      3.29  |   V Q    |          |          |          |
6+15       0.9799      3.34  |    VQ    |          |          |          |
6+20       1.0030      3.36  |    VQ    |          |          |          |
6+25       1.0261      3.36  |    VQ    |          |          |          |
6+30       1.0493      3.36  |    VQ    |          |          |          |
6+35       1.0731      3.46  |    VQ    |          |          |          |
6+40       1.0983      3.66  |    V Q   |          |          |          |
6+45       1.1239      3.72  |    V Q   |          |          |          |
6+50       1.1496      3.73  |    V Q   |          |          |          |
6+55       1.1753      3.73  |     VQ   |          |          |          |
7+ 0       1.2010      3.74  |     VQ   |          |          |          |
7+ 5       1.2268      3.74  |     VQ   |          |          |          |
7+10       1.2525      3.74  |     VQ   |          |          |          |
7+15       1.2782      3.74  |     VQ   |          |          |          |
7+20       1.3046      3.83  |     VQ   |          |          |          |
7+25       1.3324      4.04  |     V Q  |          |          |          |
7+30       1.3605      4.09  |      VQ  |          |          |          |
7+35       1.3895      4.20  |      VQ  |          |          |          |
7+40       1.4198      4.41  |      VQ  |          |          |          |
7+45       1.4506      4.46  |      VQ  |          |          |          |
7+50       1.4820      4.57  |      V Q |          |          |          |
7+55       1.5150      4.78  |      V Q |          |          |          |
8+ 0       1.5483      4.84  |       VQ |          |          |          |
8+ 5       1.5830      5.04  |       V Q|          |          |          |
8+10       1.6205      5.46  |       V Q|          |          |          |
8+15       1.6589      5.56  |       V  |Q         |          |          |
8+20       1.6974      5.59  |       V  |Q         |          |          |
8+25       1.7359      5.60  |       V  |Q         |          |          |
8+30       1.7745      5.60  |        V |Q         |          |          |
8+35       1.8138      5.70  |        V |Q         |          |          |
8+40       1.8544      5.90  |        V |Q         |          |          |
8+45       1.8955      5.96  |        V |Q         |          |          |
8+50       1.9372      6.06  |         V Q         |          |          |
8+55       1.9805      6.28  |         V Q         |          |          |
9+ 0       2.0241      6.33  |         V Q         |          |          |
9+ 5       2.0690      6.53  |         V  Q        |          |          |
9+10       2.1169      6.95  |         V  Q        |          |          |
```

9+15	2.1655	7.06	|	|V Q |	|	|
9+20	2.2150	7.18	|	|V Q |	|	|
9+25	2.2659	7.40	|	|V Q |	|	|
9+30	2.3172	7.45	|	| V Q |	|	|
9+35	2.3693	7.56	|	| V Q |	|	|
9+40	2.4228	7.77	|	| V Q |	|	|
9+45	2.4767	7.82	|	| V Q |	|	|
9+50	2.5313	7.93	|	| V Q |	|	|
9+55	2.5874	8.14	|	| V Q |	|	|
10+ 0	2.6439	8.20	|	| V Q |	|	|
10+ 5	2.6959	7.56	|	| V Q |	|	|
10+10	2.7380	6.11	|	| Q V |	|	|
10+15	2.7776	5.74	|	|Q V |	|	|
10+20	2.8164	5.64	|	|Q V |	|	|
10+25	2.8551	5.61	|	|Q V |	|	|
10+30	2.8937	5.60	|	|Q V |	|	|
10+35	2.9355	6.07	|	| Q V |	|	|
10+40	2.9844	7.11	|	| QV |	|	|
10+45	3.0352	7.37	|	| QV |	|	|
10+50	3.0865	7.44	|	| QV |	|	|
10+55	3.1379	7.46	|	| Q V |	|	|
11+ 0	3.1893	7.47	|	| Q V |	|	|
11+ 5	3.2401	7.38	|	| Q V |	|	|
11+10	3.2895	7.17	|	| Q V |	|	|
11+15	3.3385	7.12	|	| Q V |	|	|
11+20	3.3874	7.10	|	| Q V |	|	|
11+25	3.4363	7.10	|	| Q V |	|	|
11+30	3.4852	7.10	|	| Q V |	|	|
11+35	3.5328	6.91	|	| Q V |	|	|
11+40	3.5776	6.50	|	| Q V |	|	|
11+45	3.6216	6.39	|	| Q V |	|	|
11+50	3.6660	6.45	|	| Q V |	|	|
11+55	3.7118	6.65	|	| Q V|	|	|
12+ 0	3.7580	6.70	|	| Q V|	|	|
12+ 5	3.8088	7.37	|	| Q V|	|	|
12+10	3.8696	8.83	|	| Q V |	|	|
12+15	3.9330	9.20	|	| Q V |	|	|
12+20	3.9977	9.39	|	| Q V |	|	|
12+25	4.0640	9.63	|	| Q|V |	|	|
12+30	4.1307	9.69	|	| Q|V |	|	|
12+35	4.1989	9.89	|	| Q|V |	|	|
12+40	4.2699	10.31	|	| Q V |	|	|
12+45	4.3416	10.42	|	| Q V |	|	|
12+50	4.4143	10.54	|	| |QV |	|	|
12+55	4.4883	10.76	|	| |Q V |	|	|
13+ 0	4.5628	10.81	|	| |Q V |	|	|
13+ 5	4.6406	11.29	|	| | Q V |	|	|
13+10	4.7256	12.34	|	| | Q |	|	|
13+15	4.8123	12.60	|	| | VQ |	|	|
13+20	4.8996	12.67	|	| | Q |	|	|
13+25	4.9870	12.69	|	| | Q |	|	|
13+30	5.0745	12.70	|	| | QV |	|	|
13+35	5.1549	11.67	|	| | Q V |	|	|
13+40	5.2196	9.39	|	| Q | V |	|	|
13+45	5.2803	8.81	|	| Q | V |	|	|
13+50	5.3399	8.65	|	| Q | V |	|	|
13+55	5.3991	8.61	|	| Q | V |	|	|
14+ 0	5.4583	8.59	|	| Q | V |	|	|
14+ 5	5.5201	8.96	|	| Q | V |	|	|
14+10	5.5875	9.80	|	| Q| V |	|	|
14+15	5.6564	10.01	|	| Q V|	|	|
14+20	5.7251	9.97	|	| Q| V|	|	|
14+25	5.7925	9.78	|	| Q| V |	|	|
14+30	5.8595	9.73	|	| Q| V |	|	|
14+35	5.9264	9.72	|	| Q| V |	|	|
14+40	5.9933	9.71	|	| Q| |V |	|	|
14+45	6.0602	9.71	|	| Q| |V |	|	|
14+50	6.1265	9.62	|	| Q| |V |	|	|
14+55	6.1913	9.41	|	| Q | | V |	|	|
15+ 0	6.2557	9.36	|	| Q | | V |	|	|
15+ 5	6.3194	9.25	|	| Q | | V |	|	|
15+10	6.3817	9.04	|	| Q | | V |	|	|
15+15	6.4436	8.99	|	| Q | | V |	|	|
15+20	6.5047	8.88	|	| Q | | V |	|	|
15+25	6.5644	8.67	|	| Q | | V |	|	|



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   21+45       7.5637      1.10  | Q       |         |         |        v|
   21+50       7.5707      1.02  | Q       |         |         |        v|
   21+55       7.5764      0.82  |Q        |         |         |        v|
   22+ 0       7.5816      0.77  |Q        |         |         |        v|
   22+ 5       7.5875      0.85  |Q        |         |         |        v|
   22+10       7.5947      1.05  | Q       |         |         |        v|
   22+15       7.6023      1.10  | Q       |         |         |        v|
   22+20       7.6093      1.02  | Q       |         |         |        v|
   22+25       7.6149      0.82  |Q        |         |         |        v|
   22+30       7.6202      0.77  |Q        |         |         |        v|
   22+35       7.6254      0.75  |Q        |         |         |        v|
   22+40       7.6306      0.75  |Q        |         |         |        v|
   22+45       7.6357      0.75  |Q        |         |         |        v|
   22+50       7.6409      0.75  |Q        |         |         |        v|
   22+55       7.6460      0.75  |Q        |         |         |        v|
   23+ 0       7.6511      0.75  |Q        |         |         |        v|
   23+ 5       7.6563      0.75  |Q        |         |         |        v|
   23+10       7.6614      0.75  |Q        |         |         |        v|
   23+15       7.6666      0.75  |Q        |         |         |        v|
   23+20       7.6717      0.75  |Q        |         |         |        v|
   23+25       7.6769      0.75  |Q        |         |         |        v|
   23+30       7.6820      0.75  |Q        |         |         |        v|
   23+35       7.6872      0.75  |Q        |         |         |        v|
   23+40       7.6923      0.75  |Q        |         |         |        v|
   23+45       7.6975      0.75  |Q        |         |         |        v|
   23+50       7.7026      0.75  |Q        |         |         |        v|
   23+55       7.7077      0.75  |Q        |         |         |        v|
   24+ 0       7.7129      0.75  |Q        |         |         |        v|
   24+ 5       7.7168      0.56  |Q        |         |         |        v|
   24+10       7.7178      0.15  Q         |         |         |        v|
   24+15       7.7180      0.04  Q         |         |         |        v|
   24+20       7.7181      0.01  Q         |         |         |        v|
   24+25       7.7181      0.00  Q         |         |         |         v
---------------------------------------------------------------------------
```

PROPOSED CONDITION
5-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST5YR15.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.55	30.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.25	69.13

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.714(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.714(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

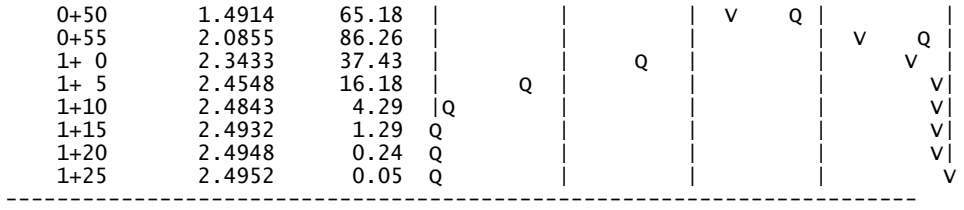
```
      62.6  42.6      0.645     0.710        0.233       1.000      0.233
                                                        Sum (F) =   0.233
      Area averaged mean soil loss (F) (In/Hr) =  0.233
      Minimum soil loss rate ((In/Hr)) =  0.116
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.330
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083        131.015         24.971             13.917
          2   0.167        262.030         55.588             30.980
          3   0.250        393.045         14.152              7.887
          4   0.333        524.061          3.839              2.140
          5   0.417        655.076          1.026              0.572
          6   0.500        786.091          0.425              0.237
                                   Sum = 100.000    Sum=      55.732
-------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.291       (  0.233)       0.096        0.195
   2   0.17     4.70      0.402       (  0.233)       0.133        0.270
   3   0.25     4.70      0.402       (  0.233)       0.133        0.270
   4   0.33     5.10      0.437       (  0.233)       0.144        0.293
   5   0.42     5.80      0.497       (  0.233)       0.164        0.333
   6   0.50     5.90      0.505       (  0.233)       0.167        0.339
   7   0.58     7.10      0.608       (  0.233)       0.201        0.407
   8   0.67     8.70      0.745          0.233    (  0.246)        0.512
   9   0.75    13.20      1.130          0.233    (  0.373)        0.898
  10   0.83    29.70      2.543          0.233    (  0.839)        2.311
  11   0.92     7.70      0.659       (  0.233)       0.218        0.442
  12   1.00     4.00      0.343       (  0.233)       0.113        0.229
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     6.5
       Flood volume = Effective rainfall      0.54(In)
        times area      55.3(Ac.)/[(In)/(Ft.)] =       2.5(Ac.Ft)
       Total soil loss =      0.17(In)
       Total soil loss =     0.793(Ac.Ft)
       Total rainfall =      0.71(In)
       Flood volume =      108691.2 Cubic Feet
       Total soil loss =       34556.0 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =     86.264(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
       ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       22.5      45.0      67.5      90.0
  ------------------------------------------------------------------------
    0+ 5       0.0187      2.72  VQ        |         |         |         |
    0+10       0.0862      9.80  |V  Q     |         |         |         |
    0+15       0.1802     13.65  | V   Q   |         |         |         |
    0+20       0.2834     14.98  |   V Q   |         |         |         |
    0+25       0.3972     16.52  |     VQ  |         |         |         |
    0+30       0.5219     18.11  |       Q |         |         |         |
    0+35       0.6571     19.63  |       Q V         |         |         |
    0+40       0.8181     23.37  |         Q  V      |         |         |
    0+45       1.0425     32.58  |         |   Q V   |         |         |
```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0+55 2.0855 86.26
1+ 0 2.3433 37.43
1+ 5 2.4548 16.18
1+10 2.4843 4.29
1+15 2.4932 1.29
1+20 2.4948 0.24
1+25 2.4952 0.05

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST5YR35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.208(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.207(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.188	(0.233)	0.062	0.126
2	0.17	1.30	0.188	(0.233)	0.062	0.126
3	0.25	1.10	0.159	(0.233)	0.053	0.107
4	0.33	1.50	0.217	(0.233)	0.072	0.146
5	0.42	1.50	0.217	(0.233)	0.072	0.146
6	0.50	1.80	0.261	(0.233)	0.086	0.175
7	0.58	1.50	0.217	(0.233)	0.072	0.146
8	0.67	1.80	0.261	(0.233)	0.086	0.175
9	0.75	1.80	0.261	(0.233)	0.086	0.175
10	0.83	1.50	0.217	(0.233)	0.072	0.146
11	0.92	1.60	0.232	(0.233)	0.076	0.155
12	1.00	1.80	0.261	(0.233)	0.086	0.175
13	1.08	2.20	0.319	(0.233)	0.105	0.214
14	1.17	2.20	0.319	(0.233)	0.105	0.214
15	1.25	2.20	0.319	(0.233)	0.105	0.214
16	1.33	2.00	0.290	(0.233)	0.096	0.194
17	1.42	2.60	0.377	(0.233)	0.124	0.252
18	1.50	2.70	0.391	(0.233)	0.129	0.262
19	1.58	2.40	0.348	(0.233)	0.115	0.233
20	1.67	2.70	0.391	(0.233)	0.129	0.262
21	1.75	3.30	0.478	(0.233)	0.158	0.320
22	1.83	3.10	0.449	(0.233)	0.148	0.301
23	1.92	2.90	0.420	(0.233)	0.139	0.282
24	2.00	3.00	0.435	(0.233)	0.143	0.291
25	2.08	3.10	0.449	(0.233)	0.148	0.301
26	2.17	4.20	0.609	(0.233)	0.201	0.408
27	2.25	5.00	0.724	0.233	(0.239)	0.492
28	2.33	3.50	0.507	(0.233)	0.167	0.340
29	2.42	6.80	0.985	0.233	(0.325)	0.753
30	2.50	7.30	1.058	0.233	(0.349)	0.825
31	2.58	8.20	1.188	0.233	(0.392)	0.955
32	2.67	5.90	0.855	0.233	(0.282)	0.622
33	2.75	2.00	0.290	(0.233)	0.096	0.194
34	2.83	1.80	0.261	(0.233)	0.086	0.175
35	2.92	1.80	0.261	(0.233)	0.086	0.175
36	3.00	0.60	0.087	(0.233)	0.029	0.058
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	10.1

Flood volume = Effective rainfall 0.84(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 3.9(Ac.Ft)
Total soil loss = 0.36(In)
Total soil loss = 1.673(Ac.Ft)
Total rainfall = 1.21(In)
Flood volume = 169475.7 Cubic Feet

Total soil loss = 72887.5 Cubic Feet

Peak flow rate of this hydrograph = 46.707(CFS)

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3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	12.5	25.0	37.5	50.0
0+ 5	0.0121	1.76	VQ				
0+10	0.0511	5.67	V Q				
0+15	0.0952	6.39	V Q				
0+20	0.1407	6.60	V Q				
0+25	0.1939	7.73	V Q				
0+30	0.2519	8.43	V Q				
0+35	0.3138	8.99	V Q				
0+40	0.3741	8.75	V Q				
0+45	0.4394	9.49	V Q				
0+50	0.5033	9.27	V Q				
0+55	0.5622	8.55	VQ				
1+ 0	0.6235	8.90	VQ				
1+ 5	0.6928	10.07	VQ				
1+10	0.7715	11.43	V Q				
1+15	0.8526	11.78	VQ				
1+20	0.9325	11.60	Q				
1+25	1.0141	11.84	QV				
1+30	1.1080	13.63	QV				
1+35	1.2040	13.95	QV				
1+40	1.2980	13.64	Q V				
1+45	1.4025	15.17	Q V				
1+50	1.5188	16.90	Q V				
1+55	1.6327	16.53	Q V				
2+ 0	1.7432	16.05	Q V				
2+ 5	1.8556	16.33	Q V				
2+10	1.9807	18.15	Q V				
2+15	2.1371	22.71	Q V				
2+20	2.3029	24.07	Q V				
2+25	2.4819	26.00	Q V				
2+30	2.7495	38.85	V Q				
2+35	3.0657	45.92	V Q				
2+40	3.3874	46.71	V Q				
2+45	3.6064	31.80	Q V				
2+50	3.7170	16.06	Q V				
2+55	3.7959	11.45	Q V				
3+ 0	3.8552	8.60	Q V				
3+ 5	3.8814	3.82	Q V				
3+10	3.8882	0.98	Q V				
3+15	3.8900	0.27	Q V				
3+20	3.8905	0.07	Q V				
3+25	3.8906	0.01	Q V				

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST5YR65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.40	77.42

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	3.00	165.90

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.775(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.774(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6	42.6	0.645	0.710	0.233	1.000	0.233
					Sum (F) =	0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

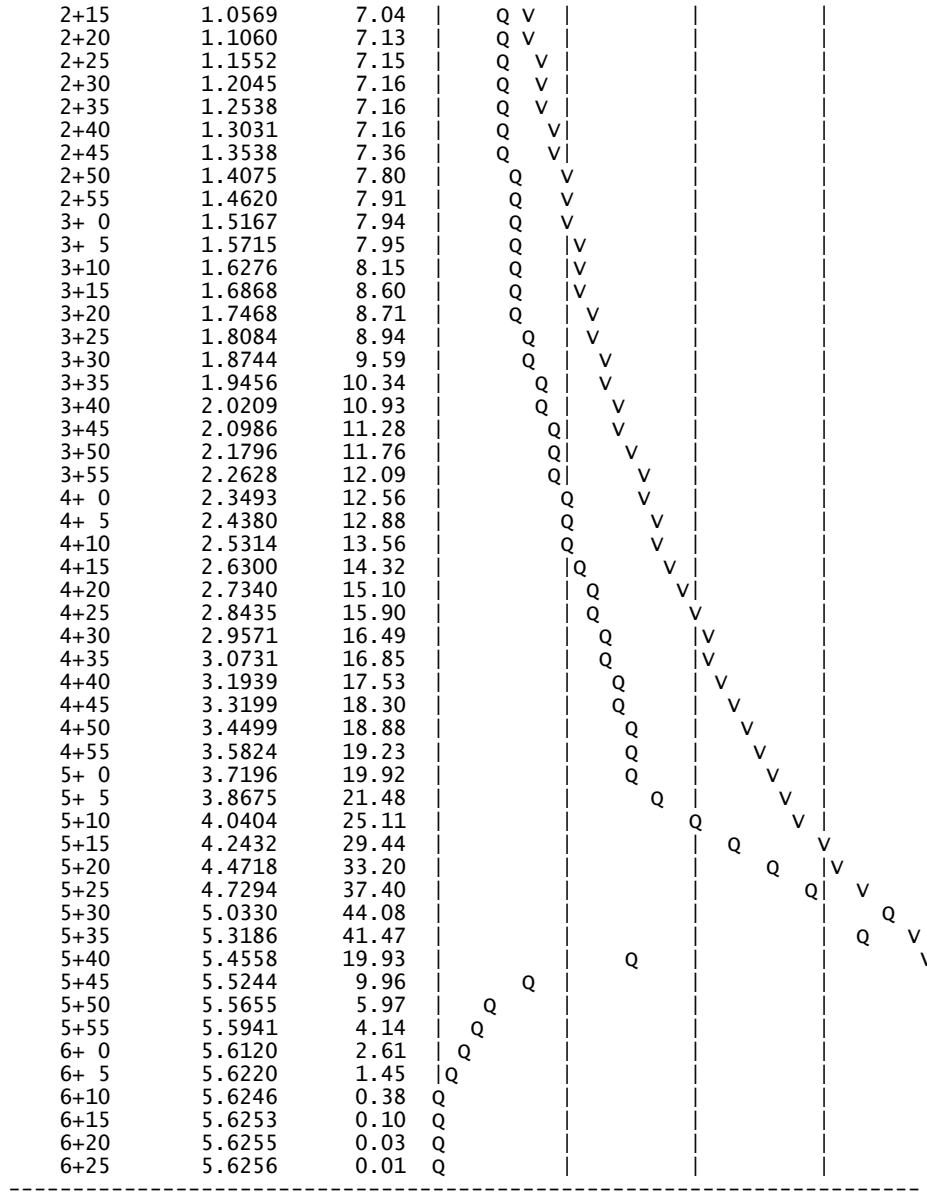
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.106	(0.233)	0.035	0.071
2	0.17	0.60	0.128	(0.233)	0.042	0.086
3	0.25	0.60	0.128	(0.233)	0.042	0.086
4	0.33	0.60	0.128	(0.233)	0.042	0.086
5	0.42	0.60	0.128	(0.233)	0.042	0.086
6	0.50	0.70	0.149	(0.233)	0.049	0.100
7	0.58	0.70	0.149	(0.233)	0.049	0.100
8	0.67	0.70	0.149	(0.233)	0.049	0.100
9	0.75	0.70	0.149	(0.233)	0.049	0.100
10	0.83	0.70	0.149	(0.233)	0.049	0.100
11	0.92	0.70	0.149	(0.233)	0.049	0.100
12	1.00	0.80	0.170	(0.233)	0.056	0.114
13	1.08	0.80	0.170	(0.233)	0.056	0.114
14	1.17	0.80	0.170	(0.233)	0.056	0.114
15	1.25	0.80	0.170	(0.233)	0.056	0.114
16	1.33	0.80	0.170	(0.233)	0.056	0.114
17	1.42	0.80	0.170	(0.233)	0.056	0.114
18	1.50	0.80	0.170	(0.233)	0.056	0.114
19	1.58	0.80	0.170	(0.233)	0.056	0.114
20	1.67	0.80	0.170	(0.233)	0.056	0.114
21	1.75	0.80	0.170	(0.233)	0.056	0.114
22	1.83	0.80	0.170	(0.233)	0.056	0.114
23	1.92	0.80	0.170	(0.233)	0.056	0.114
24	2.00	0.90	0.192	(0.233)	0.063	0.128
25	2.08	0.80	0.170	(0.233)	0.056	0.114
26	2.17	0.90	0.192	(0.233)	0.063	0.128
27	2.25	0.90	0.192	(0.233)	0.063	0.128
28	2.33	0.90	0.192	(0.233)	0.063	0.128
29	2.42	0.90	0.192	(0.233)	0.063	0.128
30	2.50	0.90	0.192	(0.233)	0.063	0.128
31	2.58	0.90	0.192	(0.233)	0.063	0.128
32	2.67	0.90	0.192	(0.233)	0.063	0.128
33	2.75	1.00	0.213	(0.233)	0.070	0.143
34	2.83	1.00	0.213	(0.233)	0.070	0.143
35	2.92	1.00	0.213	(0.233)	0.070	0.143
36	3.00	1.00	0.213	(0.233)	0.070	0.143
37	3.08	1.00	0.213	(0.233)	0.070	0.143
38	3.17	1.10	0.234	(0.233)	0.077	0.157
39	3.25	1.10	0.234	(0.233)	0.077	0.157
40	3.33	1.10	0.234	(0.233)	0.077	0.157
41	3.42	1.20	0.256	(0.233)	0.084	0.171
42	3.50	1.30	0.277	(0.233)	0.091	0.185
43	3.58	1.40	0.298	(0.233)	0.098	0.200
44	3.67	1.40	0.298	(0.233)	0.098	0.200

```
45   3.75     1.50      0.319       (  0.233)       0.105        0.214
46   3.83     1.50      0.319       (  0.233)       0.105        0.214
47   3.92     1.60      0.341       (  0.233)       0.112        0.228
48   4.00     1.60      0.341       (  0.233)       0.112        0.228
49   4.08     1.70      0.362       (  0.233)       0.119        0.243
50   4.17     1.80      0.383       (  0.233)       0.126        0.257
51   4.25     1.90      0.405       (  0.233)       0.134        0.271
52   4.33     2.00      0.426       (  0.233)       0.141        0.285
53   4.42     2.10      0.447       (  0.233)       0.148        0.300
54   4.50     2.10      0.447       (  0.233)       0.148        0.300
55   4.58     2.20      0.468       (  0.233)       0.155        0.314
56   4.67     2.30      0.490       (  0.233)       0.162        0.328
57   4.75     2.40      0.511       (  0.233)       0.169        0.342
58   4.83     2.40      0.511       (  0.233)       0.169        0.342
59   4.92     2.50      0.532       (  0.233)       0.176        0.357
60   5.00     2.60      0.554       (  0.233)       0.183        0.371
61   5.08     3.10      0.660       (  0.233)       0.218        0.442
62   5.17     3.60      0.767          0.233    (  0.253)       0.534
63   5.25     3.90      0.830          0.233    (  0.274)       0.598
64   5.33     4.20      0.894          0.233    (  0.295)       0.662
65   5.42     4.70      1.001          0.233    (  0.330)       0.768
66   5.50     5.60      1.192          0.233    (  0.393)       0.960
67   5.58     1.90      0.405       (  0.233)       0.134        0.271
68   5.67     0.90      0.192       (  0.233)       0.063        0.128
69   5.75     0.60      0.128       (  0.233)       0.042        0.086
70   5.83     0.50      0.106       (  0.233)       0.035        0.071
71   5.92     0.30      0.064       (  0.233)       0.021        0.043
72   6.00     0.20      0.043       (  0.233)       0.014        0.029
               (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    14.6
     Flood volume = Effective rainfall      1.22(In)
      times area      55.3(Ac.)/[(In)/(Ft.)] =       5.6(Ac.Ft)
     Total soil loss =      0.55(In)
     Total soil loss =     2.552(Ac.Ft)
     Total rainfall =      1.77(In)
     Flood volume =      245049.9 Cubic Feet
     Total soil loss =      111145.7 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     44.082(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
     ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
-------------------------------------------------------------------------
  0+ 5       0.0068      0.99  Q         |         |         |         |
  0+10       0.0303      3.40  V Q       |         |         |         |
  0+15       0.0606      4.41  V  Q      |         |         |         |
  0+20       0.0928      4.67  V  Q      |         |         |         |
  0+25       0.1255      4.74  V  Q      |         |         |         |
  0+30       0.1597      4.97  |V Q      |         |         |         |
  0+35       0.1970      5.41  |V  Q     |         |         |         |
  0+40       0.2351      5.53  |V  Q     |         |         |         |
  0+45       0.2733      5.56  |V  Q     |         |         |         |
  0+50       0.3117      5.57  | V Q     |         |         |         |
  0+55       0.3500      5.57  | V Q     |         |         |         |
  1+ 0       0.3897      5.77  | V Q     |         |         |         |
  1+ 5       0.4325      6.21  |  VQ     |         |         |         |
  1+10       0.4760      6.32  |  V Q    |         |         |         |
  1+15       0.5198      6.35  |  V Q    |         |         |         |
  1+20       0.5636      6.36  |   VQ    |         |         |         |
  1+25       0.6074      6.36  |   VQ    |         |         |         |
  1+30       0.6512      6.36  |   VQ    |         |         |         |
  1+35       0.6951      6.36  |   VQ    |         |         |         |
  1+40       0.7389      6.36  |    Q    |         |         |         |
  1+45       0.7827      6.36  |    Q    |         |         |         |
  1+50       0.8266      6.36  |    Q    |         |         |         |
  1+55       0.8704      6.36  |    QV   |         |         |         |
  2+ 0       0.9156      6.56  |    QV   |         |         |         |
  2+ 5       0.9625      6.81  |    QV   |         |         |         |
  2+10       1.0084      6.68  |    Q V  |         |         |         |
```



U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST5YR245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 3.437(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.437(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	(0.412)	0.009	0.018
2	0.17	0.07	0.027	(0.411)	0.009	0.018
3	0.25	0.07	0.027	(0.409)	0.009	0.018
4	0.33	0.10	0.041	(0.408)	0.014	0.028
5	0.42	0.10	0.041	(0.406)	0.014	0.028
6	0.50	0.10	0.041	(0.405)	0.014	0.028
7	0.58	0.10	0.041	(0.403)	0.014	0.028
8	0.67	0.10	0.041	(0.401)	0.014	0.028
9	0.75	0.10	0.041	(0.400)	0.014	0.028
10	0.83	0.13	0.055	(0.398)	0.018	0.037
11	0.92	0.13	0.055	(0.397)	0.018	0.037
12	1.00	0.13	0.055	(0.395)	0.018	0.037
13	1.08	0.10	0.041	(0.394)	0.014	0.028
14	1.17	0.10	0.041	(0.392)	0.014	0.028
15	1.25	0.10	0.041	(0.390)	0.014	0.028
16	1.33	0.10	0.041	(0.389)	0.014	0.028
17	1.42	0.10	0.041	(0.387)	0.014	0.028
18	1.50	0.10	0.041	(0.386)	0.014	0.028
19	1.58	0.10	0.041	(0.384)	0.014	0.028
20	1.67	0.10	0.041	(0.383)	0.014	0.028
21	1.75	0.10	0.041	(0.381)	0.014	0.028
22	1.83	0.13	0.055	(0.380)	0.018	0.037
23	1.92	0.13	0.055	(0.378)	0.018	0.037
24	2.00	0.13	0.055	(0.377)	0.018	0.037
25	2.08	0.13	0.055	(0.375)	0.018	0.037
26	2.17	0.13	0.055	(0.374)	0.018	0.037
27	2.25	0.13	0.055	(0.372)	0.018	0.037
28	2.33	0.13	0.055	(0.370)	0.018	0.037
29	2.42	0.13	0.055	(0.369)	0.018	0.037
30	2.50	0.13	0.055	(0.367)	0.018	0.037
31	2.58	0.17	0.069	(0.366)	0.023	0.046
32	2.67	0.17	0.069	(0.364)	0.023	0.046
33	2.75	0.17	0.069	(0.363)	0.023	0.046
34	2.83	0.17	0.069	(0.361)	0.023	0.046
35	2.92	0.17	0.069	(0.360)	0.023	0.046
36	3.00	0.17	0.069	(0.358)	0.023	0.046
37	3.08	0.17	0.069	(0.357)	0.023	0.046
38	3.17	0.17	0.069	(0.356)	0.023	0.046
39	3.25	0.17	0.069	(0.354)	0.023	0.046
40	3.33	0.17	0.069	(0.353)	0.023	0.046
41	3.42	0.17	0.069	(0.351)	0.023	0.046
42	3.50	0.17	0.069	(0.350)	0.023	0.046
43	3.58	0.17	0.069	(0.348)	0.023	0.046
44	3.67	0.17	0.069	(0.347)	0.023	0.046

45	3.75	0.17	0.069	(0.345)	0.023	0.046
46	3.83	0.20	0.082	(0.344)	0.027	0.055
47	3.92	0.20	0.082	(0.342)	0.027	0.055
48	4.00	0.20	0.082	(0.341)	0.027	0.055
49	4.08	0.20	0.082	(0.339)	0.027	0.055
50	4.17	0.20	0.082	(0.338)	0.027	0.055
51	4.25	0.20	0.082	(0.337)	0.027	0.055
52	4.33	0.23	0.096	(0.335)	0.032	0.064
53	4.42	0.23	0.096	(0.334)	0.032	0.064
54	4.50	0.23	0.096	(0.332)	0.032	0.064
55	4.58	0.23	0.096	(0.331)	0.032	0.064
56	4.67	0.23	0.096	(0.329)	0.032	0.064
57	4.75	0.23	0.096	(0.328)	0.032	0.064
58	4.83	0.27	0.110	(0.327)	0.036	0.074
59	4.92	0.27	0.110	(0.325)	0.036	0.074
60	5.00	0.27	0.110	(0.324)	0.036	0.074
61	5.08	0.20	0.082	(0.322)	0.027	0.055
62	5.17	0.20	0.082	(0.321)	0.027	0.055
63	5.25	0.20	0.082	(0.320)	0.027	0.055
64	5.33	0.23	0.096	(0.318)	0.032	0.064
65	5.42	0.23	0.096	(0.317)	0.032	0.064
66	5.50	0.23	0.096	(0.315)	0.032	0.064
67	5.58	0.27	0.110	(0.314)	0.036	0.074
68	5.67	0.27	0.110	(0.313)	0.036	0.074
69	5.75	0.27	0.110	(0.311)	0.036	0.074
70	5.83	0.27	0.110	(0.310)	0.036	0.074
71	5.92	0.27	0.110	(0.308)	0.036	0.074
72	6.00	0.27	0.110	(0.307)	0.036	0.074
73	6.08	0.30	0.124	(0.306)	0.041	0.083
74	6.17	0.30	0.124	(0.304)	0.041	0.083
75	6.25	0.30	0.124	(0.303)	0.041	0.083
76	6.33	0.30	0.124	(0.302)	0.041	0.083
77	6.42	0.30	0.124	(0.300)	0.041	0.083
78	6.50	0.30	0.124	(0.299)	0.041	0.083
79	6.58	0.33	0.137	(0.298)	0.045	0.092
80	6.67	0.33	0.137	(0.296)	0.045	0.092
81	6.75	0.33	0.137	(0.295)	0.045	0.092
82	6.83	0.33	0.137	(0.294)	0.045	0.092
83	6.92	0.33	0.137	(0.292)	0.045	0.092
84	7.00	0.33	0.137	(0.291)	0.045	0.092
85	7.08	0.33	0.137	(0.290)	0.045	0.092
86	7.17	0.33	0.137	(0.288)	0.045	0.092
87	7.25	0.33	0.137	(0.287)	0.045	0.092
88	7.33	0.37	0.151	(0.286)	0.050	0.101
89	7.42	0.37	0.151	(0.284)	0.050	0.101
90	7.50	0.37	0.151	(0.283)	0.050	0.101
91	7.58	0.40	0.165	(0.282)	0.054	0.111
92	7.67	0.40	0.165	(0.281)	0.054	0.111
93	7.75	0.40	0.165	(0.279)	0.054	0.111
94	7.83	0.43	0.179	(0.278)	0.059	0.120
95	7.92	0.43	0.179	(0.277)	0.059	0.120
96	8.00	0.43	0.179	(0.275)	0.059	0.120
97	8.08	0.50	0.206	(0.274)	0.068	0.138
98	8.17	0.50	0.206	(0.273)	0.068	0.138
99	8.25	0.50	0.206	(0.272)	0.068	0.138
100	8.33	0.50	0.206	(0.270)	0.068	0.138
101	8.42	0.50	0.206	(0.269)	0.068	0.138
102	8.50	0.50	0.206	(0.268)	0.068	0.138
103	8.58	0.53	0.220	(0.266)	0.073	0.147
104	8.67	0.53	0.220	(0.265)	0.073	0.147
105	8.75	0.53	0.220	(0.264)	0.073	0.147
106	8.83	0.57	0.234	(0.263)	0.077	0.157
107	8.92	0.57	0.234	(0.261)	0.077	0.157
108	9.00	0.57	0.234	(0.260)	0.077	0.157
109	9.08	0.63	0.261	(0.259)	0.086	0.175
110	9.17	0.63	0.261	(0.258)	0.086	0.175
111	9.25	0.63	0.261	(0.257)	0.086	0.175
112	9.33	0.67	0.275	(0.255)	0.091	0.184
113	9.42	0.67	0.275	(0.254)	0.091	0.184
114	9.50	0.67	0.275	(0.253)	0.091	0.184
115	9.58	0.70	0.289	(0.252)	0.095	0.193
116	9.67	0.70	0.289	(0.250)	0.095	0.193
117	9.75	0.70	0.289	(0.249)	0.095	0.193
118	9.83	0.73	0.302	(0.248)	0.100	0.203
119	9.92	0.73	0.302	(0.247)	0.100	0.203

120	10.00	0.73	0.302	(0.246)	0.100	0.203
121	10.08	0.50	0.206	(0.245)	0.068	0.138
122	10.17	0.50	0.206	(0.243)	0.068	0.138
123	10.25	0.50	0.206	(0.242)	0.068	0.138
124	10.33	0.50	0.206	(0.241)	0.068	0.138
125	10.42	0.50	0.206	(0.240)	0.068	0.138
126	10.50	0.50	0.206	(0.239)	0.068	0.138
127	10.58	0.67	0.275	(0.237)	0.091	0.184
128	10.67	0.67	0.275	(0.236)	0.091	0.184
129	10.75	0.67	0.275	(0.235)	0.091	0.184
130	10.83	0.67	0.275	(0.234)	0.091	0.184
131	10.92	0.67	0.275	(0.233)	0.091	0.184
132	11.00	0.67	0.275	(0.232)	0.091	0.184
133	11.08	0.63	0.261	(0.231)	0.086	0.175
134	11.17	0.63	0.261	(0.229)	0.086	0.175
135	11.25	0.63	0.261	(0.228)	0.086	0.175
136	11.33	0.63	0.261	(0.227)	0.086	0.175
137	11.42	0.63	0.261	(0.226)	0.086	0.175
138	11.50	0.63	0.261	(0.225)	0.086	0.175
139	11.58	0.57	0.234	(0.224)	0.077	0.157
140	11.67	0.57	0.234	(0.223)	0.077	0.157
141	11.75	0.57	0.234	(0.222)	0.077	0.157
142	11.83	0.60	0.247	(0.220)	0.082	0.166
143	11.92	0.60	0.247	(0.219)	0.082	0.166
144	12.00	0.60	0.247	(0.218)	0.082	0.166
145	12.08	0.83	0.344	(0.217)	0.113	0.230
146	12.17	0.83	0.344	(0.216)	0.113	0.230
147	12.25	0.83	0.344	(0.215)	0.113	0.230
148	12.33	0.87	0.357	(0.214)	0.118	0.239
149	12.42	0.87	0.357	(0.213)	0.118	0.239
150	12.50	0.87	0.357	(0.212)	0.118	0.239
151	12.58	0.93	0.385	(0.211)	0.127	0.258
152	12.67	0.93	0.385	(0.210)	0.127	0.258
153	12.75	0.93	0.385	(0.209)	0.127	0.258
154	12.83	0.97	0.399	(0.208)	0.132	0.267
155	12.92	0.97	0.399	(0.207)	0.132	0.267
156	13.00	0.97	0.399	(0.205)	0.132	0.267
157	13.08	1.13	0.467	(0.204)	0.154	0.313
158	13.17	1.13	0.467	(0.203)	0.154	0.313
159	13.25	1.13	0.467	(0.202)	0.154	0.313
160	13.33	1.13	0.467	(0.201)	0.154	0.313
161	13.42	1.13	0.467	(0.200)	0.154	0.313
162	13.50	1.13	0.467	(0.199)	0.154	0.313
163	13.58	0.77	0.316	(0.198)	0.104	0.212
164	13.67	0.77	0.316	(0.197)	0.104	0.212
165	13.75	0.77	0.316	(0.196)	0.104	0.212
166	13.83	0.77	0.316	(0.195)	0.104	0.212
167	13.92	0.77	0.316	(0.194)	0.104	0.212
168	14.00	0.77	0.316	(0.193)	0.104	0.212
169	14.08	0.90	0.371	(0.192)	0.122	0.249
170	14.17	0.90	0.371	(0.191)	0.122	0.249
171	14.25	0.90	0.371	(0.190)	0.122	0.249
172	14.33	0.87	0.357	(0.189)	0.118	0.239
173	14.42	0.87	0.357	(0.188)	0.118	0.239
174	14.50	0.87	0.357	(0.187)	0.118	0.239
175	14.58	0.87	0.357	(0.186)	0.118	0.239
176	14.67	0.87	0.357	(0.185)	0.118	0.239
177	14.75	0.87	0.357	(0.185)	0.118	0.239
178	14.83	0.83	0.344	(0.184)	0.113	0.230
179	14.92	0.83	0.344	(0.183)	0.113	0.230
180	15.00	0.83	0.344	(0.182)	0.113	0.230
181	15.08	0.80	0.330	(0.181)	0.109	0.221
182	15.17	0.80	0.330	(0.180)	0.109	0.221
183	15.25	0.80	0.330	(0.179)	0.109	0.221
184	15.33	0.77	0.316	(0.178)	0.104	0.212
185	15.42	0.77	0.316	(0.177)	0.104	0.212
186	15.50	0.77	0.316	(0.176)	0.104	0.212
187	15.58	0.63	0.261	(0.175)	0.086	0.175
188	15.67	0.63	0.261	(0.174)	0.086	0.175
189	15.75	0.63	0.261	(0.174)	0.086	0.175
190	15.83	0.63	0.261	(0.173)	0.086	0.175
191	15.92	0.63	0.261	(0.172)	0.086	0.175
192	16.00	0.63	0.261	(0.171)	0.086	0.175
193	16.08	0.13	0.055	(0.170)	0.018	0.037
194	16.17	0.13	0.055	(0.169)	0.018	0.037

195	16.25	0.13	0.055	(0.168)	0.018	0.037
196	16.33	0.13	0.055	(0.167)	0.018	0.037
197	16.42	0.13	0.055	(0.167)	0.018	0.037
198	16.50	0.13	0.055	(0.166)	0.018	0.037
199	16.58	0.10	0.041	(0.165)	0.014	0.028
200	16.67	0.10	0.041	(0.164)	0.014	0.028
201	16.75	0.10	0.041	(0.163)	0.014	0.028
202	16.83	0.10	0.041	(0.162)	0.014	0.028
203	16.92	0.10	0.041	(0.162)	0.014	0.028
204	17.00	0.10	0.041	(0.161)	0.014	0.028
205	17.08	0.17	0.069	(0.160)	0.023	0.046
206	17.17	0.17	0.069	(0.159)	0.023	0.046
207	17.25	0.17	0.069	(0.158)	0.023	0.046
208	17.33	0.17	0.069	(0.158)	0.023	0.046
209	17.42	0.17	0.069	(0.157)	0.023	0.046
210	17.50	0.17	0.069	(0.156)	0.023	0.046
211	17.58	0.17	0.069	(0.155)	0.023	0.046
212	17.67	0.17	0.069	(0.154)	0.023	0.046
213	17.75	0.17	0.069	(0.154)	0.023	0.046
214	17.83	0.13	0.055	(0.153)	0.018	0.037
215	17.92	0.13	0.055	(0.152)	0.018	0.037
216	18.00	0.13	0.055	(0.151)	0.018	0.037
217	18.08	0.13	0.055	(0.151)	0.018	0.037
218	18.17	0.13	0.055	(0.150)	0.018	0.037
219	18.25	0.13	0.055	(0.149)	0.018	0.037
220	18.33	0.13	0.055	(0.148)	0.018	0.037
221	18.42	0.13	0.055	(0.148)	0.018	0.037
222	18.50	0.13	0.055	(0.147)	0.018	0.037
223	18.58	0.10	0.041	(0.146)	0.014	0.028
224	18.67	0.10	0.041	(0.146)	0.014	0.028
225	18.75	0.10	0.041	(0.145)	0.014	0.028
226	18.83	0.07	0.027	(0.144)	0.009	0.018
227	18.92	0.07	0.027	(0.143)	0.009	0.018
228	19.00	0.07	0.027	(0.143)	0.009	0.018
229	19.08	0.10	0.041	(0.142)	0.014	0.028
230	19.17	0.10	0.041	(0.141)	0.014	0.028
231	19.25	0.10	0.041	(0.141)	0.014	0.028
232	19.33	0.13	0.055	(0.140)	0.018	0.037
233	19.42	0.13	0.055	(0.139)	0.018	0.037
234	19.50	0.13	0.055	(0.139)	0.018	0.037
235	19.58	0.10	0.041	(0.138)	0.014	0.028
236	19.67	0.10	0.041	(0.138)	0.014	0.028
237	19.75	0.10	0.041	(0.137)	0.014	0.028
238	19.83	0.07	0.027	(0.136)	0.009	0.018
239	19.92	0.07	0.027	(0.136)	0.009	0.018
240	20.00	0.07	0.027	(0.135)	0.009	0.018
241	20.08	0.10	0.041	(0.135)	0.014	0.028
242	20.17	0.10	0.041	(0.134)	0.014	0.028
243	20.25	0.10	0.041	(0.133)	0.014	0.028
244	20.33	0.10	0.041	(0.133)	0.014	0.028
245	20.42	0.10	0.041	(0.132)	0.014	0.028
246	20.50	0.10	0.041	(0.132)	0.014	0.028
247	20.58	0.10	0.041	(0.131)	0.014	0.028
248	20.67	0.10	0.041	(0.131)	0.014	0.028
249	20.75	0.10	0.041	(0.130)	0.014	0.028
250	20.83	0.07	0.027	(0.129)	0.009	0.018
251	20.92	0.07	0.027	(0.129)	0.009	0.018
252	21.00	0.07	0.027	(0.128)	0.009	0.018
253	21.08	0.10	0.041	(0.128)	0.014	0.028
254	21.17	0.10	0.041	(0.127)	0.014	0.028
255	21.25	0.10	0.041	(0.127)	0.014	0.028
256	21.33	0.07	0.027	(0.126)	0.009	0.018
257	21.42	0.07	0.027	(0.126)	0.009	0.018
258	21.50	0.07	0.027	(0.125)	0.009	0.018
259	21.58	0.10	0.041	(0.125)	0.014	0.028
260	21.67	0.10	0.041	(0.125)	0.014	0.028
261	21.75	0.10	0.041	(0.124)	0.014	0.028
262	21.83	0.07	0.027	(0.124)	0.009	0.018
263	21.92	0.07	0.027	(0.123)	0.009	0.018
264	22.00	0.07	0.027	(0.123)	0.009	0.018
265	22.08	0.10	0.041	(0.122)	0.014	0.028
266	22.17	0.10	0.041	(0.122)	0.014	0.028
267	22.25	0.10	0.041	(0.122)	0.014	0.028
268	22.33	0.07	0.027	(0.121)	0.009	0.018
269	22.42	0.07	0.027	(0.121)	0.009	0.018

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270  22.50     0.07      0.027       (  0.121)       0.009        0.018
271  22.58     0.07      0.027       (  0.120)       0.009        0.018
272  22.67     0.07      0.027       (  0.120)       0.009        0.018
273  22.75     0.07      0.027       (  0.120)       0.009        0.018
274  22.83     0.07      0.027       (  0.119)       0.009        0.018
275  22.92     0.07      0.027       (  0.119)       0.009        0.018
276  23.00     0.07      0.027       (  0.119)       0.009        0.018
277  23.08     0.07      0.027       (  0.118)       0.009        0.018
278  23.17     0.07      0.027       (  0.118)       0.009        0.018
279  23.25     0.07      0.027       (  0.118)       0.009        0.018
280  23.33     0.07      0.027       (  0.118)       0.009        0.018
281  23.42     0.07      0.027       (  0.117)       0.009        0.018
282  23.50     0.07      0.027       (  0.117)       0.009        0.018
283  23.58     0.07      0.027       (  0.117)       0.009        0.018
284  23.67     0.07      0.027       (  0.117)       0.009        0.018
285  23.75     0.07      0.027       (  0.117)       0.009        0.018
286  23.83     0.07      0.027       (  0.117)       0.009        0.018
287  23.92     0.07      0.027       (  0.116)       0.009        0.018
288  24.00     0.07      0.027       (  0.116)       0.009        0.018
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    27.6
      Flood volume = Effective rainfall      2.30(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =      10.6(Ac.Ft)
      Total soil loss =      1.13(In)
      Total soil loss =     5.226(Ac.Ft)
      Total rainfall =      3.44(In)
      Flood volume =      462196.0 Cubic Feet
      Total soil loss =      227648.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     17.461(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ------------------------------------------------------------------------
   0+ 5       0.0018      0.26  Q         |         |         |         |
   0+10       0.0075      0.83  VQ        |         |         |         |
   0+15       0.0142      0.97  VQ        |         |         |         |
   0+20       0.0220      1.14  V Q       |         |         |         |
   0+25       0.0319      1.44  V Q       |         |         |         |
   0+30       0.0423      1.51  V  Q      |         |         |         |
   0+35       0.0529      1.53  V  Q      |         |         |         |
   0+40       0.0635      1.54  V  Q      |         |         |         |
   0+45       0.0741      1.54  V  Q      |         |         |         |
   0+50       0.0856      1.67  V  Q      |         |         |         |
   0+55       0.0991      1.95  V  Q      |         |         |         |
   1+ 0       0.1130      2.03  V   Q     |         |         |         |
   1+ 5       0.1262      1.92  V  Q      |         |         |         |
   1+10       0.1375      1.64  V  Q      |         |         |         |
   1+15       0.1483      1.57  V  Q      |         |         |         |
   1+20       0.1590      1.55  V  Q      |         |         |         |
   1+25       0.1696      1.54  V  Q      |         |         |         |
   1+30       0.1802      1.54  V  Q      |         |         |         |
   1+35       0.1908      1.54  V  Q      |         |         |         |
   1+40       0.2014      1.54  V  Q      |         |         |         |
   1+45       0.2120      1.54  V  Q      |         |         |         |
   1+50       0.2235      1.67  V  Q      |         |         |         |
   1+55       0.2370      1.95  V  Q      |         |         |         |
   2+ 0       0.2510      2.03  V   Q     |         |         |         |
   2+ 5       0.2650      2.05  V   Q     |         |         |         |
   2+10       0.2792      2.05  |V  Q     |         |         |         |
   2+15       0.2933      2.05  |V  Q     |         |         |         |
   2+20       0.3075      2.05  |V  Q     |         |         |         |
   2+25       0.3216      2.05  |V  Q     |         |         |         |
   2+30       0.3358      2.05  |V  Q     |         |         |         |
   2+35       0.3508      2.18  |V  Q     |         |         |         |
   2+40       0.3678      2.47  |V  Q     |         |         |         |
   2+45       0.3853      2.54  |V   Q    |         |         |         |
   2+50       0.4029      2.56  |V   Q    |         |         |         |
   2+55       0.4206      2.57  |V   Q    |         |         |         |
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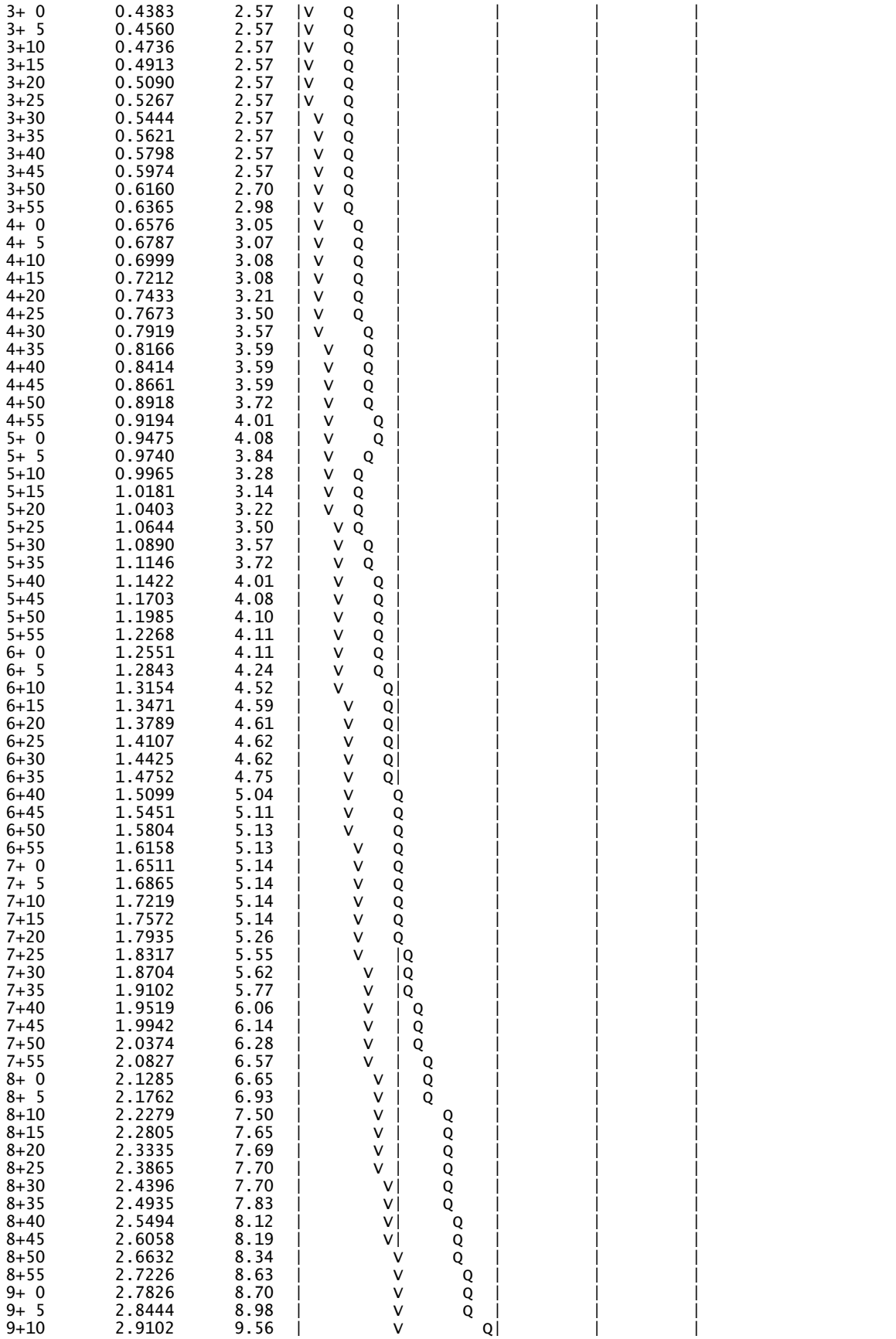
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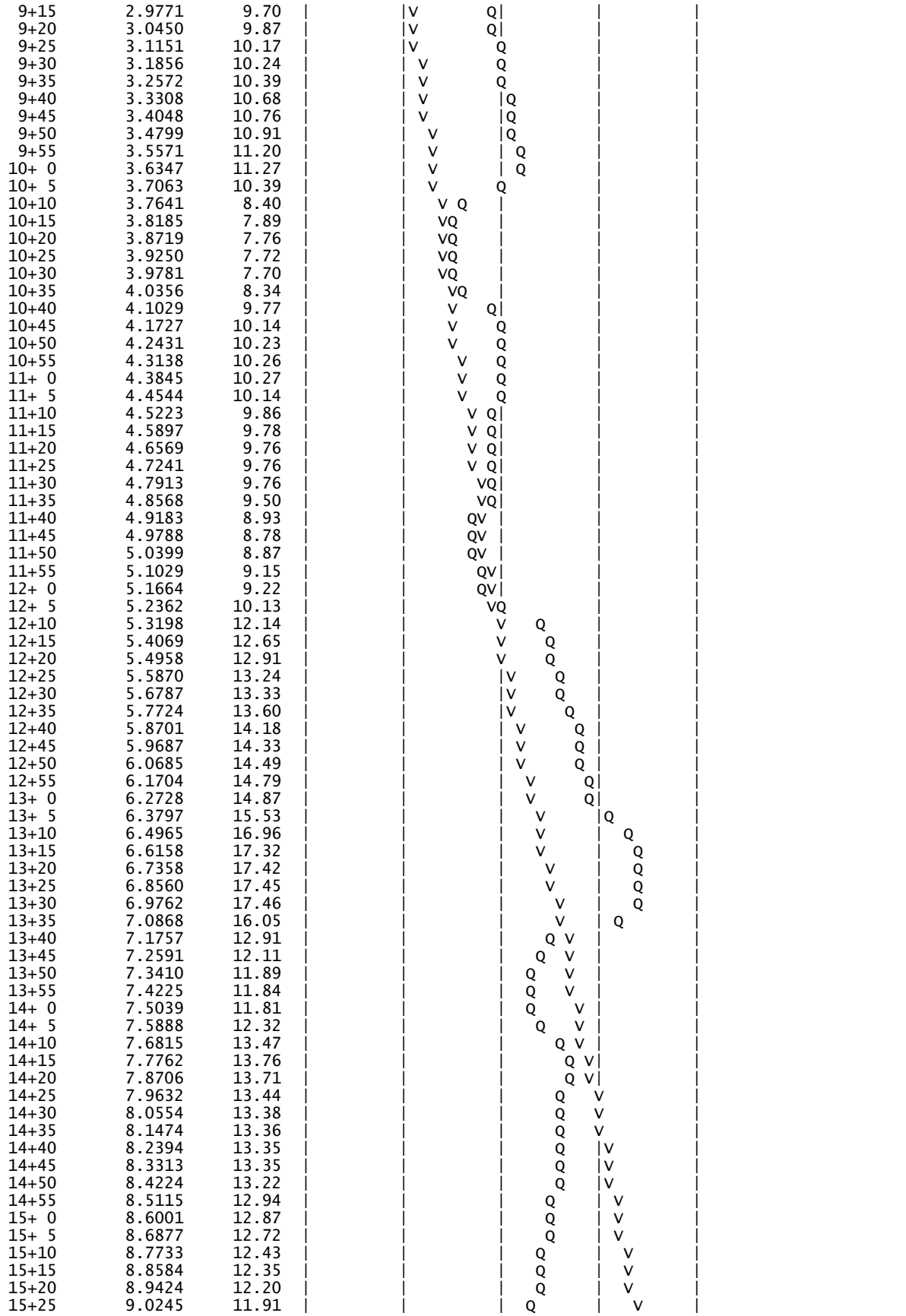
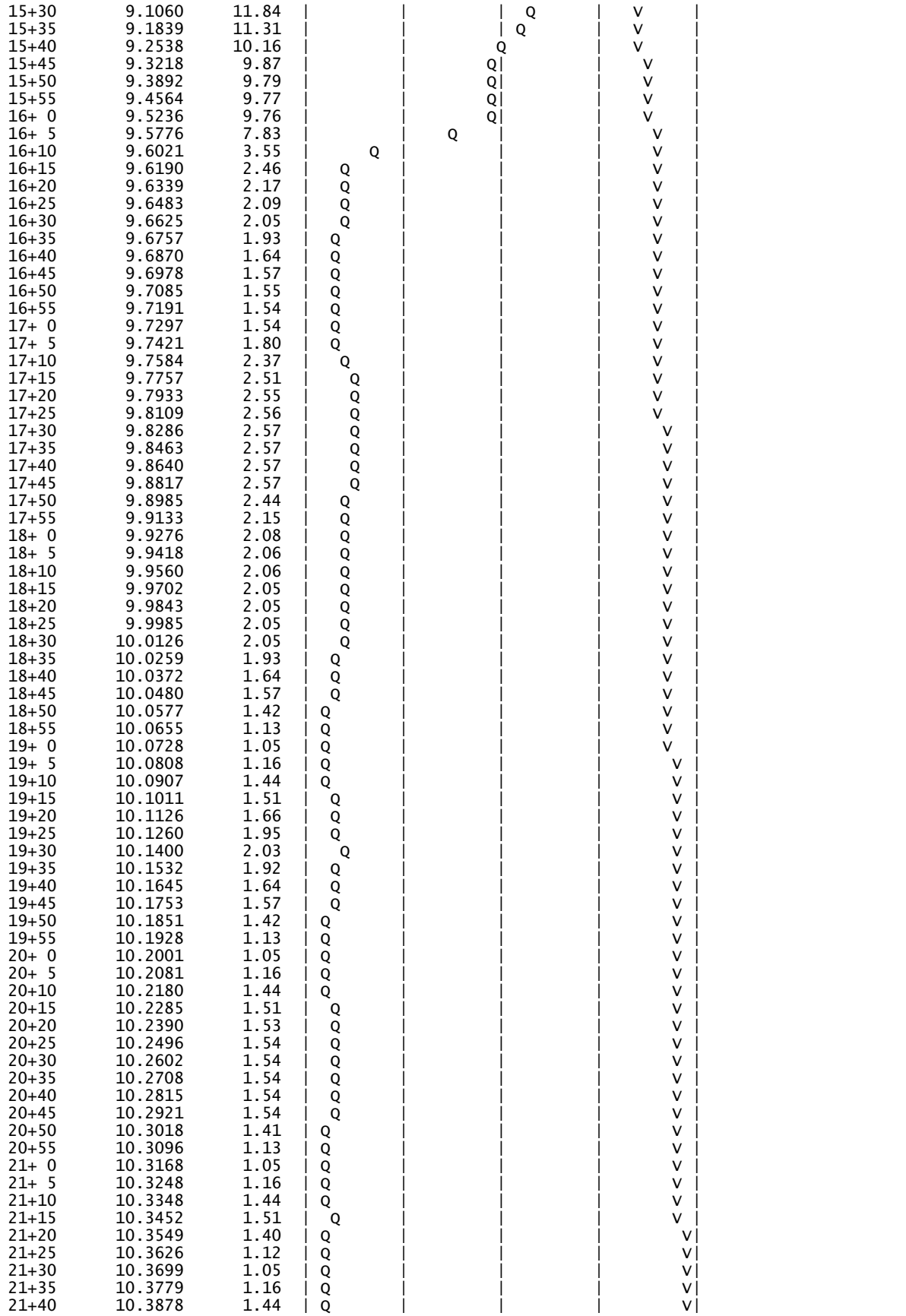
3+ 5 0.4560 2.57
3+10 0.4736 2.57
3+15 0.4913 2.57
3+20 0.5090 2.57
3+25 0.5267 2.57
3+30 0.5444 2.57
3+35 0.5621 2.57
3+40 0.5798 2.57
3+45 0.5974 2.57
3+50 0.6160 2.70
3+55 0.6365 2.98
4+ 0 0.6576 3.05
4+ 5 0.6787 3.07
4+10 0.6999 3.08
4+15 0.7212 3.08
4+20 0.7433 3.21
4+25 0.7673 3.50
4+30 0.7919 3.57
4+35 0.8166 3.59
4+40 0.8414 3.59
4+45 0.8661 3.59
4+50 0.8918 3.72
4+55 0.9194 4.01
5+ 0 0.9475 4.08
5+ 5 0.9740 3.84
5+10 0.9965 3.28
5+15 1.0181 3.14
5+20 1.0403 3.22
5+25 1.0644 3.50
5+30 1.0890 3.57
5+35 1.1146 3.72
5+40 1.1422 4.01
5+45 1.1703 4.08
5+50 1.1985 4.10
5+55 1.2268 4.11
6+ 0 1.2551 4.11
6+ 5 1.2843 4.24
6+10 1.3154 4.52
6+15 1.3471 4.59
6+20 1.3789 4.61
6+25 1.4107 4.62
6+30 1.4425 4.62
6+35 1.4752 4.75
6+40 1.5099 5.04
6+45 1.5451 5.11
6+50 1.5804 5.13
6+55 1.6158 5.13
7+ 0 1.6511 5.14
7+ 5 1.6865 5.14
7+10 1.7219 5.14
7+15 1.7572 5.14
7+20 1.7935 5.26
7+25 1.8317 5.55
7+30 1.8704 5.62
7+35 1.9102 5.77
7+40 1.9519 6.06
7+45 1.9942 6.14
7+50 2.0374 6.28
7+55 2.0827 6.57
8+ 0 2.1285 6.65
8+ 5 2.1762 6.93
8+10 2.2279 7.50
8+15 2.2805 7.65
8+20 2.3335 7.69
8+25 2.3865 7.70
8+30 2.4396 7.70
8+35 2.4935 7.83
8+40 2.5494 8.12
8+45 2.6058 8.19
8+50 2.6632 8.34
8+55 2.7226 8.63
9+ 0 2.7826 8.70
9+ 5 2.8444 8.98
9+10 2.9102 9.56





```
   21+45      10.3982      1.51  |  Q      |         |         |        v|
   21+50      10.4079      1.40  | Q       |         |         |        v|
   21+55      10.4157      1.12  | Q       |         |         |        v|
   22+ 0      10.4229      1.05  | Q       |         |         |        v|
   22+ 5      10.4309      1.16  | Q       |         |         |        v|
   22+10      10.4409      1.44  | Q       |         |         |        v|
   22+15      10.4513      1.51  |  Q      |         |         |        v|
   22+20      10.4610      1.40  | Q       |         |         |        v|
   22+25      10.4687      1.12  | Q       |         |         |        v|
   22+30      10.4760      1.05  | Q       |         |         |        v|
   22+35      10.4831      1.03  | Q       |         |         |        v|
   22+40      10.4902      1.03  | Q       |         |         |        v|
   22+45      10.4973      1.03  | Q       |         |         |        v|
   22+50      10.5043      1.03  | Q       |         |         |        v|
   22+55      10.5114      1.03  | Q       |         |         |        v|
   23+ 0      10.5185      1.03  | Q       |         |         |        v|
   23+ 5      10.5256      1.03  | Q       |         |         |        v|
   23+10      10.5326      1.03  | Q       |         |         |        v|
   23+15      10.5397      1.03  | Q       |         |         |        v|
   23+20      10.5468      1.03  | Q       |         |         |        v|
   23+25      10.5539      1.03  | Q       |         |         |        v|
   23+30      10.5609      1.03  | Q       |         |         |        v|
   23+35      10.5680      1.03  | Q       |         |         |        v|
   23+40      10.5751      1.03  | Q       |         |         |        v|
   23+45      10.5821      1.03  | Q       |         |         |        v|
   23+50      10.5892      1.03  | Q       |         |         |        v|
   23+55      10.5963      1.03  | Q       |         |         |        v|
   24+ 0      10.6034      1.03  | Q       |         |         |        v|
   24+ 5      10.6087      0.77  |Q        |         |         |        v|
   24+10      10.6101      0.20  Q         |         |         |        v|
   24+15      10.6104      0.05  Q         |         |         |        v|
   24+20      10.6105      0.01  Q         |         |         |        v|
   24+25      10.6106      0.00  Q         |         |         |        v|
---------------------------------------------------------------------------
```

PROPOSED CONDITION
10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST10YR110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.55	30.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.25	69.13

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.838(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.838(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
      62.6  62.6      0.442     0.710        0.160       1.000      0.160
                                                        Sum (F) =   0.160
      Area averaged mean soil loss (F) (In/Hr) =  0.160
      Minimum soil loss rate ((In/Hr)) =  0.080
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.330
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083        131.015         24.971             13.917
          2   0.167        262.030         55.588             30.980
          3   0.250        393.045         14.152              7.887
          4   0.333        524.061          3.839              2.140
          5   0.417        655.076          1.026              0.572
          6   0.500        786.091          0.425              0.237
                                   Sum = 100.000    Sum=      55.732
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.342       (  0.160)       0.113        0.229
   2   0.17     4.70      0.472       (  0.160)       0.156        0.316
   3   0.25     4.70      0.472       (  0.160)       0.156        0.316
   4   0.33     5.10      0.513          0.160    (  0.169)        0.353
   5   0.42     5.80      0.583          0.160    (  0.192)        0.423
   6   0.50     5.90      0.593          0.160    (  0.196)        0.433
   7   0.58     7.10      0.714          0.160    (  0.235)        0.554
   8   0.67     8.70      0.874          0.160    (  0.289)        0.715
   9   0.75    13.20      1.327          0.160    (  0.438)        1.167
  10   0.83    29.70      2.985          0.160    (  0.985)        2.826
  11   0.92     7.70      0.774          0.160    (  0.255)        0.614
  12   1.00     4.00      0.402       (  0.160)       0.133        0.269
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     8.2
       Flood volume = Effective rainfall      0.68(In)
        times area      55.3(Ac.)/[(In)/(Ft.)] =       3.2(Ac.Ft)
       Total soil loss =      0.15(In)
       Total soil loss =     0.704(Ac.Ft)
       Total rainfall =      0.84(In)
       Flood volume =      137461.2 Cubic Feet
       Total soil loss =       30670.9 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =    107.296(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
       ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ----------------------------------------------------------------------------
    0+ 5       0.0220      3.19  Q         |         |         |         |
    0+10       0.1012     11.50  |VQ       |         |         |         |
    0+15       0.2115     16.02  | VQ      |         |         |         |
    0+20       0.3335     17.71  |  QV     |         |         |         |
    0+25       0.4723     20.14  |   QV    |         |         |         |
    0+30       0.6297     22.86  |   Q  V  |         |         |         |
    0+35       0.8053     25.50  |    Q    V         |         |         |
    0+40       1.0239     31.73  |     Q   | V       |         |         |
    0+45       1.3272     44.04  |       Q |     V   |         |         |
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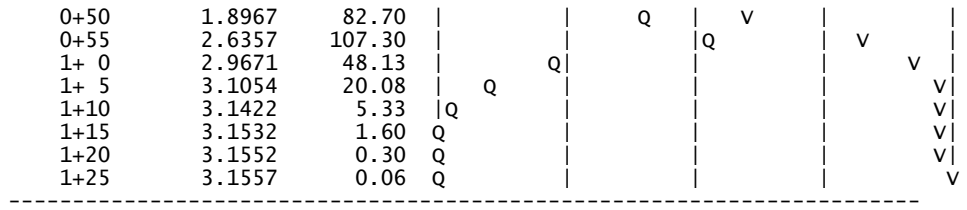
0+50 1.8967 82.70
0+55 2.6357 107.30
1+ 0 2.9671 48.13
1+ 5 3.1054 20.08
1+10 3.1422 5.33
1+15 3.1532 1.60
1+20 3.1552 0.30
1+25 3.1557 0.06

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST10YR310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.403(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 62.6 0.442 0.710 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.219	(0.160)	0.072	0.147
2	0.17	1.30	0.219	(0.160)	0.072	0.147
3	0.25	1.10	0.185	(0.160)	0.061	0.124
4	0.33	1.50	0.252	(0.160)	0.083	0.169
5	0.42	1.50	0.252	(0.160)	0.083	0.169
6	0.50	1.80	0.303	(0.160)	0.100	0.203
7	0.58	1.50	0.252	(0.160)	0.083	0.169
8	0.67	1.80	0.303	(0.160)	0.100	0.203
9	0.75	1.80	0.303	(0.160)	0.100	0.203
10	0.83	1.50	0.252	(0.160)	0.083	0.169
11	0.92	1.60	0.269	(0.160)	0.089	0.180
12	1.00	1.80	0.303	(0.160)	0.100	0.203
13	1.08	2.20	0.370	(0.160)	0.122	0.248
14	1.17	2.20	0.370	(0.160)	0.122	0.248
15	1.25	2.20	0.370	(0.160)	0.122	0.248
16	1.33	2.00	0.337	(0.160)	0.111	0.225
17	1.42	2.60	0.437	(0.160)	0.144	0.293
18	1.50	2.70	0.454	(0.160)	0.150	0.304
19	1.58	2.40	0.404	(0.160)	0.133	0.271
20	1.67	2.70	0.454	(0.160)	0.150	0.304
21	1.75	3.30	0.555	0.160	(0.183)	0.396
22	1.83	3.10	0.522	0.160	(0.172)	0.362
23	1.92	2.90	0.488	0.160	(0.161)	0.328
24	2.00	3.00	0.505	0.160	(0.167)	0.345
25	2.08	3.10	0.522	0.160	(0.172)	0.362
26	2.17	4.20	0.707	0.160	(0.233)	0.547
27	2.25	5.00	0.841	0.160	(0.278)	0.682
28	2.33	3.50	0.589	0.160	(0.194)	0.429
29	2.42	6.80	1.144	0.160	(0.378)	0.985
30	2.50	7.30	1.228	0.160	(0.405)	1.069
31	2.58	8.20	1.380	0.160	(0.455)	1.220
32	2.67	5.90	0.993	0.160	(0.328)	0.833
33	2.75	2.00	0.337	(0.160)	0.111	0.225
34	2.83	1.80	0.303	(0.160)	0.100	0.203
35	2.92	1.80	0.303	(0.160)	0.100	0.203
36	3.00	0.60	0.101	(0.160)	0.033	0.068
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	12.5

Flood volume = Effective rainfall 1.04(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 4.8(Ac.Ft)
Total soil loss = 0.36(In)
Total soil loss = 1.667(Ac.Ft)
Total rainfall = 1.40(In)
Flood volume = 208861.7 Cubic Feet

Total soil loss = 72616.5 Cubic Feet

Peak flow rate of this hydrograph = 60.374(CFS)

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3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	17.5	35.0	52.5	70.0
0+ 5	0.0141	2.04	VQ				
0+10	0.0594	6.58	V Q				
0+15	0.1105	7.43	V Q				
0+20	0.1634	7.67	V Q				
0+25	0.2251	8.97	V Q				
0+30	0.2925	9.79	V Q				
0+35	0.3645	10.45	V Q				
0+40	0.4344	10.16	V Q				
0+45	0.5103	11.02	V Q				
0+50	0.5845	10.76	V Q				
0+55	0.6529	9.93	Q				
1+ 0	0.7241	10.34	QV				
1+ 5	0.8046	11.69	Q				
1+10	0.8961	13.27	Q				
1+15	0.9902	13.68	QV				
1+20	1.0830	13.47	Q V				
1+25	1.1777	13.75	Q V				
1+30	1.2868	15.83	QV				
1+35	1.3983	16.20	Q V				
1+40	1.5074	15.84	Q V				
1+45	1.6311	17.95	Q V				
1+50	1.7725	20.53	Q V				
1+55	1.9089	19.80	Q V				
2+ 0	2.0392	18.93	Q V				
2+ 5	2.1729	19.41	Q V				
2+10	2.3283	22.57	Q V				
2+15	2.5372	30.32	Q V				
2+20	2.7609	32.48	Q V				
2+25	2.9941	33.86	Q V				
2+30	3.3429	50.65	VQ				
2+35	3.7515	59.33	V Q				
2+40	4.1673	60.37	Q				
2+45	4.4534	41.55	Q				
2+50	4.5901	19.85	Q				
2+55	4.6840	13.63	Q				
3+ 0	4.7534	10.08	Q				
3+ 5	4.7841	4.46	Q				
3+10	4.7920	1.14	Q				
3+15	4.7941	0.31	Q				
3+20	4.7947	0.09	Q				
3+25	4.7948	0.02	Q				

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST10YR610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.40	77.42

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	3.00	165.90

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 2.058(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.058(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 62.6 0.442 0.710 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.123	(0.160)	0.041	0.083
2	0.17	0.60	0.148	(0.160)	0.049	0.099
3	0.25	0.60	0.148	(0.160)	0.049	0.099
4	0.33	0.60	0.148	(0.160)	0.049	0.099
5	0.42	0.60	0.148	(0.160)	0.049	0.099
6	0.50	0.70	0.173	(0.160)	0.057	0.116
7	0.58	0.70	0.173	(0.160)	0.057	0.116
8	0.67	0.70	0.173	(0.160)	0.057	0.116
9	0.75	0.70	0.173	(0.160)	0.057	0.116
10	0.83	0.70	0.173	(0.160)	0.057	0.116
11	0.92	0.70	0.173	(0.160)	0.057	0.116
12	1.00	0.80	0.198	(0.160)	0.065	0.132
13	1.08	0.80	0.198	(0.160)	0.065	0.132
14	1.17	0.80	0.198	(0.160)	0.065	0.132
15	1.25	0.80	0.198	(0.160)	0.065	0.132
16	1.33	0.80	0.198	(0.160)	0.065	0.132
17	1.42	0.80	0.198	(0.160)	0.065	0.132
18	1.50	0.80	0.198	(0.160)	0.065	0.132
19	1.58	0.80	0.198	(0.160)	0.065	0.132
20	1.67	0.80	0.198	(0.160)	0.065	0.132
21	1.75	0.80	0.198	(0.160)	0.065	0.132
22	1.83	0.80	0.198	(0.160)	0.065	0.132
23	1.92	0.80	0.198	(0.160)	0.065	0.132
24	2.00	0.90	0.222	(0.160)	0.073	0.149
25	2.08	0.80	0.198	(0.160)	0.065	0.132
26	2.17	0.90	0.222	(0.160)	0.073	0.149
27	2.25	0.90	0.222	(0.160)	0.073	0.149
28	2.33	0.90	0.222	(0.160)	0.073	0.149
29	2.42	0.90	0.222	(0.160)	0.073	0.149
30	2.50	0.90	0.222	(0.160)	0.073	0.149
31	2.58	0.90	0.222	(0.160)	0.073	0.149
32	2.67	0.90	0.222	(0.160)	0.073	0.149
33	2.75	1.00	0.247	(0.160)	0.081	0.165
34	2.83	1.00	0.247	(0.160)	0.081	0.165
35	2.92	1.00	0.247	(0.160)	0.081	0.165
36	3.00	1.00	0.247	(0.160)	0.081	0.165
37	3.08	1.00	0.247	(0.160)	0.081	0.165
38	3.17	1.10	0.272	(0.160)	0.090	0.182
39	3.25	1.10	0.272	(0.160)	0.090	0.182
40	3.33	1.10	0.272	(0.160)	0.090	0.182
41	3.42	1.20	0.296	(0.160)	0.098	0.199
42	3.50	1.30	0.321	(0.160)	0.106	0.215
43	3.58	1.40	0.346	(0.160)	0.114	0.232
44	3.67	1.40	0.346	(0.160)	0.114	0.232

45	3.75	1.50	0.370	(0.160)	0.122		0.248
46	3.83	1.50	0.370	(0.160)	0.122		0.248
47	3.92	1.60	0.395	(0.160)	0.130		0.265
48	4.00	1.60	0.395	(0.160)	0.130		0.265
49	4.08	1.70	0.420	(0.160)	0.139		0.281
50	4.17	1.80	0.444	(0.160)	0.147		0.298
51	4.25	1.90	0.469	(0.160)	0.155		0.314
52	4.33	2.00	0.494	0.160	(0.163)		0.334
53	4.42	2.10	0.519	0.160	(0.171)		0.359
54	4.50	2.10	0.519	0.160	(0.171)		0.359
55	4.58	2.20	0.543	0.160	(0.179)		0.384
56	4.67	2.30	0.568	0.160	(0.187)		0.408
57	4.75	2.40	0.593	0.160	(0.196)		0.433
58	4.83	2.40	0.593	0.160	(0.196)		0.433
59	4.92	2.50	0.617	0.160	(0.204)		0.458
60	5.00	2.60	0.642	0.160	(0.212)		0.483
61	5.08	3.10	0.766	0.160	(0.253)		0.606
62	5.17	3.60	0.889	0.160	(0.293)		0.729
63	5.25	3.90	0.963	0.160	(0.318)		0.804
64	5.33	4.20	1.037	0.160	(0.342)		0.878
65	5.42	4.70	1.161	0.160	(0.383)		1.001
66	5.50	5.60	1.383	0.160	(0.456)		1.223
67	5.58	1.90	0.469	(0.160)	0.155		0.314
68	5.67	0.90	0.222	(0.160)	0.073		0.149
69	5.75	0.60	0.148	(0.160)	0.049		0.099
70	5.83	0.50	0.123	(0.160)	0.041		0.083
71	5.92	0.30	0.074	(0.160)	0.024		0.050
72	6.00	0.20	0.049	(0.160)	0.016		0.033

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.9

Flood volume = Effective rainfall 1.49(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 6.9(Ac.Ft)
Total soil loss = 0.57(In)
Total soil loss = 2.618(Ac.Ft)
Total rainfall = 2.06(In)
Flood volume = 299040.3 Cubic Feet
Total soil loss = 114052.8 Cubic Feet

Peak flow rate of this hydrograph = 57.271(CFS)

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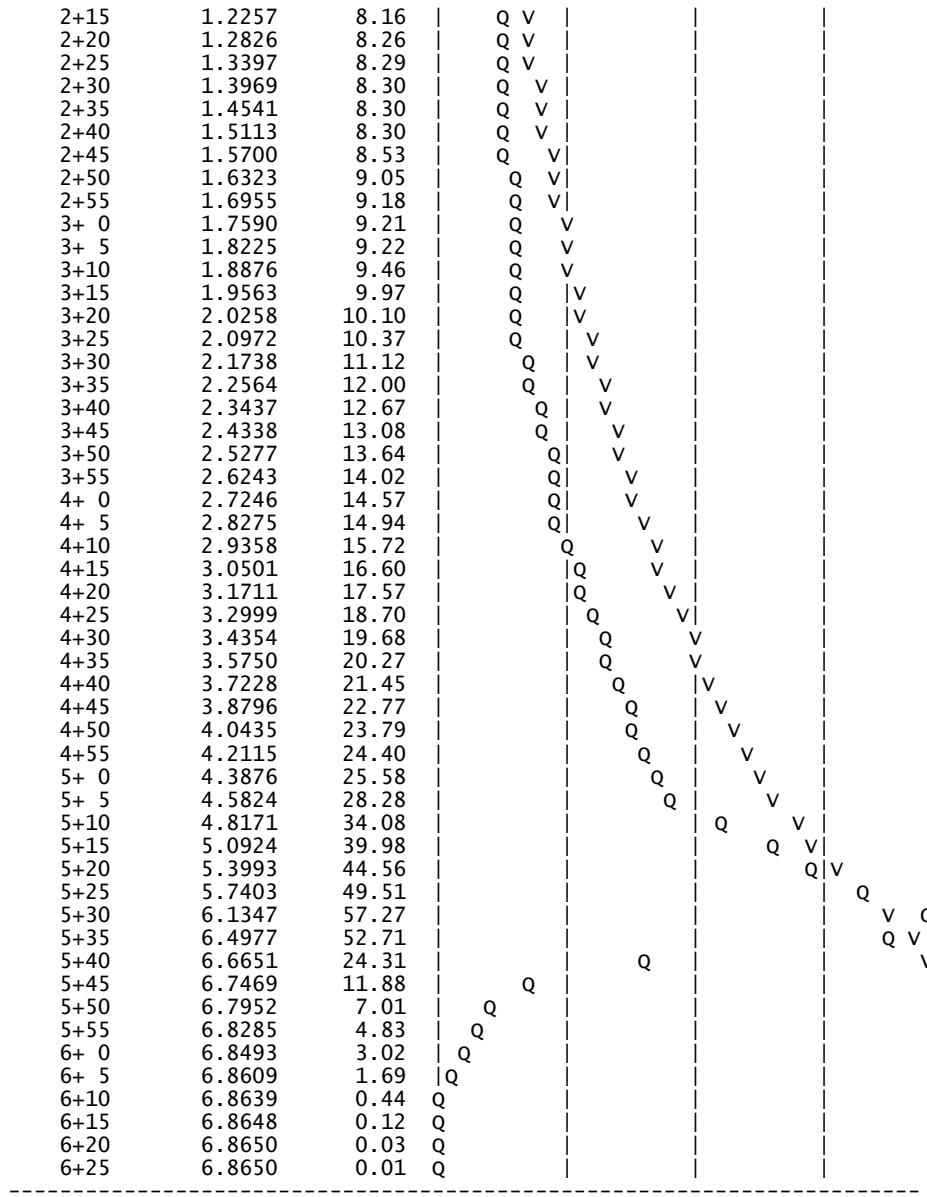
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	15.0	30.0	45.0	60.0
0+ 5	0.0079	1.15	Q				
0+10	0.0351	3.95	V Q				
0+15	0.0703	5.11	V Q				
0+20	0.1076	5.42	V Q				
0+25	0.1455	5.50	V Q				
0+30	0.1852	5.76	V Q				
0+35	0.2285	6.28	V Q				
0+40	0.2726	6.41	V Q				
0+45	0.3170	6.44	V Q				
0+50	0.3614	6.45	V Q				
0+55	0.4059	6.46	V Q				
1+ 0	0.4520	6.69	V Q				
1+ 5	0.5016	7.20	V Q				
1+10	0.5521	7.33	VQ				
1+15	0.6028	7.37	VQ				
1+20	0.6536	7.38	VQ				
1+25	0.7044	7.38	Q				
1+30	0.7553	7.38	Q				
1+35	0.8061	7.38	Q				
1+40	0.8569	7.38	Q				
1+45	0.9078	7.38	QV				
1+50	0.9586	7.38	QV				
1+55	1.0094	7.38	QV				
2+ 0	1.0618	7.61	QV				
2+ 5	1.1162	7.89	QV				
2+10	1.1695	7.74	QV				


2+15 1.2257 8.16
2+20 1.2826 8.26
2+25 1.3397 8.29
2+30 1.3969 8.30
2+35 1.4541 8.30
2+40 1.5113 8.30
2+45 1.5700 8.53
2+50 1.6323 9.05
2+55 1.6955 9.18
3+ 0 1.7590 9.21
3+ 5 1.8225 9.22
3+10 1.8876 9.46
3+15 1.9563 9.97
3+20 2.0258 10.10
3+25 2.0972 10.37
3+30 2.1738 11.12
3+35 2.2564 12.00
3+40 2.3437 12.67
3+45 2.4338 13.08
3+50 2.5277 13.64
3+55 2.6243 14.02
4+ 0 2.7246 14.57
4+ 5 2.8275 14.94
4+10 2.9358 15.72
4+15 3.0501 16.60
4+20 3.1711 17.57
4+25 3.2999 18.70
4+30 3.4354 19.68
4+35 3.5750 20.27
4+40 3.7228 21.45
4+45 3.8796 22.77
4+50 4.0435 23.79
4+55 4.2115 24.40
5+ 0 4.3876 25.58
5+ 5 4.5824 28.28
5+10 4.8171 34.08
5+15 5.0924 39.98
5+20 5.3993 44.56
5+25 5.7403 49.51
5+30 6.1347 57.27
5+35 6.4977 52.71
5+40 6.6651 24.31
5+45 6.7469 11.88
5+50 6.7952 7.01
5+55 6.8285 4.83
6+ 0 6.8493 3.02
6+ 5 6.8609 1.69
6+10 6.8639 0.44
6+15 6.8648 0.12
6+20 6.8650 0.03
6+25 6.8650 0.01

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST10YR2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.145(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 62.6 0.442 0.710 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	(0.283)	0.011	0.022
2	0.17	0.07	0.033	(0.282)	0.011	0.022
3	0.25	0.07	0.033	(0.281)	0.011	0.022
4	0.33	0.10	0.050	(0.280)	0.016	0.033
5	0.42	0.10	0.050	(0.278)	0.016	0.033
6	0.50	0.10	0.050	(0.277)	0.016	0.033
7	0.58	0.10	0.050	(0.276)	0.016	0.033
8	0.67	0.10	0.050	(0.275)	0.016	0.033
9	0.75	0.10	0.050	(0.274)	0.016	0.033
10	0.83	0.13	0.066	(0.273)	0.022	0.044
11	0.92	0.13	0.066	(0.272)	0.022	0.044
12	1.00	0.13	0.066	(0.271)	0.022	0.044
13	1.08	0.10	0.050	(0.270)	0.016	0.033
14	1.17	0.10	0.050	(0.269)	0.016	0.033
15	1.25	0.10	0.050	(0.268)	0.016	0.033
16	1.33	0.10	0.050	(0.267)	0.016	0.033
17	1.42	0.10	0.050	(0.266)	0.016	0.033
18	1.50	0.10	0.050	(0.265)	0.016	0.033
19	1.58	0.10	0.050	(0.263)	0.016	0.033
20	1.67	0.10	0.050	(0.262)	0.016	0.033
21	1.75	0.10	0.050	(0.261)	0.016	0.033
22	1.83	0.13	0.066	(0.260)	0.022	0.044
23	1.92	0.13	0.066	(0.259)	0.022	0.044
24	2.00	0.13	0.066	(0.258)	0.022	0.044
25	2.08	0.13	0.066	(0.257)	0.022	0.044
26	2.17	0.13	0.066	(0.256)	0.022	0.044
27	2.25	0.13	0.066	(0.255)	0.022	0.044
28	2.33	0.13	0.066	(0.254)	0.022	0.044
29	2.42	0.13	0.066	(0.253)	0.022	0.044
30	2.50	0.13	0.066	(0.252)	0.022	0.044
31	2.58	0.17	0.083	(0.251)	0.027	0.056
32	2.67	0.17	0.083	(0.250)	0.027	0.056
33	2.75	0.17	0.083	(0.249)	0.027	0.056
34	2.83	0.17	0.083	(0.248)	0.027	0.056
35	2.92	0.17	0.083	(0.247)	0.027	0.056
36	3.00	0.17	0.083	(0.246)	0.027	0.056
37	3.08	0.17	0.083	(0.245)	0.027	0.056
38	3.17	0.17	0.083	(0.244)	0.027	0.056
39	3.25	0.17	0.083	(0.243)	0.027	0.056
40	3.33	0.17	0.083	(0.242)	0.027	0.056
41	3.42	0.17	0.083	(0.241)	0.027	0.056
42	3.50	0.17	0.083	(0.240)	0.027	0.056
43	3.58	0.17	0.083	(0.239)	0.027	0.056
44	3.67	0.17	0.083	(0.238)	0.027	0.056

45	3.75	0.17	0.083	(0.237)	0.027	0.056
46	3.83	0.20	0.099	(0.236)	0.033	0.067
47	3.92	0.20	0.099	(0.235)	0.033	0.067
48	4.00	0.20	0.099	(0.234)	0.033	0.067
49	4.08	0.20	0.099	(0.233)	0.033	0.067
50	4.17	0.20	0.099	(0.232)	0.033	0.067
51	4.25	0.20	0.099	(0.231)	0.033	0.067
52	4.33	0.23	0.116	(0.230)	0.038	0.078
53	4.42	0.23	0.116	(0.229)	0.038	0.078
54	4.50	0.23	0.116	(0.228)	0.038	0.078
55	4.58	0.23	0.116	(0.227)	0.038	0.078
56	4.67	0.23	0.116	(0.226)	0.038	0.078
57	4.75	0.23	0.116	(0.225)	0.038	0.078
58	4.83	0.27	0.133	(0.224)	0.044	0.089
59	4.92	0.27	0.133	(0.223)	0.044	0.089
60	5.00	0.27	0.133	(0.222)	0.044	0.089
61	5.08	0.20	0.099	(0.221)	0.033	0.067
62	5.17	0.20	0.099	(0.220)	0.033	0.067
63	5.25	0.20	0.099	(0.219)	0.033	0.067
64	5.33	0.23	0.116	(0.218)	0.038	0.078
65	5.42	0.23	0.116	(0.217)	0.038	0.078
66	5.50	0.23	0.116	(0.216)	0.038	0.078
67	5.58	0.27	0.133	(0.215)	0.044	0.089
68	5.67	0.27	0.133	(0.214)	0.044	0.089
69	5.75	0.27	0.133	(0.213)	0.044	0.089
70	5.83	0.27	0.133	(0.212)	0.044	0.089
71	5.92	0.27	0.133	(0.212)	0.044	0.089
72	6.00	0.27	0.133	(0.211)	0.044	0.089
73	6.08	0.30	0.149	(0.210)	0.049	0.100
74	6.17	0.30	0.149	(0.209)	0.049	0.100
75	6.25	0.30	0.149	(0.208)	0.049	0.100
76	6.33	0.30	0.149	(0.207)	0.049	0.100
77	6.42	0.30	0.149	(0.206)	0.049	0.100
78	6.50	0.30	0.149	(0.205)	0.049	0.100
79	6.58	0.33	0.166	(0.204)	0.055	0.111
80	6.67	0.33	0.166	(0.203)	0.055	0.111
81	6.75	0.33	0.166	(0.202)	0.055	0.111
82	6.83	0.33	0.166	(0.201)	0.055	0.111
83	6.92	0.33	0.166	(0.200)	0.055	0.111
84	7.00	0.33	0.166	(0.200)	0.055	0.111
85	7.08	0.33	0.166	(0.199)	0.055	0.111
86	7.17	0.33	0.166	(0.198)	0.055	0.111
87	7.25	0.33	0.166	(0.197)	0.055	0.111
88	7.33	0.37	0.182	(0.196)	0.060	0.122
89	7.42	0.37	0.182	(0.195)	0.060	0.122
90	7.50	0.37	0.182	(0.194)	0.060	0.122
91	7.58	0.40	0.199	(0.193)	0.066	0.133
92	7.67	0.40	0.199	(0.192)	0.066	0.133
93	7.75	0.40	0.199	(0.191)	0.066	0.133
94	7.83	0.43	0.216	(0.191)	0.071	0.144
95	7.92	0.43	0.216	(0.190)	0.071	0.144
96	8.00	0.43	0.216	(0.189)	0.071	0.144
97	8.08	0.50	0.249	(0.188)	0.082	0.167
98	8.17	0.50	0.249	(0.187)	0.082	0.167
99	8.25	0.50	0.249	(0.186)	0.082	0.167
100	8.33	0.50	0.249	(0.185)	0.082	0.167
101	8.42	0.50	0.249	(0.184)	0.082	0.167
102	8.50	0.50	0.249	(0.184)	0.082	0.167
103	8.58	0.53	0.265	(0.183)	0.088	0.178
104	8.67	0.53	0.265	(0.182)	0.088	0.178
105	8.75	0.53	0.265	(0.181)	0.088	0.178
106	8.83	0.57	0.282	(0.180)	0.093	0.189
107	8.92	0.57	0.282	(0.179)	0.093	0.189
108	9.00	0.57	0.282	(0.178)	0.093	0.189
109	9.08	0.63	0.315	(0.178)	0.104	0.211
110	9.17	0.63	0.315	(0.177)	0.104	0.211
111	9.25	0.63	0.315	(0.176)	0.104	0.211
112	9.33	0.67	0.332	(0.175)	0.109	0.222
113	9.42	0.67	0.332	(0.174)	0.109	0.222
114	9.50	0.67	0.332	(0.173)	0.109	0.222
115	9.58	0.70	0.348	(0.173)	0.115	0.233
116	9.67	0.70	0.348	(0.172)	0.115	0.233
117	9.75	0.70	0.348	(0.171)	0.115	0.233
118	9.83	0.73	0.365	(0.170)	0.120	0.244
119	9.92	0.73	0.365	(0.169)	0.120	0.244

120	10.00	0.73	0.365	(0.168)	0.120	0.244
121	10.08	0.50	0.249	(0.168)	0.082	0.167
122	10.17	0.50	0.249	(0.167)	0.082	0.167
123	10.25	0.50	0.249	(0.166)	0.082	0.167
124	10.33	0.50	0.249	(0.165)	0.082	0.167
125	10.42	0.50	0.249	(0.164)	0.082	0.167
126	10.50	0.50	0.249	(0.164)	0.082	0.167
127	10.58	0.67	0.332	(0.163)	0.109	0.222
128	10.67	0.67	0.332	(0.162)	0.109	0.222
129	10.75	0.67	0.332	(0.161)	0.109	0.222
130	10.83	0.67	0.332	(0.160)	0.109	0.222
131	10.92	0.67	0.332	(0.160)	0.109	0.222
132	11.00	0.67	0.332	(0.159)	0.109	0.222
133	11.08	0.63	0.315	(0.158)	0.104	0.211
134	11.17	0.63	0.315	(0.157)	0.104	0.211
135	11.25	0.63	0.315	(0.157)	0.104	0.211
136	11.33	0.63	0.315	(0.156)	0.104	0.211
137	11.42	0.63	0.315	(0.155)	0.104	0.211
138	11.50	0.63	0.315	(0.154)	0.104	0.211
139	11.58	0.57	0.282	(0.153)	0.093	0.189
140	11.67	0.57	0.282	(0.153)	0.093	0.189
141	11.75	0.57	0.282	(0.152)	0.093	0.189
142	11.83	0.60	0.298	(0.151)	0.098	0.200
143	11.92	0.60	0.298	(0.150)	0.098	0.200
144	12.00	0.60	0.298	(0.150)	0.098	0.200
145	12.08	0.83	0.415	(0.149)	0.137	0.278
146	12.17	0.83	0.415	(0.148)	0.137	0.278
147	12.25	0.83	0.415	(0.147)	0.137	0.278
148	12.33	0.87	0.431	(0.147)	0.142	0.289
149	12.42	0.87	0.431	(0.146)	0.142	0.289
150	12.50	0.87	0.431	(0.145)	0.142	0.289
151	12.58	0.93	0.464	0.144	(0.153)	0.320
152	12.67	0.93	0.464	0.144	(0.153)	0.320
153	12.75	0.93	0.464	0.143	(0.153)	0.321
154	12.83	0.97	0.481	0.142	(0.159)	0.339
155	12.92	0.97	0.481	0.142	(0.159)	0.339
156	13.00	0.97	0.481	0.141	(0.159)	0.340
157	13.08	1.13	0.564	0.140	(0.186)	0.424
158	13.17	1.13	0.564	0.139	(0.186)	0.424
159	13.25	1.13	0.564	0.139	(0.186)	0.425
160	13.33	1.13	0.564	0.138	(0.186)	0.426
161	13.42	1.13	0.564	0.137	(0.186)	0.426
162	13.50	1.13	0.564	0.137	(0.186)	0.427
163	13.58	0.77	0.381	(0.136)	0.126	0.256
164	13.67	0.77	0.381	(0.135)	0.126	0.256
165	13.75	0.77	0.381	(0.135)	0.126	0.256
166	13.83	0.77	0.381	(0.134)	0.126	0.256
167	13.92	0.77	0.381	(0.133)	0.126	0.256
168	14.00	0.77	0.381	(0.133)	0.126	0.256
169	14.08	0.90	0.448	0.132	(0.148)	0.316
170	14.17	0.90	0.448	0.131	(0.148)	0.317
171	14.25	0.90	0.448	0.130	(0.148)	0.317
172	14.33	0.87	0.431	0.130	(0.142)	0.301
173	14.42	0.87	0.431	0.129	(0.142)	0.302
174	14.50	0.87	0.431	0.129	(0.142)	0.303
175	14.58	0.87	0.431	0.128	(0.142)	0.303
176	14.67	0.87	0.431	0.127	(0.142)	0.304
177	14.75	0.87	0.431	0.127	(0.142)	0.305
178	14.83	0.83	0.415	0.126	(0.137)	0.289
179	14.92	0.83	0.415	0.125	(0.137)	0.289
180	15.00	0.83	0.415	0.125	(0.137)	0.290
181	15.08	0.80	0.398	0.124	(0.131)	0.274
182	15.17	0.80	0.398	0.123	(0.131)	0.275
183	15.25	0.80	0.398	0.123	(0.131)	0.275
184	15.33	0.77	0.381	0.122	(0.126)	0.259
185	15.42	0.77	0.381	0.121	(0.126)	0.260
186	15.50	0.77	0.381	0.121	(0.126)	0.261
187	15.58	0.63	0.315	(0.120)	0.104	0.211
188	15.67	0.63	0.315	(0.120)	0.104	0.211
189	15.75	0.63	0.315	(0.119)	0.104	0.211
190	15.83	0.63	0.315	(0.118)	0.104	0.211
191	15.92	0.63	0.315	(0.118)	0.104	0.211
192	16.00	0.63	0.315	(0.117)	0.104	0.211
193	16.08	0.13	0.066	(0.117)	0.022	0.044
194	16.17	0.13	0.066	(0.116)	0.022	0.044

195	16.25	0.13	0.066	(0.115)	0.022	0.044
196	16.33	0.13	0.066	(0.115)	0.022	0.044
197	16.42	0.13	0.066	(0.114)	0.022	0.044
198	16.50	0.13	0.066	(0.114)	0.022	0.044
199	16.58	0.10	0.050	(0.113)	0.016	0.033
200	16.67	0.10	0.050	(0.112)	0.016	0.033
201	16.75	0.10	0.050	(0.112)	0.016	0.033
202	16.83	0.10	0.050	(0.111)	0.016	0.033
203	16.92	0.10	0.050	(0.111)	0.016	0.033
204	17.00	0.10	0.050	(0.110)	0.016	0.033
205	17.08	0.17	0.083	(0.110)	0.027	0.056
206	17.17	0.17	0.083	(0.109)	0.027	0.056
207	17.25	0.17	0.083	(0.109)	0.027	0.056
208	17.33	0.17	0.083	(0.108)	0.027	0.056
209	17.42	0.17	0.083	(0.107)	0.027	0.056
210	17.50	0.17	0.083	(0.107)	0.027	0.056
211	17.58	0.17	0.083	(0.106)	0.027	0.056
212	17.67	0.17	0.083	(0.106)	0.027	0.056
213	17.75	0.17	0.083	(0.105)	0.027	0.056
214	17.83	0.13	0.066	(0.105)	0.022	0.044
215	17.92	0.13	0.066	(0.104)	0.022	0.044
216	18.00	0.13	0.066	(0.104)	0.022	0.044
217	18.08	0.13	0.066	(0.103)	0.022	0.044
218	18.17	0.13	0.066	(0.103)	0.022	0.044
219	18.25	0.13	0.066	(0.102)	0.022	0.044
220	18.33	0.13	0.066	(0.102)	0.022	0.044
221	18.42	0.13	0.066	(0.101)	0.022	0.044
222	18.50	0.13	0.066	(0.101)	0.022	0.044
223	18.58	0.10	0.050	(0.100)	0.016	0.033
224	18.67	0.10	0.050	(0.100)	0.016	0.033
225	18.75	0.10	0.050	(0.099)	0.016	0.033
226	18.83	0.07	0.033	(0.099)	0.011	0.022
227	18.92	0.07	0.033	(0.098)	0.011	0.022
228	19.00	0.07	0.033	(0.098)	0.011	0.022
229	19.08	0.10	0.050	(0.097)	0.016	0.033
230	19.17	0.10	0.050	(0.097)	0.016	0.033
231	19.25	0.10	0.050	(0.097)	0.016	0.033
232	19.33	0.13	0.066	(0.096)	0.022	0.044
233	19.42	0.13	0.066	(0.096)	0.022	0.044
234	19.50	0.13	0.066	(0.095)	0.022	0.044
235	19.58	0.10	0.050	(0.095)	0.016	0.033
236	19.67	0.10	0.050	(0.094)	0.016	0.033
237	19.75	0.10	0.050	(0.094)	0.016	0.033
238	19.83	0.07	0.033	(0.093)	0.011	0.022
239	19.92	0.07	0.033	(0.093)	0.011	0.022
240	20.00	0.07	0.033	(0.093)	0.011	0.022
241	20.08	0.10	0.050	(0.092)	0.016	0.033
242	20.17	0.10	0.050	(0.092)	0.016	0.033
243	20.25	0.10	0.050	(0.091)	0.016	0.033
244	20.33	0.10	0.050	(0.091)	0.016	0.033
245	20.42	0.10	0.050	(0.091)	0.016	0.033
246	20.50	0.10	0.050	(0.090)	0.016	0.033
247	20.58	0.10	0.050	(0.090)	0.016	0.033
248	20.67	0.10	0.050	(0.089)	0.016	0.033
249	20.75	0.10	0.050	(0.089)	0.016	0.033
250	20.83	0.07	0.033	(0.089)	0.011	0.022
251	20.92	0.07	0.033	(0.088)	0.011	0.022
252	21.00	0.07	0.033	(0.088)	0.011	0.022
253	21.08	0.10	0.050	(0.088)	0.016	0.033
254	21.17	0.10	0.050	(0.087)	0.016	0.033
255	21.25	0.10	0.050	(0.087)	0.016	0.033
256	21.33	0.07	0.033	(0.087)	0.011	0.022
257	21.42	0.07	0.033	(0.086)	0.011	0.022
258	21.50	0.07	0.033	(0.086)	0.011	0.022
259	21.58	0.10	0.050	(0.086)	0.016	0.033
260	21.67	0.10	0.050	(0.085)	0.016	0.033
261	21.75	0.10	0.050	(0.085)	0.016	0.033
262	21.83	0.07	0.033	(0.085)	0.011	0.022
263	21.92	0.07	0.033	(0.085)	0.011	0.022
264	22.00	0.07	0.033	(0.084)	0.011	0.022
265	22.08	0.10	0.050	(0.084)	0.016	0.033
266	22.17	0.10	0.050	(0.084)	0.016	0.033
267	22.25	0.10	0.050	(0.083)	0.016	0.033
268	22.33	0.07	0.033	(0.083)	0.011	0.022
269	22.42	0.07	0.033	(0.083)	0.011	0.022

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270  22.50     0.07      0.033       (  0.083)       0.011        0.022
271  22.58     0.07      0.033       (  0.082)       0.011        0.022
272  22.67     0.07      0.033       (  0.082)       0.011        0.022
273  22.75     0.07      0.033       (  0.082)       0.011        0.022
274  22.83     0.07      0.033       (  0.082)       0.011        0.022
275  22.92     0.07      0.033       (  0.082)       0.011        0.022
276  23.00     0.07      0.033       (  0.081)       0.011        0.022
277  23.08     0.07      0.033       (  0.081)       0.011        0.022
278  23.17     0.07      0.033       (  0.081)       0.011        0.022
279  23.25     0.07      0.033       (  0.081)       0.011        0.022
280  23.33     0.07      0.033       (  0.081)       0.011        0.022
281  23.42     0.07      0.033       (  0.080)       0.011        0.022
282  23.50     0.07      0.033       (  0.080)       0.011        0.022
283  23.58     0.07      0.033       (  0.080)       0.011        0.022
284  23.67     0.07      0.033       (  0.080)       0.011        0.022
285  23.75     0.07      0.033       (  0.080)       0.011        0.022
286  23.83     0.07      0.033       (  0.080)       0.011        0.022
287  23.92     0.07      0.033       (  0.080)       0.011        0.022
288  24.00     0.07      0.033       (  0.080)       0.011        0.022
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    33.9
      Flood volume = Effective rainfall      2.82(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =      13.0(Ac.Ft)
      Total soil loss =      1.32(In)
      Total soil loss =     6.084(Ac.Ft)
      Total rainfall =      4.15(In)
      Flood volume =      567066.4 Cubic Feet
      Total soil loss =      265033.9 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     23.776(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
 ------------------------------------------------------------------------
   0+ 5       0.0021      0.31  Q         |         |         |         |
   0+10       0.0090      1.00  VQ        |         |         |         |
   0+15       0.0171      1.17  VQ        |         |         |         |
   0+20       0.0266      1.38  VQ        |         |         |         |
   0+25       0.0385      1.73  V Q       |         |         |         |
   0+30       0.0511      1.83  V Q       |         |         |         |
   0+35       0.0638      1.85  V Q       |         |         |         |
   0+40       0.0766      1.86  V Q       |         |         |         |
   0+45       0.0894      1.86  V Q       |         |         |         |
   0+50       0.1032      2.01  V Q       |         |         |         |
   0+55       0.1195      2.36  V  Q      |         |         |         |
   1+ 0       0.1363      2.45  V  Q      |         |         |         |
   1+ 5       0.1523      2.31  V  Q      |         |         |         |
   1+10       0.1659      1.98  V Q       |         |         |         |
   1+15       0.1789      1.89  V Q       |         |         |         |
   1+20       0.1918      1.87  V Q       |         |         |         |
   1+25       0.2046      1.86  V Q       |         |         |         |
   1+30       0.2174      1.86  V Q       |         |         |         |
   1+35       0.2302      1.86  V Q       |         |         |         |
   1+40       0.2430      1.86  V Q       |         |         |         |
   1+45       0.2558      1.86  V Q       |         |         |         |
   1+50       0.2696      2.01  V Q       |         |         |         |
   1+55       0.2859      2.36  V  Q      |         |         |         |
   2+ 0       0.3027      2.45  V  Q      |         |         |         |
   2+ 5       0.3197      2.47  V  Q      |         |         |         |
   2+10       0.3368      2.48  |V Q       |         |         |         |
   2+15       0.3538      2.48  |V Q       |         |         |         |
   2+20       0.3709      2.48  |V Q       |         |         |         |
   2+25       0.3879      2.48  |V Q       |         |         |         |
   2+30       0.4050      2.48  |V Q       |         |         |         |
   2+35       0.4231      2.63  |V Q       |         |         |         |
   2+40       0.4436      2.98  |V Q       |         |         |         |
   2+45       0.4647      3.06  |V  Q      |         |         |         |
   2+50       0.4860      3.09  |V  Q      |         |         |         |
   2+55       0.5073      3.09  |V  Q      |         |         |         |
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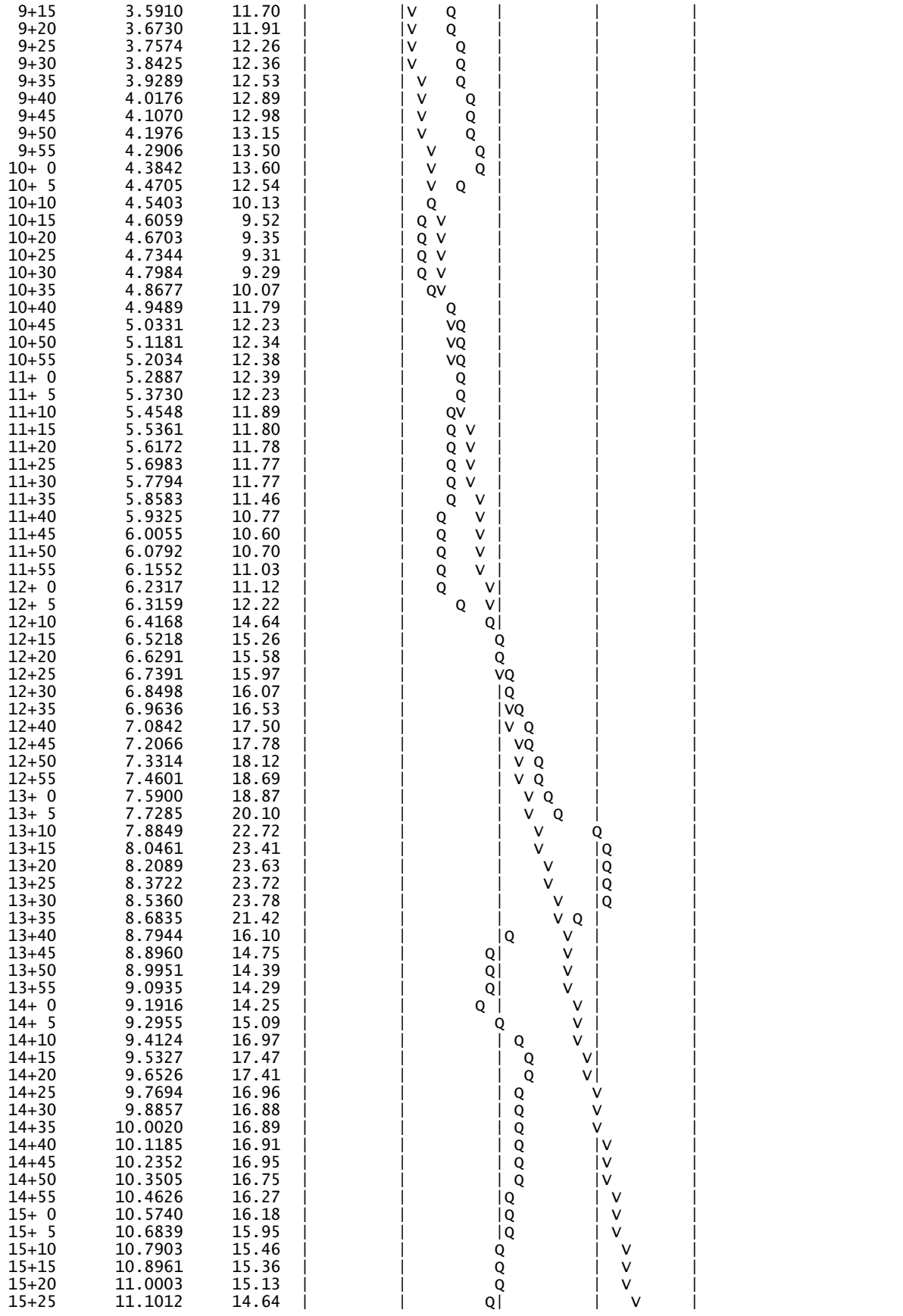
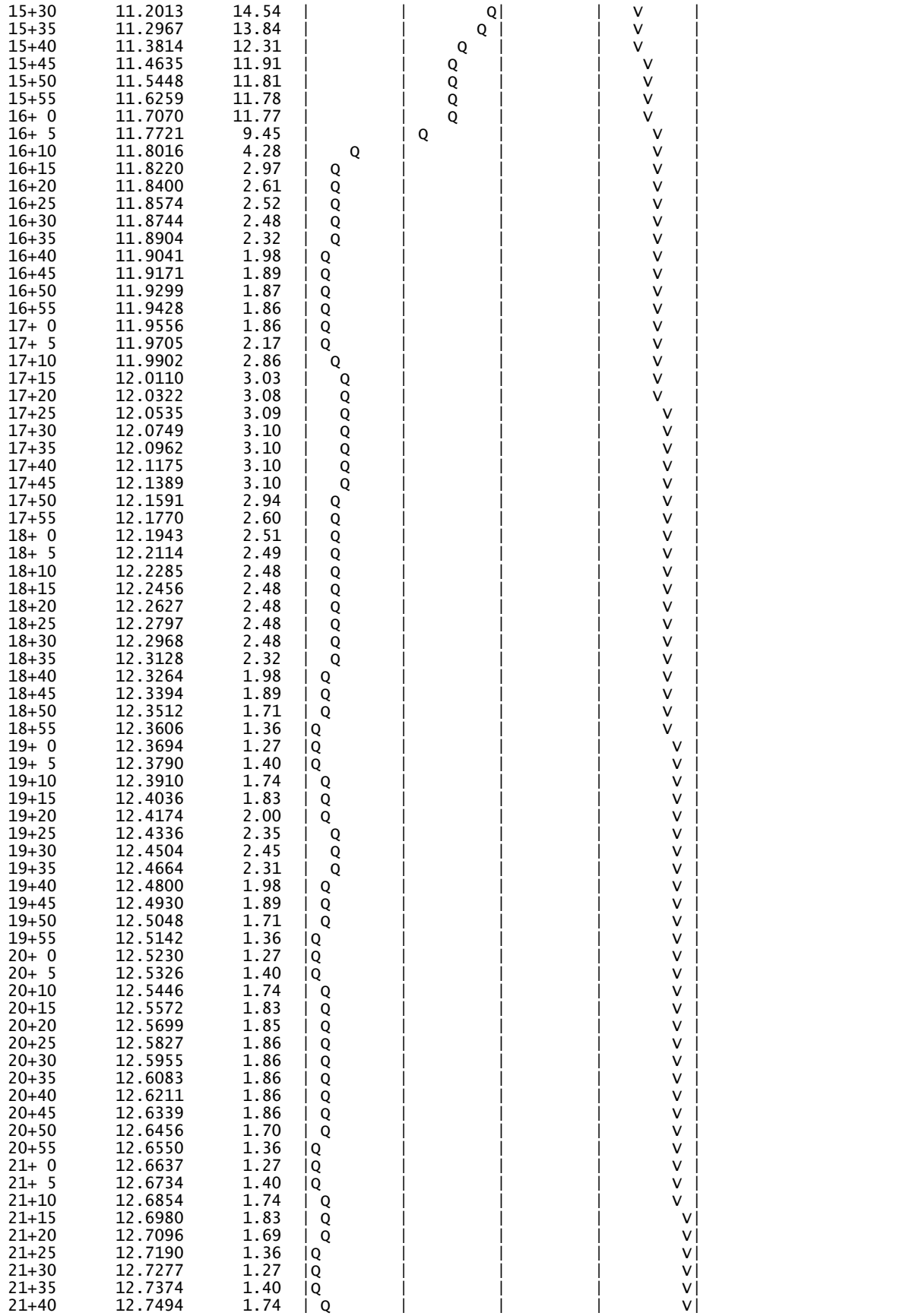
3+ 0	0.5287	3.10	V Q			
3+ 5	0.5500	3.10	V Q			
3+10	0.5713	3.10	V Q			
3+15	0.5927	3.10	V Q			
3+20	0.6140	3.10	V Q			
3+25	0.6353	3.10	V Q			
3+30	0.6566	3.10	V Q			
3+35	0.6780	3.10	V Q			
3+40	0.6993	3.10	V Q			
3+45	0.7206	3.10	V Q			
3+50	0.7430	3.25	V Q			
3+55	0.7678	3.60	V Q			
4+ 0	0.7932	3.68	V Q			
4+ 5	0.8187	3.71	V Q			
4+10	0.8443	3.71	V Q			
4+15	0.8699	3.72	V Q			
4+20	0.8965	3.87	V Q			
4+25	0.9256	4.22	V Q			
4+30	0.9552	4.30	V Q			
4+35	0.9850	4.33	V Q			
4+40	1.0149	4.33	V Q			
4+45	1.0447	4.34	V Q			
4+50	1.0757	4.49	V Q			
4+55	1.1090	4.84	V Q			
5+ 0	1.1429	4.92	V Q			
5+ 5	1.1748	4.64	V Q			
5+10	1.2020	3.95	V Q			
5+15	1.2281	3.78	V Q			
5+20	1.2549	3.89	V Q			
5+25	1.2839	4.22	V Q			
5+30	1.3136	4.30	VQ			
5+35	1.3444	4.48	VQ			
5+40	1.3777	4.83	V Q			
5+45	1.4116	4.92	V Q			
5+50	1.4457	4.95	V Q			
5+55	1.4798	4.95	V Q			
6+ 0	1.5139	4.96	V Q			
6+ 5	1.5491	5.11	V Q			
6+10	1.5867	5.45	V Q			
6+15	1.6249	5.54	V Q			
6+20	1.6632	5.57	V Q			
6+25	1.7016	5.57	V Q			
6+30	1.7400	5.58	V Q			
6+35	1.7794	5.73	V Q			
6+40	1.8213	6.07	V Q			
6+45	1.8637	6.16	V Q			
6+50	1.9063	6.19	V Q			
6+55	1.9490	6.19	V Q			
7+ 0	1.9916	6.19	V Q			
7+ 5	2.0343	6.19	V Q			
7+10	2.0769	6.19	V Q			
7+15	2.1196	6.19	V Q			
7+20	2.1633	6.35	V Q			
7+25	2.2094	6.69	V Q			
7+30	2.2561	6.78	V Q			
7+35	2.3041	6.96	V Q			
7+40	2.3544	7.31	V Q			
7+45	2.4054	7.40	V Q			
7+50	2.4576	7.58	V Q			
7+55	2.5122	7.93	V Q			
8+ 0	2.5674	8.02	V Q			
8+ 5	2.6250	8.35	V Q			
8+10	2.6873	9.05	V Q			
8+15	2.7508	9.23	V Q			
8+20	2.8147	9.27	V Q			
8+25	2.8786	9.29	V Q			
8+30	2.9426	9.29	V Q			
8+35	3.0077	9.45	V Q			
8+40	3.0751	9.79	V Q			
8+45	3.1432	9.88	V Q			
8+50	3.2124	10.06	V Q			
8+55	3.2841	10.41	V Q			
9+ 0	3.3564	10.50	V Q			
9+ 5	3.4310	10.83	V Q			
9+10	3.5104	11.53	V Q			





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  21+45      12.7620      1.83  | Q       |         |         |        v|
  21+50      12.7736      1.69  | Q       |         |         |        v|
  21+55      12.7830      1.36  |Q        |         |         |        v|
  22+ 0      12.7917      1.27  |Q        |         |         |        v|
  22+ 5      12.8014      1.40  |Q        |         |         |        v|
  22+10      12.8134      1.74  | Q       |         |         |        v|
  22+15      12.8259      1.83  | Q       |         |         |        v|
  22+20      12.8376      1.69  | Q       |         |         |        v|
  22+25      12.8470      1.36  |Q        |         |         |        v|
  22+30      12.8557      1.27  |Q        |         |         |        v|
  22+35      12.8643      1.25  |Q        |         |         |        v|
  22+40      12.8729      1.24  |Q        |         |         |        v|
  22+45      12.8814      1.24  |Q        |         |         |        v|
  22+50      12.8899      1.24  |Q        |         |         |        v|
  22+55      12.8985      1.24  |Q        |         |         |        v|
  23+ 0      12.9070      1.24  |Q        |         |         |        v|
  23+ 5      12.9155      1.24  |Q        |         |         |        v|
  23+10      12.9241      1.24  |Q        |         |         |        v|
  23+15      12.9326      1.24  |Q        |         |         |        v|
  23+20      12.9411      1.24  |Q        |         |         |        v|
  23+25      12.9497      1.24  |Q        |         |         |        v|
  23+30      12.9582      1.24  |Q        |         |         |        v|
  23+35      12.9667      1.24  |Q        |         |         |        v|
  23+40      12.9753      1.24  |Q        |         |         |        v|
  23+45      12.9838      1.24  |Q        |         |         |        v|
  23+50      12.9923      1.24  |Q        |         |         |        v|
  23+55      13.0008      1.24  |Q        |         |         |        v|
  24+ 0      13.0094      1.24  |Q        |         |         |        v|
  24+ 5      13.0158      0.93  |Q        |         |         |        v|
  24+10      13.0174      0.24  Q         |         |         |        v|
  24+15      13.0179      0.07  Q         |         |         |        v|
  24+20      13.0180      0.02  Q         |         |         |        v|
  24+25      13.0181      0.01  Q         |         |         |        v|
-------------------------------------------------------------------------
```

PROPOSED CONDITION
100-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: WEST100YR1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.55	30.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.25	69.13

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 1.250(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 1.249(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
      62.6  62.6      0.442     0.710        0.160       1.000      0.160
                                                        Sum (F) =   0.160
      Area averaged mean soil loss (F) (In/Hr) =  0.160
      Minimum soil loss rate ((In/Hr)) =  0.080
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.330
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083        131.015         24.971             13.917
          2   0.167        262.030         55.588             30.980
          3   0.250        393.045         14.152              7.887
          4   0.333        524.061          3.839              2.140
          5   0.417        655.076          1.026              0.572
          6   0.500        786.091          0.425              0.237
                                   Sum = 100.000    Sum=      55.732
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.510          0.160    (  0.168)        0.350
   2   0.17     4.70      0.705          0.160    (  0.233)        0.545
   3   0.25     4.70      0.705          0.160    (  0.233)        0.545
   4   0.33     5.10      0.765          0.160    (  0.252)        0.605
   5   0.42     5.80      0.870          0.160    (  0.287)        0.710
   6   0.50     5.90      0.885          0.160    (  0.292)        0.725
   7   0.58     7.10      1.064          0.160    (  0.351)        0.905
   8   0.67     8.70      1.304          0.160    (  0.430)        1.145
   9   0.75    13.20      1.979          0.160    (  0.653)        1.819
  10   0.83    29.70      4.453          0.160    (  1.469)        4.293
  11   0.92     7.70      1.154          0.160    (  0.381)        0.995
  12   1.00     4.00      0.600          0.160    (  0.198)        0.440
               (Loss Rate Not Used)
     Sum =     100.0                                 Sum =    13.1
       Flood volume = Effective rainfall      1.09(In)
        times area      55.3(Ac.)/[(In)/(Ft.)] =       5.0(Ac.Ft)
       Total soil loss =      0.16(In)
       Total soil loss =     0.735(Ac.Ft)
       Total rainfall =      1.25(In)
       Flood volume =      218773.5 Cubic Feet
       Total soil loss =       32024.5 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =    164.424(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
       ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ----------------------------------------------------------------------------
    0+ 5       0.0336      4.88  Q         |         |         |         |
    0+10       0.1606     18.45  |V Q      |         |         |         |
    0+15       0.3483     27.25  | V  Q    |         |         |         |
    0+20       0.5575     30.37  |   V Q   |         |         |         |
    0+25       0.7938     34.31  |     Q   |         |         |         |
    0+30       1.0585     38.44  |      QV |         |         |         |
    0+35       1.3506     42.41  |       Q V         |         |         |
    0+40       1.7067     51.71  |         Q  V      |         |         |
    0+45       2.1892     70.06  |         |   Q  V  |         |         |
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    0+50       3.0689    127.73  |          |          |   VQ     |          |
    0+55       4.2013    164.42  |          |          |          | QV       |
    1+ 0       4.7220     75.61  |          |     Q    |          |       V  |
    1+ 5       4.9424     32.00  |     Q    |          |          |         V|
    1+10       5.0009      8.49  |Q         |          |          |         V|
    1+15       5.0183      2.53  Q          |          |          |         V|
    1+20       5.0216      0.49  Q          |          |          |         V|
    1+25       5.0223      0.10  Q          |          |          |         V|
-------------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: WEST100YR3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 2.050(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.050(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 62.6 0.442 0.710 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.320	(0.160)	0.106	0.214
2	0.17	1.30	0.320	(0.160)	0.106	0.214
3	0.25	1.10	0.271	(0.160)	0.089	0.181
4	0.33	1.50	0.369	(0.160)	0.122	0.247
5	0.42	1.50	0.369	(0.160)	0.122	0.247
6	0.50	1.80	0.443	(0.160)	0.146	0.297
7	0.58	1.50	0.369	(0.160)	0.122	0.247
8	0.67	1.80	0.443	(0.160)	0.146	0.297
9	0.75	1.80	0.443	(0.160)	0.146	0.297
10	0.83	1.50	0.369	(0.160)	0.122	0.247
11	0.92	1.60	0.394	(0.160)	0.130	0.264
12	1.00	1.80	0.443	(0.160)	0.146	0.297
13	1.08	2.20	0.541	0.160	(0.179)	0.382
14	1.17	2.20	0.541	0.160	(0.179)	0.382
15	1.25	2.20	0.541	0.160	(0.179)	0.382
16	1.33	2.00	0.492	0.160	(0.162)	0.332
17	1.42	2.60	0.639	0.160	(0.211)	0.480
18	1.50	2.70	0.664	0.160	(0.219)	0.505
19	1.58	2.40	0.590	0.160	(0.195)	0.431
20	1.67	2.70	0.664	0.160	(0.219)	0.505
21	1.75	3.30	0.812	0.160	(0.268)	0.652
22	1.83	3.10	0.762	0.160	(0.252)	0.603
23	1.92	2.90	0.713	0.160	(0.235)	0.554
24	2.00	3.00	0.738	0.160	(0.243)	0.578
25	2.08	3.10	0.762	0.160	(0.252)	0.603
26	2.17	4.20	1.033	0.160	(0.341)	0.873
27	2.25	5.00	1.230	0.160	(0.406)	1.070
28	2.33	3.50	0.861	0.160	(0.284)	0.701
29	2.42	6.80	1.672	0.160	(0.552)	1.513
30	2.50	7.30	1.795	0.160	(0.592)	1.636
31	2.58	8.20	2.017	0.160	(0.666)	1.857
32	2.67	5.90	1.451	0.160	(0.479)	1.292
33	2.75	2.00	0.492	0.160	(0.162)	0.332
34	2.83	1.80	0.443	(0.160)	0.146	0.297
35	2.92	1.80	0.443	(0.160)	0.146	0.297
36	3.00	0.60	0.148	(0.160)	0.049	0.099
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	19.4

Flood volume = Effective rainfall 1.62(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 7.5(Ac.Ft)
Total soil loss = 0.43(In)
Total soil loss = 1.994(Ac.Ft)
Total rainfall = 2.05(In)
Flood volume = 324553.4 Cubic Feet

Total soil loss = 86862.0 Cubic Feet

Peak flow rate of this hydrograph = 92.350(CFS)

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3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	25.0	50.0	75.0	100.0
0+ 5	0.0205	2.98	VQ				
0+10	0.0868	9.62	V Q				
0+15	0.1616	10.85	V Q				
0+20	0.2388	11.21	V Q				
0+25	0.3291	13.11	V Q				
0+30	0.4276	14.30	V Q				
0+35	0.5327	15.27	V Q				
0+40	0.6350	14.85	V Q				
0+45	0.7459	16.11	V Q				
0+50	0.8543	15.73	V Q				
0+55	0.9543	14.52	Q				
1+ 0	1.0584	15.12	VQ				
1+ 5	1.1779	17.36	Q				
1+10	1.3174	20.26	VQ				
1+15	1.4620	20.99	VQ				
1+20	1.6033	20.51	Q				
1+25	1.7486	21.10	QV				
1+30	1.9252	25.65	Q				
1+35	2.1073	26.44	QV				
1+40	2.2841	25.66	Q V				
1+45	2.4876	29.55	Q V				
1+50	2.7211	33.91	QV				
1+55	2.9483	32.99	Q V				
2+ 0	3.1671	31.76	Q V				
2+ 5	3.3907	32.47	Q V				
2+10	3.6462	37.10	Q V				
2+15	3.9797	48.43	Q V				
2+20	4.3349	51.58	Q V				
2+25	4.7041	53.60	Q V				
2+30	5.2422	78.14	V			Q	
2+35	5.8677	90.82	V			Q	
2+40	6.5037	92.35	V Q				
2+45	6.9434	63.85	Q	V			
2+50	7.1493	29.89	Q	V			
2+55	7.2882	20.16	Q	V			
3+ 0	7.3901	14.80	Q	V			
3+ 5	7.4351	6.54	Q	V			
3+10	7.4466	1.66	Q	V			
3+15	7.4497	0.45	Q	V			
3+20	7.4506	0.13	Q	V			
3+25	7.4507	0.02	Q	V			

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: WEST100YR6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.40	77.42

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	3.00	165.90

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6	62.6	0.442	0.710	0.160	1.000	0.160
					Sum (F) =	0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.180	(0.160)	0.059	0.121
2	0.17	0.60	0.216	(0.160)	0.071	0.145
3	0.25	0.60	0.216	(0.160)	0.071	0.145
4	0.33	0.60	0.216	(0.160)	0.071	0.145
5	0.42	0.60	0.216	(0.160)	0.071	0.145
6	0.50	0.70	0.252	(0.160)	0.083	0.169
7	0.58	0.70	0.252	(0.160)	0.083	0.169
8	0.67	0.70	0.252	(0.160)	0.083	0.169
9	0.75	0.70	0.252	(0.160)	0.083	0.169
10	0.83	0.70	0.252	(0.160)	0.083	0.169
11	0.92	0.70	0.252	(0.160)	0.083	0.169
12	1.00	0.80	0.288	(0.160)	0.095	0.193
13	1.08	0.80	0.288	(0.160)	0.095	0.193
14	1.17	0.80	0.288	(0.160)	0.095	0.193
15	1.25	0.80	0.288	(0.160)	0.095	0.193
16	1.33	0.80	0.288	(0.160)	0.095	0.193
17	1.42	0.80	0.288	(0.160)	0.095	0.193
18	1.50	0.80	0.288	(0.160)	0.095	0.193
19	1.58	0.80	0.288	(0.160)	0.095	0.193
20	1.67	0.80	0.288	(0.160)	0.095	0.193
21	1.75	0.80	0.288	(0.160)	0.095	0.193
22	1.83	0.80	0.288	(0.160)	0.095	0.193
23	1.92	0.80	0.288	(0.160)	0.095	0.193
24	2.00	0.90	0.324	(0.160)	0.107	0.217
25	2.08	0.80	0.288	(0.160)	0.095	0.193
26	2.17	0.90	0.324	(0.160)	0.107	0.217
27	2.25	0.90	0.324	(0.160)	0.107	0.217
28	2.33	0.90	0.324	(0.160)	0.107	0.217
29	2.42	0.90	0.324	(0.160)	0.107	0.217
30	2.50	0.90	0.324	(0.160)	0.107	0.217
31	2.58	0.90	0.324	(0.160)	0.107	0.217
32	2.67	0.90	0.324	(0.160)	0.107	0.217
33	2.75	1.00	0.360	(0.160)	0.119	0.241
34	2.83	1.00	0.360	(0.160)	0.119	0.241
35	2.92	1.00	0.360	(0.160)	0.119	0.241
36	3.00	1.00	0.360	(0.160)	0.119	0.241
37	3.08	1.00	0.360	(0.160)	0.119	0.241
38	3.17	1.10	0.396	(0.160)	0.131	0.265
39	3.25	1.10	0.396	(0.160)	0.131	0.265
40	3.33	1.10	0.396	(0.160)	0.131	0.265
41	3.42	1.20	0.432	(0.160)	0.143	0.289
42	3.50	1.30	0.468	(0.160)	0.154	0.314
43	3.58	1.40	0.504	0.160	(0.166)	0.344
44	3.67	1.40	0.504	0.160	(0.166)	0.344

45	3.75	1.50	0.540	0.160	(0.178)		0.380
46	3.83	1.50	0.540	0.160	(0.178)		0.380
47	3.92	1.60	0.576	0.160	(0.190)		0.416
48	4.00	1.60	0.576	0.160	(0.190)		0.416
49	4.08	1.70	0.612	0.160	(0.202)		0.452
50	4.17	1.80	0.648	0.160	(0.214)		0.488
51	4.25	1.90	0.684	0.160	(0.226)		0.524
52	4.33	2.00	0.720	0.160	(0.238)		0.560
53	4.42	2.10	0.756	0.160	(0.249)		0.596
54	4.50	2.10	0.756	0.160	(0.249)		0.596
55	4.58	2.20	0.792	0.160	(0.261)		0.632
56	4.67	2.30	0.828	0.160	(0.273)		0.668
57	4.75	2.40	0.864	0.160	(0.285)		0.704
58	4.83	2.40	0.864	0.160	(0.285)		0.704
59	4.92	2.50	0.900	0.160	(0.297)		0.740
60	5.00	2.60	0.936	0.160	(0.309)		0.776
61	5.08	3.10	1.116	0.160	(0.368)		0.956
62	5.17	3.60	1.296	0.160	(0.428)		1.136
63	5.25	3.90	1.404	0.160	(0.463)		1.244
64	5.33	4.20	1.512	0.160	(0.499)		1.352
65	5.42	4.70	1.692	0.160	(0.558)		1.532
66	5.50	5.60	2.016	0.160	(0.665)		1.856
67	5.58	1.90	0.684	0.160	(0.226)		0.524
68	5.67	0.90	0.324	(0.160)	0.107		0.217
69	5.75	0.60	0.216	(0.160)	0.071		0.145
70	5.83	0.50	0.180	(0.160)	0.059		0.121
71	5.92	0.30	0.108	(0.160)	0.036		0.072
72	6.00	0.20	0.072	(0.160)	0.024		0.048

(Loss Rate Not Used)

Sum = 100.0 Sum = 27.5

Flood volume = Effective rainfall 2.29(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 10.6(Ac.Ft)
Total soil loss = 0.71(In)
Total soil loss = 3.265(Ac.Ft)
Total rainfall = 3.00(In)
Flood volume = 459881.1 Cubic Feet
Total soil loss = 142221.4 Cubic Feet

Peak flow rate of this hydrograph = 87.545(CFS)

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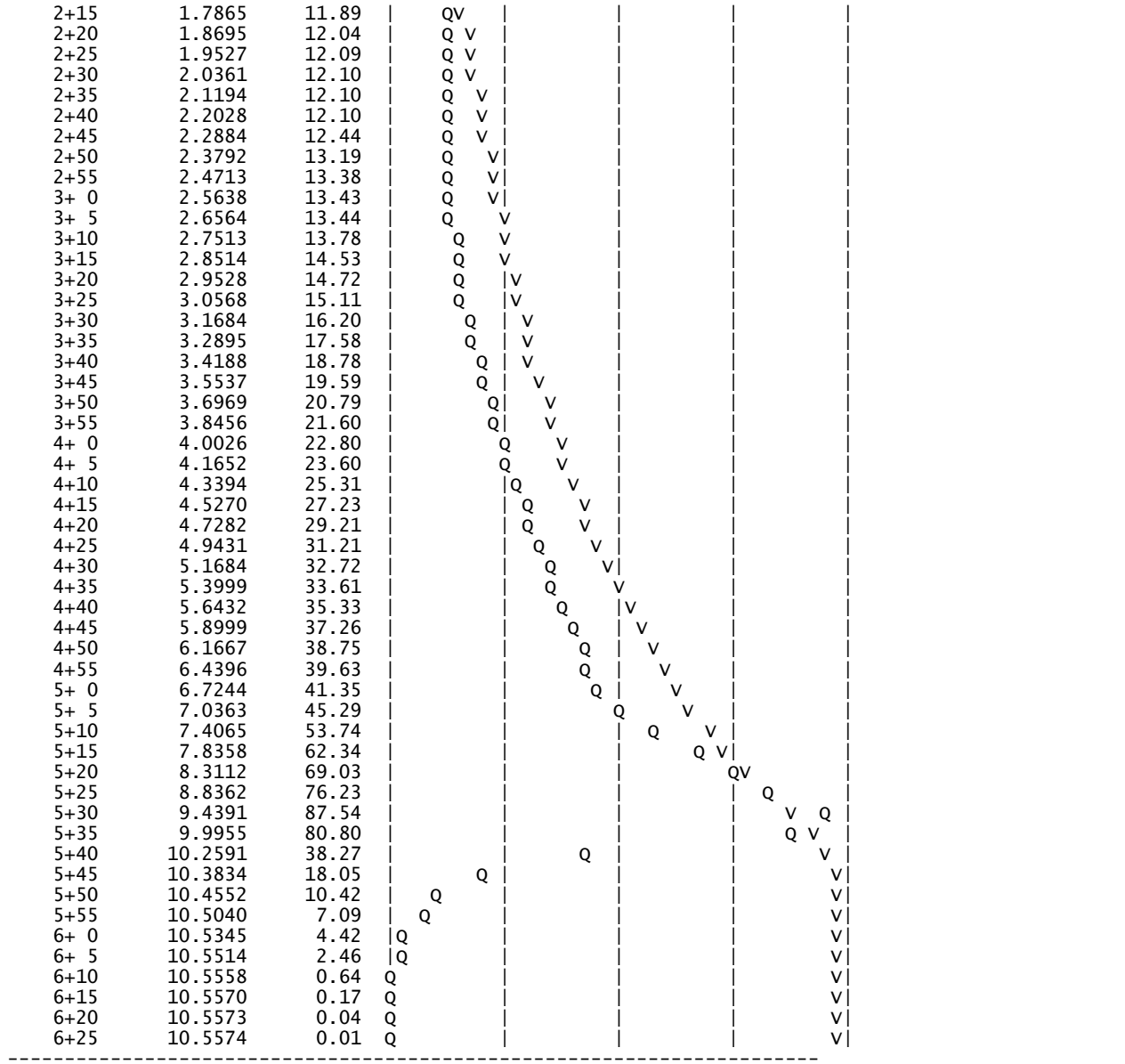
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	22.5	45.0	67.5	90.0
0+ 5	0.0116	1.68	Q				
0+10	0.0512	5.75	V Q				
0+15	0.1025	7.45	V Q				
0+20	0.1569	7.90	V Q				
0+25	0.2121	8.02	V Q				
0+30	0.2700	8.40	V Q				
0+35	0.3330	9.15	V Q				
0+40	0.3973	9.34	V Q				
0+45	0.4620	9.39	V Q				
0+50	0.5268	9.41	V Q				
0+55	0.5916	9.41	V Q				
1+ 0	0.6588	9.75	V Q				
1+ 5	0.7311	10.50	V Q				
1+10	0.8047	10.69	VQ				
1+15	0.8786	10.74	VQ				
1+20	0.9527	10.75	VQ				
1+25	1.0268	10.76	VQ				
1+30	1.1008	10.76	Q				
1+35	1.1749	10.76	Q				
1+40	1.2490	10.76	Q				
1+45	1.3231	10.76	QV				
1+50	1.3972	10.76	QV				
1+55	1.4713	10.76	QV				
2+ 0	1.5477	11.09	QV				
2+ 5	1.6269	11.51	QV				
2+10	1.7046	11.28	QV				


2+15 1.7865 11.89
2+20 1.8695 12.04
2+25 1.9527 12.09
2+30 2.0361 12.10
2+35 2.1194 12.10
2+40 2.2028 12.10
2+45 2.2884 12.44
2+50 2.3792 13.19
2+55 2.4713 13.38
3+ 0 2.5638 13.43
3+ 5 2.6564 13.44
3+10 2.7513 13.78
3+15 2.8514 14.53
3+20 2.9528 14.72
3+25 3.0568 15.11
3+30 3.1684 16.20
3+35 3.2895 17.58
3+40 3.4188 18.78
3+45 3.5537 19.59
3+50 3.6969 20.79
3+55 3.8456 21.60
4+ 0 4.0026 22.80
4+ 5 4.1652 23.60
4+10 4.3394 25.31
4+15 4.5270 27.23
4+20 4.7282 29.21
4+25 4.9431 31.21
4+30 5.1684 32.72
4+35 5.3999 33.61
4+40 5.6432 35.33
4+45 5.8999 37.26
4+50 6.1667 38.75
4+55 6.4396 39.63
5+ 0 6.7244 41.35
5+ 5 7.0363 45.29
5+10 7.4065 53.74
5+15 7.8358 62.34
5+20 8.3112 69.03
5+25 8.8362 76.23
5+30 9.4391 87.54
5+35 9.9955 80.80
5+40 10.2591 38.27
5+45 10.3834 18.05
5+50 10.4552 10.42
5+55 10.5040 7.09
6+ 0 10.5345 4.42
6+ 5 10.5514 2.46
6+10 10.5558 0.64
6+15 10.5570 0.17
6+20 10.5573 0.04
6+25 10.5574 0.01

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: WEST100YR2410O.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 6.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 6.499(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6	62.6	0.442	0.710	0.160	1.000	0.160
					Sum (F) =	0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.052	(0.283)	0.017	0.035
2	0.17	0.07	0.052	(0.282)	0.017	0.035
3	0.25	0.07	0.052	(0.281)	0.017	0.035
4	0.33	0.10	0.078	(0.280)	0.026	0.052
5	0.42	0.10	0.078	(0.278)	0.026	0.052
6	0.50	0.10	0.078	(0.277)	0.026	0.052
7	0.58	0.10	0.078	(0.276)	0.026	0.052
8	0.67	0.10	0.078	(0.275)	0.026	0.052
9	0.75	0.10	0.078	(0.274)	0.026	0.052
10	0.83	0.13	0.104	(0.273)	0.034	0.070
11	0.92	0.13	0.104	(0.272)	0.034	0.070
12	1.00	0.13	0.104	(0.271)	0.034	0.070
13	1.08	0.10	0.078	(0.270)	0.026	0.052
14	1.17	0.10	0.078	(0.269)	0.026	0.052
15	1.25	0.10	0.078	(0.268)	0.026	0.052
16	1.33	0.10	0.078	(0.267)	0.026	0.052
17	1.42	0.10	0.078	(0.266)	0.026	0.052
18	1.50	0.10	0.078	(0.265)	0.026	0.052
19	1.58	0.10	0.078	(0.263)	0.026	0.052
20	1.67	0.10	0.078	(0.262)	0.026	0.052
21	1.75	0.10	0.078	(0.261)	0.026	0.052
22	1.83	0.13	0.104	(0.260)	0.034	0.070
23	1.92	0.13	0.104	(0.259)	0.034	0.070
24	2.00	0.13	0.104	(0.258)	0.034	0.070
25	2.08	0.13	0.104	(0.257)	0.034	0.070
26	2.17	0.13	0.104	(0.256)	0.034	0.070
27	2.25	0.13	0.104	(0.255)	0.034	0.070
28	2.33	0.13	0.104	(0.254)	0.034	0.070
29	2.42	0.13	0.104	(0.253)	0.034	0.070
30	2.50	0.13	0.104	(0.252)	0.034	0.070
31	2.58	0.17	0.130	(0.251)	0.043	0.087
32	2.67	0.17	0.130	(0.250)	0.043	0.087
33	2.75	0.17	0.130	(0.249)	0.043	0.087
34	2.83	0.17	0.130	(0.248)	0.043	0.087
35	2.92	0.17	0.130	(0.247)	0.043	0.087
36	3.00	0.17	0.130	(0.246)	0.043	0.087
37	3.08	0.17	0.130	(0.245)	0.043	0.087
38	3.17	0.17	0.130	(0.244)	0.043	0.087
39	3.25	0.17	0.130	(0.243)	0.043	0.087
40	3.33	0.17	0.130	(0.242)	0.043	0.087
41	3.42	0.17	0.130	(0.241)	0.043	0.087
42	3.50	0.17	0.130	(0.240)	0.043	0.087
43	3.58	0.17	0.130	(0.239)	0.043	0.087
44	3.67	0.17	0.130	(0.238)	0.043	0.087

45	3.75	0.17	0.130	(0.237)	0.043	0.087
46	3.83	0.20	0.156	(0.236)	0.051	0.105
47	3.92	0.20	0.156	(0.235)	0.051	0.105
48	4.00	0.20	0.156	(0.234)	0.051	0.105
49	4.08	0.20	0.156	(0.233)	0.051	0.105
50	4.17	0.20	0.156	(0.232)	0.051	0.105
51	4.25	0.20	0.156	(0.231)	0.051	0.105
52	4.33	0.23	0.182	(0.230)	0.060	0.122
53	4.42	0.23	0.182	(0.229)	0.060	0.122
54	4.50	0.23	0.182	(0.228)	0.060	0.122
55	4.58	0.23	0.182	(0.227)	0.060	0.122
56	4.67	0.23	0.182	(0.226)	0.060	0.122
57	4.75	0.23	0.182	(0.225)	0.060	0.122
58	4.83	0.27	0.208	(0.224)	0.069	0.139
59	4.92	0.27	0.208	(0.223)	0.069	0.139
60	5.00	0.27	0.208	(0.222)	0.069	0.139
61	5.08	0.20	0.156	(0.221)	0.051	0.105
62	5.17	0.20	0.156	(0.220)	0.051	0.105
63	5.25	0.20	0.156	(0.219)	0.051	0.105
64	5.33	0.23	0.182	(0.218)	0.060	0.122
65	5.42	0.23	0.182	(0.217)	0.060	0.122
66	5.50	0.23	0.182	(0.216)	0.060	0.122
67	5.58	0.27	0.208	(0.215)	0.069	0.139
68	5.67	0.27	0.208	(0.214)	0.069	0.139
69	5.75	0.27	0.208	(0.213)	0.069	0.139
70	5.83	0.27	0.208	(0.212)	0.069	0.139
71	5.92	0.27	0.208	(0.212)	0.069	0.139
72	6.00	0.27	0.208	(0.211)	0.069	0.139
73	6.08	0.30	0.234	(0.210)	0.077	0.157
74	6.17	0.30	0.234	(0.209)	0.077	0.157
75	6.25	0.30	0.234	(0.208)	0.077	0.157
76	6.33	0.30	0.234	(0.207)	0.077	0.157
77	6.42	0.30	0.234	(0.206)	0.077	0.157
78	6.50	0.30	0.234	(0.205)	0.077	0.157
79	6.58	0.33	0.260	(0.204)	0.086	0.174
80	6.67	0.33	0.260	(0.203)	0.086	0.174
81	6.75	0.33	0.260	(0.202)	0.086	0.174
82	6.83	0.33	0.260	(0.201)	0.086	0.174
83	6.92	0.33	0.260	(0.200)	0.086	0.174
84	7.00	0.33	0.260	(0.200)	0.086	0.174
85	7.08	0.33	0.260	(0.199)	0.086	0.174
86	7.17	0.33	0.260	(0.198)	0.086	0.174
87	7.25	0.33	0.260	(0.197)	0.086	0.174
88	7.33	0.37	0.286	(0.196)	0.094	0.192
89	7.42	0.37	0.286	(0.195)	0.094	0.192
90	7.50	0.37	0.286	(0.194)	0.094	0.192
91	7.58	0.40	0.312	(0.193)	0.103	0.209
92	7.67	0.40	0.312	(0.192)	0.103	0.209
93	7.75	0.40	0.312	(0.191)	0.103	0.209
94	7.83	0.43	0.338	(0.191)	0.112	0.226
95	7.92	0.43	0.338	(0.190)	0.112	0.226
96	8.00	0.43	0.338	(0.189)	0.112	0.226
97	8.08	0.50	0.390	(0.188)	0.129	0.261
98	8.17	0.50	0.390	(0.187)	0.129	0.261
99	8.25	0.50	0.390	(0.186)	0.129	0.261
100	8.33	0.50	0.390	(0.185)	0.129	0.261
101	8.42	0.50	0.390	(0.184)	0.129	0.261
102	8.50	0.50	0.390	(0.184)	0.129	0.261
103	8.58	0.53	0.416	(0.183)	0.137	0.279
104	8.67	0.53	0.416	(0.182)	0.137	0.279
105	8.75	0.53	0.416	(0.181)	0.137	0.279
106	8.83	0.57	0.442	(0.180)	0.146	0.296
107	8.92	0.57	0.442	(0.179)	0.146	0.296
108	9.00	0.57	0.442	(0.178)	0.146	0.296
109	9.08	0.63	0.494	(0.178)	0.163	0.331
110	9.17	0.63	0.494	(0.177)	0.163	0.331
111	9.25	0.63	0.494	(0.176)	0.163	0.331
112	9.33	0.67	0.520	(0.175)	0.172	0.348
113	9.42	0.67	0.520	(0.174)	0.172	0.348
114	9.50	0.67	0.520	(0.173)	0.172	0.348
115	9.58	0.70	0.546	0.173	(0.180)	0.373
116	9.67	0.70	0.546	0.172	(0.180)	0.374
117	9.75	0.70	0.546	0.171	(0.180)	0.375
118	9.83	0.73	0.572	0.170	(0.189)	0.402
119	9.92	0.73	0.572	0.169	(0.189)	0.403

120	10.00	0.73	0.572		0.168	(0.189)	0.403
121	10.08	0.50	0.390	(	0.168)	0.129	0.261
122	10.17	0.50	0.390	(	0.167)	0.129	0.261
123	10.25	0.50	0.390	(	0.166)	0.129	0.261
124	10.33	0.50	0.390	(	0.165)	0.129	0.261
125	10.42	0.50	0.390	(	0.164)	0.129	0.261
126	10.50	0.50	0.390	(	0.164)	0.129	0.261
127	10.58	0.67	0.520		0.163	(0.172)	0.357
128	10.67	0.67	0.520		0.162	(0.172)	0.358
129	10.75	0.67	0.520		0.161	(0.172)	0.359
130	10.83	0.67	0.520		0.160	(0.172)	0.360
131	10.92	0.67	0.520		0.160	(0.172)	0.360
132	11.00	0.67	0.520		0.159	(0.172)	0.361
133	11.08	0.63	0.494		0.158	(0.163)	0.336
134	11.17	0.63	0.494		0.157	(0.163)	0.337
135	11.25	0.63	0.494		0.157	(0.163)	0.337
136	11.33	0.63	0.494		0.156	(0.163)	0.338
137	11.42	0.63	0.494		0.155	(0.163)	0.339
138	11.50	0.63	0.494		0.154	(0.163)	0.340
139	11.58	0.57	0.442	(	0.153)	0.146	0.296
140	11.67	0.57	0.442	(	0.153)	0.146	0.296
141	11.75	0.57	0.442	(	0.152)	0.146	0.296
142	11.83	0.60	0.468		0.151	(0.154)	0.317
143	11.92	0.60	0.468		0.150	(0.154)	0.318
144	12.00	0.60	0.468		0.150	(0.154)	0.318
145	12.08	0.83	0.650		0.149	(0.214)	0.501
146	12.17	0.83	0.650		0.148	(0.214)	0.502
147	12.25	0.83	0.650		0.147	(0.214)	0.502
148	12.33	0.87	0.676		0.147	(0.223)	0.529
149	12.42	0.87	0.676		0.146	(0.223)	0.530
150	12.50	0.87	0.676		0.145	(0.223)	0.531
151	12.58	0.93	0.728		0.144	(0.240)	0.583
152	12.67	0.93	0.728		0.144	(0.240)	0.584
153	12.75	0.93	0.728		0.143	(0.240)	0.585
154	12.83	0.97	0.754		0.142	(0.249)	0.612
155	12.92	0.97	0.754		0.142	(0.249)	0.612
156	13.00	0.97	0.754		0.141	(0.249)	0.613
157	13.08	1.13	0.884		0.140	(0.292)	0.744
158	13.17	1.13	0.884		0.139	(0.292)	0.744
159	13.25	1.13	0.884		0.139	(0.292)	0.745
160	13.33	1.13	0.884		0.138	(0.292)	0.746
161	13.42	1.13	0.884		0.137	(0.292)	0.747
162	13.50	1.13	0.884		0.137	(0.292)	0.747
163	13.58	0.77	0.598		0.136	(0.197)	0.462
164	13.67	0.77	0.598		0.135	(0.197)	0.463
165	13.75	0.77	0.598		0.135	(0.197)	0.463
166	13.83	0.77	0.598		0.134	(0.197)	0.464
167	13.92	0.77	0.598		0.133	(0.197)	0.465
168	14.00	0.77	0.598		0.133	(0.197)	0.465
169	14.08	0.90	0.702		0.132	(0.232)	0.570
170	14.17	0.90	0.702		0.131	(0.232)	0.571
171	14.25	0.90	0.702		0.130	(0.232)	0.571
172	14.33	0.87	0.676		0.130	(0.223)	0.546
173	14.42	0.87	0.676		0.129	(0.223)	0.547
174	14.50	0.87	0.676		0.129	(0.223)	0.547
175	14.58	0.87	0.676		0.128	(0.223)	0.548
176	14.67	0.87	0.676		0.127	(0.223)	0.549
177	14.75	0.87	0.676		0.127	(0.223)	0.549
178	14.83	0.83	0.650		0.126	(0.214)	0.524
179	14.92	0.83	0.650		0.125	(0.214)	0.525
180	15.00	0.83	0.650		0.125	(0.214)	0.525
181	15.08	0.80	0.624		0.124	(0.206)	0.500
182	15.17	0.80	0.624		0.123	(0.206)	0.501
183	15.25	0.80	0.624		0.123	(0.206)	0.501
184	15.33	0.77	0.598		0.122	(0.197)	0.476
185	15.42	0.77	0.598		0.121	(0.197)	0.476
186	15.50	0.77	0.598		0.121	(0.197)	0.477
187	15.58	0.63	0.494		0.120	(0.163)	0.374
188	15.67	0.63	0.494		0.120	(0.163)	0.374
189	15.75	0.63	0.494		0.119	(0.163)	0.375
190	15.83	0.63	0.494		0.118	(0.163)	0.376
191	15.92	0.63	0.494		0.118	(0.163)	0.376
192	16.00	0.63	0.494		0.117	(0.163)	0.377
193	16.08	0.13	0.104	(	0.117)	0.034	0.070
194	16.17	0.13	0.104	(	0.116)	0.034	0.070

195	16.25	0.13	0.104	(0.115)	0.034	0.070
196	16.33	0.13	0.104	(0.115)	0.034	0.070
197	16.42	0.13	0.104	(0.114)	0.034	0.070
198	16.50	0.13	0.104	(0.114)	0.034	0.070
199	16.58	0.10	0.078	(0.113)	0.026	0.052
200	16.67	0.10	0.078	(0.112)	0.026	0.052
201	16.75	0.10	0.078	(0.112)	0.026	0.052
202	16.83	0.10	0.078	(0.111)	0.026	0.052
203	16.92	0.10	0.078	(0.111)	0.026	0.052
204	17.00	0.10	0.078	(0.110)	0.026	0.052
205	17.08	0.17	0.130	(0.110)	0.043	0.087
206	17.17	0.17	0.130	(0.109)	0.043	0.087
207	17.25	0.17	0.130	(0.109)	0.043	0.087
208	17.33	0.17	0.130	(0.108)	0.043	0.087
209	17.42	0.17	0.130	(0.107)	0.043	0.087
210	17.50	0.17	0.130	(0.107)	0.043	0.087
211	17.58	0.17	0.130	(0.106)	0.043	0.087
212	17.67	0.17	0.130	(0.106)	0.043	0.087
213	17.75	0.17	0.130	(0.105)	0.043	0.087
214	17.83	0.13	0.104	(0.105)	0.034	0.070
215	17.92	0.13	0.104	(0.104)	0.034	0.070
216	18.00	0.13	0.104	(0.104)	0.034	0.070
217	18.08	0.13	0.104	(0.103)	0.034	0.070
218	18.17	0.13	0.104	(0.103)	0.034	0.070
219	18.25	0.13	0.104	(0.102)	0.034	0.070
220	18.33	0.13	0.104	(0.102)	0.034	0.070
221	18.42	0.13	0.104	(0.101)	0.034	0.070
222	18.50	0.13	0.104	(0.101)	0.034	0.070
223	18.58	0.10	0.078	(0.100)	0.026	0.052
224	18.67	0.10	0.078	(0.100)	0.026	0.052
225	18.75	0.10	0.078	(0.099)	0.026	0.052
226	18.83	0.07	0.052	(0.099)	0.017	0.035
227	18.92	0.07	0.052	(0.098)	0.017	0.035
228	19.00	0.07	0.052	(0.098)	0.017	0.035
229	19.08	0.10	0.078	(0.097)	0.026	0.052
230	19.17	0.10	0.078	(0.097)	0.026	0.052
231	19.25	0.10	0.078	(0.097)	0.026	0.052
232	19.33	0.13	0.104	(0.096)	0.034	0.070
233	19.42	0.13	0.104	(0.096)	0.034	0.070
234	19.50	0.13	0.104	(0.095)	0.034	0.070
235	19.58	0.10	0.078	(0.095)	0.026	0.052
236	19.67	0.10	0.078	(0.094)	0.026	0.052
237	19.75	0.10	0.078	(0.094)	0.026	0.052
238	19.83	0.07	0.052	(0.093)	0.017	0.035
239	19.92	0.07	0.052	(0.093)	0.017	0.035
240	20.00	0.07	0.052	(0.093)	0.017	0.035
241	20.08	0.10	0.078	(0.092)	0.026	0.052
242	20.17	0.10	0.078	(0.092)	0.026	0.052
243	20.25	0.10	0.078	(0.091)	0.026	0.052
244	20.33	0.10	0.078	(0.091)	0.026	0.052
245	20.42	0.10	0.078	(0.091)	0.026	0.052
246	20.50	0.10	0.078	(0.090)	0.026	0.052
247	20.58	0.10	0.078	(0.090)	0.026	0.052
248	20.67	0.10	0.078	(0.089)	0.026	0.052
249	20.75	0.10	0.078	(0.089)	0.026	0.052
250	20.83	0.07	0.052	(0.089)	0.017	0.035
251	20.92	0.07	0.052	(0.088)	0.017	0.035
252	21.00	0.07	0.052	(0.088)	0.017	0.035
253	21.08	0.10	0.078	(0.088)	0.026	0.052
254	21.17	0.10	0.078	(0.087)	0.026	0.052
255	21.25	0.10	0.078	(0.087)	0.026	0.052
256	21.33	0.07	0.052	(0.087)	0.017	0.035
257	21.42	0.07	0.052	(0.086)	0.017	0.035
258	21.50	0.07	0.052	(0.086)	0.017	0.035
259	21.58	0.10	0.078	(0.086)	0.026	0.052
260	21.67	0.10	0.078	(0.085)	0.026	0.052
261	21.75	0.10	0.078	(0.085)	0.026	0.052
262	21.83	0.07	0.052	(0.085)	0.017	0.035
263	21.92	0.07	0.052	(0.085)	0.017	0.035
264	22.00	0.07	0.052	(0.084)	0.017	0.035
265	22.08	0.10	0.078	(0.084)	0.026	0.052
266	22.17	0.10	0.078	(0.084)	0.026	0.052
267	22.25	0.10	0.078	(0.083)	0.026	0.052
268	22.33	0.07	0.052	(0.083)	0.017	0.035
269	22.42	0.07	0.052	(0.083)	0.017	0.035

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270  22.50     0.07      0.052       (  0.083)       0.017        0.035
271  22.58     0.07      0.052       (  0.082)       0.017        0.035
272  22.67     0.07      0.052       (  0.082)       0.017        0.035
273  22.75     0.07      0.052       (  0.082)       0.017        0.035
274  22.83     0.07      0.052       (  0.082)       0.017        0.035
275  22.92     0.07      0.052       (  0.082)       0.017        0.035
276  23.00     0.07      0.052       (  0.081)       0.017        0.035
277  23.08     0.07      0.052       (  0.081)       0.017        0.035
278  23.17     0.07      0.052       (  0.081)       0.017        0.035
279  23.25     0.07      0.052       (  0.081)       0.017        0.035
280  23.33     0.07      0.052       (  0.081)       0.017        0.035
281  23.42     0.07      0.052       (  0.080)       0.017        0.035
282  23.50     0.07      0.052       (  0.080)       0.017        0.035
283  23.58     0.07      0.052       (  0.080)       0.017        0.035
284  23.67     0.07      0.052       (  0.080)       0.017        0.035
285  23.75     0.07      0.052       (  0.080)       0.017        0.035
286  23.83     0.07      0.052       (  0.080)       0.017        0.035
287  23.92     0.07      0.052       (  0.080)       0.017        0.035
288  24.00     0.07      0.052       (  0.080)       0.017        0.035
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    56.7
      Flood volume = Effective rainfall      4.72(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =      21.8(Ac.Ft)
      Total soil loss =      1.78(In)
      Total soil loss =     8.186(Ac.Ft)
      Total rainfall =      6.50(In)
      Flood volume =      948067.8 Cubic Feet
      Total soil loss =      356594.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     41.628(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
 ---------------------------------------------------------------------------
   0+ 5       0.0033      0.49  Q        |         |         |         |
   0+10       0.0141      1.56  VQ       |         |         |         |
   0+15       0.0268      1.84  VQ       |         |         |         |
   0+20       0.0416      2.16  VQ       |         |         |         |
   0+25       0.0604      2.72  V Q      |         |         |         |
   0+30       0.0801      2.86  V Q      |         |         |         |
   0+35       0.1000      2.90  V Q      |         |         |         |
   0+40       0.1201      2.91  V Q      |         |         |         |
   0+45       0.1401      2.91  V Q      |         |         |         |
   0+50       0.1619      3.16  V Q      |         |         |         |
   0+55       0.1873      3.70  V Q      |         |         |         |
   1+ 0       0.2137      3.83  V  Q     |         |         |         |
   1+ 5       0.2387      3.63  V Q      |         |         |         |
   1+10       0.2601      3.10  V Q      |         |         |         |
   1+15       0.2805      2.97  V Q      |         |         |         |
   1+20       0.3006      2.93  V Q      |         |         |         |
   1+25       0.3207      2.92  V Q      |         |         |         |
   1+30       0.3408      2.91  V Q      |         |         |         |
   1+35       0.3609      2.91  V Q      |         |         |         |
   1+40       0.3809      2.91  V Q      |         |         |         |
   1+45       0.4010      2.91  V Q      |         |         |         |
   1+50       0.4228      3.16  V Q      |         |         |         |
   1+55       0.4482      3.70  V Q      |         |         |         |
   2+ 0       0.4746      3.83  V  Q     |         |         |         |
   2+ 5       0.5013      3.87  V  Q     |         |         |         |
   2+10       0.5280      3.88  V  Q     |         |         |         |
   2+15       0.5548      3.88  |V Q     |         |         |         |
   2+20       0.5815      3.88  |V Q     |         |         |         |
   2+25       0.6083      3.88  |V Q     |         |         |         |
   2+30       0.6350      3.88  |V Q     |         |         |         |
   2+35       0.6634      4.13  |V Q     |         |         |         |
   2+40       0.6956      4.67  |V Q     |         |         |         |
   2+45       0.7287      4.80  |V Q     |         |         |         |
   2+50       0.7620      4.84  |V Q     |         |         |         |
   2+55       0.7954      4.85  |V Q     |         |         |         |
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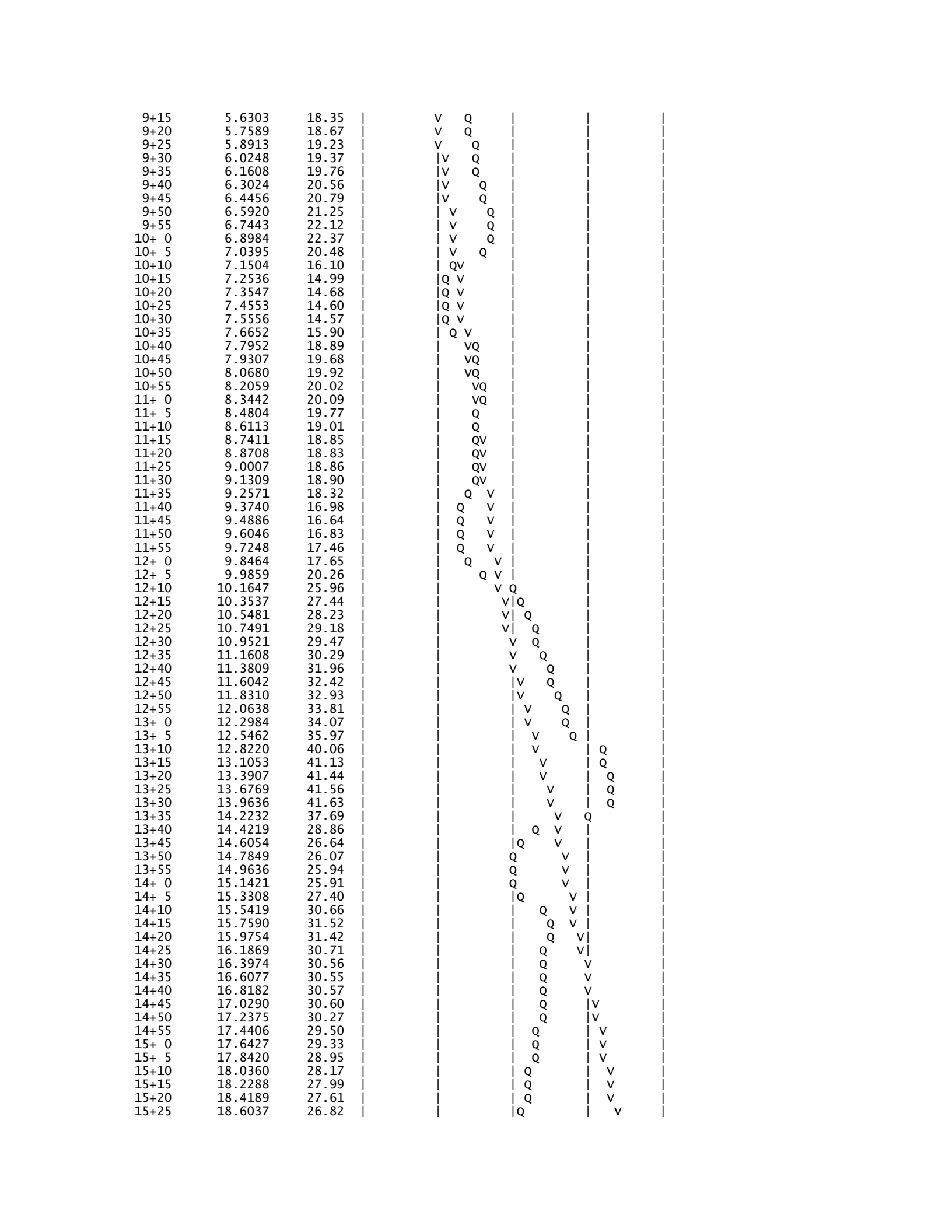
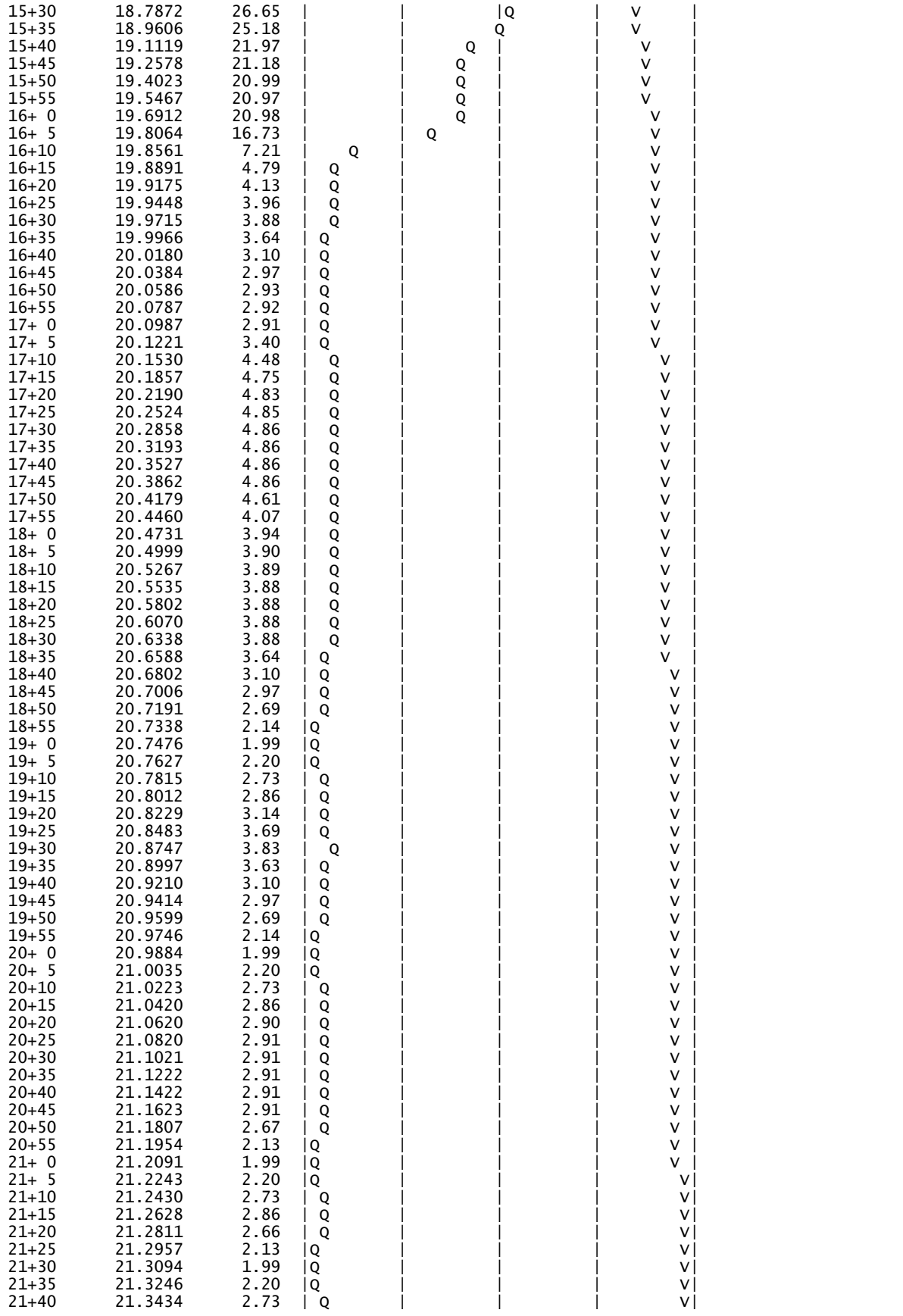
3+ 0	0.8289	4.86	V Q			
3+ 5	0.8623	4.86	V Q			
3+10	0.8958	4.86	V Q			
3+15	0.9292	4.86	V Q			
3+20	0.9627	4.86	V Q			
3+25	0.9961	4.86	V Q			
3+30	1.0296	4.86	V Q			
3+35	1.0630	4.86	V Q			
3+40	1.0965	4.86	VQ			
3+45	1.1299	4.86	VQ			
3+50	1.1650	5.10	V Q			
3+55	1.2038	5.64	V Q			
4+ 0	1.2436	5.78	V Q			
4+ 5	1.2837	5.81	V Q			
4+10	1.3238	5.82	V Q			
4+15	1.3639	5.83	V Q			
4+20	1.4057	6.07	V Q			
4+25	1.4512	6.61	V Q			
4+30	1.4977	6.75	V Q			
4+35	1.5444	6.78	V Q			
4+40	1.5912	6.79	V Q			
4+45	1.6380	6.80	V Q			
4+50	1.6865	7.04	V Q			
4+55	1.7388	7.58	V Q			
5+ 0	1.7919	7.72	V Q			
5+ 5	1.8420	7.27	V Q			
5+10	1.8847	6.20	VQ			
5+15	1.9255	5.93	VQ			
5+20	1.9675	6.10	VQ			
5+25	2.0131	6.62	V Q			
5+30	2.0596	6.75	V Q			
5+35	2.1080	7.03	V Q			
5+40	2.1602	7.58	V Q			
5+45	2.2133	7.72	V Q			
5+50	2.2667	7.76	V Q			
5+55	2.3202	7.77	V Q			
6+ 0	2.3737	7.77	V Q			
6+ 5	2.4289	8.01	V Q			
6+10	2.4878	8.55	V Q			
6+15	2.5477	8.69	V Q			
6+20	2.6078	8.73	V Q			
6+25	2.6679	8.74	V Q			
6+30	2.7281	8.74	VQ			
6+35	2.7900	8.98	V Q			
6+40	2.8556	9.52	V Q			
6+45	2.9221	9.66	V Q			
6+50	2.9889	9.70	V Q			
6+55	3.0558	9.71	V Q			
7+ 0	3.1227	9.71	V Q			
7+ 5	3.1896	9.71	V Q			
7+10	3.2565	9.71	V Q			
7+15	3.3234	9.71	VQ			
7+20	3.3919	9.96	VQ			
7+25	3.4642	10.49	V Q			
7+30	3.5374	10.63	V Q			
7+35	3.6126	10.91	V Q			
7+40	3.6915	11.46	V Q			
7+45	3.7714	11.60	V Q			
7+50	3.8533	11.88	V Q			
7+55	3.9389	12.43	V Q			
8+ 0	4.0255	12.57	V Q			
8+ 5	4.1157	13.10	V Q			
8+10	4.2134	14.19	V Q			
8+15	4.3130	14.47	V Q			
8+20	4.4132	14.54	V Q			
8+25	4.5135	14.56	V Q			
8+30	4.6138	14.57	V Q			
8+35	4.7158	14.81	V Q			
8+40	4.8215	15.35	V Q			
8+45	4.9282	15.49	V Q			
8+50	5.0368	15.77	V Q			
8+55	5.1492	16.32	V Q			
9+ 0	5.2625	16.46	V Q			
9+ 5	5.3795	16.98	V Q			
9+10	5.5040	18.07	V Q			





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   21+45      21.3631      2.86  | Q       |         |         |        V|
   21+50      21.3814      2.66  | Q       |         |         |        V|
   21+55      21.3960      2.13  |Q        |         |         |        V|
   22+ 0      21.4098      1.99  |Q        |         |         |        V|
   22+ 5      21.4249      2.20  |Q        |         |         |        V|
   22+10      21.4437      2.73  | Q       |         |         |        V|
   22+15      21.4634      2.86  | Q       |         |         |        V|
   22+20      21.4817      2.66  | Q       |         |         |        V|
   22+25      21.4964      2.13  |Q        |         |         |        V|
   22+30      21.5101      1.99  |Q        |         |         |        V|
   22+35      21.5236      1.96  |Q        |         |         |        V|
   22+40      21.5370      1.95  |Q        |         |         |        V|
   22+45      21.5504      1.94  |Q        |         |         |        V|
   22+50      21.5638      1.94  |Q        |         |         |        V|
   22+55      21.5771      1.94  |Q        |         |         |        V|
   23+ 0      21.5905      1.94  |Q        |         |         |        V|
   23+ 5      21.6039      1.94  |Q        |         |         |        V|
   23+10      21.6173      1.94  |Q        |         |         |        V|
   23+15      21.6306      1.94  |Q        |         |         |        V|
   23+20      21.6440      1.94  |Q        |         |         |        V|
   23+25      21.6574      1.94  |Q        |         |         |        V|
   23+30      21.6708      1.94  |Q        |         |         |        V|
   23+35      21.6842      1.94  |Q        |         |         |        V|
   23+40      21.6975      1.94  |Q        |         |         |        V|
   23+45      21.7109      1.94  |Q        |         |         |        V|
   23+50      21.7243      1.94  |Q        |         |         |        V|
   23+55      21.7377      1.94  |Q        |         |         |        V|
   24+ 0      21.7510      1.94  |Q        |         |         |        V|
   24+ 5      21.7611      1.46  |Q        |         |         |        V|
   24+10      21.7637      0.38  Q         |         |         |        V|
   24+15      21.7644      0.10  Q         |         |         |        V|
   24+20      21.7646      0.03  Q         |         |         |        V|
   24+25      21.7646      0.01  Q         |         |         |         V
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STAGE-STORAGE/OUTFLOW TABLE

Building 1 CMP Chambers - Stage/Storage/Outflow Table
W.O.# 21-0044

Basin Information: Infiltration Basin			2-YEAR	ORIFICE	5-YEAR	WEIR	10/100-YEAR	WEIR
Tributary Area:	42.9	AC	Q EXISTING	3.6	Q EXISTING	9	Q EXISTING	30.8/59.1
DCV=	103,000	CF						
Bottom Elevation:	2476.60	FT	Opening (in)	4	L(ft)	1.5	L(ft)	7
			# of Orifices	4	C	3	C	3
Bottom Area:	84,533	SF	Orifice Area (sf)	0.0873				
Bottom Slope:	0	%	Orifice Diameter (ft)	0.3333				
Constant Infiltration:	0	cfs	Total Area (sf)	0.3491				
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$			G (ft/s^2)	32.2				
Q_{WEIR}= C*L*H$^{3/2}$			Cd	0.66				
			Invert H (ft)	0	Invert H (ft)	5.82	Invert H (ft)	6.96

#	Elevation (ft)	Depth (ft)	Storage (cf)	Storage (ac-ft)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	Total Q (cfs)	Total Q (cfs)	Total Q (cfs)	Comments
											2 Year Total	5 Year Total	10/100 Year Total	
1	**2476.6**	**0**	**0.00**	**0.000**							**0.00**	**0.00**	**0.00**	**Bottom of Chambers**
2	**2479.00**	**2.4**	**1036.80**	**0.024**							**0.00**	**0.00**	**0.00**	**Vbmp/Invert of 2 Yr Orifice**
3	**2479.2**	**2.6**	**13202.10**	**0.303**	**0.00**						**0.00**	**0.00**	**0.00**	**Middle of 2 Yr Orifice**
4	2479.6	3	38230.02	0.878	0.40	1.17					1.17	1.17	1.17	
5	2480.1	3.5	70437.53	1.617	0.90	1.75					1.75	1.75	1.75	
6	2480.6	4	103163.88	2.368	1.40	2.19					2.19	2.19	2.19	
7	2481.1	4.5	135890.23	3.120	1.90	2.55					2.55	2.55	2.55	
8	2481.6	5	168097.74	3.859	2.40	2.86					2.86	2.86	2.86	
9	2482.1	5.5	199241.49	4.574	2.90	3.15					3.15	3.15	3.15	
10	**2482.42**	**5.82**	**218105.9573**	**5.007**	**3.22**	**3.317583**	**0**				**3.32**	**3.32**	**3.32**	**Top of 2 Yr Ponding/Inv 5 Yr**
11	2482.6	6	228717.22	5.251	3.40	3.41	0.18	0.34			3.41	3.75	3.75	
12	2483.1	6.5	255808.19	5.873	3.90	3.65	0.68	2.52			3.65	6.17	6.17	
13	**2483.56**	**6.96**	**277677.9073**	**6.375**	**4.36**	**3.86**	**1.14**	**5.48**	**0**		**3.86**	**9.34**	**9.34**	**Top of 5 Yr Ponding/Inv 10/100 Yr**
14	2483.6	7	279579.62	6.418	4.40	3.88	1.18	5.77	0.04	0.17	3.88	9.65	9.81	
15	**2483.87**	**7.27**	**289849.46**	**6.654**	**4.67**	**4.00**	**1.45**	**7.86**	**0.31**	**3.62**	**4.00**	**11.85**	**15.48**	**Top of 10 Yr Ponding**
16	2484.1	7.5	298597.84	6.855	4.90	4.09	1.68	9.80	0.54	8.33	4.09	13.89	22.22	
17	**2484.59**	**7.99**	**309113.1544**	**7.096**	**5.39**	**4.29**	**2.17**	**14.38**	**1.03**	**21.95**	**4.29**	**18.68**	**40.63**	**Top of 100 Yr Ponding**
18	**2484.6**	**8**	**309327.75**	**7.101**	**5.40**	**4.30**	**2.18**	**14.48**	**1.04**	**22.27**	**4.30**	**18.78**	**41.05**	**Top of Chambers**

BASIN ROUTING
2-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 04/07/22

21-0044 EXETER INDUSTRIAL BLDG 1
2-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST2YR242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 12.701 (CFS)
Total volume = 7.718 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

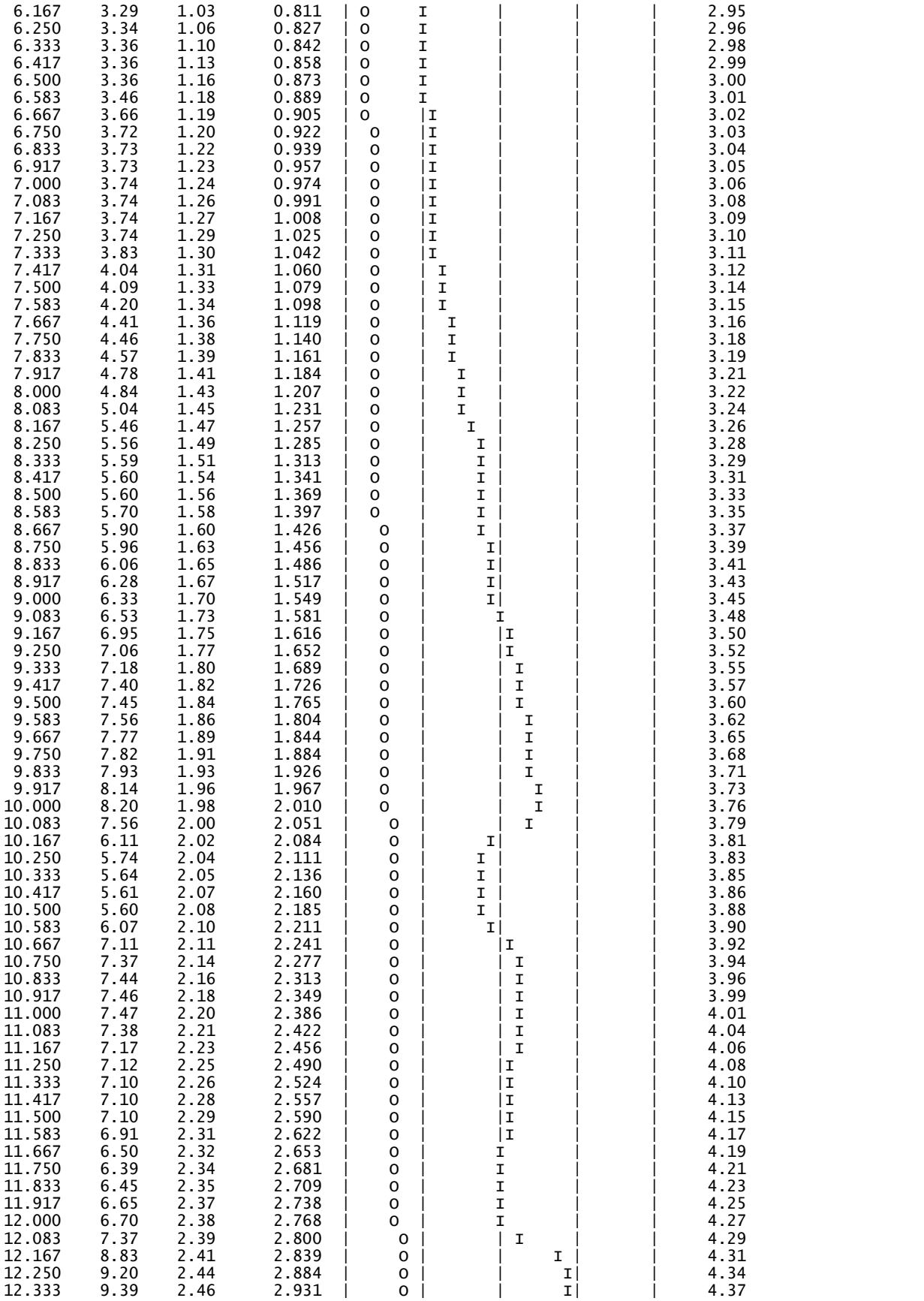
Depth vs. Storage and Depth vs. Discharge data:

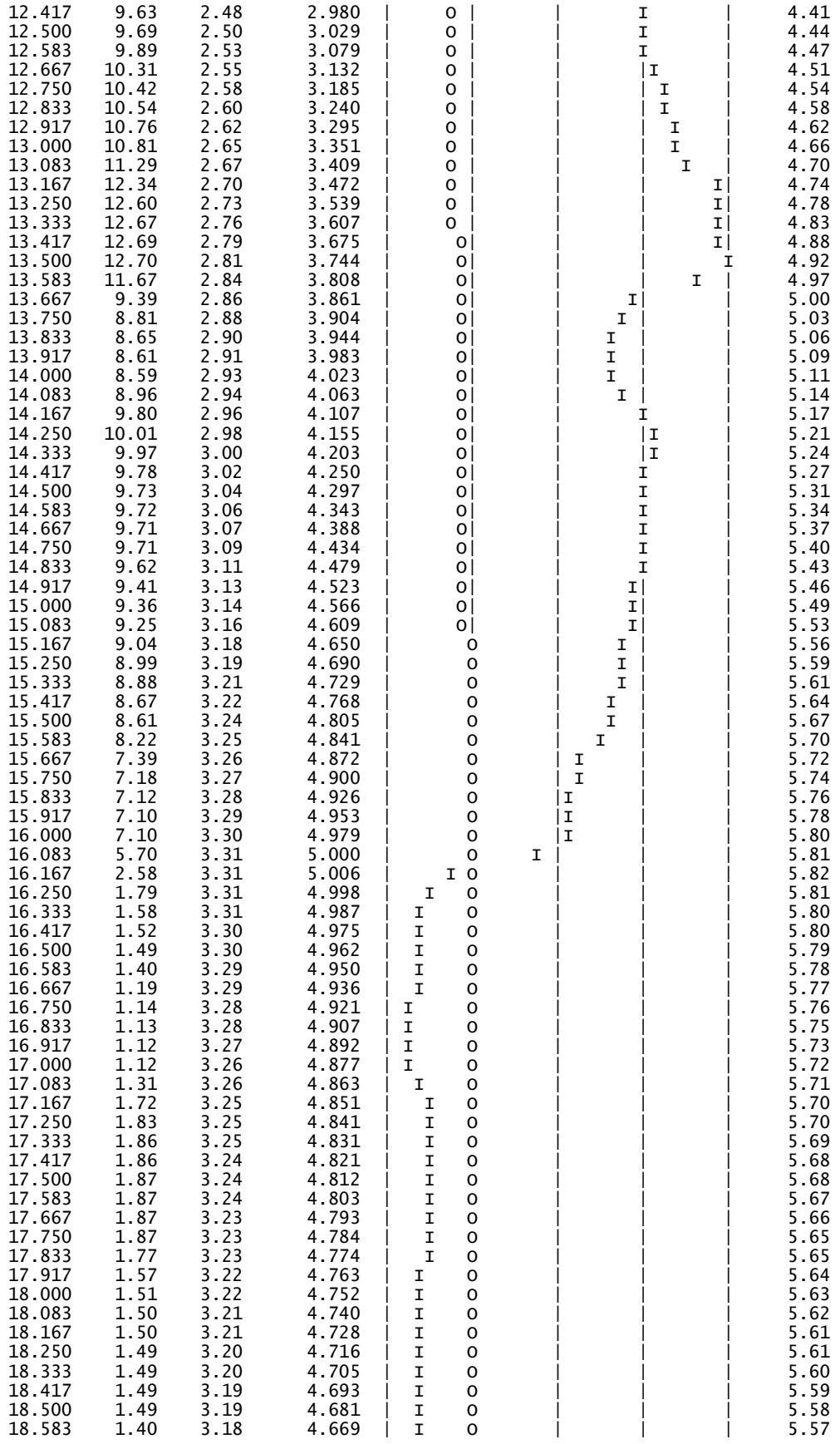
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
6.000	5.251	3.409	5.239	5.263
6.500	5.873	3.651	5.860	5.886
7.000	6.418	3.878	6.405	6.431
7.500	6.855	4.093	6.841	6.869
8.000	7.101	4.296	7.086	7.116

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	3.2	6.35	9.53	12.70	Depth (Ft.)
0.083	0.19	0.00	0.001	O	|	|	|	|	0.01
0.167	0.60	0.00	0.003	OI	|	|	|	|	0.03
0.250	0.71	0.00	0.008	OI	|	|	|	|	0.07
0.333	0.83	0.00	0.013	O I	|	|	|	|	0.11
0.417	1.04	0.00	0.020	O I	|	|	|	|	0.17
0.500	1.10	0.00	0.027	O I	|	|	|	|	0.23
0.583	1.12	0.00	0.035	O I	|	|	|	|	0.30
0.667	1.12	0.00	0.042	O I	|	|	|	|	0.36
0.750	1.12	0.00	0.050	O I	|	|	|	|	0.43
0.833	1.21	0.00	0.058	O I	|	|	|	|	0.50
0.917	1.42	0.00	0.067	O I	|	|	|	|	0.58
1.000	1.47	0.00	0.077	O I	|	|	|	|	0.66
1.083	1.40	0.00	0.087	O I	|	|	|	|	0.75
1.167	1.19	0.00	0.096	O I	|	|	|	|	0.82
1.250	1.14	0.00	0.104	O I	|	|	|	|	0.89
1.333	1.13	0.00	0.112	O I	|	|	|	|	0.96
1.417	1.12	0.00	0.119	O I	|	|	|	|	1.03
1.500	1.12	0.00	0.127	O I	|	|	|	|	1.09
1.583	1.12	0.00	0.135	O I	|	|	|	|	1.16
1.667	1.12	0.00	0.143	O I	|	|	|	|	1.22
1.750	1.12	0.00	0.150	O I	|	|	|	|	1.29
1.833	1.21	0.00	0.158	O I	|	|	|	|	1.36
1.917	1.42	0.00	0.167	O I	|	|	|	|	1.44
2.000	1.47	0.00	0.177	O I	|	|	|	|	1.52
2.083	1.49	0.00	0.188	O I	|	|	|	|	1.61
2.167	1.49	0.00	0.198	O I	|	|	|	|	1.70
2.250	1.49	0.00	0.208	O I	|	|	|	|	1.79
2.333	1.49	0.00	0.218	O I	|	|	|	|	1.87
2.417	1.49	0.00	0.229	O I	|	|	|	|	1.96
2.500	1.49	0.00	0.239	O I	|	|	|	|	2.05
2.583	1.59	0.00	0.250	O I	|	|	|	|	2.14
2.667	1.80	0.00	0.261	O I	|	|	|	|	2.24
2.750	1.85	0.00	0.274	O I	|	|	|	|	2.35
2.833	1.86	0.00	0.287	O I	|	|	|	|	2.46
2.917	1.87	0.00	0.299	O I	|	|	|	|	2.57
3.000	1.87	0.02	0.312	O I	|	|	|	|	2.61
3.083	1.87	0.05	0.325	O I	|	|	|	|	2.62
3.167	1.87	0.07	0.337	O I	|	|	|	|	2.62
3.250	1.87	0.10	0.350	O I	|	|	|	|	2.63
3.333	1.87	0.12	0.362	O I	|	|	|	|	2.64
3.417	1.87	0.14	0.374	O I	|	|	|	|	2.65
3.500	1.87	0.17	0.385	O I	|	|	|	|	2.66
3.583	1.87	0.19	0.397	O I	|	|	|	|	2.67
3.667	1.87	0.22	0.409	O I	|	|	|	|	2.67
3.750	1.87	0.24	0.420	O I	|	|	|	|	2.68
3.833	1.96	0.26	0.431	O I	|	|	|	|	2.69
3.917	2.17	0.29	0.444	O I	|	|	|	|	2.70
4.000	2.22	0.31	0.457	O I	|	|	|	|	2.71
4.083	2.24	0.34	0.470	O I	|	|	|	|	2.72
4.167	2.24	0.37	0.483	O I	|	|	|	|	2.73
4.250	2.24	0.39	0.496	O I	|	|	|	|	2.73
4.333	2.33	0.42	0.509	|O I	|	|	|	|	2.74
4.417	2.54	0.45	0.522	|O I	|	|	|	|	2.75
4.500	2.60	0.48	0.537	|O I	|	|	|	|	2.76
4.583	2.61	0.51	0.551	|O I	|	|	|	|	2.77
4.667	2.61	0.53	0.566	|O I	|	|	|	|	2.78
4.750	2.61	0.56	0.580	|O I	|	|	|	|	2.79
4.833	2.71	0.59	0.594	|O I	|	|	|	|	2.80
4.917	2.92	0.62	0.610	|O I|	|	|	|	|	2.81
5.000	2.97	0.66	0.625	|O I|	|	|	|	|	2.82
5.083	2.80	0.69	0.641	|O I|	|	|	|	|	2.83
5.167	2.39	0.71	0.654	|O I |	|	|	|	|	2.84
5.250	2.28	0.74	0.665	|O I |	|	|	|	|	2.85
5.333	2.35	0.76	0.676	|O I |	|	|	|	|	2.86
5.417	2.55	0.78	0.687	|O I |	|	|	|	|	2.87
5.500	2.60	0.81	0.699	| O I |	|	|	|	|	2.88
5.583	2.70	0.83	0.712	| O I |	|	|	|	|	2.88
5.667	2.91	0.86	0.725	| O I|	|	|	|	|	2.89
5.750	2.97	0.89	0.740	| O I|	|	|	|	|	2.90
5.833	2.98	0.92	0.754	| O I|	|	|	|	|	2.91
5.917	2.99	0.95	0.768	| O I|	|	|	|	|	2.92
6.000	2.99	0.97	0.782	| O I|	|	|	|	|	2.93
6.083	3.08	1.00	0.796	| O I|	|	|	|	|	2.94





18.667	1.19	3.18	4.656	| I O |	|	|	|	5.56
18.750	1.14	3.17	4.643	| I O|	|	|	|	5.55
18.833	1.03	3.17	4.628	| I O|	|	|	|	5.54
18.917	0.82	3.16	4.613	| I O|	|	|	|	5.53
19.000	0.77	3.16	4.596	|I O|	|	|	|	5.52
19.083	0.85	3.15	4.580	| I O|	|	|	|	5.50
19.167	1.05	3.14	4.565	| I O|	|	|	|	5.49
19.250	1.10	3.14	4.551	| I O|	|	|	|	5.48
19.333	1.21	3.13	4.537	| I O|	|	|	|	5.47
19.417	1.42	3.13	4.525	| I O|	|	|	|	5.47
19.500	1.47	3.12	4.513	| I O|	|	|	|	5.46
19.583	1.40	3.12	4.502	| I O|	|	|	|	5.45
19.667	1.19	3.11	4.489	| I O|	|	|	|	5.44
19.750	1.14	3.11	4.476	| I O|	|	|	|	5.43
19.833	1.03	3.10	4.462	| I O|	|	|	|	5.42
19.917	0.82	3.10	4.447	| I O|	|	|	|	5.41
20.000	0.77	3.09	4.431	|I O|	|	|	|	5.40
20.083	0.85	3.08	4.415	| I O|	|	|	|	5.39
20.167	1.05	3.08	4.400	| I O|	|	|	|	5.38
20.250	1.10	3.07	4.387	| I O|	|	|	|	5.37
20.333	1.12	3.07	4.373	| I O|	|	|	|	5.36
20.417	1.12	3.06	4.360	| I O|	|	|	|	5.35
20.500	1.12	3.06	4.346	| I O|	|	|	|	5.34
20.583	1.12	3.05	4.333	| I O|	|	|	|	5.33
20.667	1.12	3.05	4.320	| I O|	|	|	|	5.32
20.750	1.12	3.04	4.307	| I O|	|	|	|	5.31
20.833	1.03	3.04	4.293	| I O|	|	|	|	5.30
20.917	0.82	3.03	4.278	| I O|	|	|	|	5.29
21.000	0.77	3.02	4.263	|I O|	|	|	|	5.28
21.083	0.85	3.02	4.248	| I O|	|	|	|	5.27
21.167	1.05	3.01	4.234	| I O|	|	|	|	5.26
21.250	1.10	3.01	4.220	| I O|	|	|	|	5.25
21.333	1.02	3.00	4.207	| I O|	|	|	|	5.24
21.417	0.82	3.00	4.193	| I O|	|	|	|	5.23
21.500	0.77	2.99	4.177	|I O|	|	|	|	5.22
21.583	0.85	2.98	4.162	| I O|	|	|	|	5.21
21.667	1.05	2.98	4.148	| I O|	|	|	|	5.20
21.750	1.10	2.97	4.135	| I O|	|	|	|	5.19
21.833	1.02	2.97	4.122	| I O|	|	|	|	5.18
21.917	0.82	2.96	4.108	| I O|	|	|	|	5.17
22.000	0.77	2.96	4.093	|I O|	|	|	|	5.16
22.083	0.85	2.95	4.078	| I O|	|	|	|	5.15
22.167	1.05	2.95	4.065	| I O|	|	|	|	5.14
22.250	1.10	2.94	4.052	| I O|	|	|	|	5.13
22.333	1.02	2.94	4.039	| I O|	|	|	|	5.13
22.417	0.82	2.93	4.025	| I O|	|	|	|	5.12
22.500	0.77	2.92	4.010	|I O|	|	|	|	5.11
22.583	0.75	2.92	3.995	|I O|	|	|	|	5.10
22.667	0.75	2.91	3.980	|I O|	|	|	|	5.08
22.750	0.75	2.91	3.966	|I O|	|	|	|	5.07
22.833	0.75	2.90	3.951	|I O|	|	|	|	5.06
22.917	0.75	2.89	3.936	|I O|	|	|	|	5.05
23.000	0.75	2.89	3.921	|I O|	|	|	|	5.04
23.083	0.75	2.88	3.906	|I O|	|	|	|	5.03
23.167	0.75	2.88	3.892	|I O|	|	|	|	5.02
23.250	0.75	2.87	3.877	|I O|	|	|	|	5.01
23.333	0.75	2.87	3.862	|I O|	|	|	|	5.00
23.417	0.75	2.86	3.848	|I O|	|	|	|	4.99
23.500	0.75	2.85	3.833	|I O|	|	|	|	4.98
23.583	0.75	2.85	3.819	|I O|	|	|	|	4.97
23.667	0.75	2.84	3.804	|I O|	|	|	|	4.96
23.750	0.75	2.83	3.790	|I O|	|	|	|	4.95
23.833	0.75	2.83	3.776	|I O|	|	|	|	4.94
23.917	0.75	2.82	3.761	|I O|	|	|	|	4.93
24.000	0.75	2.82	3.747	|I O|	|	|	|	4.92
24.083	0.56	2.81	3.732	|I O|	|	|	|	4.91
24.167	0.15	2.80	3.715	I O|	|	|	|	4.90
24.250	0.04	2.79	3.697	I O|	|	|	|	4.89
24.333	0.01	2.79	3.678	I O|	|	|	|	4.88
24.417	0.00	2.78	3.658	I O |	|	|	|	4.86
24.500	0.00	2.77	3.639	I O |	|	|	|	4.85
24.583	0.00	2.76	3.620	I O |	|	|	|	4.84
24.667	0.00	2.75	3.601	I O |	|	|	|	4.83
24.750	0.00	2.75	3.582	I O |	|	|	|	4.81
24.833	0.00	2.74	3.564	I O |	|	|	|	4.80

24.917	0.00	2.73	3.545	I	o	|	|	|	4.79
25.000	0.00	2.72	3.526	I	o	|	|	|	4.77
25.083	0.00	2.71	3.507	I	o	|	|	|	4.76
25.167	0.00	2.71	3.489	I	o	|	|	|	4.75
25.250	0.00	2.70	3.470	I	o	|	|	|	4.74
25.333	0.00	2.69	3.451	I	o	|	|	|	4.72
25.417	0.00	2.68	3.433	I	o	|	|	|	4.71
25.500	0.00	2.67	3.414	I	o	|	|	|	4.70
25.583	0.00	2.67	3.396	I	o	|	|	|	4.69
25.667	0.00	2.66	3.378	I	o	|	|	|	4.67
25.750	0.00	2.65	3.359	I	o	|	|	|	4.66
25.833	0.00	2.64	3.341	I	o	|	|	|	4.65
25.917	0.00	2.63	3.323	I	o	|	|	|	4.64
26.000	0.00	2.63	3.305	I	o	|	|	|	4.63
26.083	0.00	2.62	3.287	I	o	|	|	|	4.61
26.167	0.00	2.61	3.269	I	o	|	|	|	4.60
26.250	0.00	2.60	3.251	I	o	|	|	|	4.59
26.333	0.00	2.60	3.233	I	o	|	|	|	4.58
26.417	0.00	2.59	3.215	I	o	|	|	|	4.56
26.500	0.00	2.58	3.197	I	o	|	|	|	4.55
26.583	0.00	2.57	3.180	I	o	|	|	|	4.54
26.667	0.00	2.57	3.162	I	o	|	|	|	4.53
26.750	0.00	2.56	3.144	I	o	|	|	|	4.52
26.833	0.00	2.55	3.127	I	o	|	|	|	4.50
26.917	0.00	2.54	3.109	I	o	|	|	|	4.49
27.000	0.00	2.53	3.092	I	o	|	|	|	4.48
27.083	0.00	2.53	3.074	I	o	|	|	|	4.47
27.167	0.00	2.52	3.057	I	o	|	|	|	4.46
27.250	0.00	2.51	3.040	I	o	|	|	|	4.45
27.333	0.00	2.50	3.022	I	o	|	|	|	4.44
27.417	0.00	2.49	3.005	I	o	|	|	|	4.42
27.500	0.00	2.48	2.988	I	o	|	|	|	4.41
27.583	0.00	2.48	2.971	I	o	|	|	|	4.40
27.667	0.00	2.47	2.954	I	o	|	|	|	4.39
27.750	0.00	2.46	2.937	I	o	|	|	|	4.38
27.833	0.00	2.45	2.920	I	o	|	|	|	4.37
27.917	0.00	2.44	2.903	I	o	|	|	|	4.36
28.000	0.00	2.44	2.886	I	o	|	|	|	4.34
28.083	0.00	2.43	2.870	I	o	|	|	|	4.33
28.167	0.00	2.42	2.853	I	o	|	|	|	4.32
28.250	0.00	2.41	2.836	I	o	|	|	|	4.31
28.333	0.00	2.40	2.820	I	o	|	|	|	4.30
28.417	0.00	2.40	2.803	I	o	|	|	|	4.29
28.500	0.00	2.39	2.787	I	o	|	|	|	4.28
28.583	0.00	2.38	2.770	I	o	|	|	|	4.27
28.667	0.00	2.37	2.754	I	o	|	|	|	4.26
28.750	0.00	2.36	2.737	I	o	|	|	|	4.25
28.833	0.00	2.36	2.721	I	o	|	|	|	4.23
28.917	0.00	2.35	2.705	I	o	|	|	|	4.22
29.000	0.00	2.34	2.689	I	o	|	|	|	4.21
29.083	0.00	2.33	2.673	I	o	|	|	|	4.20
29.167	0.00	2.33	2.657	I	o	|	|	|	4.19
29.250	0.00	2.32	2.641	I	o	|	|	|	4.18
29.333	0.00	2.31	2.625	I	o	|	|	|	4.17
29.417	0.00	2.30	2.609	I	o	|	|	|	4.16
29.500	0.00	2.30	2.593	I	o	|	|	|	4.15
29.583	0.00	2.29	2.577	I	o	|	|	|	4.14
29.667	0.00	2.28	2.562	I	o	|	|	|	4.13
29.750	0.00	2.27	2.546	I	o	|	|	|	4.12
29.833	0.00	2.27	2.530	I	o	|	|	|	4.11
29.917	0.00	2.26	2.515	I	o	|	|	|	4.10
30.000	0.00	2.25	2.499	I	o	|	|	|	4.09
30.083	0.00	2.24	2.484	I	o	|	|	|	4.08
30.167	0.00	2.24	2.468	I	o	|	|	|	4.07
30.250	0.00	2.23	2.453	I	o	|	|	|	4.06
30.333	0.00	2.22	2.438	I	o	|	|	|	4.05
30.417	0.00	2.21	2.422	I	o	|	|	|	4.04
30.500	0.00	2.21	2.407	I	o	|	|	|	4.03
30.583	0.00	2.20	2.392	I	o	|	|	|	4.02
30.667	0.00	2.19	2.377	I	o	|	|	|	4.01
30.750	0.00	2.18	2.362	I	o	|	|	|	4.00
30.833	0.00	2.18	2.347	I	o	|	|	|	3.99
30.917	0.00	2.17	2.332	I	o	|	|	|	3.98
31.000	0.00	2.16	2.317	I	o	|	|	|	3.97
31.083	0.00	2.15	2.302	I	o	|	|	|	3.96

31.167	0.00	2.14	2.287	I	o	|	|	|	3.95
31.250	0.00	2.13	2.272	I	o	|	|	|	3.94
31.333	0.00	2.12	2.258	I	o	|	|	|	3.93
31.417	0.00	2.12	2.243	I	o	|	|	|	3.92
31.500	0.00	2.11	2.229	I	o	|	|	|	3.91
31.583	0.00	2.10	2.214	I	o	|	|	|	3.90
31.667	0.00	2.09	2.200	I	o	|	|	|	3.89
31.750	0.00	2.08	2.185	I	o	|	|	|	3.88
31.833	0.00	2.07	2.171	I	o	|	|	|	3.87
31.917	0.00	2.07	2.157	I	o	|	|	|	3.86
32.000	0.00	2.06	2.143	I	o	|	|	|	3.85
32.083	0.00	2.05	2.128	I	o	|	|	|	3.84
32.167	0.00	2.04	2.114	I	o	|	|	|	3.83
32.250	0.00	2.03	2.100	I	o	|	|	|	3.82
32.333	0.00	2.03	2.086	I	o	|	|	|	3.81
32.417	0.00	2.02	2.072	I	o	|	|	|	3.80
32.500	0.00	2.01	2.059	I	o	|	|	|	3.79
32.583	0.00	2.00	2.045	I	o	|	|	|	3.78
32.667	0.00	1.99	2.031	I	o	|	|	|	3.78
32.750	0.00	1.99	2.017	I	o	|	|	|	3.77
32.833	0.00	1.98	2.004	I	o	|	|	|	3.76
32.917	0.00	1.97	1.990	I	o	|	|	|	3.75
33.000	0.00	1.96	1.977	I	o	|	|	|	3.74
33.083	0.00	1.95	1.963	I	o	|	|	|	3.73
33.167	0.00	1.95	1.950	I	o	|	|	|	3.72
33.250	0.00	1.94	1.936	I	o	|	|	|	3.71
33.333	0.00	1.93	1.923	I	o	|	|	|	3.70
33.417	0.00	1.92	1.910	I	o	|	|	|	3.69
33.500	0.00	1.92	1.896	I	o	|	|	|	3.69
33.583	0.00	1.91	1.883	I	o	|	|	|	3.68
33.667	0.00	1.90	1.870	I	o	|	|	|	3.67
33.750	0.00	1.89	1.857	I	o	|	|	|	3.66
33.833	0.00	1.89	1.844	I	o	|	|	|	3.65
33.917	0.00	1.88	1.831	I	o	|	|	|	3.64
34.000	0.00	1.87	1.818	I	o	|	|	|	3.63
34.083	0.00	1.86	1.805	I	o	|	|	|	3.63
34.167	0.00	1.86	1.793	I	o	|	|	|	3.62
34.250	0.00	1.85	1.780	I	o	|	|	|	3.61
34.333	0.00	1.84	1.767	I	o	|	|	|	3.60
34.417	0.00	1.83	1.754	I	o	|	|	|	3.59
34.500	0.00	1.83	1.742	I	o	|	|	|	3.58
34.583	0.00	1.82	1.729	I	o	|	|	|	3.57
34.667	0.00	1.81	1.717	I	o	|	|	|	3.57
34.750	0.00	1.80	1.704	I	o	|	|	|	3.56
34.833	0.00	1.80	1.692	I	o	|	|	|	3.55
34.917	0.00	1.79	1.680	I	o	|	|	|	3.54
35.000	0.00	1.78	1.667	I	o	|	|	|	3.53
35.083	0.00	1.78	1.655	I	o	|	|	|	3.53
35.167	0.00	1.77	1.643	I	o	|	|	|	3.52
35.250	0.00	1.76	1.631	I	o	|	|	|	3.51
35.333	0.00	1.75	1.619	I	o	|	|	|	3.50
35.417	0.00	1.75	1.606	I	o	|	|	|	3.49
35.500	0.00	1.74	1.595	I	o	|	|	|	3.48
35.583	0.00	1.73	1.583	I	o	|	|	|	3.48
35.667	0.00	1.72	1.571	I	o	|	|	|	3.47
35.750	0.00	1.71	1.559	I	o	|	|	|	3.46
35.833	0.00	1.70	1.547	I	o	|	|	|	3.45
35.917	0.00	1.69	1.536	I	o	|	|	|	3.44
36.000	0.00	1.68	1.524	I	o	|	|	|	3.44
36.083	0.00	1.67	1.512	I	o	|	|	|	3.43
36.167	0.00	1.66	1.501	I	o	|	|	|	3.42
36.250	0.00	1.65	1.489	I	o	|	|	|	3.41
36.333	0.00	1.64	1.478	I	o	|	|	|	3.41
36.417	0.00	1.64	1.467	I	o	|	|	|	3.40
36.500	0.00	1.63	1.456	I	o	|	|	|	3.39
36.583	0.00	1.62	1.444	I	o	|	|	|	3.38
36.667	0.00	1.61	1.433	I	o	|	|	|	3.38
36.750	0.00	1.60	1.422	I	o	|	|	|	3.37
36.833	0.00	1.59	1.411	I	o	|	|	|	3.36
36.917	0.00	1.58	1.400	I	o	|	|	|	3.35
37.000	0.00	1.57	1.390	I	o	|	|	|	3.35
37.083	0.00	1.57	1.379	I	o	|	|	|	3.34
37.167	0.00	1.56	1.368	I	o	|	|	|	3.33
37.250	0.00	1.55	1.357	I	o	|	|	|	3.32
37.333	0.00	1.54	1.347	I	o	|	|	|	3.32

37.417	0.00	1.53	1.336	I	o	|	|	|	3.31
37.500	0.00	1.52	1.326	I	o	|	|	|	3.30
37.583	0.00	1.51	1.315	I	o	|	|	|	3.30
37.667	0.00	1.51	1.305	I	o	|	|	|	3.29
37.750	0.00	1.50	1.294	I	o	|	|	|	3.28
37.833	0.00	1.49	1.284	I	o	|	|	|	3.27
37.917	0.00	1.48	1.274	I	o	|	|	|	3.27
38.000	0.00	1.47	1.264	I	o	|	|	|	3.26
38.083	0.00	1.47	1.253	I	o	|	|	|	3.25
38.167	0.00	1.46	1.243	I	o	|	|	|	3.25
38.250	0.00	1.45	1.233	I	o	|	|	|	3.24
38.333	0.00	1.44	1.223	I	o	|	|	|	3.23
38.417	0.00	1.43	1.214	I	o	|	|	|	3.23
38.500	0.00	1.43	1.204	I	o	|	|	|	3.22
38.583	0.00	1.42	1.194	I	o	|	|	|	3.21
38.667	0.00	1.41	1.184	I	o	|	|	|	3.21
38.750	0.00	1.40	1.174	I	o	|	|	|	3.20
38.833	0.00	1.40	1.165	I	o	|	|	|	3.19
38.917	0.00	1.39	1.155	I	o	|	|	|	3.19
39.000	0.00	1.38	1.146	I	o	|	|	|	3.18
39.083	0.00	1.37	1.136	I	o	|	|	|	3.17
39.167	0.00	1.37	1.127	I	o	|	|	|	3.17
39.250	0.00	1.36	1.117	I	o	|	|	|	3.16
39.333	0.00	1.35	1.108	I	o	|	|	|	3.16
39.417	0.00	1.34	1.099	I	o	|	|	|	3.15
39.500	0.00	1.34	1.090	I	o	|	|	|	3.14
39.583	0.00	1.33	1.080	I	o	|	|	|	3.14
39.667	0.00	1.32	1.071	I	o	|	|	|	3.13
39.750	0.00	1.31	1.062	I	o	|	|	|	3.12
39.833	0.00	1.31	1.053	I	o	|	|	|	3.12
39.917	0.00	1.30	1.044	I	o	|	|	|	3.11
40.000	0.00	1.29	1.035	I	o	|	|	|	3.11
40.083	0.00	1.29	1.026	I	o	|	|	|	3.10
40.167	0.00	1.28	1.017	I	o	|	|	|	3.09
40.250	0.00	1.27	1.009	I	o	|	|	|	3.09
40.333	0.00	1.27	1.000	I	o	|	|	|	3.08
40.417	0.00	1.26	0.991	I	o	|	|	|	3.08
40.500	0.00	1.25	0.983	I	o	|	|	|	3.07
40.583	0.00	1.24	0.974	I	o	|	|	|	3.06
40.667	0.00	1.24	0.965	I	o	|	|	|	3.06
40.750	0.00	1.23	0.957	I	o	|	|	|	3.05
40.833	0.00	1.22	0.948	I	o	|	|	|	3.05
40.917	0.00	1.22	0.940	I	o	|	|	|	3.04
41.000	0.00	1.21	0.932	I	o	|	|	|	3.04
41.083	0.00	1.20	0.923	I	o	|	|	|	3.03
41.167	0.00	1.20	0.915	I	o	|	|	|	3.03
41.250	0.00	1.19	0.907	I	o	|	|	|	3.02
41.333	0.00	1.19	0.899	I	o	|	|	|	3.01
41.417	0.00	1.18	0.891	I	o	|	|	|	3.01
41.500	0.00	1.17	0.882	I	o	|	|	|	3.00
41.583	0.00	1.16	0.874	I	o	|	|	|	3.00
41.667	0.00	1.15	0.866	I	o	|	|	|	2.99
41.750	0.00	1.13	0.859	I	o	|	|	|	2.99
41.833	0.00	1.11	0.851	I	o	|	|	|	2.98
41.917	0.00	1.10	0.843	I	o	|	|	|	2.98
42.000	0.00	1.08	0.836	I	o	|	|	|	2.97
42.083	0.00	1.07	0.828	I	o	|	|	|	2.97
42.167	0.00	1.05	0.821	I	o	|	|	|	2.96
42.250	0.00	1.04	0.814	I	o	|	|	|	2.96
42.333	0.00	1.02	0.807	I	o	|	|	|	2.95
42.417	0.00	1.01	0.800	I	o	|	|	|	2.95
42.500	0.00	1.00	0.793	I	o	|	|	|	2.94
42.583	0.00	0.98	0.786	I	o	|	|	|	2.94
42.667	0.00	0.97	0.779	I	o	|	|	|	2.93
42.750	0.00	0.96	0.773	I	o	|	|	|	2.93
42.833	0.00	0.94	0.766	I	o	|	|	|	2.92
42.917	0.00	0.93	0.760	I	o	|	|	|	2.92
43.000	0.00	0.92	0.753	I	o	|	|	|	2.91
43.083	0.00	0.90	0.747	I	o	|	|	|	2.91
43.167	0.00	0.89	0.741	I	o	|	|	|	2.90
43.250	0.00	0.88	0.735	I	o	|	|	|	2.90
43.333	0.00	0.87	0.729	I	o	|	|	|	2.90
43.417	0.00	0.85	0.723	I	o	|	|	|	2.89
43.500	0.00	0.84	0.717	I	o	|	|	|	2.89
43.583	0.00	0.83	0.711	I	o	|	|	|	2.88

43.667	0.00	0.82	0.706	I O				2.88
43.750	0.00	0.81	0.700	I O				2.88
43.833	0.00	0.80	0.695	I O				2.87
43.917	0.00	0.79	0.689	IO				2.87
44.000	0.00	0.77	0.684	IO				2.86
44.083	0.00	0.76	0.678	IO				2.86
44.167	0.00	0.75	0.673	IO				2.86
44.250	0.00	0.74	0.668	IO				2.85
44.333	0.00	0.73	0.663	IO				2.85
44.417	0.00	0.72	0.658	IO				2.85
44.500	0.00	0.71	0.653	IO				2.84
44.583	0.00	0.70	0.648	IO				2.84
44.667	0.00	0.69	0.643	IO				2.84
44.750	0.00	0.68	0.639	IO				2.83
44.833	0.00	0.67	0.634	IO				2.83
44.917	0.00	0.66	0.629	IO				2.83
45.000	0.00	0.65	0.625	IO				2.82
45.083	0.00	0.65	0.620	IO				2.82
45.167	0.00	0.64	0.616	IO				2.82
45.250	0.00	0.63	0.612	IO				2.81
45.333	0.00	0.62	0.607	IO				2.81
45.417	0.00	0.61	0.603	IO				2.81
45.500	0.00	0.60	0.599	IO				2.81
45.583	0.00	0.59	0.595	IO				2.80
45.667	0.00	0.59	0.591	IO				2.80
45.750	0.00	0.58	0.587	IO				2.80
45.833	0.00	0.57	0.583	IO				2.79
45.917	0.00	0.56	0.579	IO				2.79
46.000	0.00	0.55	0.575	IO				2.79
46.083	0.00	0.55	0.571	IO				2.79
46.167	0.00	0.54	0.567	IO				2.78
46.250	0.00	0.53	0.564	IO				2.78
46.333	0.00	0.52	0.560	IO				2.78
46.417	0.00	0.52	0.557	IO				2.78
46.500	0.00	0.51	0.553	IO				2.77
46.583	0.00	0.50	0.550	IO				2.77
46.667	0.00	0.49	0.546	IO				2.77
46.750	0.00	0.49	0.543	IO				2.77
46.833	0.00	0.48	0.539	IO				2.76
46.917	0.00	0.47	0.536	IO				2.76
47.000	0.00	0.47	0.533	IO				2.76
47.083	0.00	0.46	0.530	IO				2.76
47.167	0.00	0.46	0.527	IO				2.76
47.250	0.00	0.45	0.523	IO				2.75
47.333	0.00	0.44	0.520	IO				2.75
47.417	0.00	0.44	0.517	IO				2.75
47.500	0.00	0.43	0.514	IO				2.75
47.583	0.00	0.42	0.511	IO				2.74
47.667	0.00	0.42	0.508	IO				2.74
47.750	0.00	0.41	0.506	IO				2.74
47.833	0.00	0.41	0.503	IO				2.74
47.917	0.00	0.40	0.500	IO				2.74
48.000	0.00	0.40	0.497	O				2.74
48.083	0.00	0.39	0.495	O				2.73
48.167	0.00	0.38	0.492	O				2.73
48.250	0.00	0.38	0.489	O				2.73
48.333	0.00	0.37	0.487	O				2.73
48.417	0.00	0.37	0.484	O				2.73
48.500	0.00	0.36	0.482	O				2.72
48.583	0.00	0.36	0.479	O				2.72
48.667	0.00	0.35	0.477	O				2.72
48.750	0.00	0.35	0.474	O				2.72
48.833	0.00	0.34	0.472	O				2.72
48.917	0.00	0.34	0.469	O				2.72
49.000	0.00	0.33	0.467	O				2.71
49.083	0.00	0.33	0.465	O				2.71
49.167	0.00	0.33	0.463	O				2.71
49.250	0.00	0.32	0.460	O				2.71
49.333	0.00	0.32	0.458	O				2.71
49.417	0.00	0.31	0.456	O				2.71
49.500	0.00	0.31	0.454	O				2.70
49.583	0.00	0.30	0.452	O				2.70
49.667	0.00	0.30	0.450	O				2.70
49.750	0.00	0.29	0.448	O				2.70
49.833	0.00	0.29	0.446	O				2.70

49.917	0.00	0.29	0.444	o	|	|	|	|	2.70
50.000	0.00	0.28	0.442	o	|	|	|	|	2.70
50.083	0.00	0.28	0.440	o	|	|	|	|	2.70
50.167	0.00	0.27	0.438	o	|	|	|	|	2.69
50.250	0.00	0.27	0.436	o	|	|	|	|	2.69
50.333	0.00	0.27	0.434	o	|	|	|	|	2.69
50.417	0.00	0.26	0.432	o	|	|	|	|	2.69
50.500	0.00	0.26	0.431	o	|	|	|	|	2.69
50.583	0.00	0.26	0.429	o	|	|	|	|	2.69
50.667	0.00	0.25	0.427	o	|	|	|	|	2.69
50.750	0.00	0.25	0.425	o	|	|	|	|	2.69
50.833	0.00	0.25	0.424	o	|	|	|	|	2.68
50.917	0.00	0.24	0.422	o	|	|	|	|	2.68
51.000	0.00	0.24	0.420	o	|	|	|	|	2.68
51.083	0.00	0.24	0.419	o	|	|	|	|	2.68
51.167	0.00	0.23	0.417	o	|	|	|	|	2.68
51.250	0.00	0.23	0.415	o	|	|	|	|	2.68
51.333	0.00	0.23	0.414	o	|	|	|	|	2.68
51.417	0.00	0.22	0.412	o	|	|	|	|	2.68
51.500	0.00	0.22	0.411	o	|	|	|	|	2.67
51.583	0.00	0.22	0.409	o	|	|	|	|	2.67
51.667	0.00	0.21	0.408	o	|	|	|	|	2.67
51.750	0.00	0.21	0.406	o	|	|	|	|	2.67
51.833	0.00	0.21	0.405	o	|	|	|	|	2.67
51.917	0.00	0.20	0.403	o	|	|	|	|	2.67
52.000	0.00	0.20	0.402	o	|	|	|	|	2.67
52.083	0.00	0.20	0.401	o	|	|	|	|	2.67
52.167	0.00	0.20	0.399	o	|	|	|	|	2.67
52.250	0.00	0.19	0.398	o	|	|	|	|	2.67
52.333	0.00	0.19	0.397	o	|	|	|	|	2.67
52.417	0.00	0.19	0.395	o	|	|	|	|	2.66
52.500	0.00	0.19	0.394	o	|	|	|	|	2.66
52.583	0.00	0.18	0.393	o	|	|	|	|	2.66
52.667	0.00	0.18	0.391	o	|	|	|	|	2.66
52.750	0.00	0.18	0.390	o	|	|	|	|	2.66
52.833	0.00	0.18	0.389	o	|	|	|	|	2.66
52.917	0.00	0.17	0.388	o	|	|	|	|	2.66
53.000	0.00	0.17	0.387	o	|	|	|	|	2.66
53.083	0.00	0.17	0.385	o	|	|	|	|	2.66
53.167	0.00	0.17	0.384	o	|	|	|	|	2.66
53.250	0.00	0.16	0.383	o	|	|	|	|	2.66
53.333	0.00	0.16	0.382	o	|	|	|	|	2.65
53.417	0.00	0.16	0.381	o	|	|	|	|	2.65
53.500	0.00	0.16	0.380	o	|	|	|	|	2.65
53.583	0.00	0.15	0.379	o	|	|	|	|	2.65
53.667	0.00	0.15	0.378	o	|	|	|	|	2.65
53.750	0.00	0.15	0.377	o	|	|	|	|	2.65
53.833	0.00	0.15	0.376	o	|	|	|	|	2.65
53.917	0.00	0.15	0.375	o	|	|	|	|	2.65
54.000	0.00	0.14	0.374	o	|	|	|	|	2.65
54.083	0.00	0.14	0.373	o	|	|	|	|	2.65
54.167	0.00	0.14	0.372	o	|	|	|	|	2.65
54.250	0.00	0.14	0.371	o	|	|	|	|	2.65
54.333	0.00	0.14	0.370	o	|	|	|	|	2.65
54.417	0.00	0.13	0.369	o	|	|	|	|	2.65
54.500	0.00	0.13	0.368	o	|	|	|	|	2.65
54.583	0.00	0.13	0.367	o	|	|	|	|	2.64
54.667	0.00	0.13	0.366	o	|	|	|	|	2.64
54.750	0.00	0.13	0.365	o	|	|	|	|	2.64
54.833	0.00	0.13	0.364	o	|	|	|	|	2.64
54.917	0.00	0.12	0.363	o	|	|	|	|	2.64
55.000	0.00	0.12	0.363	o	|	|	|	|	2.64
55.083	0.00	0.12	0.362	o	|	|	|	|	2.64
55.167	0.00	0.12	0.361	o	|	|	|	|	2.64
55.250	0.00	0.12	0.360	o	|	|	|	|	2.64
55.333	0.00	0.12	0.359	o	|	|	|	|	2.64
55.417	0.00	0.11	0.359	o	|	|	|	|	2.64
55.500	0.00	0.11	0.358	o	|	|	|	|	2.64
55.583	0.00	0.11	0.357	o	|	|	|	|	2.64
55.667	0.00	0.11	0.356	o	|	|	|	|	2.64
55.750	0.00	0.11	0.356	o	|	|	|	|	2.64
55.833	0.00	0.11	0.355	o	|	|	|	|	2.64
55.917	0.00	0.10	0.354	o	|	|	|	|	2.64
56.000	0.00	0.10	0.353	o	|	|	|	|	2.64
56.083	0.00	0.10	0.353	o	|	|	|	|	2.63

56.167	0.00	0.10	0.352	o	|	|	|	2.63
56.250	0.00	0.10	0.351	o	|	|	|	2.63
56.333	0.00	0.10	0.351	o	|	|	|	2.63
56.417	0.00	0.10	0.350	o	|	|	|	2.63
56.500	0.00	0.09	0.349	o	|	|	|	2.63
56.583	0.00	0.09	0.349	o	|	|	|	2.63
56.667	0.00	0.09	0.348	o	|	|	|	2.63
56.750	0.00	0.09	0.347	o	|	|	|	2.63
56.833	0.00	0.09	0.347	o	|	|	|	2.63
56.917	0.00	0.09	0.346	o	|	|	|	2.63
57.000	0.00	0.09	0.345	o	|	|	|	2.63
57.083	0.00	0.09	0.345	o	|	|	|	2.63
57.167	0.00	0.08	0.344	o	|	|	|	2.63
57.250	0.00	0.08	0.344	o	|	|	|	2.63
57.333	0.00	0.08	0.343	o	|	|	|	2.63
57.417	0.00	0.08	0.343	o	|	|	|	2.63
57.500	0.00	0.08	0.342	o	|	|	|	2.63
57.583	0.00	0.08	0.341	o	|	|	|	2.63
57.667	0.00	0.08	0.341	o	|	|	|	2.63
57.750	0.00	0.08	0.340	o	|	|	|	2.63
57.833	0.00	0.08	0.340	o	|	|	|	2.63
57.917	0.00	0.07	0.339	o	|	|	|	2.63
58.000	0.00	0.07	0.339	o	|	|	|	2.62
58.083	0.00	0.07	0.338	o	|	|	|	2.62
58.167	0.00	0.07	0.338	o	|	|	|	2.62
58.250	0.00	0.07	0.337	o	|	|	|	2.62
58.333	0.00	0.07	0.337	o	|	|	|	2.62
58.417	0.00	0.07	0.336	o	|	|	|	2.62
58.500	0.00	0.07	0.336	o	|	|	|	2.62
58.583	0.00	0.07	0.335	o	|	|	|	2.62
58.667	0.00	0.07	0.335	o	|	|	|	2.62
58.750	0.00	0.07	0.335	o	|	|	|	2.62
58.833	0.00	0.06	0.334	o	|	|	|	2.62
58.917	0.00	0.06	0.334	o	|	|	|	2.62
59.000	0.00	0.06	0.333	o	|	|	|	2.62
59.083	0.00	0.06	0.333	o	|	|	|	2.62
59.167	0.00	0.06	0.332	o	|	|	|	2.62
59.250	0.00	0.06	0.332	o	|	|	|	2.62
59.333	0.00	0.06	0.332	o	|	|	|	2.62
59.417	0.00	0.06	0.331	o	|	|	|	2.62
59.500	0.00	0.06	0.331	o	|	|	|	2.62
59.583	0.00	0.06	0.330	o	|	|	|	2.62
59.667	0.00	0.06	0.330	o	|	|	|	2.62
59.750	0.00	0.06	0.330	o	|	|	|	2.62
59.833	0.00	0.05	0.329	o	|	|	|	2.62
59.917	0.00	0.05	0.329	o	|	|	|	2.62
60.000	0.00	0.05	0.328	o	|	|	|	2.62
60.083	0.00	0.05	0.328	o	|	|	|	2.62
60.167	0.00	0.05	0.328	o	|	|	|	2.62
60.250	0.00	0.05	0.327	o	|	|	|	2.62
60.333	0.00	0.05	0.327	o	|	|	|	2.62
60.417	0.00	0.05	0.327	o	|	|	|	2.62
60.500	0.00	0.05	0.326	o	|	|	|	2.62
60.583	0.00	0.05	0.326	o	|	|	|	2.62
60.667	0.00	0.05	0.326	o	|	|	|	2.62
60.750	0.00	0.05	0.325	o	|	|	|	2.62
60.833	0.00	0.05	0.325	o	|	|	|	2.62
60.917	0.00	0.05	0.325	o	|	|	|	2.62
61.000	0.00	0.04	0.324	o	|	|	|	2.61
61.083	0.00	0.04	0.324	o	|	|	|	2.61
61.167	0.00	0.04	0.324	o	|	|	|	2.61
61.250	0.00	0.04	0.324	o	|	|	|	2.61
61.333	0.00	0.04	0.323	o	|	|	|	2.61
61.417	0.00	0.04	0.323	o	|	|	|	2.61
61.500	0.00	0.04	0.323	o	|	|	|	2.61
61.583	0.00	0.04	0.322	o	|	|	|	2.61
61.667	0.00	0.04	0.322	o	|	|	|	2.61
61.750	0.00	0.04	0.322	o	|	|	|	2.61
61.833	0.00	0.04	0.322	o	|	|	|	2.61
61.917	0.00	0.04	0.321	o	|	|	|	2.61
62.000	0.00	0.04	0.321	o	|	|	|	2.61
62.083	0.00	0.04	0.321	o	|	|	|	2.61
62.167	0.00	0.04	0.321	o	|	|	|	2.61
62.250	0.00	0.04	0.320	o	|	|	|	2.61
62.333	0.00	0.04	0.320	o	|	|	|	2.61

62.417	0.00	0.04	0.320	o	|	|	|	|	2.61
62.500	0.00	0.03	0.320	o	|	|	|	|	2.61
62.583	0.00	0.03	0.319	o	|	|	|	|	2.61
62.667	0.00	0.03	0.319	o	|	|	|	|	2.61
62.750	0.00	0.03	0.319	o	|	|	|	|	2.61
62.833	0.00	0.03	0.319	o	|	|	|	|	2.61
62.917	0.00	0.03	0.318	o	|	|	|	|	2.61
63.000	0.00	0.03	0.318	o	|	|	|	|	2.61
63.083	0.00	0.03	0.318	o	|	|	|	|	2.61
63.167	0.00	0.03	0.318	o	|	|	|	|	2.61
63.250	0.00	0.03	0.318	o	|	|	|	|	2.61
63.333	0.00	0.03	0.317	o	|	|	|	|	2.61
63.417	0.00	0.03	0.317	o	|	|	|	|	2.61
63.500	0.00	0.03	0.317	o	|	|	|	|	2.61
63.583	0.00	0.03	0.317	o	|	|	|	|	2.61
63.667	0.00	0.03	0.317	o	|	|	|	|	2.61
63.750	0.00	0.03	0.316	o	|	|	|	|	2.61
63.833	0.00	0.03	0.316	o	|	|	|	|	2.61
63.917	0.00	0.03	0.316	o	|	|	|	|	2.61
64.000	0.00	0.03	0.316	o	|	|	|	|	2.61
64.083	0.00	0.03	0.316	o	|	|	|	|	2.61
64.167	0.00	0.03	0.315	o	|	|	|	|	2.61
64.250	0.00	0.03	0.315	o	|	|	|	|	2.61
64.333	0.00	0.03	0.315	o	|	|	|	|	2.61
64.417	0.00	0.03	0.315	o	|	|	|	|	2.61
64.500	0.00	0.02	0.315	o	|	|	|	|	2.61
64.583	0.00	0.02	0.315	o	|	|	|	|	2.61
64.667	0.00	0.02	0.314	o	|	|	|	|	2.61
64.750	0.00	0.02	0.314	o	|	|	|	|	2.61
64.833	0.00	0.02	0.314	o	|	|	|	|	2.61
64.917	0.00	0.02	0.314	o	|	|	|	|	2.61
65.000	0.00	0.02	0.314	o	|	|	|	|	2.61
65.083	0.00	0.02	0.314	o	|	|	|	|	2.61
65.167	0.00	0.02	0.313	o	|	|	|	|	2.61
65.250	0.00	0.02	0.313	o	|	|	|	|	2.61
65.333	0.00	0.02	0.313	o	|	|	|	|	2.61
65.417	0.00	0.02	0.313	o	|	|	|	|	2.61
65.500	0.00	0.02	0.313	o	|	|	|	|	2.61
65.583	0.00	0.02	0.313	o	|	|	|	|	2.61
65.667	0.00	0.02	0.313	o	|	|	|	|	2.61
65.750	0.00	0.02	0.312	o	|	|	|	|	2.61
65.833	0.00	0.02	0.312	o	|	|	|	|	2.61
65.917	0.00	0.02	0.312	o	|	|	|	|	2.61
66.000	0.00	0.02	0.312	o	|	|	|	|	2.61
66.083	0.00	0.02	0.312	o	|	|	|	|	2.61
66.167	0.00	0.02	0.312	o	|	|	|	|	2.61
66.250	0.00	0.02	0.312	o	|	|	|	|	2.61
66.333	0.00	0.02	0.311	o	|	|	|	|	2.61
66.417	0.00	0.02	0.311	o	|	|	|	|	2.61
66.500	0.00	0.02	0.311	o	|	|	|	|	2.61
66.583	0.00	0.02	0.311	o	|	|	|	|	2.61
66.667	0.00	0.02	0.311	o	|	|	|	|	2.61
66.750	0.00	0.02	0.311	o	|	|	|	|	2.61
66.833	0.00	0.02	0.311	o	|	|	|	|	2.61
66.917	0.00	0.02	0.311	o	|	|	|	|	2.61
67.000	0.00	0.02	0.311	o	|	|	|	|	2.61
67.083	0.00	0.02	0.310	o	|	|	|	|	2.61
67.167	0.00	0.02	0.310	o	|	|	|	|	2.61
67.250	0.00	0.02	0.310	o	|	|	|	|	2.61
67.333	0.00	0.02	0.310	o	|	|	|	|	2.60
67.417	0.00	0.02	0.310	o	|	|	|	|	2.60
67.500	0.00	0.01	0.310	o	|	|	|	|	2.60
67.583	0.00	0.01	0.310	o	|	|	|	|	2.60
67.667	0.00	0.01	0.310	o	|	|	|	|	2.60
67.750	0.00	0.01	0.310	o	|	|	|	|	2.60
67.833	0.00	0.01	0.309	o	|	|	|	|	2.60
67.917	0.00	0.01	0.309	o	|	|	|	|	2.60
68.000	0.00	0.01	0.309	o	|	|	|	|	2.60
68.083	0.00	0.01	0.309	o	|	|	|	|	2.60
68.167	0.00	0.01	0.309	o	|	|	|	|	2.60
68.250	0.00	0.01	0.309	o	|	|	|	|	2.60
68.333	0.00	0.01	0.309	o	|	|	|	|	2.60
68.417	0.00	0.01	0.309	o	|	|	|	|	2.60
68.500	0.00	0.01	0.309	o	|	|	|	|	2.60
68.583	0.00	0.01	0.309	o	|	|	|	|	2.60

68.667	0.00	0.01	0.309	o	|	|	|	|	2.60
68.750	0.00	0.01	0.308	o	|	|	|	|	2.60
68.833	0.00	0.01	0.308	o	|	|	|	|	2.60
68.917	0.00	0.01	0.308	o	|	|	|	|	2.60
69.000	0.00	0.01	0.308	o	|	|	|	|	2.60
69.083	0.00	0.01	0.308	o	|	|	|	|	2.60
69.167	0.00	0.01	0.308	o	|	|	|	|	2.60
69.250	0.00	0.01	0.308	o	|	|	|	|	2.60
69.333	0.00	0.01	0.308	o	|	|	|	|	2.60
69.417	0.00	0.01	0.308	o	|	|	|	|	2.60
69.500	0.00	0.01	0.308	o	|	|	|	|	2.60
69.583	0.00	0.01	0.308	o	|	|	|	|	2.60
69.667	0.00	0.01	0.308	o	|	|	|	|	2.60
69.750	0.00	0.01	0.308	o	|	|	|	|	2.60
69.833	0.00	0.01	0.307	o	|	|	|	|	2.60
69.917	0.00	0.01	0.307	o	|	|	|	|	2.60
70.000	0.00	0.01	0.307	o	|	|	|	|	2.60
70.083	0.00	0.01	0.307	o	|	|	|	|	2.60
70.167	0.00	0.01	0.307	o	|	|	|	|	2.60
70.250	0.00	0.01	0.307	o	|	|	|	|	2.60
70.333	0.00	0.01	0.307	o	|	|	|	|	2.60
70.417	0.00	0.01	0.307	o	|	|	|	|	2.60
70.500	0.00	0.01	0.307	o	|	|	|	|	2.60
70.583	0.00	0.01	0.307	o	|	|	|	|	2.60
70.667	0.00	0.01	0.307	o	|	|	|	|	2.60
70.750	0.00	0.01	0.307	o	|	|	|	|	2.60
70.833	0.00	0.01	0.307	o	|	|	|	|	2.60
70.917	0.00	0.01	0.307	o	|	|	|	|	2.60
71.000	0.00	0.01	0.307	o	|	|	|	|	2.60
71.083	0.00	0.01	0.307	o	|	|	|	|	2.60
71.167	0.00	0.01	0.306	o	|	|	|	|	2.60
71.250	0.00	0.01	0.306	o	|	|	|	|	2.60
71.333	0.00	0.01	0.306	o	|	|	|	|	2.60
71.417	0.00	0.01	0.306	o	|	|	|	|	2.60
71.500	0.00	0.01	0.306	o	|	|	|	|	2.60
71.583	0.00	0.01	0.306	o	|	|	|	|	2.60
71.667	0.00	0.01	0.306	o	|	|	|	|	2.60
71.750	0.00	0.01	0.306	o	|	|	|	|	2.60
71.833	0.00	0.01	0.306	o	|	|	|	|	2.60
71.917	0.00	0.01	0.306	o	|	|	|	|	2.60
72.000	0.00	0.01	0.306	o	|	|	|	|	2.60
72.083	0.00	0.01	0.306	o	|	|	|	|	2.60
72.167	0.00	0.01	0.306	o	|	|	|	|	2.60
72.250	0.00	0.01	0.306	o	|	|	|	|	2.60
72.333	0.00	0.01	0.306	o	|	|	|	|	2.60
72.417	0.00	0.01	0.306	o	|	|	|	|	2.60
72.500	0.00	0.01	0.306	o	|	|	|	|	2.60
72.583	0.00	0.01	0.306	o	|	|	|	|	2.60
72.667	0.00	0.01	0.306	o	|	|	|	|	2.60
72.750	0.00	0.01	0.306	o	|	|	|	|	2.60
72.833	0.00	0.01	0.306	o	|	|	|	|	2.60
72.917	0.00	0.01	0.305	o	|	|	|	|	2.60
73.000	0.00	0.01	0.305	o	|	|	|	|	2.60
73.083	0.00	0.01	0.305	o	|	|	|	|	2.60
73.167	0.00	0.01	0.305	o	|	|	|	|	2.60
73.250	0.00	0.01	0.305	o	|	|	|	|	2.60
73.333	0.00	0.01	0.305	o	|	|	|	|	2.60
73.417	0.00	0.01	0.305	o	|	|	|	|	2.60
73.500	0.00	0.01	0.305	o	|	|	|	|	2.60
73.583	0.00	0.01	0.305	o	|	|	|	|	2.60
73.667	0.00	0.01	0.305	o	|	|	|	|	2.60
73.750	0.00	0.01	0.305	o	|	|	|	|	2.60
73.833	0.00	0.01	0.305	o	|	|	|	|	2.60
73.917	0.00	0.01	0.305	o	|	|	|	|	2.60
74.000	0.00	0.01	0.305	o	|	|	|	|	2.60
74.083	0.00	0.00	0.305	o	|	|	|	|	2.60
74.167	0.00	0.00	0.305	o	|	|	|	|	2.60
74.250	0.00	0.00	0.305	o	|	|	|	|	2.60
74.333	0.00	0.00	0.305	o	|	|	|	|	2.60
74.417	0.00	0.00	0.305	o	|	|	|	|	2.60
74.500	0.00	0.00	0.305	o	|	|	|	|	2.60
74.583	0.00	0.00	0.305	o	|	|	|	|	2.60
74.667	0.00	0.00	0.305	o	|	|	|	|	2.60
74.750	0.00	0.00	0.305	o	|	|	|	|	2.60
74.833	0.00	0.00	0.305	o	|	|	|	|	2.60

74.917	0.00	0.00	0.305	o	|	|	|	|	2.60
75.000	0.00	0.00	0.305	o	|	|	|	|	2.60
75.083	0.00	0.00	0.305	o	|	|	|	|	2.60
75.167	0.00	0.00	0.305	o	|	|	|	|	2.60
75.250	0.00	0.00	0.305	o	|	|	|	|	2.60
75.333	0.00	0.00	0.304	o	|	|	|	|	2.60
75.417	0.00	0.00	0.304	o	|	|	|	|	2.60
75.500	0.00	0.00	0.304	o	|	|	|	|	2.60
75.583	0.00	0.00	0.304	o	|	|	|	|	2.60
75.667	0.00	0.00	0.304	o	|	|	|	|	2.60
75.750	0.00	0.00	0.304	o	|	|	|	|	2.60
75.833	0.00	0.00	0.304	o	|	|	|	|	2.60
75.917	0.00	0.00	0.304	o	|	|	|	|	2.60
76.000	0.00	0.00	0.304	o	|	|	|	|	2.60
76.083	0.00	0.00	0.304	o	|	|	|	|	2.60
76.167	0.00	0.00	0.304	o	|	|	|	|	2.60
76.250	0.00	0.00	0.304	o	|	|	|	|	2.60
76.333	0.00	0.00	0.304	o	|	|	|	|	2.60
76.417	0.00	0.00	0.304	o	|	|	|	|	2.60
76.500	0.00	0.00	0.304	o	|	|	|	|	2.60
76.583	0.00	0.00	0.304	o	|	|	|	|	2.60
76.667	0.00	0.00	0.304	o	|	|	|	|	2.60
76.750	0.00	0.00	0.304	o	|	|	|	|	2.60
76.833	0.00	0.00	0.304	o	|	|	|	|	2.60
76.917	0.00	0.00	0.304	o	|	|	|	|	2.60
77.000	0.00	0.00	0.304	o	|	|	|	|	2.60
77.083	0.00	0.00	0.304	o	|	|	|	|	2.60
77.167	0.00	0.00	0.304	o	|	|	|	|	2.60
77.250	0.00	0.00	0.304	o	|	|	|	|	2.60
77.333	0.00	0.00	0.304	o	|	|	|	|	2.60
77.417	0.00	0.00	0.304	o	|	|	|	|	2.60
77.500	0.00	0.00	0.304	o	|	|	|	|	2.60
77.583	0.00	0.00	0.304	o	|	|	|	|	2.60
77.667	0.00	0.00	0.304	o	|	|	|	|	2.60
77.750	0.00	0.00	0.304	o	|	|	|	|	2.60
77.833	0.00	0.00	0.304	o	|	|	|	|	2.60
77.917	0.00	0.00	0.304	o	|	|	|	|	2.60
78.000	0.00	0.00	0.304	o	|	|	|	|	2.60
78.083	0.00	0.00	0.304	o	|	|	|	|	2.60
78.167	0.00	0.00	0.304	o	|	|	|	|	2.60
78.250	0.00	0.00	0.304	o	|	|	|	|	2.60
78.333	0.00	0.00	0.304	o	|	|	|	|	2.60
78.417	0.00	0.00	0.304	o	|	|	|	|	2.60
78.500	0.00	0.00	0.304	o	|	|	|	|	2.60
78.583	0.00	0.00	0.304	o	|	|	|	|	2.60
78.667	0.00	0.00	0.304	o	|	|	|	|	2.60
78.750	0.00	0.00	0.304	o	|	|	|	|	2.60
78.833	0.00	0.00	0.304	o	|	|	|	|	2.60
78.917	0.00	0.00	0.304	o	|	|	|	|	2.60
79.000	0.00	0.00	0.304	o	|	|	|	|	2.60
79.083	0.00	0.00	0.304	o	|	|	|	|	2.60
79.167	0.00	0.00	0.304	o	|	|	|	|	2.60
79.250	0.00	0.00	0.304	o	|	|	|	|	2.60
79.333	0.00	0.00	0.304	o	|	|	|	|	2.60
79.417	0.00	0.00	0.304	o	|	|	|	|	2.60
79.500	0.00	0.00	0.303	o	|	|	|	|	2.60
79.583	0.00	0.00	0.303	o	|	|	|	|	2.60
79.667	0.00	0.00	0.303	o	|	|	|	|	2.60
79.750	0.00	0.00	0.303	o	|	|	|	|	2.60
79.833	0.00	0.00	0.303	o	|	|	|	|	2.60
79.917	0.00	0.00	0.303	o	|	|	|	|	2.60
80.000	0.00	0.00	0.303	o	|	|	|	|	2.60
80.083	0.00	0.00	0.303	o	|	|	|	|	2.60
80.167	0.00	0.00	0.303	o	|	|	|	|	2.60
80.250	0.00	0.00	0.303	o	|	|	|	|	2.60
80.333	0.00	0.00	0.303	o	|	|	|	|	2.60
80.417	0.00	0.00	0.303	o	|	|	|	|	2.60
80.500	0.00	0.00	0.303	o	|	|	|	|	2.60
80.583	0.00	0.00	0.303	o	|	|	|	|	2.60
80.667	0.00	0.00	0.303	o	|	|	|	|	2.60
80.750	0.00	0.00	0.303	o	|	|	|	|	2.60
80.833	0.00	0.00	0.303	o	|	|	|	|	2.60
80.917	0.00	0.00	0.303	o	|	|	|	|	2.60
81.000	0.00	0.00	0.303	o	|	|	|	|	2.60
81.083	0.00	0.00	0.303	o	|	|	|	|	2.60

81.167	0.00	0.00	0.303	o	|	|	|	2.60
81.250	0.00	0.00	0.303	o	|	|	|	2.60
81.333	0.00	0.00	0.303	o	|	|	|	2.60
81.417	0.00	0.00	0.303	o	|	|	|	2.60
81.500	0.00	0.00	0.303	o	|	|	|	2.60
81.583	0.00	0.00	0.303	o	|	|	|	2.60
81.667	0.00	0.00	0.303	o	|	|	|	2.60
81.750	0.00	0.00	0.303	o	|	|	|	2.60
81.833	0.00	0.00	0.303	o	|	|	|	2.60
81.917	0.00	0.00	0.303	o	|	|	|	2.60
82.000	0.00	0.00	0.303	o	|	|	|	2.60
82.083	0.00	0.00	0.303	o	|	|	|	2.60
82.167	0.00	0.00	0.303	o	|	|	|	2.60
82.250	0.00	0.00	0.303	o	|	|	|	2.60
82.333	0.00	0.00	0.303	o	|	|	|	2.60
82.417	0.00	0.00	0.303	o	|	|	|	2.60
82.500	0.00	0.00	0.303	o	|	|	|	2.60
82.583	0.00	0.00	0.303	o	|	|	|	2.60
82.667	0.00	0.00	0.303	o	|	|	|	2.60
82.750	0.00	0.00	0.303	o	|	|	|	2.60
82.833	0.00	0.00	0.303	o	|	|	|	2.60
82.917	0.00	0.00	0.303	o	|	|	|	2.60
83.000	0.00	0.00	0.303	o	|	|	|	2.60
83.083	0.00	0.00	0.303	o	|	|	|	2.60
83.167	0.00	0.00	0.303	o	|	|	|	2.60
83.250	0.00	0.00	0.303	o	|	|	|	2.60
83.333	0.00	0.00	0.303	o	|	|	|	2.60
83.417	0.00	0.00	0.303	o	|	|	|	2.60
83.500	0.00	0.00	0.303	o	|	|	|	2.60
83.583	0.00	0.00	0.303	o	|	|	|	2.60
83.667	0.00	0.00	0.303	o	|	|	|	2.60

Remaining water in basin = 0.30 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 1004
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.314 (CFS)
Total volume = 7.415 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

BASIN ROUTING
5-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

21-0044 EXETER INDUSTRIAL BLDG 1
5-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST5YR245.rte

**********HYDROGRAPH DATA**********

Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 17.461 (CFS)
Total volume = 10.611 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
5.820	5.007	3.318	4.996	5.018
6.000	5.251	3.753	5.238	5.264
6.500	5.873	6.174	5.852	5.894
7.000	6.418	9.646	6.385	6.451
7.500	6.855	13.891	6.807	6.903
8.000	7.101	18.781	7.036	7.166

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	4.4	8.73	13.10	17.46	Depth (Ft.)
0.083	0.26	0.00	0.001	O	|	|	|	|	0.01
0.167	0.83	0.00	0.005	OI	|	|	|	|	0.04
0.250	0.97	0.00	0.011	OI	|	|	|	|	0.09
0.333	1.14	0.00	0.018	O I	|	|	|	|	0.16
0.417	1.44	0.00	0.027	O I	|	|	|	|	0.23
0.500	1.51	0.00	0.037	O I	|	|	|	|	0.32
0.583	1.53	0.00	0.048	O I	|	|	|	|	0.41
0.667	1.54	0.00	0.058	O I	|	|	|	|	0.50
0.750	1.54	0.00	0.069	O I	|	|	|	|	0.59
0.833	1.67	0.00	0.080	O I	|	|	|	|	0.69
0.917	1.95	0.00	0.092	O I	|	|	|	|	0.79
1.000	2.03	0.00	0.106	O I	|	|	|	|	0.91
1.083	1.92	0.00	0.120	O I	|	|	|	|	1.03
1.167	1.64	0.00	0.132	O I	|	|	|	|	1.13
1.250	1.57	0.00	0.143	O I	|	|	|	|	1.23
1.333	1.55	0.00	0.154	O I	|	|	|	|	1.32
1.417	1.54	0.00	0.164	O I	|	|	|	|	1.41
1.500	1.54	0.00	0.175	O I	|	|	|	|	1.50
1.583	1.54	0.00	0.185	O I	|	|	|	|	1.59
1.667	1.54	0.00	0.196	O I	|	|	|	|	1.68
1.750	1.54	0.00	0.207	O I	|	|	|	|	1.77
1.833	1.67	0.00	0.218	O I	|	|	|	|	1.87
1.917	1.95	0.00	0.230	O I	|	|	|	|	1.98
2.000	2.03	0.00	0.244	O I	|	|	|	|	2.09
2.083	2.05	0.00	0.258	O I	|	|	|	|	2.21
2.167	2.05	0.00	0.272	O I	|	|	|	|	2.33
2.250	2.05	0.00	0.286	O I	|	|	|	|	2.46
2.333	2.05	0.00	0.300	O I	|	|	|	|	2.58
2.417	2.05	0.02	0.314	O I	|	|	|	|	2.61
2.500	2.05	0.05	0.328	O I	|	|	|	|	2.62
2.583	2.18	0.08	0.342	O I	|	|	|	|	2.63
2.667	2.47	0.11	0.358	O I	|	|	|	|	2.64
2.750	2.54	0.15	0.374	O I	|	|	|	|	2.65
2.833	2.56	0.18	0.391	O I	|	|	|	|	2.66
2.917	2.57	0.21	0.407	O I	|	|	|	|	2.67
3.000	2.57	0.24	0.423	O I	|	|	|	|	2.68
3.083	2.57	0.28	0.439	O I	|	|	|	|	2.69
3.167	2.57	0.31	0.455	O I	|	|	|	|	2.71
3.250	2.57	0.34	0.470	O I	|	|	|	|	2.72
3.333	2.57	0.37	0.485	O I	|	|	|	|	2.73
3.417	2.57	0.40	0.500	O I	|	|	|	|	2.74
3.500	2.57	0.43	0.515	O I	|	|	|	|	2.75
3.583	2.57	0.46	0.530	O I	|	|	|	|	2.76
3.667	2.57	0.49	0.544	O I	|	|	|	|	2.77
3.750	2.57	0.52	0.558	O I	|	|	|	|	2.78
3.833	2.70	0.55	0.573	|O I	|	|	|	|	2.79
3.917	2.98	0.58	0.588	|O I	|	|	|	|	2.80
4.000	3.05	0.61	0.605	|O I	|	|	|	|	2.81
4.083	3.07	0.65	0.622	|O I	|	|	|	|	2.82
4.167	3.08	0.68	0.638	|O I	|	|	|	|	2.83
4.250	3.08	0.72	0.655	|O I	|	|	|	|	2.84
4.333	3.21	0.75	0.671	|O I	|	|	|	|	2.86
4.417	3.50	0.79	0.689	|O I	|	|	|	|	2.87
4.500	3.57	0.82	0.708	|O I	|	|	|	|	2.88
4.583	3.59	0.86	0.727	|O I	|	|	|	|	2.89
4.667	3.59	0.90	0.745	|O I	|	|	|	|	2.91
4.750	3.59	0.94	0.764	|O I	|	|	|	|	2.92
4.833	3.72	0.98	0.783	|O I	|	|	|	|	2.93
4.917	4.01	1.02	0.802	|O I|	|	|	|	2.95
5.000	4.08	1.06	0.823	|O I|	|	|	|	2.96
5.083	3.84	1.10	0.843	| O I|	|	|	|	2.98
5.167	3.28	1.13	0.860	| O I |	|	|	|	2.99
5.250	3.14	1.16	0.874	| O I |	|	|	|	3.00
5.333	3.22	1.18	0.888	| O I |	|	|	|	3.01
5.417	3.50	1.19	0.903	| O I |	|	|	|	3.02
5.500	3.57	1.20	0.919	| O I |	|	|	|	3.03
5.583	3.72	1.21	0.936	| O I |	|	|	|	3.04
5.667	4.01	1.23	0.954	| O I|	|	|	|	3.05
5.750	4.08	1.24	0.973	| O I|	|	|	|	3.06
5.833	4.10	1.26	0.993	| O I|	|	|	|	3.08
5.917	4.11	1.28	1.012	| O I|	|	|	|	3.09
6.000	4.11	1.29	1.032	| O I|	|	|	|	3.10

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 6.083    4.24    1.31      1.051  | o    I|       |       |       |     3.12
 6.167    4.52    1.32      1.073  | o     I       |       |       |     3.13
 6.250    4.59    1.34      1.095  | o     I       |       |       |     3.15
 6.333    4.61    1.36      1.117  | o     I       |       |       |     3.16
 6.417    4.62    1.38      1.140  | o     I       |       |       |     3.18
 6.500    4.62    1.39      1.162  | o     I       |       |       |     3.19
 6.583    4.75    1.41      1.185  | o     I       |       |       |     3.21
 6.667    5.04    1.43      1.208  | o     |I      |       |       |     3.22
 6.750    5.11    1.45      1.233  | o     |I      |       |       |     3.24
 6.833    5.13    1.47      1.259  | o     |I      |       |       |     3.26
 6.917    5.13    1.49      1.284  | o     |I      |       |       |     3.27
 7.000    5.14    1.51      1.309  | o     |I      |       |       |     3.29
 7.083    5.14    1.53      1.334  | o     |I      |       |       |     3.31
 7.167    5.14    1.55      1.358  | o     |I      |       |       |     3.33
 7.250    5.14    1.57      1.383  | o     |I      |       |       |     3.34
 7.333    5.26    1.59      1.408  | o     |I      |       |       |     3.36
 7.417    5.55    1.61      1.434  | o     | I     |       |       |     3.38
 7.500    5.62    1.63      1.462  | o     | I     |       |       |     3.39
 7.583    5.77    1.65      1.489  |  o    | I     |       |       |     3.41
 7.667    6.06    1.68      1.519  |  o    |  I    |       |       |     3.43
 7.750    6.14    1.70      1.549  |  o    |  I    |       |       |     3.45
 7.833    6.28    1.72      1.580  |  o    |  I    |       |       |     3.48
 7.917    6.57    1.75      1.612  |  o    |   I   |       |       |     3.50
 8.000    6.65    1.77      1.646  |  o    |   I   |       |       |     3.52
 8.083    6.93    1.79      1.680  |  o    |   I   |       |       |     3.54
 8.167    7.50    1.81      1.718  |  o    |    I  |       |       |     3.57
 8.250    7.65    1.84      1.757  |  o    |     I |       |       |     3.59
 8.333    7.69    1.86      1.797  |  o    |     I |       |       |     3.62
 8.417    7.70    1.88      1.837  |  o    |     I |       |       |     3.65
 8.500    7.70    1.90      1.877  |  o    |     I |       |       |     3.67
 8.583    7.83    1.93      1.918  |  o    |     I |       |       |     3.70
 8.667    8.12    1.95      1.959  |  o    |     I |       |       |     3.73
 8.750    8.19    1.98      2.002  |  o    |      I|       |       |     3.76
 8.833    8.34    2.00      2.045  |  o    |      I|       |       |     3.79
 8.917    8.63    2.03      2.090  |  o    |      I|       |       |     3.81
 9.000    8.70    2.05      2.135  |  o    |      I|       |       |     3.85
 9.083    8.98    2.08      2.182  |  o    |       I       |       |     3.88
 9.167    9.56    2.11      2.231  |  o    |       |I      |       |     3.91
 9.250    9.70    2.14      2.283  |  o    |       |I      |       |     3.94
 9.333    9.87    2.17      2.336  |  o    |       | I     |       |     3.98
 9.417   10.17    2.20      2.390  |   o   |       | I     |       |     4.01
 9.500   10.24    2.22      2.445  |   o   |       | I     |       |     4.05
 9.583   10.39    2.25      2.500  |   o   |       |  I    |       |     4.09
 9.667   10.68    2.28      2.557  |   o   |       |  I    |       |     4.13
 9.750   10.76    2.31      2.615  |   o   |       |  I    |       |     4.16
 9.833   10.91    2.33      2.674  |   o   |       |  I    |       |     4.20
 9.917   11.20    2.36      2.734  |   o   |       |   I   |       |     4.24
10.000   11.27    2.39      2.795  |   o   |       |   I   |       |     4.28
10.083   10.39    2.42      2.853  |   o   |       |  I    |       |     4.32
10.167    8.40    2.44      2.901  |   o   |      I|       |       |     4.35
10.250    7.89    2.46      2.940  |   o   |     I |       |       |     4.38
10.333    7.76    2.48      2.977  |   o   |     I |       |       |     4.40
10.417    7.72    2.50      3.013  |   o   |     I |       |       |     4.43
10.500    7.70    2.51      3.049  |   o   |     I |       |       |     4.45
10.583    8.34    2.53      3.087  |   o   |      I|       |       |     4.48
10.667    9.77    2.55      3.132  |   o   |       |I      |       |     4.51
10.750   10.14    2.57      3.183  |   o   |       | I     |       |     4.54
10.833   10.23    2.60      3.235  |   o   |       | I     |       |     4.58
10.917   10.26    2.62      3.287  |   o   |       | I     |       |     4.61
11.000   10.27    2.64      3.340  |   o   |       | I     |       |     4.65
11.083   10.14    2.66      3.392  |   o   |       | I     |       |     4.68
11.167    9.86    2.69      3.443  |   o   |       | I     |       |     4.72
11.250    9.78    2.71      3.492  |   o   |       |I      |       |     4.75
11.333    9.76    2.73      3.540  |   o   |       |I      |       |     4.78
11.417    9.76    2.75      3.589  |    o  |       |I      |       |     4.82
11.500    9.76    2.77      3.637  |    o  |       |I      |       |     4.85
11.583    9.50    2.79      3.684  |    o  |       |I      |       |     4.88
11.667    8.93    2.81      3.728  |    o  |       I       |       |     4.91
11.750    8.78    2.83      3.770  |    o  |       I       |       |     4.94
11.833    8.87    2.84      3.811  |    o  |       I       |       |     4.97
11.917    9.15    2.86      3.853  |    o  |       I       |       |     5.00
12.000    9.22    2.88      3.897  |    o  |       I       |       |     5.03
12.083   10.13    2.90      3.944  |    o  |       | I     |       |     5.06
12.167   12.14    2.92      4.000  |    o  |       |     I |       |     5.10
12.250   12.65    2.95      4.065  |    o  |       |      I|       |     5.14
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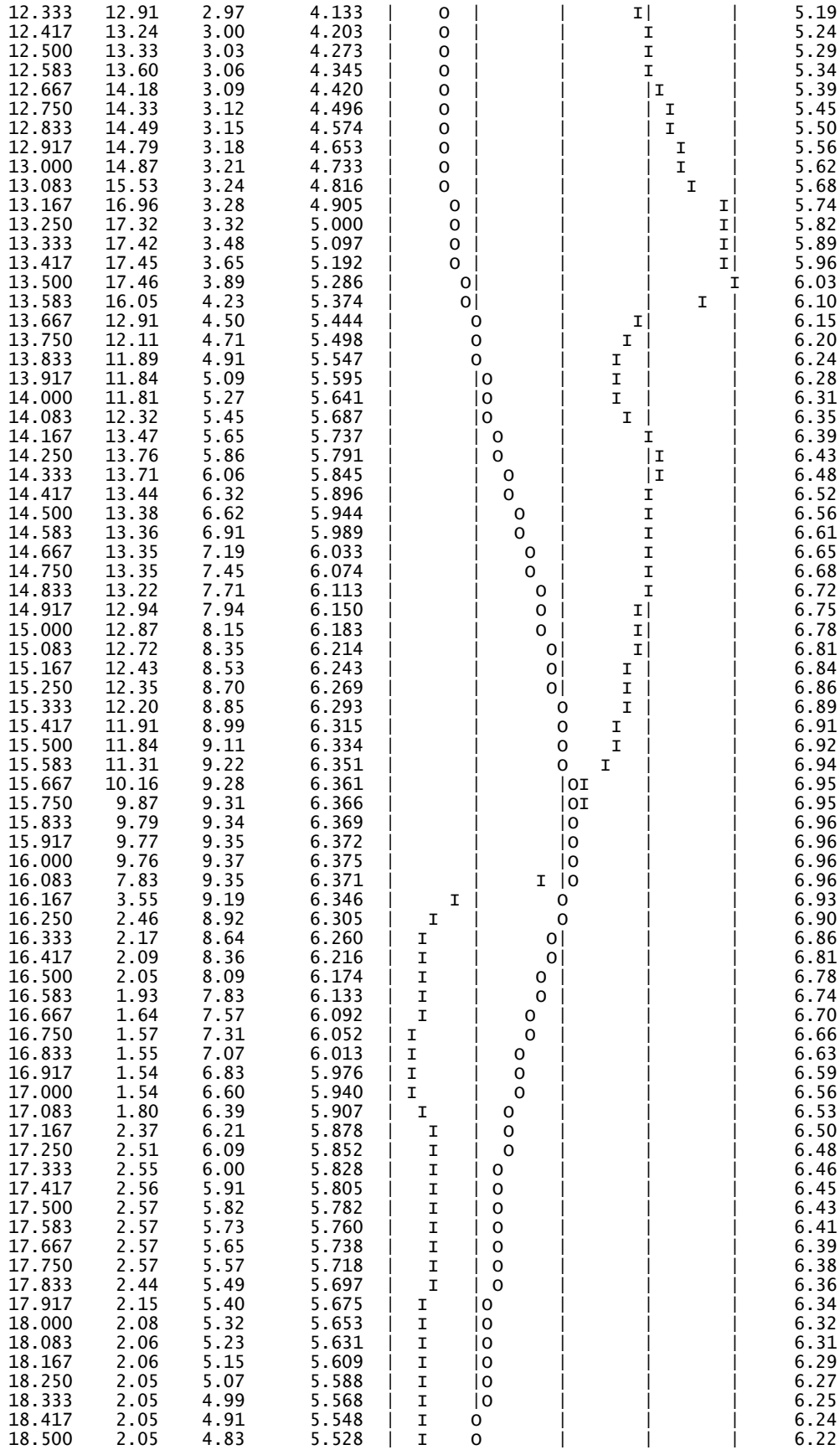

18.583	1.93	4.76	5.509	| I o | | |	6.21
18.667	1.64	4.68	5.489	| I o | | |	6.19
18.750	1.57	4.60	5.468	| I o | | |	6.17
18.833	1.42	4.52	5.447	| I o | | |	6.16
18.917	1.13	4.43	5.425	| I o | | |	6.14
19.000	1.05	4.34	5.402	|I o| | |	6.12
19.083	1.16	4.26	5.380	| I o| | |	6.10
19.167	1.44	4.18	5.360	| I o| | |	6.09
19.250	1.51	4.11	5.342	| I o| | |	6.07
19.333	1.66	4.04	5.325	| I o| | |	6.06
19.417	1.95	3.98	5.309	| I o| | |	6.05
19.500	2.03	3.93	5.296	| I o| | |	6.04
19.583	1.92	3.88	5.283	| I o| | |	6.03
19.667	1.64	3.82	5.268	| I o| | |	6.01
19.750	1.57	3.76	5.253	| I o | | |	6.00
19.833	1.42	3.73	5.238	| I o | | |	5.99
19.917	1.13	3.70	5.221	| I o | | |	5.98
20.000	1.05	3.67	5.203	|I o | | |	5.96
20.083	1.16	3.64	5.186	| I o | | |	5.95
20.167	1.44	3.61	5.170	| I o | | |	5.94
20.250	1.51	3.58	5.155	| I o | | |	5.93
20.333	1.53	3.56	5.141	| I o | | |	5.92
20.417	1.54	3.53	5.127	| I o | | |	5.91
20.500	1.54	3.51	5.113	| I o | | |	5.90
20.583	1.54	3.48	5.100	| I o | | |	5.89
20.667	1.54	3.46	5.087	| I o | | |	5.88
20.750	1.54	3.44	5.074	| I o | | |	5.87
20.833	1.41	3.41	5.060	| I o | | |	5.86
20.917	1.13	3.39	5.045	| I o | | |	5.85
21.000	1.05	3.36	5.030	|I o | | |	5.84
21.083	1.16	3.33	5.014	| I o | | |	5.83
21.167	1.44	3.32	5.000	| I o | | |	5.82
21.250	1.51	3.31	4.988	| I o | | |	5.81
21.333	1.40	3.31	4.975	| I o | | |	5.80
21.417	1.12	3.30	4.961	| I o | | |	5.79
21.500	1.05	3.29	4.946	|I o | | |	5.77
21.583	1.16	3.29	4.931	| I o | | |	5.76
21.667	1.44	3.28	4.917	| I o | | |	5.75
21.750	1.51	3.28	4.905	| I o | | |	5.74
21.833	1.40	3.27	4.892	| I o | | |	5.74
21.917	1.12	3.27	4.878	| I o | | |	5.72
22.000	1.05	3.26	4.863	|I o | | |	5.71
22.083	1.16	3.26	4.849	| I o | | |	5.70
22.167	1.44	3.25	4.835	| I o | | |	5.69
22.250	1.51	3.25	4.823	| I o | | |	5.68
22.333	1.40	3.24	4.811	| I o | | |	5.67
22.417	1.12	3.24	4.797	| I o | | |	5.66
22.500	1.05	3.23	4.782	|I o | | |	5.65
22.583	1.03	3.22	4.767	|I o | | |	5.64
22.667	1.03	3.22	4.752	|I o | | |	5.63
22.750	1.03	3.21	4.737	|I o | | |	5.62
22.833	1.03	3.21	4.722	|I o | | |	5.61
22.917	1.03	3.20	4.707	|I o | | |	5.60
23.000	1.03	3.19	4.692	|I o | | |	5.59
23.083	1.03	3.19	4.677	|I o | | |	5.58
23.167	1.03	3.18	4.662	|I o | | |	5.57
23.250	1.03	3.18	4.648	|I o | | |	5.55
23.333	1.03	3.17	4.633	|I o | | |	5.54
23.417	1.03	3.17	4.618	|I o | | |	5.53
23.500	1.03	3.16	4.603	|I o | | |	5.52
23.583	1.03	3.15	4.589	|I o | | |	5.51
23.667	1.03	3.15	4.574	|I o | | |	5.50
23.750	1.03	3.14	4.560	|I o | | |	5.49
23.833	1.03	3.14	4.545	|I o | | |	5.48
23.917	1.03	3.13	4.530	|I o | | |	5.47
24.000	1.03	3.12	4.516	|I o | | |	5.46
24.083	0.77	3.12	4.501	|I o | | |	5.45
24.167	0.20	3.11	4.483	I o | | |	5.44
24.250	0.05	3.10	4.462	I o | | |	5.42
24.333	0.01	3.10	4.441	I o | | |	5.41
24.417	0.00	3.09	4.420	I o | | |	5.39
24.500	0.00	3.08	4.399	I o | | |	5.38
24.583	0.00	3.07	4.377	I o | | |	5.36
24.667	0.00	3.06	4.356	I o | | |	5.35
24.750	0.00	3.05	4.335	I o | | |	5.33

24.833	0.00	3.04	4.314	I	o	|	|	|	5.32
24.917	0.00	3.04	4.293	I	o	|	|	|	5.30
25.000	0.00	3.03	4.272	I	o	|	|	|	5.29
25.083	0.00	3.02	4.252	I	o	|	|	|	5.27
25.167	0.00	3.01	4.231	I	o	|	|	|	5.26
25.250	0.00	3.00	4.210	I	o	|	|	|	5.25
25.333	0.00	3.00	4.189	I	o	|	|	|	5.23
25.417	0.00	2.99	4.169	I	o	|	|	|	5.22
25.500	0.00	2.98	4.148	I	o	|	|	|	5.20
25.583	0.00	2.97	4.128	I	o	|	|	|	5.19
25.667	0.00	2.96	4.107	I	o	|	|	|	5.17
25.750	0.00	2.95	4.087	I	o	|	|	|	5.16
25.833	0.00	2.95	4.067	I	o	|	|	|	5.15
25.917	0.00	2.94	4.046	I	o	|	|	|	5.13
26.000	0.00	2.93	4.026	I	o	|	|	|	5.12
26.083	0.00	2.92	4.006	I	o	|	|	|	5.10
26.167	0.00	2.91	3.986	I	o	|	|	|	5.09
26.250	0.00	2.91	3.966	I	o	|	|	|	5.07
26.333	0.00	2.90	3.946	I	o	|	|	|	5.06
26.417	0.00	2.89	3.926	I	o	|	|	|	5.05
26.500	0.00	2.88	3.906	I	o	|	|	|	5.03
26.583	0.00	2.87	3.886	I	o	|	|	|	5.02
26.667	0.00	2.87	3.866	I	o	|	|	|	5.01
26.750	0.00	2.86	3.847	I	o	|	|	|	4.99
26.833	0.00	2.85	3.827	I	o	|	|	|	4.98
26.917	0.00	2.84	3.807	I	o	|	|	|	4.97
27.000	0.00	2.83	3.788	I	o	|	|	|	4.95
27.083	0.00	2.83	3.768	I	o	|	|	|	4.94
27.167	0.00	2.82	3.749	I	o	|	|	|	4.93
27.250	0.00	2.81	3.730	I	o	|	|	|	4.91
27.333	0.00	2.80	3.710	I	o	|	|	|	4.90
27.417	0.00	2.79	3.691	I	o	|	|	|	4.89
27.500	0.00	2.78	3.672	I	o	|	|	|	4.87
27.583	0.00	2.78	3.653	I	o	|	|	|	4.86
27.667	0.00	2.77	3.634	I	o	|	|	|	4.85
27.750	0.00	2.76	3.615	I	o	|	|	|	4.83
27.833	0.00	2.75	3.596	I	o	|	|	|	4.82
27.917	0.00	2.74	3.577	I	o	|	|	|	4.81
28.000	0.00	2.74	3.558	I	o	|	|	|	4.80
28.083	0.00	2.73	3.539	I	o	|	|	|	4.78
28.167	0.00	2.72	3.520	I	o	|	|	|	4.77
28.250	0.00	2.71	3.502	I	o	|	|	|	4.76
28.333	0.00	2.70	3.483	I	o	|	|	|	4.75
28.417	0.00	2.70	3.464	I	o	|	|	|	4.73
28.500	0.00	2.69	3.446	I	o	|	|	|	4.72
28.583	0.00	2.68	3.427	I	o	|	|	|	4.71
28.667	0.00	2.67	3.409	I	o	|	|	|	4.70
28.750	0.00	2.66	3.391	I	o	|	|	|	4.68
28.833	0.00	2.66	3.372	I	o	|	|	|	4.67
28.917	0.00	2.65	3.354	I	o	|	|	|	4.66
29.000	0.00	2.64	3.336	I	o	|	|	|	4.65
29.083	0.00	2.63	3.318	I	o	|	|	|	4.63
29.167	0.00	2.62	3.299	I	o	|	|	|	4.62
29.250	0.00	2.62	3.281	I	o	|	|	|	4.61
29.333	0.00	2.61	3.263	I	o	|	|	|	4.60
29.417	0.00	2.60	3.245	I	o	|	|	|	4.58
29.500	0.00	2.59	3.228	I	o	|	|	|	4.57
29.583	0.00	2.59	3.210	I	o	|	|	|	4.56
29.667	0.00	2.58	3.192	I	o	|	|	|	4.55
29.750	0.00	2.57	3.174	I	o	|	|	|	4.54
29.833	0.00	2.56	3.157	I	o	|	|	|	4.52
29.917	0.00	2.56	3.139	I	o	|	|	|	4.51
30.000	0.00	2.55	3.121	I	o	|	|	|	4.50
30.083	0.00	2.54	3.104	I	o	|	|	|	4.49
30.167	0.00	2.53	3.086	I	o	|	|	|	4.48
30.250	0.00	2.52	3.069	I	o	|	|	|	4.47
30.333	0.00	2.52	3.052	I	o	|	|	|	4.45
30.417	0.00	2.51	3.034	I	o	|	|	|	4.44
30.500	0.00	2.50	3.017	I	o	|	|	|	4.43
30.583	0.00	2.49	3.000	I	o	|	|	|	4.42
30.667	0.00	2.48	2.983	I	o	|	|	|	4.41
30.750	0.00	2.47	2.966	I	o	|	|	|	4.40
30.833	0.00	2.47	2.949	I	o	|	|	|	4.39
30.917	0.00	2.46	2.932	I	o	|	|	|	4.37
31.000	0.00	2.45	2.915	I	o	|	|	|	4.36

31.083	0.00	2.44	2.898	I	o	|	|	|	|	4.35
31.167	0.00	2.43	2.881	I	o	|	|	|	|	4.34
31.250	0.00	2.43	2.864	I	o	|	|	|	|	4.33
31.333	0.00	2.42	2.848	I	o	|	|	|	|	4.32
31.417	0.00	2.41	2.831	I	o	|	|	|	|	4.31
31.500	0.00	2.40	2.815	I	o	|	|	|	|	4.30
31.583	0.00	2.39	2.798	I	o	|	|	|	|	4.29
31.667	0.00	2.39	2.782	I	o	|	|	|	|	4.28
31.750	0.00	2.38	2.765	I	o	|	|	|	|	4.26
31.833	0.00	2.37	2.749	I	o	|	|	|	|	4.25
31.917	0.00	2.36	2.733	I	o	|	|	|	|	4.24
32.000	0.00	2.35	2.716	I	o	|	|	|	|	4.23
32.083	0.00	2.35	2.700	I	o	|	|	|	|	4.22
32.167	0.00	2.34	2.684	I	o	|	|	|	|	4.21
32.250	0.00	2.33	2.668	I	o	|	|	|	|	4.20
32.333	0.00	2.32	2.652	I	o	|	|	|	|	4.19
32.417	0.00	2.32	2.636	I	o	|	|	|	|	4.18
32.500	0.00	2.31	2.620	I	o	|	|	|	|	4.17
32.583	0.00	2.30	2.604	I	o	|	|	|	|	4.16
32.667	0.00	2.29	2.588	I	o	|	|	|	|	4.15
32.750	0.00	2.29	2.573	I	o	|	|	|	|	4.14
32.833	0.00	2.28	2.557	I	o	|	|	|	|	4.13
32.917	0.00	2.27	2.541	I	o	|	|	|	|	4.12
33.000	0.00	2.26	2.526	I	o	|	|	|	|	4.10
33.083	0.00	2.26	2.510	I	o	|	|	|	|	4.09
33.167	0.00	2.25	2.494	I	o	|	|	|	|	4.08
33.250	0.00	2.24	2.479	I	o	|	|	|	|	4.07
33.333	0.00	2.23	2.464	I	o	|	|	|	|	4.06
33.417	0.00	2.23	2.448	I	o	|	|	|	|	4.05
33.500	0.00	2.22	2.433	I	o	|	|	|	|	4.04
33.583	0.00	2.21	2.418	I	o	|	|	|	|	4.03
33.667	0.00	2.20	2.402	I	o	|	|	|	|	4.02
33.750	0.00	2.20	2.387	I	o	|	|	|	|	4.01
33.833	0.00	2.19	2.372	I	o	|	|	|	|	4.00
33.917	0.00	2.18	2.357	I	o	|	|	|	|	3.99
34.000	0.00	2.17	2.342	I	o	|	|	|	|	3.98
34.083	0.00	2.16	2.327	I	o	|	|	|	|	3.97
34.167	0.00	2.16	2.312	I	o	|	|	|	|	3.96
34.250	0.00	2.15	2.297	I	o	|	|	|	|	3.95
34.333	0.00	2.14	2.283	I	o	|	|	|	|	3.94
34.417	0.00	2.13	2.268	I	o	|	|	|	|	3.93
34.500	0.00	2.12	2.253	I	o	|	|	|	|	3.92
34.583	0.00	2.11	2.239	I	o	|	|	|	|	3.91
34.667	0.00	2.10	2.224	I	o	|	|	|	|	3.90
34.750	0.00	2.10	2.210	I	o	|	|	|	|	3.89
34.833	0.00	2.09	2.195	I	o	|	|	|	|	3.89
34.917	0.00	2.08	2.181	I	o	|	|	|	|	3.88
35.000	0.00	2.07	2.167	I	o	|	|	|	|	3.87
35.083	0.00	2.06	2.153	I	o	|	|	|	|	3.86
35.167	0.00	2.06	2.138	I	o	|	|	|	|	3.85
35.250	0.00	2.05	2.124	I	o	|	|	|	|	3.84
35.333	0.00	2.04	2.110	I	o	|	|	|	|	3.83
35.417	0.00	2.03	2.096	I	o	|	|	|	|	3.82
35.500	0.00	2.02	2.082	I	o	|	|	|	|	3.81
35.583	0.00	2.01	2.068	I	o	|	|	|	|	3.80
35.667	0.00	2.01	2.054	I	o	|	|	|	|	3.79
35.750	0.00	2.00	2.041	I	o	|	|	|	|	3.78
35.833	0.00	1.99	2.027	I	o	|	|	|	|	3.77
35.917	0.00	1.98	2.013	I	o	|	|	|	|	3.76
36.000	0.00	1.98	2.000	I	o	|	|	|	|	3.75
36.083	0.00	1.97	1.986	I	o	|	|	|	|	3.75
36.167	0.00	1.96	1.972	I	o	|	|	|	|	3.74
36.250	0.00	1.95	1.959	I	o	|	|	|	|	3.73
36.333	0.00	1.94	1.946	I	o	|	|	|	|	3.72
36.417	0.00	1.94	1.932	I	o	|	|	|	|	3.71
36.500	0.00	1.93	1.919	I	o	|	|	|	|	3.70
36.583	0.00	1.92	1.906	I	o	|	|	|	|	3.69
36.667	0.00	1.91	1.892	I	o	|	|	|	|	3.68
36.750	0.00	1.91	1.879	I	o	|	|	|	|	3.67
36.833	0.00	1.90	1.866	I	o	|	|	|	|	3.67
36.917	0.00	1.89	1.853	I	o	|	|	|	|	3.66
37.000	0.00	1.88	1.840	I	o	|	|	|	|	3.65
37.083	0.00	1.88	1.827	I	o	|	|	|	|	3.64
37.167	0.00	1.87	1.814	I	o	|	|	|	|	3.63
37.250	0.00	1.86	1.801	I	o	|	|	|	|	3.62

37.333	0.00	1.85	1.789	I o	|	|	|	3.61
37.417	0.00	1.85	1.776	I o	|	|	|	3.61
37.500	0.00	1.84	1.763	I o	|	|	|	3.60
37.583	0.00	1.83	1.751	I o	|	|	|	3.59
37.667	0.00	1.82	1.738	I o	|	|	|	3.58
37.750	0.00	1.82	1.726	I o	|	|	|	3.57
37.833	0.00	1.81	1.713	I o	|	|	|	3.56
37.917	0.00	1.80	1.701	I o	|	|	|	3.56
38.000	0.00	1.80	1.688	I o	|	|	|	3.55
38.083	0.00	1.79	1.676	I o	|	|	|	3.54
38.167	0.00	1.78	1.664	I o	|	|	|	3.53
38.250	0.00	1.77	1.651	I o	|	|	|	3.52
38.333	0.00	1.77	1.639	I o	|	|	|	3.51
38.417	0.00	1.76	1.627	I o	|	|	|	3.51
38.500	0.00	1.75	1.615	I o	|	|	|	3.50
38.583	0.00	1.74	1.603	I o	|	|	|	3.49
38.667	0.00	1.73	1.591	I o	|	|	|	3.48
38.750	0.00	1.72	1.579	I o	|	|	|	3.47
38.833	0.00	1.71	1.567	I o	|	|	|	3.47
38.917	0.00	1.71	1.555	I o	|	|	|	3.46
39.000	0.00	1.70	1.544	I o	|	|	|	3.45
39.083	0.00	1.69	1.532	I o	|	|	|	3.44
39.167	0.00	1.68	1.520	I o	|	|	|	3.43
39.250	0.00	1.67	1.509	I o	|	|	|	3.43
39.333	0.00	1.66	1.497	I o	|	|	|	3.42
39.417	0.00	1.65	1.486	I o	|	|	|	3.41
39.500	0.00	1.64	1.475	I o	|	|	|	3.40
39.583	0.00	1.63	1.463	I o	|	|	|	3.40
39.667	0.00	1.62	1.452	I o	|	|	|	3.39
39.750	0.00	1.61	1.441	I o	|	|	|	3.38
39.833	0.00	1.61	1.430	I o	|	|	|	3.37
39.917	0.00	1.60	1.419	I o	|	|	|	3.37
40.000	0.00	1.59	1.408	I o	|	|	|	3.36
40.083	0.00	1.58	1.397	I o	|	|	|	3.35
40.167	0.00	1.57	1.386	I o	|	|	|	3.34
40.250	0.00	1.56	1.375	I o	|	|	|	3.34
40.333	0.00	1.55	1.365	I o	|	|	|	3.33
40.417	0.00	1.55	1.354	I o	|	|	|	3.32
40.500	0.00	1.54	1.343	I o	|	|	|	3.31
40.583	0.00	1.53	1.333	I o	|	|	|	3.31
40.667	0.00	1.52	1.322	I o	|	|	|	3.30
40.750	0.00	1.51	1.312	I o	|	|	|	3.29
40.833	0.00	1.50	1.302	I o	|	|	|	3.29
40.917	0.00	1.50	1.291	I o	|	|	|	3.28
41.000	0.00	1.49	1.281	I o	|	|	|	3.27
41.083	0.00	1.48	1.271	I o	|	|	|	3.27
41.167	0.00	1.47	1.261	I o	|	|	|	3.26
41.250	0.00	1.46	1.250	I o	|	|	|	3.25
41.333	0.00	1.46	1.240	I o	|	|	|	3.25
41.417	0.00	1.45	1.230	I o	|	|	|	3.24
41.500	0.00	1.44	1.220	I o	|	|	|	3.23
41.583	0.00	1.43	1.211	I o	|	|	|	3.22
41.667	0.00	1.42	1.201	I o	|	|	|	3.22
41.750	0.00	1.42	1.191	I o	|	|	|	3.21
41.833	0.00	1.41	1.181	I o	|	|	|	3.21
41.917	0.00	1.40	1.172	I o	|	|	|	3.20
42.000	0.00	1.39	1.162	I o	|	|	|	3.19
42.083	0.00	1.39	1.152	I o	|	|	|	3.19
42.167	0.00	1.38	1.143	I o	|	|	|	3.18
42.250	0.00	1.37	1.133	I o	|	|	|	3.17
42.333	0.00	1.36	1.124	I o	|	|	|	3.17
42.417	0.00	1.36	1.115	I o	|	|	|	3.16
42.500	0.00	1.35	1.105	I o	|	|	|	3.15
42.583	0.00	1.34	1.096	I o	|	|	|	3.15
42.667	0.00	1.33	1.087	I o	|	|	|	3.14
42.750	0.00	1.33	1.078	I o	|	|	|	3.14
42.833	0.00	1.32	1.068	I o	|	|	|	3.13
42.917	0.00	1.31	1.059	I o	|	|	|	3.12
43.000	0.00	1.31	1.050	I o	|	|	|	3.12
43.083	0.00	1.30	1.041	I o	|	|	|	3.11
43.167	0.00	1.29	1.032	I o	|	|	|	3.10
43.250	0.00	1.28	1.024	I o	|	|	|	3.10
43.333	0.00	1.28	1.015	I o	|	|	|	3.09
43.417	0.00	1.27	1.006	I o	|	|	|	3.09
43.500	0.00	1.26	0.997	I o	|	|	|	3.08

43.583	0.00	1.26	0.989	I O					3.07
43.667	0.00	1.25	0.980	I O					3.07
43.750	0.00	1.24	0.971	I O					3.06
43.833	0.00	1.24	0.963	I O					3.06
43.917	0.00	1.23	0.954	I O					3.05
44.000	0.00	1.22	0.946	I O					3.05
44.083	0.00	1.22	0.938	I O					3.04
44.167	0.00	1.21	0.929	I O					3.03
44.250	0.00	1.20	0.921	I O					3.03
44.333	0.00	1.20	0.913	I O					3.02
44.417	0.00	1.19	0.904	I O					3.02
44.500	0.00	1.18	0.896	I O					3.01
44.583	0.00	1.18	0.888	I O					3.01
44.667	0.00	1.17	0.880	I O					3.00
44.750	0.00	1.16	0.872	I O					3.00
44.833	0.00	1.14	0.864	I O					2.99
44.917	0.00	1.12	0.856	I O					2.98
45.000	0.00	1.11	0.849	I O					2.98
45.083	0.00	1.09	0.841	I O					2.97
45.167	0.00	1.08	0.834	IO					2.97
45.250	0.00	1.06	0.826	IO					2.96
45.333	0.00	1.05	0.819	IO					2.96
45.417	0.00	1.03	0.812	IO					2.95
45.500	0.00	1.02	0.805	IO					2.95
45.583	0.00	1.01	0.798	IO					2.94
45.667	0.00	0.99	0.791	IO					2.94
45.750	0.00	0.98	0.784	IO					2.93
45.833	0.00	0.96	0.777	IO					2.93
45.917	0.00	0.95	0.771	IO					2.93
46.000	0.00	0.94	0.764	IO					2.92
46.083	0.00	0.92	0.758	IO					2.92
46.167	0.00	0.91	0.751	IO					2.91
46.250	0.00	0.90	0.745	IO					2.91
46.333	0.00	0.89	0.739	IO					2.90
46.417	0.00	0.87	0.733	IO					2.90
46.500	0.00	0.86	0.727	IO					2.89
46.583	0.00	0.85	0.721	IO					2.89
46.667	0.00	0.84	0.715	IO					2.89
46.750	0.00	0.83	0.710	IO					2.88
46.833	0.00	0.82	0.704	IO					2.88
46.917	0.00	0.80	0.698	IO					2.88
47.000	0.00	0.79	0.693	IO					2.87
47.083	0.00	0.78	0.687	IO					2.87
47.167	0.00	0.77	0.682	IO					2.86
47.250	0.00	0.76	0.677	IO					2.86
47.333	0.00	0.75	0.672	IO					2.86
47.417	0.00	0.74	0.666	IO					2.85
47.500	0.00	0.73	0.661	IO					2.85
47.583	0.00	0.72	0.656	IO					2.85
47.667	0.00	0.71	0.652	IO					2.84
47.750	0.00	0.70	0.647	IO					2.84
47.833	0.00	0.69	0.642	IO					2.84
47.917	0.00	0.68	0.637	IO					2.83
48.000	0.00	0.67	0.633	IO					2.83
48.083	0.00	0.66	0.628	IO					2.83
48.167	0.00	0.65	0.623	IO					2.82
48.250	0.00	0.64	0.619	IO					2.82
48.333	0.00	0.63	0.615	IO					2.82
48.417	0.00	0.63	0.610	IO					2.81
48.500	0.00	0.62	0.606	IO					2.81
48.583	0.00	0.61	0.602	IO					2.81
48.667	0.00	0.60	0.598	IO					2.80
48.750	0.00	0.59	0.593	IO					2.80
48.833	0.00	0.58	0.589	IO					2.80
48.917	0.00	0.57	0.585	IO					2.80
49.000	0.00	0.57	0.582	IO					2.79
49.083	0.00	0.56	0.578	IO					2.79
49.167	0.00	0.55	0.574	IO					2.79
49.250	0.00	0.54	0.570	O					2.79
49.333	0.00	0.54	0.566	O					2.78
49.417	0.00	0.53	0.563	O					2.78
49.500	0.00	0.52	0.559	O					2.78
49.583	0.00	0.51	0.555	O					2.78
49.667	0.00	0.51	0.552	O					2.77
49.750	0.00	0.50	0.549	O					2.77

49.833	0.00	0.49	0.545	o	|	|	|	|	2.77
49.917	0.00	0.49	0.542	o	|	|	|	|	2.77
50.000	0.00	0.48	0.538	o	|	|	|	|	2.76
50.083	0.00	0.47	0.535	o	|	|	|	|	2.76
50.167	0.00	0.47	0.532	o	|	|	|	|	2.76
50.250	0.00	0.46	0.529	o	|	|	|	|	2.76
50.333	0.00	0.45	0.526	o	|	|	|	|	2.75
50.417	0.00	0.45	0.522	o	|	|	|	|	2.75
50.500	0.00	0.44	0.519	o	|	|	|	|	2.75
50.583	0.00	0.43	0.516	o	|	|	|	|	2.75
50.667	0.00	0.43	0.513	o	|	|	|	|	2.75
50.750	0.00	0.42	0.510	o	|	|	|	|	2.74
50.833	0.00	0.42	0.508	o	|	|	|	|	2.74
50.917	0.00	0.41	0.505	o	|	|	|	|	2.74
51.000	0.00	0.41	0.502	o	|	|	|	|	2.74
51.083	0.00	0.40	0.499	o	|	|	|	|	2.74
51.167	0.00	0.39	0.496	o	|	|	|	|	2.73
51.250	0.00	0.39	0.494	o	|	|	|	|	2.73
51.333	0.00	0.38	0.491	o	|	|	|	|	2.73
51.417	0.00	0.38	0.488	o	|	|	|	|	2.73
51.500	0.00	0.37	0.486	o	|	|	|	|	2.73
51.583	0.00	0.37	0.483	o	|	|	|	|	2.73
51.667	0.00	0.36	0.481	o	|	|	|	|	2.72
51.750	0.00	0.36	0.478	o	|	|	|	|	2.72
51.833	0.00	0.35	0.476	o	|	|	|	|	2.72
51.917	0.00	0.35	0.474	o	|	|	|	|	2.72
52.000	0.00	0.34	0.471	o	|	|	|	|	2.72
52.083	0.00	0.34	0.469	o	|	|	|	|	2.72
52.167	0.00	0.33	0.466	o	|	|	|	|	2.71
52.250	0.00	0.33	0.464	o	|	|	|	|	2.71
52.333	0.00	0.32	0.462	o	|	|	|	|	2.71
52.417	0.00	0.32	0.460	o	|	|	|	|	2.71
52.500	0.00	0.31	0.458	o	|	|	|	|	2.71
52.583	0.00	0.31	0.455	o	|	|	|	|	2.71
52.667	0.00	0.31	0.453	o	|	|	|	|	2.70
52.750	0.00	0.30	0.451	o	|	|	|	|	2.70
52.833	0.00	0.30	0.449	o	|	|	|	|	2.70
52.917	0.00	0.29	0.447	o	|	|	|	|	2.70
53.000	0.00	0.29	0.445	o	|	|	|	|	2.70
53.083	0.00	0.29	0.443	o	|	|	|	|	2.70
53.167	0.00	0.28	0.441	o	|	|	|	|	2.70
53.250	0.00	0.28	0.439	o	|	|	|	|	2.69
53.333	0.00	0.27	0.437	o	|	|	|	|	2.69
53.417	0.00	0.27	0.435	o	|	|	|	|	2.69
53.500	0.00	0.27	0.434	o	|	|	|	|	2.69
53.583	0.00	0.26	0.432	o	|	|	|	|	2.69
53.667	0.00	0.26	0.430	o	|	|	|	|	2.69
53.750	0.00	0.26	0.428	o	|	|	|	|	2.69
53.833	0.00	0.25	0.426	o	|	|	|	|	2.69
53.917	0.00	0.25	0.425	o	|	|	|	|	2.68
54.000	0.00	0.24	0.423	o	|	|	|	|	2.68
54.083	0.00	0.24	0.421	o	|	|	|	|	2.68
54.167	0.00	0.24	0.420	o	|	|	|	|	2.68
54.250	0.00	0.23	0.418	o	|	|	|	|	2.68
54.333	0.00	0.23	0.416	o	|	|	|	|	2.68
54.417	0.00	0.23	0.415	o	|	|	|	|	2.68
54.500	0.00	0.23	0.413	o	|	|	|	|	2.68
54.583	0.00	0.22	0.412	o	|	|	|	|	2.68
54.667	0.00	0.22	0.410	o	|	|	|	|	2.67
54.750	0.00	0.22	0.409	o	|	|	|	|	2.67
54.833	0.00	0.21	0.407	o	|	|	|	|	2.67
54.917	0.00	0.21	0.406	o	|	|	|	|	2.67
55.000	0.00	0.21	0.404	o	|	|	|	|	2.67
55.083	0.00	0.20	0.403	o	|	|	|	|	2.67
55.167	0.00	0.20	0.402	o	|	|	|	|	2.67
55.250	0.00	0.20	0.400	o	|	|	|	|	2.67
55.333	0.00	0.20	0.399	o	|	|	|	|	2.67
55.417	0.00	0.19	0.398	o	|	|	|	|	2.67
55.500	0.00	0.19	0.396	o	|	|	|	|	2.66
55.583	0.00	0.19	0.395	o	|	|	|	|	2.66
55.667	0.00	0.19	0.394	o	|	|	|	|	2.66
55.750	0.00	0.18	0.392	o	|	|	|	|	2.66
55.833	0.00	0.18	0.391	o	|	|	|	|	2.66
55.917	0.00	0.18	0.390	o	|	|	|	|	2.66
56.000	0.00	0.18	0.389	o	|	|	|	|	2.66

56.083	0.00	0.17	0.387	o	|	|	|	2.66
56.167	0.00	0.17	0.386	o	|	|	|	2.66
56.250	0.00	0.17	0.385	o	|	|	|	2.66
56.333	0.00	0.17	0.384	o	|	|	|	2.66
56.417	0.00	0.16	0.383	o	|	|	|	2.66
56.500	0.00	0.16	0.382	o	|	|	|	2.65
56.583	0.00	0.16	0.381	o	|	|	|	2.65
56.667	0.00	0.16	0.380	o	|	|	|	2.65
56.750	0.00	0.15	0.378	o	|	|	|	2.65
56.833	0.00	0.15	0.377	o	|	|	|	2.65
56.917	0.00	0.15	0.376	o	|	|	|	2.65
57.000	0.00	0.15	0.375	o	|	|	|	2.65
57.083	0.00	0.15	0.374	o	|	|	|	2.65
57.167	0.00	0.14	0.373	o	|	|	|	2.65
57.250	0.00	0.14	0.372	o	|	|	|	2.65
57.333	0.00	0.14	0.371	o	|	|	|	2.65
57.417	0.00	0.14	0.370	o	|	|	|	2.65
57.500	0.00	0.14	0.369	o	|	|	|	2.65
57.583	0.00	0.13	0.369	o	|	|	|	2.65
57.667	0.00	0.13	0.368	o	|	|	|	2.64
57.750	0.00	0.13	0.367	o	|	|	|	2.64
57.833	0.00	0.13	0.366	o	|	|	|	2.64
57.917	0.00	0.13	0.365	o	|	|	|	2.64
58.000	0.00	0.13	0.364	o	|	|	|	2.64
58.083	0.00	0.12	0.363	o	|	|	|	2.64
58.167	0.00	0.12	0.362	o	|	|	|	2.64
58.250	0.00	0.12	0.362	o	|	|	|	2.64
58.333	0.00	0.12	0.361	o	|	|	|	2.64
58.417	0.00	0.12	0.360	o	|	|	|	2.64
58.500	0.00	0.12	0.359	o	|	|	|	2.64
58.583	0.00	0.11	0.358	o	|	|	|	2.64
58.667	0.00	0.11	0.358	o	|	|	|	2.64
58.750	0.00	0.11	0.357	o	|	|	|	2.64
58.833	0.00	0.11	0.356	o	|	|	|	2.64
58.917	0.00	0.11	0.355	o	|	|	|	2.64
59.000	0.00	0.11	0.355	o	|	|	|	2.64
59.083	0.00	0.10	0.354	o	|	|	|	2.64
59.167	0.00	0.10	0.353	o	|	|	|	2.63
59.250	0.00	0.10	0.352	o	|	|	|	2.63
59.333	0.00	0.10	0.352	o	|	|	|	2.63
59.417	0.00	0.10	0.351	o	|	|	|	2.63
59.500	0.00	0.10	0.350	o	|	|	|	2.63
59.583	0.00	0.10	0.350	o	|	|	|	2.63
59.667	0.00	0.09	0.349	o	|	|	|	2.63
59.750	0.00	0.09	0.348	o	|	|	|	2.63
59.833	0.00	0.09	0.348	o	|	|	|	2.63
59.917	0.00	0.09	0.347	o	|	|	|	2.63
60.000	0.00	0.09	0.347	o	|	|	|	2.63
60.083	0.00	0.09	0.346	o	|	|	|	2.63
60.167	0.00	0.09	0.345	o	|	|	|	2.63
60.250	0.00	0.09	0.345	o	|	|	|	2.63
60.333	0.00	0.08	0.344	o	|	|	|	2.63
60.417	0.00	0.08	0.344	o	|	|	|	2.63
60.500	0.00	0.08	0.343	o	|	|	|	2.63
60.583	0.00	0.08	0.342	o	|	|	|	2.63
60.667	0.00	0.08	0.342	o	|	|	|	2.63
60.750	0.00	0.08	0.341	o	|	|	|	2.63
60.833	0.00	0.08	0.341	o	|	|	|	2.63
60.917	0.00	0.08	0.340	o	|	|	|	2.63
61.000	0.00	0.08	0.340	o	|	|	|	2.63
61.083	0.00	0.07	0.339	o	|	|	|	2.63
61.167	0.00	0.07	0.339	o	|	|	|	2.62
61.250	0.00	0.07	0.338	o	|	|	|	2.62
61.333	0.00	0.07	0.338	o	|	|	|	2.62
61.417	0.00	0.07	0.337	o	|	|	|	2.62
61.500	0.00	0.07	0.337	o	|	|	|	2.62
61.583	0.00	0.07	0.336	o	|	|	|	2.62
61.667	0.00	0.07	0.336	o	|	|	|	2.62
61.750	0.00	0.07	0.335	o	|	|	|	2.62
61.833	0.00	0.07	0.335	o	|	|	|	2.62
61.917	0.00	0.06	0.334	o	|	|	|	2.62
62.000	0.00	0.06	0.334	o	|	|	|	2.62
62.083	0.00	0.06	0.334	o	|	|	|	2.62
62.167	0.00	0.06	0.333	o	|	|	|	2.62
62.250	0.00	0.06	0.333	o	|	|	|	2.62

62.333	0.00	0.06	0.332	o	|	|	|	|	2.62
62.417	0.00	0.06	0.332	o	|	|	|	|	2.62
62.500	0.00	0.06	0.331	o	|	|	|	|	2.62
62.583	0.00	0.06	0.331	o	|	|	|	|	2.62
62.667	0.00	0.06	0.331	o	|	|	|	|	2.62
62.750	0.00	0.06	0.330	o	|	|	|	|	2.62
62.833	0.00	0.06	0.330	o	|	|	|	|	2.62
62.917	0.00	0.05	0.329	o	|	|	|	|	2.62
63.000	0.00	0.05	0.329	o	|	|	|	|	2.62
63.083	0.00	0.05	0.329	o	|	|	|	|	2.62
63.167	0.00	0.05	0.328	o	|	|	|	|	2.62
63.250	0.00	0.05	0.328	o	|	|	|	|	2.62
63.333	0.00	0.05	0.328	o	|	|	|	|	2.62
63.417	0.00	0.05	0.327	o	|	|	|	|	2.62
63.500	0.00	0.05	0.327	o	|	|	|	|	2.62
63.583	0.00	0.05	0.327	o	|	|	|	|	2.62
63.667	0.00	0.05	0.326	o	|	|	|	|	2.62
63.750	0.00	0.05	0.326	o	|	|	|	|	2.62
63.833	0.00	0.05	0.326	o	|	|	|	|	2.62
63.917	0.00	0.05	0.325	o	|	|	|	|	2.62
64.000	0.00	0.05	0.325	o	|	|	|	|	2.62
64.083	0.00	0.05	0.325	o	|	|	|	|	2.62
64.167	0.00	0.04	0.324	o	|	|	|	|	2.61
64.250	0.00	0.04	0.324	o	|	|	|	|	2.61
64.333	0.00	0.04	0.324	o	|	|	|	|	2.61
64.417	0.00	0.04	0.323	o	|	|	|	|	2.61
64.500	0.00	0.04	0.323	o	|	|	|	|	2.61
64.583	0.00	0.04	0.323	o	|	|	|	|	2.61
64.667	0.00	0.04	0.323	o	|	|	|	|	2.61
64.750	0.00	0.04	0.322	o	|	|	|	|	2.61
64.833	0.00	0.04	0.322	o	|	|	|	|	2.61
64.917	0.00	0.04	0.322	o	|	|	|	|	2.61
65.000	0.00	0.04	0.322	o	|	|	|	|	2.61
65.083	0.00	0.04	0.321	o	|	|	|	|	2.61
65.167	0.00	0.04	0.321	o	|	|	|	|	2.61
65.250	0.00	0.04	0.321	o	|	|	|	|	2.61
65.333	0.00	0.04	0.320	o	|	|	|	|	2.61
65.417	0.00	0.04	0.320	o	|	|	|	|	2.61
65.500	0.00	0.04	0.320	o	|	|	|	|	2.61
65.583	0.00	0.04	0.320	o	|	|	|	|	2.61
65.667	0.00	0.03	0.320	o	|	|	|	|	2.61
65.750	0.00	0.03	0.319	o	|	|	|	|	2.61
65.833	0.00	0.03	0.319	o	|	|	|	|	2.61
65.917	0.00	0.03	0.319	o	|	|	|	|	2.61
66.000	0.00	0.03	0.319	o	|	|	|	|	2.61
66.083	0.00	0.03	0.318	o	|	|	|	|	2.61
66.167	0.00	0.03	0.318	o	|	|	|	|	2.61
66.250	0.00	0.03	0.318	o	|	|	|	|	2.61
66.333	0.00	0.03	0.318	o	|	|	|	|	2.61
66.417	0.00	0.03	0.317	o	|	|	|	|	2.61
66.500	0.00	0.03	0.317	o	|	|	|	|	2.61
66.583	0.00	0.03	0.317	o	|	|	|	|	2.61
66.667	0.00	0.03	0.317	o	|	|	|	|	2.61
66.750	0.00	0.03	0.317	o	|	|	|	|	2.61
66.833	0.00	0.03	0.316	o	|	|	|	|	2.61
66.917	0.00	0.03	0.316	o	|	|	|	|	2.61
67.000	0.00	0.03	0.316	o	|	|	|	|	2.61
67.083	0.00	0.03	0.316	o	|	|	|	|	2.61
67.167	0.00	0.03	0.316	o	|	|	|	|	2.61
67.250	0.00	0.03	0.316	o	|	|	|	|	2.61
67.333	0.00	0.03	0.315	o	|	|	|	|	2.61
67.417	0.00	0.03	0.315	o	|	|	|	|	2.61
67.500	0.00	0.03	0.315	o	|	|	|	|	2.61
67.583	0.00	0.03	0.315	o	|	|	|	|	2.61
67.667	0.00	0.02	0.315	o	|	|	|	|	2.61
67.750	0.00	0.02	0.314	o	|	|	|	|	2.61
67.833	0.00	0.02	0.314	o	|	|	|	|	2.61
67.917	0.00	0.02	0.314	o	|	|	|	|	2.61
68.000	0.00	0.02	0.314	o	|	|	|	|	2.61
68.083	0.00	0.02	0.314	o	|	|	|	|	2.61
68.167	0.00	0.02	0.314	o	|	|	|	|	2.61
68.250	0.00	0.02	0.314	o	|	|	|	|	2.61
68.333	0.00	0.02	0.313	o	|	|	|	|	2.61
68.417	0.00	0.02	0.313	o	|	|	|	|	2.61
68.500	0.00	0.02	0.313	o	|	|	|	|	2.61

68.583	0.00	0.02	0.313	o	|	|	|	|	2.61
68.667	0.00	0.02	0.313	o	|	|	|	|	2.61
68.750	0.00	0.02	0.313	o	|	|	|	|	2.61
68.833	0.00	0.02	0.312	o	|	|	|	|	2.61
68.917	0.00	0.02	0.312	o	|	|	|	|	2.61
69.000	0.00	0.02	0.312	o	|	|	|	|	2.61
69.083	0.00	0.02	0.312	o	|	|	|	|	2.61
69.167	0.00	0.02	0.312	o	|	|	|	|	2.61
69.250	0.00	0.02	0.312	o	|	|	|	|	2.61
69.333	0.00	0.02	0.312	o	|	|	|	|	2.61
69.417	0.00	0.02	0.312	o	|	|	|	|	2.61
69.500	0.00	0.02	0.311	o	|	|	|	|	2.61
69.583	0.00	0.02	0.311	o	|	|	|	|	2.61
69.667	0.00	0.02	0.311	o	|	|	|	|	2.61
69.750	0.00	0.02	0.311	o	|	|	|	|	2.61
69.833	0.00	0.02	0.311	o	|	|	|	|	2.61
69.917	0.00	0.02	0.311	o	|	|	|	|	2.61
70.000	0.00	0.02	0.311	o	|	|	|	|	2.61
70.083	0.00	0.02	0.311	o	|	|	|	|	2.61
70.167	0.00	0.02	0.310	o	|	|	|	|	2.61
70.250	0.00	0.02	0.310	o	|	|	|	|	2.61
70.333	0.00	0.02	0.310	o	|	|	|	|	2.61
70.417	0.00	0.02	0.310	o	|	|	|	|	2.60
70.500	0.00	0.02	0.310	o	|	|	|	|	2.60
70.583	0.00	0.02	0.310	o	|	|	|	|	2.60
70.667	0.00	0.01	0.310	o	|	|	|	|	2.60
70.750	0.00	0.01	0.310	o	|	|	|	|	2.60
70.833	0.00	0.01	0.310	o	|	|	|	|	2.60
70.917	0.00	0.01	0.310	o	|	|	|	|	2.60
71.000	0.00	0.01	0.309	o	|	|	|	|	2.60
71.083	0.00	0.01	0.309	o	|	|	|	|	2.60
71.167	0.00	0.01	0.309	o	|	|	|	|	2.60
71.250	0.00	0.01	0.309	o	|	|	|	|	2.60
71.333	0.00	0.01	0.309	o	|	|	|	|	2.60
71.417	0.00	0.01	0.309	o	|	|	|	|	2.60
71.500	0.00	0.01	0.309	o	|	|	|	|	2.60
71.583	0.00	0.01	0.309	o	|	|	|	|	2.60
71.667	0.00	0.01	0.309	o	|	|	|	|	2.60
71.750	0.00	0.01	0.309	o	|	|	|	|	2.60
71.833	0.00	0.01	0.309	o	|	|	|	|	2.60
71.917	0.00	0.01	0.308	o	|	|	|	|	2.60
72.000	0.00	0.01	0.308	o	|	|	|	|	2.60
72.083	0.00	0.01	0.308	o	|	|	|	|	2.60
72.167	0.00	0.01	0.308	o	|	|	|	|	2.60
72.250	0.00	0.01	0.308	o	|	|	|	|	2.60
72.333	0.00	0.01	0.308	o	|	|	|	|	2.60
72.417	0.00	0.01	0.308	o	|	|	|	|	2.60
72.500	0.00	0.01	0.308	o	|	|	|	|	2.60
72.583	0.00	0.01	0.308	o	|	|	|	|	2.60
72.667	0.00	0.01	0.308	o	|	|	|	|	2.60
72.750	0.00	0.01	0.308	o	|	|	|	|	2.60
72.833	0.00	0.01	0.308	o	|	|	|	|	2.60
72.917	0.00	0.01	0.308	o	|	|	|	|	2.60
73.000	0.00	0.01	0.307	o	|	|	|	|	2.60
73.083	0.00	0.01	0.307	o	|	|	|	|	2.60
73.167	0.00	0.01	0.307	o	|	|	|	|	2.60
73.250	0.00	0.01	0.307	o	|	|	|	|	2.60
73.333	0.00	0.01	0.307	o	|	|	|	|	2.60
73.417	0.00	0.01	0.307	o	|	|	|	|	2.60
73.500	0.00	0.01	0.307	o	|	|	|	|	2.60
73.583	0.00	0.01	0.307	o	|	|	|	|	2.60
73.667	0.00	0.01	0.307	o	|	|	|	|	2.60
73.750	0.00	0.01	0.307	o	|	|	|	|	2.60
73.833	0.00	0.01	0.307	o	|	|	|	|	2.60
73.917	0.00	0.01	0.307	o	|	|	|	|	2.60
74.000	0.00	0.01	0.307	o	|	|	|	|	2.60
74.083	0.00	0.01	0.307	o	|	|	|	|	2.60
74.167	0.00	0.01	0.307	o	|	|	|	|	2.60
74.250	0.00	0.01	0.307	o	|	|	|	|	2.60
74.333	0.00	0.01	0.306	o	|	|	|	|	2.60
74.417	0.00	0.01	0.306	o	|	|	|	|	2.60
74.500	0.00	0.01	0.306	o	|	|	|	|	2.60
74.583	0.00	0.01	0.306	o	|	|	|	|	2.60
74.667	0.00	0.01	0.306	o	|	|	|	|	2.60
74.750	0.00	0.01	0.306	o	|	|	|	|	2.60

74.833	0.00	0.01	0.306	o	|	|	|	|	2.60
74.917	0.00	0.01	0.306	o	|	|	|	|	2.60
75.000	0.00	0.01	0.306	o	|	|	|	|	2.60
75.083	0.00	0.01	0.306	o	|	|	|	|	2.60
75.167	0.00	0.01	0.306	o	|	|	|	|	2.60
75.250	0.00	0.01	0.306	o	|	|	|	|	2.60
75.333	0.00	0.01	0.306	o	|	|	|	|	2.60
75.417	0.00	0.01	0.306	o	|	|	|	|	2.60
75.500	0.00	0.01	0.306	o	|	|	|	|	2.60
75.583	0.00	0.01	0.306	o	|	|	|	|	2.60
75.667	0.00	0.01	0.306	o	|	|	|	|	2.60
75.750	0.00	0.01	0.306	o	|	|	|	|	2.60
75.833	0.00	0.01	0.306	o	|	|	|	|	2.60
75.917	0.00	0.01	0.306	o	|	|	|	|	2.60
76.000	0.00	0.01	0.306	o	|	|	|	|	2.60
76.083	0.00	0.01	0.305	o	|	|	|	|	2.60
76.167	0.00	0.01	0.305	o	|	|	|	|	2.60
76.250	0.00	0.01	0.305	o	|	|	|	|	2.60
76.333	0.00	0.01	0.305	o	|	|	|	|	2.60
76.417	0.00	0.01	0.305	o	|	|	|	|	2.60
76.500	0.00	0.01	0.305	o	|	|	|	|	2.60
76.583	0.00	0.01	0.305	o	|	|	|	|	2.60
76.667	0.00	0.01	0.305	o	|	|	|	|	2.60
76.750	0.00	0.01	0.305	o	|	|	|	|	2.60
76.833	0.00	0.01	0.305	o	|	|	|	|	2.60
76.917	0.00	0.01	0.305	o	|	|	|	|	2.60
77.000	0.00	0.01	0.305	o	|	|	|	|	2.60
77.083	0.00	0.01	0.305	o	|	|	|	|	2.60
77.167	0.00	0.01	0.305	o	|	|	|	|	2.60
77.250	0.00	0.00	0.305	o	|	|	|	|	2.60
77.333	0.00	0.00	0.305	o	|	|	|	|	2.60
77.417	0.00	0.00	0.305	o	|	|	|	|	2.60
77.500	0.00	0.00	0.305	o	|	|	|	|	2.60
77.583	0.00	0.00	0.305	o	|	|	|	|	2.60
77.667	0.00	0.00	0.305	o	|	|	|	|	2.60
77.750	0.00	0.00	0.305	o	|	|	|	|	2.60
77.833	0.00	0.00	0.305	o	|	|	|	|	2.60
77.917	0.00	0.00	0.305	o	|	|	|	|	2.60
78.000	0.00	0.00	0.305	o	|	|	|	|	2.60
78.083	0.00	0.00	0.305	o	|	|	|	|	2.60
78.167	0.00	0.00	0.305	o	|	|	|	|	2.60
78.250	0.00	0.00	0.305	o	|	|	|	|	2.60
78.333	0.00	0.00	0.305	o	|	|	|	|	2.60
78.417	0.00	0.00	0.305	o	|	|	|	|	2.60
78.500	0.00	0.00	0.304	o	|	|	|	|	2.60
78.583	0.00	0.00	0.304	o	|	|	|	|	2.60
78.667	0.00	0.00	0.304	o	|	|	|	|	2.60
78.750	0.00	0.00	0.304	o	|	|	|	|	2.60
78.833	0.00	0.00	0.304	o	|	|	|	|	2.60
78.917	0.00	0.00	0.304	o	|	|	|	|	2.60
79.000	0.00	0.00	0.304	o	|	|	|	|	2.60
79.083	0.00	0.00	0.304	o	|	|	|	|	2.60
79.167	0.00	0.00	0.304	o	|	|	|	|	2.60
79.250	0.00	0.00	0.304	o	|	|	|	|	2.60
79.333	0.00	0.00	0.304	o	|	|	|	|	2.60
79.417	0.00	0.00	0.304	o	|	|	|	|	2.60
79.500	0.00	0.00	0.304	o	|	|	|	|	2.60
79.583	0.00	0.00	0.304	o	|	|	|	|	2.60
79.667	0.00	0.00	0.304	o	|	|	|	|	2.60
79.750	0.00	0.00	0.304	o	|	|	|	|	2.60
79.833	0.00	0.00	0.304	o	|	|	|	|	2.60
79.917	0.00	0.00	0.304	o	|	|	|	|	2.60
80.000	0.00	0.00	0.304	o	|	|	|	|	2.60
80.083	0.00	0.00	0.304	o	|	|	|	|	2.60
80.167	0.00	0.00	0.304	o	|	|	|	|	2.60
80.250	0.00	0.00	0.304	o	|	|	|	|	2.60
80.333	0.00	0.00	0.304	o	|	|	|	|	2.60
80.417	0.00	0.00	0.304	o	|	|	|	|	2.60
80.500	0.00	0.00	0.304	o	|	|	|	|	2.60
80.583	0.00	0.00	0.304	o	|	|	|	|	2.60
80.667	0.00	0.00	0.304	o	|	|	|	|	2.60
80.750	0.00	0.00	0.304	o	|	|	|	|	2.60
80.833	0.00	0.00	0.304	o	|	|	|	|	2.60
80.917	0.00	0.00	0.304	o	|	|	|	|	2.60
81.000	0.00	0.00	0.304	o	|	|	|	|	2.60

81.083	0.00	0.00	0.304	o	|	|	|	|	2.60
81.167	0.00	0.00	0.304	o	|	|	|	|	2.60
81.250	0.00	0.00	0.304	o	|	|	|	|	2.60
81.333	0.00	0.00	0.304	o	|	|	|	|	2.60
81.417	0.00	0.00	0.304	o	|	|	|	|	2.60
81.500	0.00	0.00	0.304	o	|	|	|	|	2.60
81.583	0.00	0.00	0.304	o	|	|	|	|	2.60
81.667	0.00	0.00	0.304	o	|	|	|	|	2.60
81.750	0.00	0.00	0.304	o	|	|	|	|	2.60
81.833	0.00	0.00	0.304	o	|	|	|	|	2.60
81.917	0.00	0.00	0.304	o	|	|	|	|	2.60
82.000	0.00	0.00	0.304	o	|	|	|	|	2.60
82.083	0.00	0.00	0.304	o	|	|	|	|	2.60
82.167	0.00	0.00	0.304	o	|	|	|	|	2.60
82.250	0.00	0.00	0.304	o	|	|	|	|	2.60
82.333	0.00	0.00	0.304	o	|	|	|	|	2.60
82.417	0.00	0.00	0.304	o	|	|	|	|	2.60
82.500	0.00	0.00	0.304	o	|	|	|	|	2.60
82.583	0.00	0.00	0.304	o	|	|	|	|	2.60
82.667	0.00	0.00	0.303	o	|	|	|	|	2.60
82.750	0.00	0.00	0.303	o	|	|	|	|	2.60
82.833	0.00	0.00	0.303	o	|	|	|	|	2.60
82.917	0.00	0.00	0.303	o	|	|	|	|	2.60
83.000	0.00	0.00	0.303	o	|	|	|	|	2.60
83.083	0.00	0.00	0.303	o	|	|	|	|	2.60
83.167	0.00	0.00	0.303	o	|	|	|	|	2.60
83.250	0.00	0.00	0.303	o	|	|	|	|	2.60
83.333	0.00	0.00	0.303	o	|	|	|	|	2.60
83.417	0.00	0.00	0.303	o	|	|	|	|	2.60
83.500	0.00	0.00	0.303	o	|	|	|	|	2.60
83.583	0.00	0.00	0.303	o	|	|	|	|	2.60
83.667	0.00	0.00	0.303	o	|	|	|	|	2.60
83.750	0.00	0.00	0.303	o	|	|	|	|	2.60
83.833	0.00	0.00	0.303	o	|	|	|	|	2.60
83.917	0.00	0.00	0.303	o	|	|	|	|	2.60
84.000	0.00	0.00	0.303	o	|	|	|	|	2.60
84.083	0.00	0.00	0.303	o	|	|	|	|	2.60
84.167	0.00	0.00	0.303	o	|	|	|	|	2.60
84.250	0.00	0.00	0.303	o	|	|	|	|	2.60
84.333	0.00	0.00	0.303	o	|	|	|	|	2.60
84.417	0.00	0.00	0.303	o	|	|	|	|	2.60
84.500	0.00	0.00	0.303	o	|	|	|	|	2.60
84.583	0.00	0.00	0.303	o	|	|	|	|	2.60
84.667	0.00	0.00	0.303	o	|	|	|	|	2.60
84.750	0.00	0.00	0.303	o	|	|	|	|	2.60
84.833	0.00	0.00	0.303	o	|	|	|	|	2.60
84.917	0.00	0.00	0.303	o	|	|	|	|	2.60
85.000	0.00	0.00	0.303	o	|	|	|	|	2.60
85.083	0.00	0.00	0.303	o	|	|	|	|	2.60
85.167	0.00	0.00	0.303	o	|	|	|	|	2.60
85.250	0.00	0.00	0.303	o	|	|	|	|	2.60
85.333	0.00	0.00	0.303	o	|	|	|	|	2.60
85.417	0.00	0.00	0.303	o	|	|	|	|	2.60
85.500	0.00	0.00	0.303	o	|	|	|	|	2.60
85.583	0.00	0.00	0.303	o	|	|	|	|	2.60
85.667	0.00	0.00	0.303	o	|	|	|	|	2.60
85.750	0.00	0.00	0.303	o	|	|	|	|	2.60
85.833	0.00	0.00	0.303	o	|	|	|	|	2.60
85.917	0.00	0.00	0.303	o	|	|	|	|	2.60
86.000	0.00	0.00	0.303	o	|	|	|	|	2.60
86.083	0.00	0.00	0.303	o	|	|	|	|	2.60
86.167	0.00	0.00	0.303	o	|	|	|	|	2.60
86.250	0.00	0.00	0.303	o	|	|	|	|	2.60
86.333	0.00	0.00	0.303	o	|	|	|	|	2.60
86.417	0.00	0.00	0.303	o	|	|	|	|	2.60
86.500	0.00	0.00	0.303	o	|	|	|	|	2.60
86.583	0.00	0.00	0.303	o	|	|	|	|	2.60
86.667	0.00	0.00	0.303	o	|	|	|	|	2.60
86.750	0.00	0.00	0.303	o	|	|	|	|	2.60
86.833	0.00	0.00	0.303	o	|	|	|	|	2.60

Remaining water in basin = 0.30 (Ac.Ft)

```
**************************HYDROGRAPH DATA**************************
               Number of intervals =  1042
               Time interval =    5.0 (Min.)
               Maximum/Peak flow rate =        9.372 (CFS)
               Total volume =      10.308 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
*******************************************************************************

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BASIN ROUTING
10-YEAR, 24-HOUR -HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

21-0044 EXETER INDUSTRIAL BLDG 1
10-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST10YR2410.rte
**********HYDROGRAPH DATA**********
Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 23.776 (CFS)
Total volume = 13.018 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

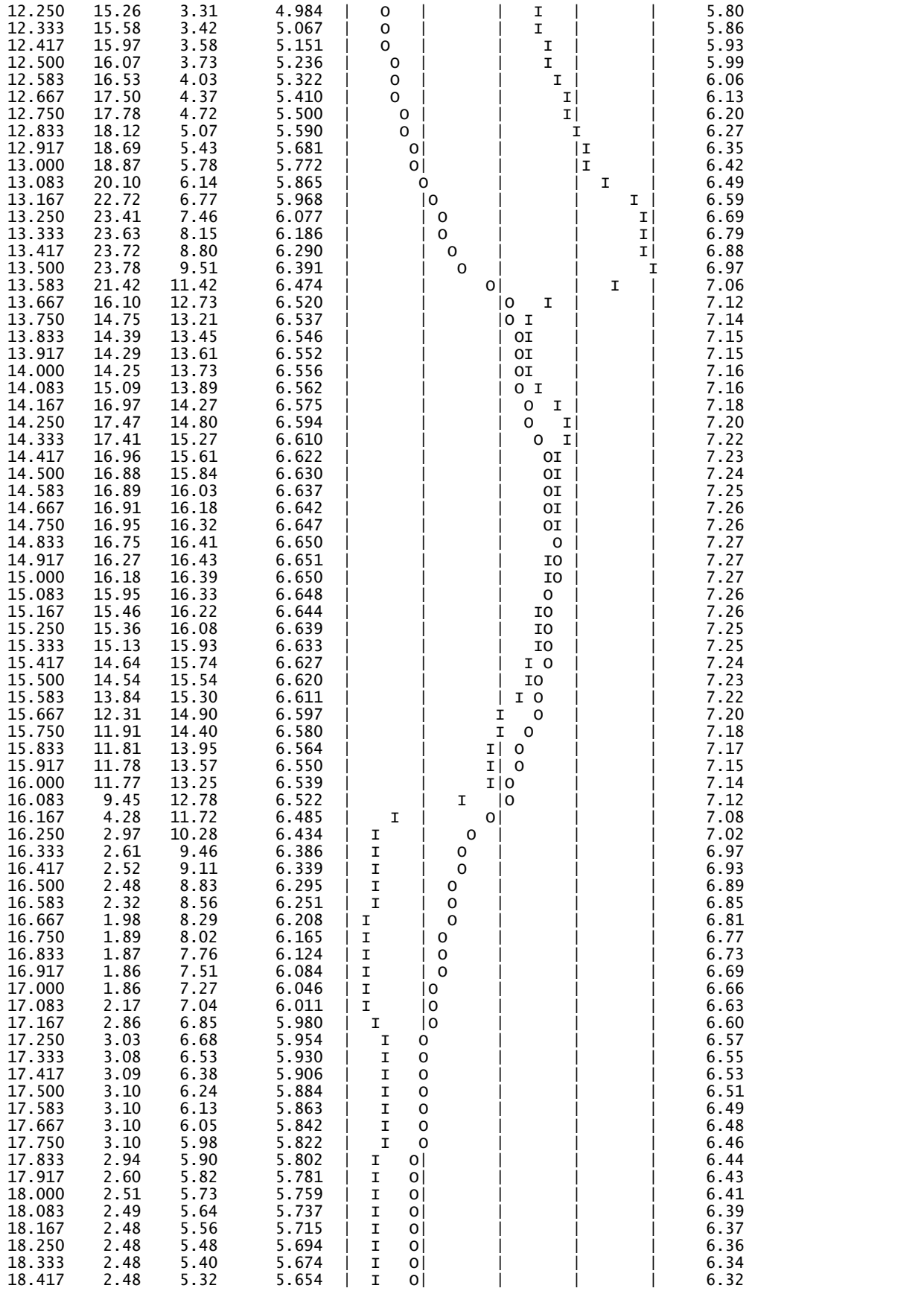
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
5.820	5.007	3.318	4.996	5.018
6.000	5.251	3.753	5.238	5.264
6.500	5.873	6.174	5.852	5.894
6.960	6.375	9.338	6.343	6.407
7.000	6.418	9.814	6.384	6.452
7.500	6.855	22.225	6.778	6.932
8.000	7.101	41.053	6.960	7.242

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 5.9 11.89 17.83 23.78	Depth (Ft.)
0.083	0.31	0.00	0.001	O	0.01
0.167	1.00	0.00	0.006	OI	0.05
0.250	1.17	0.00	0.013	OI	0.11
0.333	1.38	0.00	0.022	OI	0.19
0.417	1.73	0.00	0.033	O I	0.28
0.500	1.83	0.00	0.045	O I	0.38
0.583	1.85	0.00	0.057	O I	0.49
0.667	1.86	0.00	0.070	O I	0.60
0.750	1.86	0.00	0.083	O I	0.71
0.833	2.01	0.00	0.096	O I	0.83
0.917	2.36	0.00	0.111	O I	0.96
1.000	2.45	0.00	0.128	O I	1.10
1.083	2.31	0.00	0.144	O I	1.24
1.167	1.98	0.00	0.159	O I	1.36
1.250	1.89	0.00	0.172	O I	1.48
1.333	1.87	0.00	0.185	O I	1.59
1.417	1.86	0.00	0.198	O I	1.70
1.500	1.86	0.00	0.211	O I	1.81
1.583	1.86	0.00	0.224	O I	1.92
1.667	1.86	0.00	0.237	O I	2.03
1.750	1.86	0.00	0.249	O I	2.14
1.833	2.01	0.00	0.263	O I	2.25
1.917	2.36	0.00	0.278	O I	2.38
2.000	2.45	0.00	0.294	O I	2.52
2.083	2.47	0.02	0.311	O I	2.61
2.167	2.48	0.05	0.328	O I	2.62
2.250	2.48	0.09	0.344	O I	2.63
2.333	2.48	0.12	0.361	O I	2.64
2.417	2.48	0.15	0.377	O I	2.65
2.500	2.48	0.18	0.393	O I	2.66
2.583	2.63	0.22	0.409	O I	2.67
2.667	2.98	0.25	0.427	O I	2.69
2.750	3.06	0.29	0.446	O I	2.70
2.833	3.09	0.33	0.465	O I	2.71
2.917	3.09	0.37	0.484	O I	2.73
3.000	3.10	0.41	0.502	O I	2.74
3.083	3.10	0.44	0.521	O I	2.75
3.167	3.10	0.48	0.539	O I	2.76
3.250	3.10	0.52	0.557	O I	2.78
3.333	3.10	0.55	0.574	O I	2.79
3.417	3.10	0.59	0.592	O I	2.80
3.500	3.10	0.62	0.609	O I	2.81
3.583	3.10	0.66	0.626	O I	2.82
3.667	3.10	0.69	0.643	O I	2.84
3.750	3.10	0.72	0.659	O I	2.85
3.833	3.25	0.76	0.676	|O I	2.86
3.917	3.60	0.80	0.694	|O I	2.87
4.000	3.68	0.83	0.714	|O I	2.89
4.083	3.71	0.87	0.733	|O I	2.90
4.167	3.71	0.91	0.752	|O I	2.91
4.250	3.72	0.95	0.772	|O I	2.93
4.333	3.87	0.99	0.791	|O I	2.94
4.417	4.22	1.03	0.812	|O I	2.95
4.500	4.30	1.08	0.834	|O I	2.97
4.583	4.33	1.12	0.856	|O I	2.98
4.667	4.33	1.17	0.878	|O I	3.00
4.750	4.34	1.19	0.900	|O I	3.01
4.833	4.49	1.20	0.922	|O I	3.03
4.917	4.84	1.22	0.946	|O I	3.05
5.000	4.92	1.24	0.971	|O I	3.06
5.083	4.64	1.26	0.995	|O I	3.08
5.167	3.95	1.28	1.016	|O I	3.09
5.250	3.78	1.29	1.034	|O I	3.11
5.333	3.89	1.31	1.051	|O I	3.12
5.417	4.22	1.32	1.070	|O I	3.13
5.500	4.30	1.34	1.090	|O I	3.14
5.583	4.48	1.35	1.111	|O I	3.16
5.667	4.83	1.37	1.134	|O I	3.17
5.750	4.92	1.39	1.158	|O I	3.19
5.833	4.95	1.41	1.182	|O I	3.21
5.917	4.95	1.43	1.207	|O I	3.22

6.000	4.96	1.45	1.231	|O I |	|	|	|	3.24
6.083	5.11	1.47	1.256	|O I |	|	|	|	3.26
6.167	5.45	1.49	1.282	| O I|	|	|	|	3.27
6.250	5.54	1.51	1.309	| O I|	|	|	|	3.29
6.333	5.57	1.53	1.337	| O I|	|	|	|	3.31
6.417	5.57	1.55	1.365	| O I|	|	|	|	3.33
6.500	5.58	1.58	1.392	| O I|	|	|	|	3.35
6.583	5.73	1.60	1.420	| O I|	|	|	|	3.37
6.667	6.07	1.62	1.450	| O I |	|	|	|	3.39
6.750	6.16	1.65	1.481	| O I |	|	|	|	3.41
6.833	6.19	1.67	1.512	| O I |	|	|	|	3.43
6.917	6.19	1.70	1.543	| O I |	|	|	|	3.45
7.000	6.19	1.72	1.574	| O I |	|	|	|	3.47
7.083	6.19	1.74	1.605	| O I |	|	|	|	3.49
7.167	6.19	1.76	1.635	| O I |	|	|	|	3.51
7.250	6.19	1.78	1.666	| O I |	|	|	|	3.53
7.333	6.35	1.80	1.696	| O I |	|	|	|	3.55
7.417	6.69	1.82	1.729	| O |I |	|	|	|	3.57
7.500	6.78	1.84	1.763	| O |I |	|	|	|	3.60
7.583	6.96	1.86	1.797	| O |I |	|	|	|	3.62
7.667	7.31	1.88	1.834	| O |I |	|	|	|	3.64
7.750	7.40	1.90	1.871	| O |I |	|	|	|	3.67
7.833	7.58	1.92	1.910	| O | I |	|	|	|	3.69
7.917	7.93	1.95	1.950	| O | I |	|	|	|	3.72
8.000	8.02	1.97	1.991	| O | I |	|	|	|	3.75
8.083	8.35	1.99	2.034	| O | I |	|	|	|	3.78
8.167	9.05	2.02	2.080	| O | I |	|	|	|	3.81
8.250	9.23	2.05	2.129	| O | I |	|	|	|	3.84
8.333	9.27	2.08	2.178	| O | I |	|	|	|	3.87
8.417	9.29	2.11	2.228	| O | I |	|	|	|	3.91
8.500	9.29	2.14	2.277	| O | I |	|	|	|	3.94
8.583	9.45	2.16	2.327	| O | I |	|	|	|	3.97
8.667	9.79	2.19	2.378	| O | I |	|	|	|	4.01
8.750	9.88	2.22	2.431	| O | I |	|	|	|	4.04
8.833	10.06	2.24	2.484	| O | I |	|	|	|	4.08
8.917	10.41	2.27	2.539	| O | I |	|	|	|	4.11
9.000	10.50	2.30	2.595	| O | I |	|	|	|	4.15
9.083	10.83	2.32	2.653	| O | I |	|	|	|	4.19
9.167	11.53	2.35	2.714	| O | I|	|	|	|	4.23
9.250	11.70	2.38	2.777	| O | I|	|	|	|	4.27
9.333	11.91	2.41	2.842	| O | I |	|	|	|	4.32
9.417	12.26	2.45	2.909	| O | I |	|	|	|	4.36
9.500	12.36	2.48	2.976	| O | I |	|	|	|	4.40
9.583	12.53	2.51	3.045	| O | I |	|	|	|	4.45
9.667	12.89	2.55	3.115	| O | |I |	|	|	|	4.50
9.750	12.98	2.58	3.186	| O | |I |	|	|	|	4.54
9.833	13.15	2.61	3.259	| O | |I |	|	|	|	4.59
9.917	13.50	2.64	3.332	| O | | I |	|	|	|	4.64
10.000	13.60	2.67	3.407	| O | | I |	|	|	|	4.69
10.083	12.54	2.70	3.479	| O | I |	|	|	|	4.74
10.167	10.13	2.73	3.538	| O | I |	|	|	|	4.78
10.250	9.52	2.75	3.587	| O | I |	|	|	|	4.82
10.333	9.35	2.77	3.633	| O | I |	|	|	|	4.85
10.417	9.31	2.79	3.678	| O | I |	|	|	|	4.88
10.500	9.29	2.81	3.723	| O | I |	|	|	|	4.91
10.583	10.07	2.83	3.770	| O | I |	|	|	|	4.94
10.667	11.79	2.85	3.826	| O | I|	|	|	|	4.98
10.750	12.23	2.88	3.889	| O | I |	|	|	|	5.02
10.833	12.34	2.90	3.954	| O | I |	|	|	|	5.07
10.917	12.38	2.93	4.019	| O | I |	|	|	|	5.11
11.000	12.39	2.95	4.084	| O | I |	|	|	|	5.16
11.083	12.23	2.98	4.148	| O | I |	|	|	|	5.20
11.167	11.89	3.00	4.211	| O | I |	|	|	|	5.25
11.250	11.80	3.03	4.271	| O | I|	|	|	|	5.29
11.333	11.78	3.05	4.332	| O | I|	|	|	|	5.33
11.417	11.77	3.08	4.392	| O | I|	|	|	|	5.37
11.500	11.77	3.10	4.451	| O | I|	|	|	|	5.41
11.583	11.46	3.12	4.510	| O | I|	|	|	|	5.46
11.667	10.77	3.14	4.565	| O | I |	|	|	|	5.49
11.750	10.60	3.16	4.617	| O | I |	|	|	|	5.53
11.833	10.70	3.19	4.668	| O | I |	|	|	|	5.57
11.917	11.03	3.21	4.721	| O | I |	|	|	|	5.61
12.000	11.12	3.23	4.775	| O | I |	|	|	|	5.65
12.083	12.22	3.25	4.833	| O | I |	|	|	|	5.69
12.167	14.64	3.28	4.903	| O | | I |	|	|	|	5.74



18.500	2.48	5.25	5.635	| I O|	|	|	|	6.31
18.583	2.32	5.17	5.615	| I O |	|	|	|	6.29
18.667	1.98	5.09	5.595	| I O |	|	|	|	6.28
18.750	1.89	5.01	5.573	| I O |	|	|	|	6.26
18.833	1.71	4.92	5.552	| I O |	|	|	|	6.24
18.917	1.36	4.83	5.529	|I O |	|	|	|	6.22
19.000	1.27	4.74	5.505	|I O |	|	|	|	6.20
19.083	1.40	4.65	5.482	|I O |	|	|	|	6.19
19.167	1.74	4.57	5.461	| I O |	|	|	|	6.17
19.250	1.83	4.50	5.442	| I O |	|	|	|	6.15
19.333	2.00	4.43	5.424	| I O |	|	|	|	6.14
19.417	2.35	4.37	5.409	| I O |	|	|	|	6.13
19.500	2.45	4.32	5.396	| I O |	|	|	|	6.12
19.583	2.31	4.26	5.382	| I O |	|	|	|	6.11
19.667	1.98	4.21	5.368	| I O |	|	|	|	6.09
19.750	1.89	4.15	5.353	| I O |	|	|	|	6.08
19.833	1.71	4.09	5.337	| I O |	|	|	|	6.07
19.917	1.36	4.02	5.319	|I O |	|	|	|	6.05
20.000	1.27	3.95	5.301	|I O |	|	|	|	6.04
20.083	1.40	3.88	5.283	|I O |	|	|	|	6.03
20.167	1.74	3.82	5.267	| I O |	|	|	|	6.01
20.250	1.83	3.76	5.254	| I O |	|	|	|	6.00
20.333	1.85	3.73	5.240	| I O |	|	|	|	5.99
20.417	1.86	3.71	5.228	| I O |	|	|	|	5.98
20.500	1.86	3.69	5.215	| I O |	|	|	|	5.97
20.583	1.86	3.67	5.202	| I O |	|	|	|	5.96
20.667	1.86	3.64	5.190	| I O |	|	|	|	5.96
20.750	1.86	3.62	5.178	| I O |	|	|	|	5.95
20.833	1.70	3.60	5.165	| I O |	|	|	|	5.94
20.917	1.36	3.57	5.151	|I O |	|	|	|	5.93
21.000	1.27	3.55	5.136	|I O |	|	|	|	5.91
21.083	1.40	3.52	5.120	|I O |	|	|	|	5.90
21.167	1.74	3.50	5.107	| I O |	|	|	|	5.89
21.250	1.83	3.48	5.095	| I O |	|	|	|	5.89
21.333	1.69	3.45	5.084	| I O |	|	|	|	5.88
21.417	1.36	3.43	5.070	|I O |	|	|	|	5.87
21.500	1.27	3.41	5.056	|I O |	|	|	|	5.86
21.583	1.40	3.38	5.042	|I O |	|	|	|	5.85
21.667	1.74	3.36	5.029	| I O |	|	|	|	5.84
21.750	1.83	3.34	5.019	| I O |	|	|	|	5.83
21.833	1.69	3.32	5.008	| I O |	|	|	|	5.82
21.917	1.36	3.31	4.995	|I O |	|	|	|	5.81
22.000	1.27	3.31	4.982	|I O |	|	|	|	5.80
22.083	1.40	3.30	4.968	|I O |	|	|	|	5.79
22.167	1.74	3.30	4.956	| I O |	|	|	|	5.78
22.250	1.83	3.29	4.946	| I O |	|	|	|	5.77
22.333	1.69	3.29	4.935	| I O |	|	|	|	5.77
22.417	1.36	3.29	4.923	|I O |	|	|	|	5.76
22.500	1.27	3.28	4.910	|I O |	|	|	|	5.75
22.583	1.25	3.27	4.896	|I O |	|	|	|	5.74
22.667	1.24	3.27	4.882	|I O |	|	|	|	5.73
22.750	1.24	3.26	4.868	|I O |	|	|	|	5.72
22.833	1.24	3.26	4.854	|I O |	|	|	|	5.71
22.917	1.24	3.25	4.840	|I O |	|	|	|	5.70
23.000	1.24	3.25	4.826	|I O |	|	|	|	5.69
23.083	1.24	3.24	4.812	|I O |	|	|	|	5.68
23.167	1.24	3.24	4.799	|I O |	|	|	|	5.67
23.250	1.24	3.23	4.785	|I O |	|	|	|	5.66
23.333	1.24	3.23	4.771	|I O |	|	|	|	5.65
23.417	1.24	3.22	4.757	|I O |	|	|	|	5.64
23.500	1.24	3.21	4.744	|I O |	|	|	|	5.63
23.583	1.24	3.21	4.730	|I O |	|	|	|	5.62
23.667	1.24	3.20	4.717	|I O |	|	|	|	5.61
23.750	1.24	3.20	4.703	|I O |	|	|	|	5.60
23.833	1.24	3.19	4.690	|I O |	|	|	|	5.59
23.917	1.24	3.19	4.676	|I O |	|	|	|	5.58
24.000	1.24	3.18	4.663	|I O |	|	|	|	5.57
24.083	0.93	3.18	4.648	|I O |	|	|	|	5.55
24.167	0.24	3.17	4.631	I O |	|	|	|	5.54
24.250	0.07	3.16	4.610	I O |	|	|	|	5.53
24.333	0.02	3.15	4.588	I O |	|	|	|	5.51
24.417	0.01	3.15	4.567	I O |	|	|	|	5.49
24.500	0.00	3.14	4.545	I O |	|	|	|	5.48
24.583	0.00	3.13	4.524	I O |	|	|	|	5.46
24.667	0.00	3.12	4.502	I O |	|	|	|	5.45

24.750	0.00	3.11	4.481	I	o	|	|	|	5.43
24.833	0.00	3.10	4.459	I	o	|	|	|	5.42
24.917	0.00	3.09	4.438	I	o	|	|	|	5.40
25.000	0.00	3.09	4.417	I	o	|	|	|	5.39
25.083	0.00	3.08	4.395	I	o	|	|	|	5.38
25.167	0.00	3.07	4.374	I	o	|	|	|	5.36
25.250	0.00	3.06	4.353	I	o	|	|	|	5.35
25.333	0.00	3.05	4.332	I	o	|	|	|	5.33
25.417	0.00	3.04	4.311	I	o	|	|	|	5.32
25.500	0.00	3.04	4.290	I	o	|	|	|	5.30
25.583	0.00	3.03	4.269	I	o	|	|	|	5.29
25.667	0.00	3.02	4.248	I	o	|	|	|	5.27
25.750	0.00	3.01	4.228	I	o	|	|	|	5.26
25.833	0.00	3.00	4.207	I	o	|	|	|	5.24
25.917	0.00	2.99	4.186	I	o	|	|	|	5.23
26.000	0.00	2.99	4.166	I	o	|	|	|	5.21
26.083	0.00	2.98	4.145	I	o	|	|	|	5.20
26.167	0.00	2.97	4.125	I	o	|	|	|	5.19
26.250	0.00	2.96	4.104	I	o	|	|	|	5.17
26.333	0.00	2.95	4.084	I	o	|	|	|	5.16
26.417	0.00	2.95	4.064	I	o	|	|	|	5.14
26.500	0.00	2.94	4.043	I	o	|	|	|	5.13
26.583	0.00	2.93	4.023	I	o	|	|	|	5.11
26.667	0.00	2.92	4.003	I	o	|	|	|	5.10
26.750	0.00	2.91	3.983	I	o	|	|	|	5.09
26.833	0.00	2.91	3.963	I	o	|	|	|	5.07
26.917	0.00	2.90	3.943	I	o	|	|	|	5.06
27.000	0.00	2.89	3.923	I	o	|	|	|	5.04
27.083	0.00	2.88	3.903	I	o	|	|	|	5.03
27.167	0.00	2.87	3.883	I	o	|	|	|	5.02
27.250	0.00	2.87	3.864	I	o	|	|	|	5.00
27.333	0.00	2.86	3.844	I	o	|	|	|	4.99
27.417	0.00	2.85	3.824	I	o	|	|	|	4.98
27.500	0.00	2.84	3.805	I	o	|	|	|	4.96
27.583	0.00	2.83	3.785	I	o	|	|	|	4.95
27.667	0.00	2.82	3.766	I	o	|	|	|	4.94
27.750	0.00	2.82	3.746	I	o	|	|	|	4.92
27.833	0.00	2.81	3.727	I	o	|	|	|	4.91
27.917	0.00	2.80	3.707	I	o	|	|	|	4.90
28.000	0.00	2.79	3.688	I	o	|	|	|	4.88
28.083	0.00	2.78	3.669	I	o	|	|	|	4.87
28.167	0.00	2.77	3.650	I	o	|	|	|	4.86
28.250	0.00	2.77	3.631	I	o	|	|	|	4.85
28.333	0.00	2.76	3.612	I	o	|	|	|	4.83
28.417	0.00	2.75	3.593	I	o	|	|	|	4.82
28.500	0.00	2.74	3.574	I	o	|	|	|	4.81
28.583	0.00	2.73	3.555	I	o	|	|	|	4.79
28.667	0.00	2.73	3.536	I	o	|	|	|	4.78
28.750	0.00	2.72	3.517	I	o	|	|	|	4.77
28.833	0.00	2.71	3.499	I	o	|	|	|	4.76
28.917	0.00	2.70	3.480	I	o	|	|	|	4.74
29.000	0.00	2.69	3.462	I	o	|	|	|	4.73
29.083	0.00	2.69	3.443	I	o	|	|	|	4.72
29.167	0.00	2.68	3.425	I	o	|	|	|	4.71
29.250	0.00	2.67	3.406	I	o	|	|	|	4.69
29.333	0.00	2.66	3.388	I	o	|	|	|	4.68
29.417	0.00	2.65	3.369	I	o	|	|	|	4.67
29.500	0.00	2.65	3.351	I	o	|	|	|	4.66
29.583	0.00	2.64	3.333	I	o	|	|	|	4.64
29.667	0.00	2.63	3.315	I	o	|	|	|	4.63
29.750	0.00	2.62	3.297	I	o	|	|	|	4.62
29.833	0.00	2.62	3.279	I	o	|	|	|	4.61
29.917	0.00	2.61	3.261	I	o	|	|	|	4.60
30.000	0.00	2.60	3.243	I	o	|	|	|	4.58
30.083	0.00	2.59	3.225	I	o	|	|	|	4.57
30.167	0.00	2.59	3.207	I	o	|	|	|	4.56
30.250	0.00	2.58	3.189	I	o	|	|	|	4.55
30.333	0.00	2.57	3.172	I	o	|	|	|	4.53
30.417	0.00	2.56	3.154	I	o	|	|	|	4.52
30.500	0.00	2.55	3.136	I	o	|	|	|	4.51
30.583	0.00	2.55	3.119	I	o	|	|	|	4.50
30.667	0.00	2.54	3.101	I	o	|	|	|	4.49
30.750	0.00	2.53	3.084	I	o	|	|	|	4.48
30.833	0.00	2.52	3.066	I	o	|	|	|	4.46
30.917	0.00	2.51	3.049	I	o	|	|	|	4.45

31.000	0.00	2.51	3.032	I	o	|	|	|	4.44
31.083	0.00	2.50	3.015	I	o	|	|	|	4.43
31.167	0.00	2.49	2.997	I	o	|	|	|	4.42
31.250	0.00	2.48	2.980	I	o	|	|	|	4.41
31.333	0.00	2.47	2.963	I	o	|	|	|	4.40
31.417	0.00	2.46	2.946	I	o	|	|	|	4.38
31.500	0.00	2.46	2.929	I	o	|	|	|	4.37
31.583	0.00	2.45	2.912	I	o	|	|	|	4.36
31.667	0.00	2.44	2.895	I	o	|	|	|	4.35
31.750	0.00	2.43	2.879	I	o	|	|	|	4.34
31.833	0.00	2.42	2.862	I	o	|	|	|	4.33
31.917	0.00	2.42	2.845	I	o	|	|	|	4.32
32.000	0.00	2.41	2.829	I	o	|	|	|	4.31
32.083	0.00	2.40	2.812	I	o	|	|	|	4.30
32.167	0.00	2.39	2.796	I	o	|	|	|	4.28
32.250	0.00	2.38	2.779	I	o	|	|	|	4.27
32.333	0.00	2.38	2.763	I	o	|	|	|	4.26
32.417	0.00	2.37	2.746	I	o	|	|	|	4.25
32.500	0.00	2.36	2.730	I	o	|	|	|	4.24
32.583	0.00	2.35	2.714	I	o	|	|	|	4.23
32.667	0.00	2.35	2.698	I	o	|	|	|	4.22
32.750	0.00	2.34	2.682	I	o	|	|	|	4.21
32.833	0.00	2.33	2.666	I	o	|	|	|	4.20
32.917	0.00	2.32	2.649	I	o	|	|	|	4.19
33.000	0.00	2.32	2.634	I	o	|	|	|	4.18
33.083	0.00	2.31	2.618	I	o	|	|	|	4.17
33.167	0.00	2.30	2.602	I	o	|	|	|	4.16
33.250	0.00	2.29	2.586	I	o	|	|	|	4.14
33.333	0.00	2.28	2.570	I	o	|	|	|	4.13
33.417	0.00	2.28	2.554	I	o	|	|	|	4.12
33.500	0.00	2.27	2.539	I	o	|	|	|	4.11
33.583	0.00	2.26	2.523	I	o	|	|	|	4.10
33.667	0.00	2.25	2.508	I	o	|	|	|	4.09
33.750	0.00	2.25	2.492	I	o	|	|	|	4.08
33.833	0.00	2.24	2.477	I	o	|	|	|	4.07
33.917	0.00	2.23	2.461	I	o	|	|	|	4.06
34.000	0.00	2.23	2.446	I	o	|	|	|	4.05
34.083	0.00	2.22	2.431	I	o	|	|	|	4.04
34.167	0.00	2.21	2.415	I	o	|	|	|	4.03
34.250	0.00	2.20	2.400	I	o	|	|	|	4.02
34.333	0.00	2.20	2.385	I	o	|	|	|	4.01
34.417	0.00	2.19	2.370	I	o	|	|	|	4.00
34.500	0.00	2.18	2.355	I	o	|	|	|	3.99
34.583	0.00	2.17	2.340	I	o	|	|	|	3.98
34.667	0.00	2.16	2.325	I	o	|	|	|	3.97
34.750	0.00	2.15	2.310	I	o	|	|	|	3.96
34.833	0.00	2.15	2.295	I	o	|	|	|	3.95
34.917	0.00	2.14	2.281	I	o	|	|	|	3.94
35.000	0.00	2.13	2.266	I	o	|	|	|	3.93
35.083	0.00	2.12	2.251	I	o	|	|	|	3.92
35.167	0.00	2.11	2.237	I	o	|	|	|	3.91
35.250	0.00	2.10	2.222	I	o	|	|	|	3.90
35.333	0.00	2.10	2.208	I	o	|	|	|	3.89
35.417	0.00	2.09	2.193	I	o	|	|	|	3.88
35.500	0.00	2.08	2.179	I	o	|	|	|	3.87
35.583	0.00	2.07	2.165	I	o	|	|	|	3.86
35.667	0.00	2.06	2.150	I	o	|	|	|	3.86
35.750	0.00	2.05	2.136	I	o	|	|	|	3.85
35.833	0.00	2.05	2.122	I	o	|	|	|	3.84
35.917	0.00	2.04	2.108	I	o	|	|	|	3.83
36.000	0.00	2.03	2.094	I	o	|	|	|	3.82
36.083	0.00	2.02	2.080	I	o	|	|	|	3.81
36.167	0.00	2.01	2.066	I	o	|	|	|	3.80
36.250	0.00	2.01	2.052	I	o	|	|	|	3.79
36.333	0.00	2.00	2.039	I	o	|	|	|	3.78
36.417	0.00	1.99	2.025	I	o	|	|	|	3.77
36.500	0.00	1.98	2.011	I	o	|	|	|	3.76
36.583	0.00	1.97	1.998	I	o	|	|	|	3.75
36.667	0.00	1.97	1.984	I	o	|	|	|	3.74
36.750	0.00	1.96	1.970	I	o	|	|	|	3.74
36.833	0.00	1.95	1.957	I	o	|	|	|	3.73
36.917	0.00	1.94	1.944	I	o	|	|	|	3.72
37.000	0.00	1.94	1.930	I	o	|	|	|	3.71
37.083	0.00	1.93	1.917	I	o	|	|	|	3.70
37.167	0.00	1.92	1.904	I	o	|	|	|	3.69

37.250	0.00	1.91	1.890	I O	|	|	|	3.68
37.333	0.00	1.90	1.877	I O	|	|	|	3.67
37.417	0.00	1.90	1.864	I O	|	|	|	3.66
37.500	0.00	1.89	1.851	I O	|	|	|	3.66
37.583	0.00	1.88	1.838	I O	|	|	|	3.65
37.667	0.00	1.87	1.825	I O	|	|	|	3.64
37.750	0.00	1.87	1.812	I O	|	|	|	3.63
37.833	0.00	1.86	1.800	I O	|	|	|	3.62
37.917	0.00	1.85	1.787	I O	|	|	|	3.61
38.000	0.00	1.84	1.774	I O	|	|	|	3.60
38.083	0.00	1.84	1.761	I O	|	|	|	3.60
38.167	0.00	1.83	1.749	I O	|	|	|	3.59
38.250	0.00	1.82	1.736	I O	|	|	|	3.58
38.333	0.00	1.82	1.724	I O	|	|	|	3.57
38.417	0.00	1.81	1.711	I O	|	|	|	3.56
38.500	0.00	1.80	1.699	I O	|	|	|	3.55
38.583	0.00	1.79	1.686	I O	|	|	|	3.55
38.667	0.00	1.79	1.674	I O	|	|	|	3.54
38.750	0.00	1.78	1.662	I O	|	|	|	3.53
38.833	0.00	1.77	1.650	I O	|	|	|	3.52
38.917	0.00	1.77	1.637	I O	|	|	|	3.51
39.000	0.00	1.76	1.625	I O	|	|	|	3.51
39.083	0.00	1.75	1.613	I O	|	|	|	3.50
39.167	0.00	1.74	1.601	I O	|	|	|	3.49
39.250	0.00	1.73	1.589	I O	|	|	|	3.48
39.333	0.00	1.72	1.577	I O	|	|	|	3.47
39.417	0.00	1.71	1.565	I O	|	|	|	3.47
39.500	0.00	1.70	1.554	I O	|	|	|	3.46
39.583	0.00	1.69	1.542	I O	|	|	|	3.45
39.667	0.00	1.69	1.530	I O	|	|	|	3.44
39.750	0.00	1.68	1.519	I O	|	|	|	3.43
39.833	0.00	1.67	1.507	I O	|	|	|	3.43
39.917	0.00	1.66	1.496	I O	|	|	|	3.42
40.000	0.00	1.65	1.484	I O	|	|	|	3.41
40.083	0.00	1.64	1.473	I O	|	|	|	3.40
40.167	0.00	1.63	1.462	I O	|	|	|	3.39
40.250	0.00	1.62	1.451	I O	|	|	|	3.39
40.333	0.00	1.61	1.439	I O	|	|	|	3.38
40.417	0.00	1.60	1.428	I O	|	|	|	3.37
40.500	0.00	1.60	1.417	I O	|	|	|	3.36
40.583	0.00	1.59	1.406	I O	|	|	|	3.36
40.667	0.00	1.58	1.395	I O	|	|	|	3.35
40.750	0.00	1.57	1.385	I O	|	|	|	3.34
40.833	0.00	1.56	1.374	I O	|	|	|	3.34
40.917	0.00	1.55	1.363	I O	|	|	|	3.33
41.000	0.00	1.54	1.352	I O	|	|	|	3.32
41.083	0.00	1.54	1.342	I O	|	|	|	3.31
41.167	0.00	1.53	1.331	I O	|	|	|	3.31
41.250	0.00	1.52	1.321	I O	|	|	|	3.30
41.333	0.00	1.51	1.310	I O	|	|	|	3.29
41.417	0.00	1.50	1.300	I O	|	|	|	3.29
41.500	0.00	1.49	1.290	I O	|	|	|	3.28
41.583	0.00	1.49	1.279	I O	|	|	|	3.27
41.667	0.00	1.48	1.269	IO	|	|	|	3.26
41.750	0.00	1.47	1.259	IO	|	|	|	3.26
41.833	0.00	1.46	1.249	IO	|	|	|	3.25
41.917	0.00	1.45	1.239	IO	|	|	|	3.24
42.000	0.00	1.45	1.229	IO	|	|	|	3.24
42.083	0.00	1.44	1.219	IO	|	|	|	3.23
42.167	0.00	1.43	1.209	IO	|	|	|	3.22
42.250	0.00	1.42	1.199	IO	|	|	|	3.22
42.333	0.00	1.42	1.189	IO	|	|	|	3.21
42.417	0.00	1.41	1.180	IO	|	|	|	3.20
42.500	0.00	1.40	1.170	IO	|	|	|	3.20
42.583	0.00	1.39	1.160	IO	|	|	|	3.19
42.667	0.00	1.39	1.151	IO	|	|	|	3.18
42.750	0.00	1.38	1.141	IO	|	|	|	3.18
42.833	0.00	1.37	1.132	IO	|	|	|	3.17
42.917	0.00	1.36	1.123	IO	|	|	|	3.17
43.000	0.00	1.36	1.113	IO	|	|	|	3.16
43.083	0.00	1.35	1.104	IO	|	|	|	3.15
43.167	0.00	1.34	1.095	IO	|	|	|	3.15
43.250	0.00	1.33	1.085	IO	|	|	|	3.14
43.333	0.00	1.33	1.076	IO	|	|	|	3.13
43.417	0.00	1.32	1.067	IO	|	|	|	3.13

43.500	0.00	1.31	1.058	IO				3.12
43.583	0.00	1.30	1.049	IO				3.12
43.667	0.00	1.30	1.040	IO				3.11
43.750	0.00	1.29	1.031	IO				3.10
43.833	0.00	1.28	1.022	IO				3.10
43.917	0.00	1.28	1.013	IO				3.09
44.000	0.00	1.27	1.005	IO				3.09
44.083	0.00	1.26	0.996	IO				3.08
44.167	0.00	1.26	0.987	IO				3.07
44.250	0.00	1.25	0.979	IO				3.07
44.333	0.00	1.24	0.970	IO				3.06
44.417	0.00	1.24	0.962	IO				3.06
44.500	0.00	1.23	0.953	IO				3.05
44.583	0.00	1.22	0.945	IO				3.05
44.667	0.00	1.22	0.936	IO				3.04
44.750	0.00	1.21	0.928	IO				3.03
44.833	0.00	1.20	0.920	IO				3.03
44.917	0.00	1.20	0.911	IO				3.02
45.000	0.00	1.19	0.903	IO				3.02
45.083	0.00	1.18	0.895	IO				3.01
45.167	0.00	1.18	0.887	IO				3.01
45.250	0.00	1.17	0.879	IO				3.00
45.333	0.00	1.15	0.871	IO				3.00
45.417	0.00	1.14	0.863	IO				2.99
45.500	0.00	1.12	0.855	IO				2.98
45.583	0.00	1.11	0.847	IO				2.98
45.667	0.00	1.09	0.840	IO				2.97
45.750	0.00	1.08	0.832	IO				2.97
45.833	0.00	1.06	0.825	IO				2.96
45.917	0.00	1.05	0.818	IO				2.96
46.000	0.00	1.03	0.811	IO				2.95
46.083	0.00	1.02	0.804	IO				2.95
46.167	0.00	1.00	0.797	IO				2.94
46.250	0.00	0.99	0.790	IO				2.94
46.333	0.00	0.98	0.783	IO				2.93
46.417	0.00	0.96	0.776	IO				2.93
46.500	0.00	0.95	0.770	IO				2.92
46.583	0.00	0.94	0.763	IO				2.92
46.667	0.00	0.92	0.757	IO				2.92
46.750	0.00	0.91	0.751	IO				2.91
46.833	0.00	0.90	0.744	IO				2.91
46.917	0.00	0.88	0.738	IO				2.90
47.000	0.00	0.87	0.732	IO				2.90
47.083	0.00	0.86	0.726	IO				2.89
47.167	0.00	0.85	0.720	IO				2.89
47.250	0.00	0.84	0.714	IO				2.89
47.333	0.00	0.83	0.709	IO				2.88
47.417	0.00	0.81	0.703	IO				2.88
47.500	0.00	0.80	0.698	IO				2.87
47.583	0.00	0.79	0.692	IO				2.87
47.667	0.00	0.78	0.687	IO				2.87
47.750	0.00	0.77	0.681	IO				2.86
47.833	0.00	0.76	0.676	IO				2.86
47.917	0.00	0.75	0.671	IO				2.86
48.000	0.00	0.74	0.666	O				2.85
48.083	0.00	0.73	0.661	O				2.85
48.167	0.00	0.72	0.656	O				2.85
48.250	0.00	0.71	0.651	O				2.84
48.333	0.00	0.70	0.646	O				2.84
48.417	0.00	0.69	0.641	O				2.84
48.500	0.00	0.68	0.636	O				2.83
48.583	0.00	0.67	0.632	O				2.83
48.667	0.00	0.66	0.627	O				2.83
48.750	0.00	0.65	0.623	O				2.82
48.833	0.00	0.64	0.618	O				2.82
48.917	0.00	0.63	0.614	O				2.82
49.000	0.00	0.62	0.610	O				2.81
49.083	0.00	0.62	0.605	O				2.81
49.167	0.00	0.61	0.601	O				2.81
49.250	0.00	0.60	0.597	O				2.80
49.333	0.00	0.59	0.593	O				2.80
49.417	0.00	0.58	0.589	O				2.80
49.500	0.00	0.57	0.585	O				2.80
49.583	0.00	0.57	0.581	O				2.79
49.667	0.00	0.56	0.577	O				2.79

49.750	0.00	0.55	0.573	o	|	|	|	2.79
49.833	0.00	0.54	0.569	o	|	|	|	2.79
49.917	0.00	0.53	0.566	o	|	|	|	2.78
50.000	0.00	0.53	0.562	o	|	|	|	2.78
50.083	0.00	0.52	0.559	o	|	|	|	2.78
50.167	0.00	0.51	0.555	o	|	|	|	2.78
50.250	0.00	0.51	0.551	o	|	|	|	2.77
50.333	0.00	0.50	0.548	o	|	|	|	2.77
50.417	0.00	0.49	0.545	o	|	|	|	2.77
50.500	0.00	0.48	0.541	o	|	|	|	2.77
50.583	0.00	0.48	0.538	o	|	|	|	2.76
50.667	0.00	0.47	0.535	o	|	|	|	2.76
50.750	0.00	0.46	0.531	o	|	|	|	2.76
50.833	0.00	0.46	0.528	o	|	|	|	2.76
50.917	0.00	0.45	0.525	o	|	|	|	2.75
51.000	0.00	0.45	0.522	o	|	|	|	2.75
51.083	0.00	0.44	0.519	o	|	|	|	2.75
51.167	0.00	0.43	0.516	o	|	|	|	2.75
51.250	0.00	0.43	0.513	o	|	|	|	2.75
51.333	0.00	0.42	0.510	o	|	|	|	2.74
51.417	0.00	0.42	0.507	o	|	|	|	2.74
51.500	0.00	0.41	0.504	o	|	|	|	2.74
51.583	0.00	0.40	0.502	o	|	|	|	2.74
51.667	0.00	0.40	0.499	o	|	|	|	2.74
51.750	0.00	0.39	0.496	o	|	|	|	2.73
51.833	0.00	0.39	0.493	o	|	|	|	2.73
51.917	0.00	0.38	0.491	o	|	|	|	2.73
52.000	0.00	0.38	0.488	o	|	|	|	2.73
52.083	0.00	0.37	0.486	o	|	|	|	2.73
52.167	0.00	0.37	0.483	o	|	|	|	2.73
52.250	0.00	0.36	0.480	o	|	|	|	2.72
52.333	0.00	0.36	0.478	o	|	|	|	2.72
52.417	0.00	0.35	0.476	o	|	|	|	2.72
52.500	0.00	0.35	0.473	o	|	|	|	2.72
52.583	0.00	0.34	0.471	o	|	|	|	2.72
52.667	0.00	0.34	0.468	o	|	|	|	2.72
52.750	0.00	0.33	0.466	o	|	|	|	2.71
52.833	0.00	0.33	0.464	o	|	|	|	2.71
52.917	0.00	0.32	0.462	o	|	|	|	2.71
53.000	0.00	0.32	0.459	o	|	|	|	2.71
53.083	0.00	0.31	0.457	o	|	|	|	2.71
53.167	0.00	0.31	0.455	o	|	|	|	2.71
53.250	0.00	0.31	0.453	o	|	|	|	2.70
53.333	0.00	0.30	0.451	o	|	|	|	2.70
53.417	0.00	0.30	0.449	o	|	|	|	2.70
53.500	0.00	0.29	0.447	o	|	|	|	2.70
53.583	0.00	0.29	0.445	o	|	|	|	2.70
53.667	0.00	0.28	0.443	o	|	|	|	2.70
53.750	0.00	0.28	0.441	o	|	|	|	2.70
53.833	0.00	0.28	0.439	o	|	|	|	2.69
53.917	0.00	0.27	0.437	o	|	|	|	2.69
54.000	0.00	0.27	0.435	o	|	|	|	2.69
54.083	0.00	0.27	0.433	o	|	|	|	2.69
54.167	0.00	0.26	0.431	o	|	|	|	2.69
54.250	0.00	0.26	0.430	o	|	|	|	2.69
54.333	0.00	0.25	0.428	o	|	|	|	2.69
54.417	0.00	0.25	0.426	o	|	|	|	2.69
54.500	0.00	0.25	0.424	o	|	|	|	2.68
54.583	0.00	0.24	0.423	o	|	|	|	2.68
54.667	0.00	0.24	0.421	o	|	|	|	2.68
54.750	0.00	0.24	0.419	o	|	|	|	2.68
54.833	0.00	0.23	0.418	o	|	|	|	2.68
54.917	0.00	0.23	0.416	o	|	|	|	2.68
55.000	0.00	0.23	0.415	o	|	|	|	2.68
55.083	0.00	0.22	0.413	o	|	|	|	2.68
55.167	0.00	0.22	0.412	o	|	|	|	2.68
55.250	0.00	0.22	0.410	o	|	|	|	2.67
55.333	0.00	0.22	0.409	o	|	|	|	2.67
55.417	0.00	0.21	0.407	o	|	|	|	2.67
55.500	0.00	0.21	0.406	o	|	|	|	2.67
55.583	0.00	0.21	0.404	o	|	|	|	2.67
55.667	0.00	0.20	0.403	o	|	|	|	2.67
55.750	0.00	0.20	0.401	o	|	|	|	2.67
55.833	0.00	0.20	0.400	o	|	|	|	2.67
55.917	0.00	0.20	0.399	o	|	|	|	2.67

56.000	0.00	0.19	0.397	o				2.67
56.083	0.00	0.19	0.396	o				2.66
56.167	0.00	0.19	0.395	o				2.66
56.250	0.00	0.18	0.393	o				2.66
56.333	0.00	0.18	0.392	o				2.66
56.417	0.00	0.18	0.391	o				2.66
56.500	0.00	0.18	0.390	o				2.66
56.583	0.00	0.17	0.388	o				2.66
56.667	0.00	0.17	0.387	o				2.66
56.750	0.00	0.17	0.386	o				2.66
56.833	0.00	0.17	0.385	o				2.66
56.917	0.00	0.17	0.384	o				2.66
57.000	0.00	0.16	0.383	o				2.66
57.083	0.00	0.16	0.382	o				2.65
57.167	0.00	0.16	0.380	o				2.65
57.250	0.00	0.16	0.379	o				2.65
57.333	0.00	0.15	0.378	o				2.65
57.417	0.00	0.15	0.377	o				2.65
57.500	0.00	0.15	0.376	o				2.65
57.583	0.00	0.15	0.375	o				2.65
57.667	0.00	0.15	0.374	o				2.65
57.750	0.00	0.14	0.373	o				2.65
57.833	0.00	0.14	0.372	o				2.65
57.917	0.00	0.14	0.371	o				2.65
58.000	0.00	0.14	0.370	o				2.65
58.083	0.00	0.14	0.369	o				2.65
58.167	0.00	0.13	0.368	o				2.65
58.250	0.00	0.13	0.367	o				2.64
58.333	0.00	0.13	0.367	o				2.64
58.417	0.00	0.13	0.366	o				2.64
58.500	0.00	0.13	0.365	o				2.64
58.583	0.00	0.12	0.364	o				2.64
58.667	0.00	0.12	0.363	o				2.64
58.750	0.00	0.12	0.362	o				2.64
58.833	0.00	0.12	0.361	o				2.64
58.917	0.00	0.12	0.361	o				2.64
59.000	0.00	0.12	0.360	o				2.64
59.083	0.00	0.11	0.359	o				2.64
59.167	0.00	0.11	0.358	o				2.64
59.250	0.00	0.11	0.357	o				2.64
59.333	0.00	0.11	0.357	o				2.64
59.417	0.00	0.11	0.356	o				2.64
59.500	0.00	0.11	0.355	o				2.64
59.583	0.00	0.11	0.354	o				2.64
59.667	0.00	0.10	0.354	o				2.64
59.750	0.00	0.10	0.353	o				2.63
59.833	0.00	0.10	0.352	o				2.63
59.917	0.00	0.10	0.352	o				2.63
60.000	0.00	0.10	0.351	o				2.63
60.083	0.00	0.10	0.350	o				2.63
60.167	0.00	0.10	0.350	o				2.63
60.250	0.00	0.09	0.349	o				2.63
60.333	0.00	0.09	0.348	o				2.63
60.417	0.00	0.09	0.348	o				2.63
60.500	0.00	0.09	0.347	o				2.63
60.583	0.00	0.09	0.346	o				2.63
60.667	0.00	0.09	0.346	o				2.63
60.750	0.00	0.09	0.345	o				2.63
60.833	0.00	0.09	0.345	o				2.63
60.917	0.00	0.08	0.344	o				2.63
61.000	0.00	0.08	0.343	o				2.63
61.083	0.00	0.08	0.343	o				2.63
61.167	0.00	0.08	0.342	o				2.63
61.250	0.00	0.08	0.342	o				2.63
61.333	0.00	0.08	0.341	o				2.63
61.417	0.00	0.08	0.341	o				2.63
61.500	0.00	0.08	0.340	o				2.63
61.583	0.00	0.08	0.340	o				2.63
61.667	0.00	0.07	0.339	o				2.63
61.750	0.00	0.07	0.339	o				2.62
61.833	0.00	0.07	0.338	o				2.62
61.917	0.00	0.07	0.338	o				2.62
62.000	0.00	0.07	0.337	o				2.62
62.083	0.00	0.07	0.337	o				2.62
62.167	0.00	0.07	0.336	o				2.62

62.250	0.00	0.07	0.336	o	|	|	|	|	2.62
62.333	0.00	0.07	0.335	o	|	|	|	|	2.62
62.417	0.00	0.07	0.335	o	|	|	|	|	2.62
62.500	0.00	0.06	0.334	o	|	|	|	|	2.62
62.583	0.00	0.06	0.334	o	|	|	|	|	2.62
62.667	0.00	0.06	0.333	o	|	|	|	|	2.62
62.750	0.00	0.06	0.333	o	|	|	|	|	2.62
62.833	0.00	0.06	0.333	o	|	|	|	|	2.62
62.917	0.00	0.06	0.332	o	|	|	|	|	2.62
63.000	0.00	0.06	0.332	o	|	|	|	|	2.62
63.083	0.00	0.06	0.331	o	|	|	|	|	2.62
63.167	0.00	0.06	0.331	o	|	|	|	|	2.62
63.250	0.00	0.06	0.331	o	|	|	|	|	2.62
63.333	0.00	0.06	0.330	o	|	|	|	|	2.62
63.417	0.00	0.06	0.330	o	|	|	|	|	2.62
63.500	0.00	0.05	0.329	o	|	|	|	|	2.62
63.583	0.00	0.05	0.329	o	|	|	|	|	2.62
63.667	0.00	0.05	0.329	o	|	|	|	|	2.62
63.750	0.00	0.05	0.328	o	|	|	|	|	2.62
63.833	0.00	0.05	0.328	o	|	|	|	|	2.62
63.917	0.00	0.05	0.328	o	|	|	|	|	2.62
64.000	0.00	0.05	0.327	o	|	|	|	|	2.62
64.083	0.00	0.05	0.327	o	|	|	|	|	2.62
64.167	0.00	0.05	0.327	o	|	|	|	|	2.62
64.250	0.00	0.05	0.326	o	|	|	|	|	2.62
64.333	0.00	0.05	0.326	o	|	|	|	|	2.62
64.417	0.00	0.05	0.326	o	|	|	|	|	2.62
64.500	0.00	0.05	0.325	o	|	|	|	|	2.62
64.583	0.00	0.05	0.325	o	|	|	|	|	2.62
64.667	0.00	0.04	0.325	o	|	|	|	|	2.62
64.750	0.00	0.04	0.324	o	|	|	|	|	2.61
64.833	0.00	0.04	0.324	o	|	|	|	|	2.61
64.917	0.00	0.04	0.324	o	|	|	|	|	2.61
65.000	0.00	0.04	0.323	o	|	|	|	|	2.61
65.083	0.00	0.04	0.323	o	|	|	|	|	2.61
65.167	0.00	0.04	0.323	o	|	|	|	|	2.61
65.250	0.00	0.04	0.323	o	|	|	|	|	2.61
65.333	0.00	0.04	0.322	o	|	|	|	|	2.61
65.417	0.00	0.04	0.322	o	|	|	|	|	2.61
65.500	0.00	0.04	0.322	o	|	|	|	|	2.61
65.583	0.00	0.04	0.321	o	|	|	|	|	2.61
65.667	0.00	0.04	0.321	o	|	|	|	|	2.61
65.750	0.00	0.04	0.321	o	|	|	|	|	2.61
65.833	0.00	0.04	0.321	o	|	|	|	|	2.61
65.917	0.00	0.04	0.320	o	|	|	|	|	2.61
66.000	0.00	0.04	0.320	o	|	|	|	|	2.61
66.083	0.00	0.04	0.320	o	|	|	|	|	2.61
66.167	0.00	0.03	0.320	o	|	|	|	|	2.61
66.250	0.00	0.03	0.319	o	|	|	|	|	2.61
66.333	0.00	0.03	0.319	o	|	|	|	|	2.61
66.417	0.00	0.03	0.319	o	|	|	|	|	2.61
66.500	0.00	0.03	0.319	o	|	|	|	|	2.61
66.583	0.00	0.03	0.319	o	|	|	|	|	2.61
66.667	0.00	0.03	0.318	o	|	|	|	|	2.61
66.750	0.00	0.03	0.318	o	|	|	|	|	2.61
66.833	0.00	0.03	0.318	o	|	|	|	|	2.61
66.917	0.00	0.03	0.318	o	|	|	|	|	2.61
67.000	0.00	0.03	0.317	o	|	|	|	|	2.61
67.083	0.00	0.03	0.317	o	|	|	|	|	2.61
67.167	0.00	0.03	0.317	o	|	|	|	|	2.61
67.250	0.00	0.03	0.317	o	|	|	|	|	2.61
67.333	0.00	0.03	0.317	o	|	|	|	|	2.61
67.417	0.00	0.03	0.316	o	|	|	|	|	2.61
67.500	0.00	0.03	0.316	o	|	|	|	|	2.61
67.583	0.00	0.03	0.316	o	|	|	|	|	2.61
67.667	0.00	0.03	0.316	o	|	|	|	|	2.61
67.750	0.00	0.03	0.316	o	|	|	|	|	2.61
67.833	0.00	0.03	0.316	o	|	|	|	|	2.61
67.917	0.00	0.03	0.315	o	|	|	|	|	2.61
68.000	0.00	0.03	0.315	o	|	|	|	|	2.61
68.083	0.00	0.03	0.315	o	|	|	|	|	2.61
68.167	0.00	0.02	0.315	o	|	|	|	|	2.61
68.250	0.00	0.02	0.315	o	|	|	|	|	2.61
68.333	0.00	0.02	0.314	o	|	|	|	|	2.61
68.417	0.00	0.02	0.314	o	|	|	|	|	2.61

68.500	0.00	0.02	0.314	o	|	|	|	|	2.61
68.583	0.00	0.02	0.314	o	|	|	|	|	2.61
68.667	0.00	0.02	0.314	o	|	|	|	|	2.61
68.750	0.00	0.02	0.314	o	|	|	|	|	2.61
68.833	0.00	0.02	0.314	o	|	|	|	|	2.61
68.917	0.00	0.02	0.313	o	|	|	|	|	2.61
69.000	0.00	0.02	0.313	o	|	|	|	|	2.61
69.083	0.00	0.02	0.313	o	|	|	|	|	2.61
69.167	0.00	0.02	0.313	o	|	|	|	|	2.61
69.250	0.00	0.02	0.313	o	|	|	|	|	2.61
69.333	0.00	0.02	0.313	o	|	|	|	|	2.61
69.417	0.00	0.02	0.312	o	|	|	|	|	2.61
69.500	0.00	0.02	0.312	o	|	|	|	|	2.61
69.583	0.00	0.02	0.312	o	|	|	|	|	2.61
69.667	0.00	0.02	0.312	o	|	|	|	|	2.61
69.750	0.00	0.02	0.312	o	|	|	|	|	2.61
69.833	0.00	0.02	0.312	o	|	|	|	|	2.61
69.917	0.00	0.02	0.312	o	|	|	|	|	2.61
70.000	0.00	0.02	0.312	o	|	|	|	|	2.61
70.083	0.00	0.02	0.311	o	|	|	|	|	2.61
70.167	0.00	0.02	0.311	o	|	|	|	|	2.61
70.250	0.00	0.02	0.311	o	|	|	|	|	2.61
70.333	0.00	0.02	0.311	o	|	|	|	|	2.61
70.417	0.00	0.02	0.311	o	|	|	|	|	2.61
70.500	0.00	0.02	0.311	o	|	|	|	|	2.61
70.583	0.00	0.02	0.311	o	|	|	|	|	2.61
70.667	0.00	0.02	0.311	o	|	|	|	|	2.61
70.750	0.00	0.02	0.310	o	|	|	|	|	2.61
70.833	0.00	0.02	0.310	o	|	|	|	|	2.61
70.917	0.00	0.02	0.310	o	|	|	|	|	2.61
71.000	0.00	0.02	0.310	o	|	|	|	|	2.60
71.083	0.00	0.02	0.310	o	|	|	|	|	2.60
71.167	0.00	0.02	0.310	o	|	|	|	|	2.60
71.250	0.00	0.01	0.310	o	|	|	|	|	2.60
71.333	0.00	0.01	0.310	o	|	|	|	|	2.60
71.417	0.00	0.01	0.310	o	|	|	|	|	2.60
71.500	0.00	0.01	0.310	o	|	|	|	|	2.60
71.583	0.00	0.01	0.309	o	|	|	|	|	2.60
71.667	0.00	0.01	0.309	o	|	|	|	|	2.60
71.750	0.00	0.01	0.309	o	|	|	|	|	2.60
71.833	0.00	0.01	0.309	o	|	|	|	|	2.60
71.917	0.00	0.01	0.309	o	|	|	|	|	2.60
72.000	0.00	0.01	0.309	o	|	|	|	|	2.60
72.083	0.00	0.01	0.309	o	|	|	|	|	2.60
72.167	0.00	0.01	0.309	o	|	|	|	|	2.60
72.250	0.00	0.01	0.309	o	|	|	|	|	2.60
72.333	0.00	0.01	0.309	o	|	|	|	|	2.60
72.417	0.00	0.01	0.309	o	|	|	|	|	2.60
72.500	0.00	0.01	0.308	o	|	|	|	|	2.60
72.583	0.00	0.01	0.308	o	|	|	|	|	2.60
72.667	0.00	0.01	0.308	o	|	|	|	|	2.60
72.750	0.00	0.01	0.308	o	|	|	|	|	2.60
72.833	0.00	0.01	0.308	o	|	|	|	|	2.60
72.917	0.00	0.01	0.308	o	|	|	|	|	2.60
73.000	0.00	0.01	0.308	o	|	|	|	|	2.60
73.083	0.00	0.01	0.308	o	|	|	|	|	2.60
73.167	0.00	0.01	0.308	o	|	|	|	|	2.60
73.250	0.00	0.01	0.308	o	|	|	|	|	2.60
73.333	0.00	0.01	0.308	o	|	|	|	|	2.60
73.417	0.00	0.01	0.308	o	|	|	|	|	2.60
73.500	0.00	0.01	0.308	o	|	|	|	|	2.60
73.583	0.00	0.01	0.307	o	|	|	|	|	2.60
73.667	0.00	0.01	0.307	o	|	|	|	|	2.60
73.750	0.00	0.01	0.307	o	|	|	|	|	2.60
73.833	0.00	0.01	0.307	o	|	|	|	|	2.60
73.917	0.00	0.01	0.307	o	|	|	|	|	2.60
74.000	0.00	0.01	0.307	o	|	|	|	|	2.60
74.083	0.00	0.01	0.307	o	|	|	|	|	2.60
74.167	0.00	0.01	0.307	o	|	|	|	|	2.60
74.250	0.00	0.01	0.307	o	|	|	|	|	2.60
74.333	0.00	0.01	0.307	o	|	|	|	|	2.60
74.417	0.00	0.01	0.307	o	|	|	|	|	2.60
74.500	0.00	0.01	0.307	o	|	|	|	|	2.60
74.583	0.00	0.01	0.307	o	|	|	|	|	2.60
74.667	0.00	0.01	0.307	o	|	|	|	|	2.60

74.750	0.00	0.01	0.307	o	|	|	|	|	2.60
74.833	0.00	0.01	0.307	o	|	|	|	|	2.60
74.917	0.00	0.01	0.306	o	|	|	|	|	2.60
75.000	0.00	0.01	0.306	o	|	|	|	|	2.60
75.083	0.00	0.01	0.306	o	|	|	|	|	2.60
75.167	0.00	0.01	0.306	o	|	|	|	|	2.60
75.250	0.00	0.01	0.306	o	|	|	|	|	2.60
75.333	0.00	0.01	0.306	o	|	|	|	|	2.60
75.417	0.00	0.01	0.306	o	|	|	|	|	2.60
75.500	0.00	0.01	0.306	o	|	|	|	|	2.60
75.583	0.00	0.01	0.306	o	|	|	|	|	2.60
75.667	0.00	0.01	0.306	o	|	|	|	|	2.60
75.750	0.00	0.01	0.306	o	|	|	|	|	2.60
75.833	0.00	0.01	0.306	o	|	|	|	|	2.60
75.917	0.00	0.01	0.306	o	|	|	|	|	2.60
76.000	0.00	0.01	0.306	o	|	|	|	|	2.60
76.083	0.00	0.01	0.306	o	|	|	|	|	2.60
76.167	0.00	0.01	0.306	o	|	|	|	|	2.60
76.250	0.00	0.01	0.306	o	|	|	|	|	2.60
76.333	0.00	0.01	0.306	o	|	|	|	|	2.60
76.417	0.00	0.01	0.306	o	|	|	|	|	2.60
76.500	0.00	0.01	0.306	o	|	|	|	|	2.60
76.583	0.00	0.01	0.306	o	|	|	|	|	2.60
76.667	0.00	0.01	0.305	o	|	|	|	|	2.60
76.750	0.00	0.01	0.305	o	|	|	|	|	2.60
76.833	0.00	0.01	0.305	o	|	|	|	|	2.60
76.917	0.00	0.01	0.305	o	|	|	|	|	2.60
77.000	0.00	0.01	0.305	o	|	|	|	|	2.60
77.083	0.00	0.01	0.305	o	|	|	|	|	2.60
77.167	0.00	0.01	0.305	o	|	|	|	|	2.60
77.250	0.00	0.01	0.305	o	|	|	|	|	2.60
77.333	0.00	0.01	0.305	o	|	|	|	|	2.60
77.417	0.00	0.01	0.305	o	|	|	|	|	2.60
77.500	0.00	0.01	0.305	o	|	|	|	|	2.60
77.583	0.00	0.01	0.305	o	|	|	|	|	2.60
77.667	0.00	0.01	0.305	o	|	|	|	|	2.60
77.750	0.00	0.00	0.305	o	|	|	|	|	2.60
77.833	0.00	0.00	0.305	o	|	|	|	|	2.60
77.917	0.00	0.00	0.305	o	|	|	|	|	2.60
78.000	0.00	0.00	0.305	o	|	|	|	|	2.60
78.083	0.00	0.00	0.305	o	|	|	|	|	2.60
78.167	0.00	0.00	0.305	o	|	|	|	|	2.60
78.250	0.00	0.00	0.305	o	|	|	|	|	2.60
78.333	0.00	0.00	0.305	o	|	|	|	|	2.60
78.417	0.00	0.00	0.305	o	|	|	|	|	2.60
78.500	0.00	0.00	0.305	o	|	|	|	|	2.60
78.583	0.00	0.00	0.305	o	|	|	|	|	2.60
78.667	0.00	0.00	0.305	o	|	|	|	|	2.60
78.750	0.00	0.00	0.305	o	|	|	|	|	2.60
78.833	0.00	0.00	0.305	o	|	|	|	|	2.60
78.917	0.00	0.00	0.305	o	|	|	|	|	2.60
79.000	0.00	0.00	0.305	o	|	|	|	|	2.60
79.083	0.00	0.00	0.304	o	|	|	|	|	2.60
79.167	0.00	0.00	0.304	o	|	|	|	|	2.60
79.250	0.00	0.00	0.304	o	|	|	|	|	2.60
79.333	0.00	0.00	0.304	o	|	|	|	|	2.60
79.417	0.00	0.00	0.304	o	|	|	|	|	2.60
79.500	0.00	0.00	0.304	o	|	|	|	|	2.60
79.583	0.00	0.00	0.304	o	|	|	|	|	2.60
79.667	0.00	0.00	0.304	o	|	|	|	|	2.60
79.750	0.00	0.00	0.304	o	|	|	|	|	2.60
79.833	0.00	0.00	0.304	o	|	|	|	|	2.60
79.917	0.00	0.00	0.304	o	|	|	|	|	2.60
80.000	0.00	0.00	0.304	o	|	|	|	|	2.60
80.083	0.00	0.00	0.304	o	|	|	|	|	2.60
80.167	0.00	0.00	0.304	o	|	|	|	|	2.60
80.250	0.00	0.00	0.304	o	|	|	|	|	2.60
80.333	0.00	0.00	0.304	o	|	|	|	|	2.60
80.417	0.00	0.00	0.304	o	|	|	|	|	2.60
80.500	0.00	0.00	0.304	o	|	|	|	|	2.60
80.583	0.00	0.00	0.304	o	|	|	|	|	2.60
80.667	0.00	0.00	0.304	o	|	|	|	|	2.60
80.750	0.00	0.00	0.304	o	|	|	|	|	2.60
80.833	0.00	0.00	0.304	o	|	|	|	|	2.60
80.917	0.00	0.00	0.304	o	|	|	|	|	2.60

81.000	0.00	0.00	0.304	o					2.60
81.083	0.00	0.00	0.304	o					2.60
81.167	0.00	0.00	0.304	o					2.60
81.250	0.00	0.00	0.304	o					2.60
81.333	0.00	0.00	0.304	o					2.60
81.417	0.00	0.00	0.304	o					2.60
81.500	0.00	0.00	0.304	o					2.60
81.583	0.00	0.00	0.304	o					2.60
81.667	0.00	0.00	0.304	o					2.60
81.750	0.00	0.00	0.304	o					2.60
81.833	0.00	0.00	0.304	o					2.60
81.917	0.00	0.00	0.304	o					2.60
82.000	0.00	0.00	0.304	o					2.60
82.083	0.00	0.00	0.304	o					2.60
82.167	0.00	0.00	0.304	o					2.60
82.250	0.00	0.00	0.304	o					2.60
82.333	0.00	0.00	0.304	o					2.60
82.417	0.00	0.00	0.304	o					2.60
82.500	0.00	0.00	0.304	o					2.60
82.583	0.00	0.00	0.304	o					2.60
82.667	0.00	0.00	0.304	o					2.60
82.750	0.00	0.00	0.304	o					2.60
82.833	0.00	0.00	0.304	o					2.60
82.917	0.00	0.00	0.304	o					2.60
83.000	0.00	0.00	0.304	o					2.60
83.083	0.00	0.00	0.304	o					2.60
83.167	0.00	0.00	0.303	o					2.60
83.250	0.00	0.00	0.303	o					2.60
83.333	0.00	0.00	0.303	o					2.60
83.417	0.00	0.00	0.303	o					2.60
83.500	0.00	0.00	0.303	o					2.60
83.583	0.00	0.00	0.303	o					2.60
83.667	0.00	0.00	0.303	o					2.60
83.750	0.00	0.00	0.303	o					2.60
83.833	0.00	0.00	0.303	o					2.60
83.917	0.00	0.00	0.303	o					2.60
84.000	0.00	0.00	0.303	o					2.60
84.083	0.00	0.00	0.303	o					2.60
84.167	0.00	0.00	0.303	o					2.60
84.250	0.00	0.00	0.303	o					2.60
84.333	0.00	0.00	0.303	o					2.60
84.417	0.00	0.00	0.303	o					2.60
84.500	0.00	0.00	0.303	o					2.60
84.583	0.00	0.00	0.303	o					2.60
84.667	0.00	0.00	0.303	o					2.60
84.750	0.00	0.00	0.303	o					2.60
84.833	0.00	0.00	0.303	o					2.60
84.917	0.00	0.00	0.303	o					2.60
85.000	0.00	0.00	0.303	o					2.60
85.083	0.00	0.00	0.303	o					2.60
85.167	0.00	0.00	0.303	o					2.60
85.250	0.00	0.00	0.303	o					2.60
85.333	0.00	0.00	0.303	o					2.60
85.417	0.00	0.00	0.303	o					2.60
85.500	0.00	0.00	0.303	o					2.60
85.583	0.00	0.00	0.303	o					2.60
85.667	0.00	0.00	0.303	o					2.60
85.750	0.00	0.00	0.303	o					2.60
85.833	0.00	0.00	0.303	o					2.60
85.917	0.00	0.00	0.303	o					2.60
86.000	0.00	0.00	0.303	o					2.60
86.083	0.00	0.00	0.303	o					2.60
86.167	0.00	0.00	0.303	o					2.60
86.250	0.00	0.00	0.303	o					2.60
86.333	0.00	0.00	0.303	o					2.60
86.417	0.00	0.00	0.303	o					2.60
86.500	0.00	0.00	0.303	o					2.60
86.583	0.00	0.00	0.303	o					2.60
86.667	0.00	0.00	0.303	o					2.60
86.750	0.00	0.00	0.303	o					2.60
86.833	0.00	0.00	0.303	o					2.60
86.917	0.00	0.00	0.303	o					2.60
87.000	0.00	0.00	0.303	o					2.60
87.083	0.00	0.00	0.303	o					2.60
87.167	0.00	0.00	0.303	o					2.60

```
87.250    0.00    0.00      0.303  O       |       |       |       |     2.60
87.333    0.00    0.00      0.303  O       |       |       |       |     2.60
87.417    0.00    0.00      0.303  O       |       |       |       |     2.60

       Remaining water in basin =    0.30 (Ac.Ft)


       ****************************HYDROGRAPH DATA****************************
                     Number of intervals =  1049
                     Time interval =    5.0 (Min.)
                     Maximum/Peak flow rate =       16.430 (CFS)
                     Total volume =      12.715 (Ac.Ft)
              Status of hydrographs being held in storage
                         Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
              Peak (CFS)      0.000     0.000     0.000     0.000     0.000
              Vol (Ac.Ft)     0.000     0.000     0.000     0.000     0.000
       ***********************************************************************

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BASIN ROUTING
100-YEAR, 24-HOUR -HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

21-0044 BLDG 1
100-YR STORM EVENT ROUTING
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST100YR24100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 41.628 (CFS)
Total volume = 21.765 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

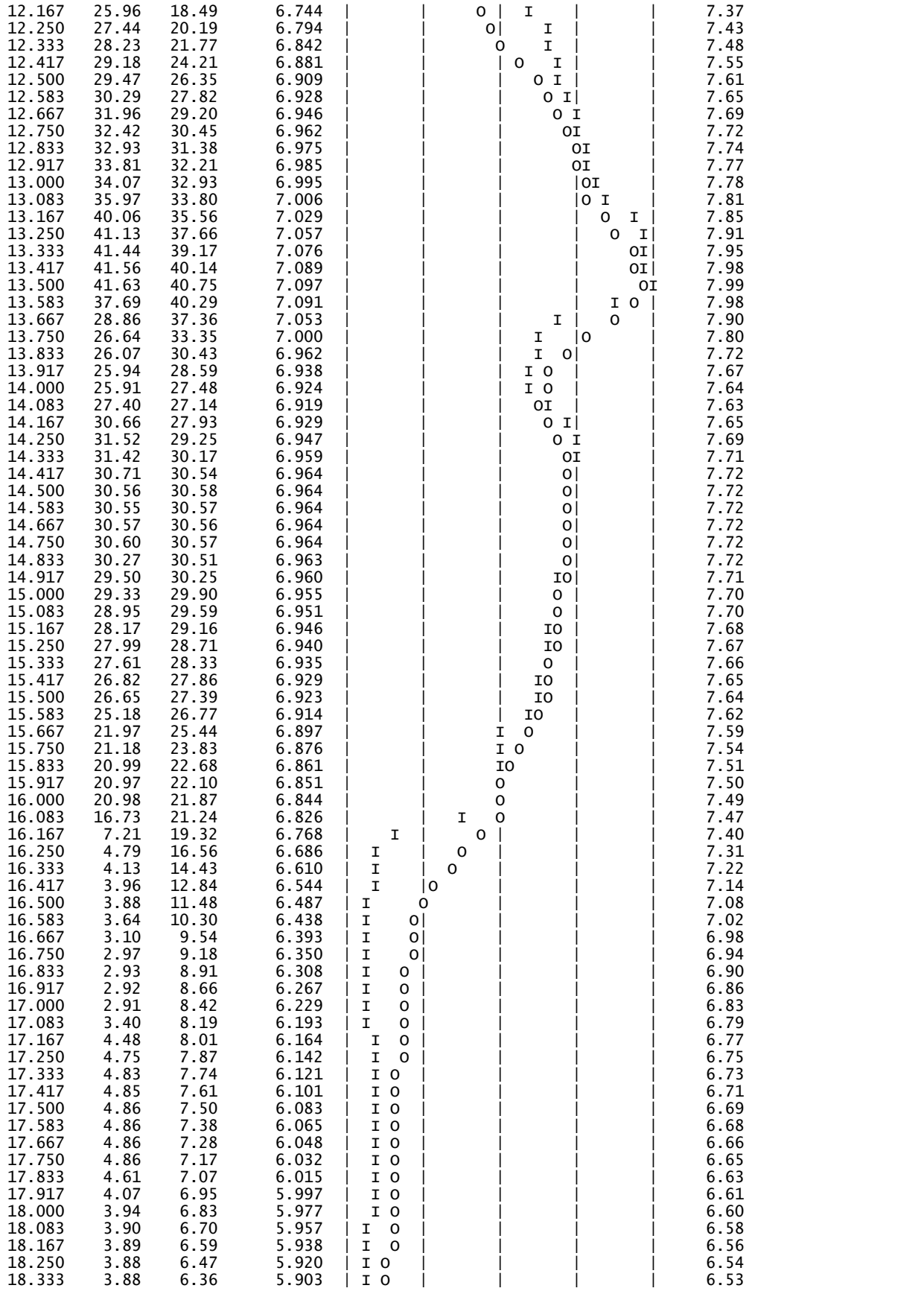
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
5.820	5.007	3.318	4.996	5.018
6.000	5.251	3.753	5.238	5.264
6.500	5.873	6.174	5.852	5.894
6.960	6.375	9.338	6.343	6.407
7.000	6.418	9.814	6.384	6.452
7.270	6.654	15.480	6.601	6.707
7.500	6.855	22.225	6.778	6.932
8.000	7.101	41.053	6.960	7.242

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 10.4 20.81 31.22 41.63	Depth (Ft.)
0.083	0.49	0.00	0.002	O | | | |	0.01
0.167	1.56	0.00	0.009	OI | | | |	0.07
0.250	1.84	0.00	0.020	OI | | | |	0.18
0.333	2.16	0.00	0.034	OI | | | |	0.29
0.417	2.72	0.00	0.051	O I | | | |	0.44
0.500	2.86	0.00	0.070	O I | | | |	0.60
0.583	2.90	0.00	0.090	O I | | | |	0.77
0.667	2.91	0.00	0.110	O I | | | |	0.94
0.750	2.91	0.00	0.130	O I | | | |	1.12
0.833	3.16	0.00	0.151	O I | | | |	1.30
0.917	3.70	0.00	0.175	O I | | | |	1.50
1.000	3.83	0.00	0.201	O I | | | |	1.72
1.083	3.63	0.00	0.226	O I | | | |	1.94
1.167	3.10	0.00	0.249	O I | | | |	2.14
1.250	2.97	0.00	0.270	O I | | | |	2.32
1.333	2.93	0.00	0.291	O I | | | |	2.49
1.417	2.92	0.02	0.311	O I | | | |	2.61
1.500	2.91	0.06	0.330	O I | | | |	2.62
1.583	2.91	0.10	0.350	O I | | | |	2.63
1.667	2.91	0.14	0.369	O I | | | |	2.65
1.750	2.91	0.17	0.388	O I | | | |	2.66
1.833	3.16	0.21	0.408	O I | | | |	2.67
1.917	3.70	0.26	0.430	O I | | | |	2.69
2.000	3.83	0.31	0.454	O I | | | |	2.70
2.083	3.87	0.36	0.478	O I | | | |	2.72
2.167	3.88	0.41	0.502	O I | | | |	2.74
2.250	3.88	0.45	0.526	O I | | | |	2.76
2.333	3.88	0.50	0.549	O I | | | |	2.77
2.417	3.88	0.55	0.572	O I | | | |	2.79
2.500	3.88	0.59	0.595	O I | | | |	2.80
2.583	4.13	0.64	0.619	O I | | | |	2.82
2.667	4.67	0.69	0.644	O I | | | |	2.84
2.750	4.80	0.75	0.672	O I | | | |	2.86
2.833	4.84	0.81	0.700	O I | | | |	2.88
2.917	4.85	0.86	0.727	O I | | | |	2.90
3.000	4.86	0.92	0.755	O I | | | |	2.91
3.083	4.86	0.97	0.782	O I | | | |	2.93
3.167	4.86	1.03	0.808	O I | | | |	2.95
3.250	4.86	1.08	0.834	O I | | | |	2.97
3.333	4.86	1.13	0.860	O I | | | |	2.99
3.417	4.86	1.18	0.886	O I | | | |	3.01
3.500	4.86	1.20	0.911	O I | | | |	3.02
3.583	4.86	1.22	0.936	O I | | | |	3.04
3.667	4.86	1.23	0.961	O I | | | |	3.06
3.750	4.86	1.25	0.986	O I | | | |	3.07
3.833	5.10	1.27	1.012	O I | | | |	3.09
3.917	5.64	1.30	1.040	O I | | | |	3.11
4.000	5.78	1.32	1.070	|O I | | | |	3.13
4.083	5.81	1.35	1.101	|O I | | | |	3.15
4.167	5.82	1.37	1.131	|O I | | | |	3.17
4.250	5.83	1.39	1.162	|O I | | | |	3.19
4.333	6.07	1.42	1.193	|O I | | | |	3.21
4.417	6.61	1.45	1.227	|O I | | | |	3.24
4.500	6.75	1.47	1.263	|O I | | | |	3.26
4.583	6.78	1.50	1.299	|O I | | | |	3.29
4.667	6.79	1.53	1.336	|O I | | | |	3.31
4.750	6.80	1.56	1.372	|O I | | | |	3.33
4.833	7.04	1.59	1.409	|O I | | | |	3.36
4.917	7.58	1.62	1.448	|O I | | | |	3.39
5.000	7.72	1.65	1.489	|O I | | | |	3.41
5.083	7.27	1.68	1.530	|O I | | | |	3.44
5.167	6.20	1.71	1.564	|O I | | | |	3.46
5.250	5.93	1.74	1.594	|O I | | | |	3.48
5.333	6.10	1.76	1.624	|O I | | | |	3.50
5.417	6.62	1.78	1.655	|O I | | | |	3.53
5.500	6.75	1.80	1.689	|O I | | | |	3.55
5.583	7.03	1.82	1.724	|O I | | | |	3.57
5.667	7.58	1.84	1.762	|O I | | | |	3.60
5.750	7.72	1.86	1.802	|O I | | | |	3.62
5.833	7.76	1.88	1.842	|O I | | | |	3.65

5.917	7.77	1.91	1.882	O I				3.68
6.000	7.77	1.93	1.923	O I				3.70
6.083	8.01	1.95	1.964	O I				3.73
6.167	8.55	1.98	2.007	O I				3.76
6.250	8.69	2.01	2.053	O I				3.79
6.333	8.73	2.03	2.099	O I				3.82
6.417	8.74	2.06	2.145	O I				3.85
6.500	8.74	2.09	2.191	O I				3.88
6.583	8.98	2.11	2.237	O I				3.91
6.667	9.52	2.14	2.286	O I				3.95
6.750	9.66	2.17	2.338	O I				3.98
6.833	9.70	2.20	2.389	O I				4.01
6.917	9.71	2.22	2.441	O I				4.05
7.000	9.71	2.25	2.492	O I				4.08
7.083	9.71	2.27	2.544	O I				4.12
7.167	9.71	2.30	2.595	O I				4.15
7.250	9.71	2.32	2.646	O I				4.18
7.333	9.96	2.35	2.697	O I				4.22
7.417	10.49	2.37	2.752	O I				4.26
7.500	10.63	2.40	2.808	O I				4.29
7.583	10.91	2.43	2.866	O I				4.33
7.667	11.46	2.46	2.926	O I				4.37
7.750	11.60	2.48	2.988	O I				4.41
7.833	11.88	2.52	3.052	O I				4.45
7.917	12.43	2.55	3.118	O I				4.50
8.000	12.57	2.58	3.187	O I				4.55
8.083	13.10	2.61	3.257	O I				4.59
8.167	14.19	2.64	3.333	O I				4.64
8.250	14.47	2.67	3.413	O I				4.70
8.333	14.54	2.71	3.495	O I				4.75
8.417	14.56	2.74	3.576	O I				4.81
8.500	14.57	2.78	3.658	O I				4.86
8.583	14.81	2.81	3.739	O I				4.92
8.667	15.35	2.85	3.824	O I				4.98
8.750	15.49	2.88	3.910	O I				5.04
8.833	15.77	2.92	3.998	O I				5.10
8.917	16.32	2.96	4.088	O I				5.16
9.000	16.46	2.99	4.181	O I				5.22
9.083	16.98	3.03	4.275	O I				5.29
9.167	18.07	3.07	4.375	O I				5.36
9.250	18.35	3.11	4.479	O I				5.43
9.333	18.67	3.15	4.585	O I				5.51
9.417	19.23	3.19	4.693	O I				5.59
9.500	19.37	3.24	4.804	O I				5.67
9.583	19.76	3.28	4.916	O I				5.75
9.667	20.56	3.36	5.032	O I				5.84
9.750	20.79	3.57	5.151	O I				5.93
9.833	21.25	3.83	5.270	O I				6.02
9.917	22.12	4.30	5.392	O I				6.11
10.000	22.37	4.77	5.514	O I				6.21
10.083	20.48	5.22	5.627	O I				6.30
10.167	16.10	5.56	5.716	O I				6.37
10.250	14.99	5.83	5.783	O I				6.43
10.333	14.68	6.06	5.845	O I				6.48
10.417	14.60	6.36	5.903	O I				6.53
10.500	14.57	6.71	5.958	O I				6.58
10.583	15.90	7.07	6.016	O I				6.63
10.667	18.89	7.51	6.085	O I				6.69
10.750	19.68	8.01	6.165	O I				6.77
10.833	19.92	8.51	6.244	O I				6.84
10.917	20.02	9.00	6.321	O I				6.91
11.000	20.09	9.56	6.395	O I				6.98
11.083	19.77	10.88	6.462	O I				7.05
11.167	19.01	12.18	6.516	O I				7.11
11.250	18.85	13.21	6.559	O I				7.16
11.333	18.83	14.07	6.595	O I				7.20
11.417	18.86	14.80	6.626	O I				7.24
11.500	18.90	15.42	6.652	O I				7.27
11.583	18.32	16.06	6.671	O I				7.29
11.667	16.98	16.39	6.681	OI				7.30
11.750	16.64	16.48	6.684	O				7.30
11.833	16.83	16.53	6.685	O				7.31
11.917	17.46	16.66	6.689	OI				7.31
12.000	17.65	16.84	6.695	OI				7.32
12.083	20.26	17.28	6.708	O I				7.33



18.417	3.88	6.26	5.886	| I O	|	|	|	6.51
18.500	3.88	6.16	5.870	| I O	|	|	|	6.50
18.583	3.64	6.10	5.854	| I O	|	|	|	6.48
18.667	3.10	6.03	5.835	| I O	|	|	|	6.47
18.750	2.97	5.95	5.815	| I O	|	|	|	6.45
18.833	2.69	5.86	5.794	| I O	|	|	|	6.44
18.917	2.14	5.77	5.770	|I O	|	|	|	6.42
19.000	1.99	5.68	5.745	|I O	|	|	|	6.40
19.083	2.20	5.58	5.721	|I O	|	|	|	6.38
19.167	2.73	5.50	5.699	| I O	|	|	|	6.36
19.250	2.86	5.43	5.681	| I O	|	|	|	6.35
19.333	3.14	5.36	5.665	| I O	|	|	|	6.33
19.417	3.69	5.31	5.651	| I O	|	|	|	6.32
19.500	3.83	5.27	5.641	| I O	|	|	|	6.31
19.583	3.63	5.23	5.630	| I O	|	|	|	6.30
19.667	3.10	5.18	5.618	| IO	|	|	|	6.29
19.750	2.97	5.12	5.603	| IO	|	|	|	6.28
19.833	2.69	5.06	5.587	| IO	|	|	|	6.27
19.917	2.14	4.99	5.569	|I O	|	|	|	6.26
20.000	1.99	4.91	5.550	|I O	|	|	|	6.24
20.083	2.20	4.84	5.530	|I O	|	|	|	6.22
20.167	2.73	4.78	5.514	| IO	|	|	|	6.21
20.250	2.86	4.73	5.501	| IO	|	|	|	6.20
20.333	2.90	4.68	5.488	| IO	|	|	|	6.19
20.417	2.91	4.63	5.476	| IO	|	|	|	6.18
20.500	2.91	4.58	5.465	| IO	|	|	|	6.17
20.583	2.91	4.54	5.453	| IO	|	|	|	6.16
20.667	2.91	4.50	5.442	| IO	|	|	|	6.15
20.750	2.91	4.45	5.431	| IO	|	|	|	6.14
20.833	2.67	4.41	5.420	| IO	|	|	|	6.14
20.917	2.13	4.36	5.406	|I O	|	|	|	6.12
21.000	1.99	4.30	5.391	|I O	|	|	|	6.11
21.083	2.20	4.24	5.376	|I O	|	|	|	6.10
21.167	2.73	4.19	5.364	| IO	|	|	|	6.09
21.250	2.86	4.16	5.354	| IO	|	|	|	6.08
21.333	2.66	4.12	5.345	| IO	|	|	|	6.08
21.417	2.13	4.07	5.333	|I O	|	|	|	6.07
21.500	1.99	4.02	5.319	|I O	|	|	|	6.05
21.583	2.20	3.97	5.306	|I O	|	|	|	6.04
21.667	2.73	3.93	5.296	| IO	|	|	|	6.04
21.750	2.86	3.90	5.288	| O	|	|	|	6.03
21.833	2.66	3.87	5.281	| O	|	|	|	6.02
21.917	2.13	3.83	5.271	|IO	|	|	|	6.02
22.000	1.99	3.78	5.259	|IO	|	|	|	6.01
22.083	2.20	3.75	5.247	|IO	|	|	|	6.00
22.167	2.73	3.73	5.238	| O	|	|	|	5.99
22.250	2.86	3.72	5.232	| O	|	|	|	5.99
22.333	2.66	3.71	5.225	| O	|	|	|	5.98
22.417	2.13	3.69	5.216	|IO	|	|	|	5.97
22.500	1.99	3.67	5.205	|IO	|	|	|	5.97
22.583	1.96	3.65	5.194	|IO	|	|	|	5.96
22.667	1.95	3.63	5.182	|IO	|	|	|	5.95
22.750	1.94	3.61	5.170	|IO	|	|	|	5.94
22.833	1.94	3.59	5.159	|IO	|	|	|	5.93
22.917	1.94	3.57	5.148	|IO	|	|	|	5.92
23.000	1.94	3.55	5.137	|IO	|	|	|	5.92
23.083	1.94	3.53	5.126	|IO	|	|	|	5.91
23.167	1.94	3.51	5.115	|IO	|	|	|	5.90
23.250	1.94	3.49	5.104	|IO	|	|	|	5.89
23.333	1.94	3.47	5.093	|IO	|	|	|	5.88
23.417	1.94	3.45	5.083	|IO	|	|	|	5.88
23.500	1.94	3.44	5.073	|IO	|	|	|	5.87
23.583	1.94	3.42	5.062	|IO	|	|	|	5.86
23.667	1.94	3.40	5.052	|IO	|	|	|	5.85
23.750	1.94	3.38	5.042	|IO	|	|	|	5.85
23.833	1.94	3.36	5.033	|IO	|	|	|	5.84
23.917	1.94	3.35	5.023	|IO	|	|	|	5.83
24.000	1.94	3.33	5.013	|IO	|	|	|	5.82
24.083	1.46	3.32	5.002	|IO	|	|	|	5.82
24.167	0.38	3.31	4.986	I O	|	|	|	5.80
24.250	0.10	3.30	4.964	I O	|	|	|	5.79
24.333	0.03	3.29	4.942	I O	|	|	|	5.77
24.417	0.01	3.28	4.920	I O	|	|	|	5.76
24.500	0.00	3.27	4.897	I O	|	|	|	5.74
24.583	0.00	3.27	4.875	I O	|	|	|	5.72

24.667	0.00	3.26	4.852	I	O	|	|	|	5.71
24.750	0.00	3.25	4.830	I	O	|	|	|	5.69
24.833	0.00	3.24	4.807	I	O	|	|	|	5.67
24.917	0.00	3.23	4.785	I	O	|	|	|	5.66
25.000	0.00	3.22	4.763	I	O	|	|	|	5.64
25.083	0.00	3.21	4.741	I	O	|	|	|	5.62
25.167	0.00	3.20	4.719	I	O	|	|	|	5.61
25.250	0.00	3.20	4.697	I	O	|	|	|	5.59
25.333	0.00	3.19	4.675	I	O	|	|	|	5.57
25.417	0.00	3.18	4.653	I	O	|	|	|	5.56
25.500	0.00	3.17	4.631	I	O	|	|	|	5.54
25.583	0.00	3.16	4.609	I	O	|	|	|	5.53
25.667	0.00	3.15	4.587	I	O	|	|	|	5.51
25.750	0.00	3.14	4.566	I	O	|	|	|	5.49
25.833	0.00	3.14	4.544	I	O	|	|	|	5.48
25.917	0.00	3.13	4.522	I	O	|	|	|	5.46
26.000	0.00	3.12	4.501	I	O	|	|	|	5.45
26.083	0.00	3.11	4.479	I	O	|	|	|	5.43
26.167	0.00	3.10	4.458	I	O	|	|	|	5.42
26.250	0.00	3.09	4.437	I	O	|	|	|	5.40
26.333	0.00	3.08	4.415	I	O	|	|	|	5.39
26.417	0.00	3.08	4.394	I	O	|	|	|	5.37
26.500	0.00	3.07	4.373	I	O	|	|	|	5.36
26.583	0.00	3.06	4.352	I	O	|	|	|	5.34
26.667	0.00	3.05	4.331	I	O	|	|	|	5.33
26.750	0.00	3.04	4.310	I	O	|	|	|	5.32
26.833	0.00	3.03	4.289	I	O	|	|	|	5.30
26.917	0.00	3.03	4.268	I	O	|	|	|	5.29
27.000	0.00	3.02	4.247	I	O	|	|	|	5.27
27.083	0.00	3.01	4.226	I	O	|	|	|	5.26
27.167	0.00	3.00	4.206	I	O	|	|	|	5.24
27.250	0.00	2.99	4.185	I	O	|	|	|	5.23
27.333	0.00	2.99	4.165	I	O	|	|	|	5.21
27.417	0.00	2.98	4.144	I	O	|	|	|	5.20
27.500	0.00	2.97	4.124	I	O	|	|	|	5.18
27.583	0.00	2.96	4.103	I	O	|	|	|	5.17
27.667	0.00	2.95	4.083	I	O	|	|	|	5.16
27.750	0.00	2.94	4.062	I	O	|	|	|	5.14
27.833	0.00	2.94	4.042	I	O	|	|	|	5.13
27.917	0.00	2.93	4.022	I	O	|	|	|	5.11
28.000	0.00	2.92	4.002	I	O	|	|	|	5.10
28.083	0.00	2.91	3.982	I	O	|	|	|	5.09
28.167	0.00	2.90	3.962	I	O	|	|	|	5.07
28.250	0.00	2.90	3.942	I	O	|	|	|	5.06
28.333	0.00	2.89	3.922	I	O	|	|	|	5.04
28.417	0.00	2.88	3.902	I	O	|	|	|	5.03
28.500	0.00	2.87	3.882	I	O	|	|	|	5.02
28.583	0.00	2.87	3.862	I	O	|	|	|	5.00
28.667	0.00	2.86	3.843	I	O	|	|	|	4.99
28.750	0.00	2.85	3.823	I	O	|	|	|	4.98
28.833	0.00	2.84	3.803	I	O	|	|	|	4.96
28.917	0.00	2.83	3.784	I	O	|	|	|	4.95
29.000	0.00	2.82	3.764	I	O	|	|	|	4.94
29.083	0.00	2.82	3.745	I	O	|	|	|	4.92
29.167	0.00	2.81	3.726	I	O	|	|	|	4.91
29.250	0.00	2.80	3.706	I	O	|	|	|	4.90
29.333	0.00	2.79	3.687	I	O	|	|	|	4.88
29.417	0.00	2.78	3.668	I	O	|	|	|	4.87
29.500	0.00	2.77	3.649	I	O	|	|	|	4.86
29.583	0.00	2.77	3.630	I	O	|	|	|	4.84
29.667	0.00	2.76	3.611	I	O	|	|	|	4.83
29.750	0.00	2.75	3.592	I	O	|	|	|	4.82
29.833	0.00	2.74	3.573	I	O	|	|	|	4.81
29.917	0.00	2.73	3.554	I	O	|	|	|	4.79
30.000	0.00	2.73	3.535	I	O	|	|	|	4.78
30.083	0.00	2.72	3.516	I	O	|	|	|	4.77
30.167	0.00	2.71	3.498	I	O	|	|	|	4.76
30.250	0.00	2.70	3.479	I	O	|	|	|	4.74
30.333	0.00	2.69	3.461	I	O	|	|	|	4.73
30.417	0.00	2.69	3.442	I	O	|	|	|	4.72
30.500	0.00	2.68	3.424	I	O	|	|	|	4.71
30.583	0.00	2.67	3.405	I	O	|	|	|	4.69
30.667	0.00	2.66	3.387	I	O	|	|	|	4.68
30.750	0.00	2.65	3.368	I	O	|	|	|	4.67
30.833	0.00	2.65	3.350	I	O	|	|	|	4.66

30.917	0.00	2.64	3.332	I O	|	|	|	4.64
31.000	0.00	2.63	3.314	I O	|	|	|	4.63
31.083	0.00	2.62	3.296	I O	|	|	|	4.62
31.167	0.00	2.62	3.278	I O	|	|	|	4.61
31.250	0.00	2.61	3.260	I O	|	|	|	4.59
31.333	0.00	2.60	3.242	IO	|	|	|	4.58
31.417	0.00	2.59	3.224	IO	|	|	|	4.57
31.500	0.00	2.58	3.206	IO	|	|	|	4.56
31.583	0.00	2.58	3.188	IO	|	|	|	4.55
31.667	0.00	2.57	3.171	IO	|	|	|	4.53
31.750	0.00	2.56	3.153	IO	|	|	|	4.52
31.833	0.00	2.55	3.135	IO	|	|	|	4.51
31.917	0.00	2.55	3.118	IO	|	|	|	4.50
32.000	0.00	2.54	3.100	IO	|	|	|	4.49
32.083	0.00	2.53	3.083	IO	|	|	|	4.48
32.167	0.00	2.52	3.065	IO	|	|	|	4.46
32.250	0.00	2.51	3.048	IO	|	|	|	4.45
32.333	0.00	2.51	3.031	IO	|	|	|	4.44
32.417	0.00	2.50	3.014	IO	|	|	|	4.43
32.500	0.00	2.49	2.996	IO	|	|	|	4.42
32.583	0.00	2.48	2.979	IO	|	|	|	4.41
32.667	0.00	2.47	2.962	IO	|	|	|	4.40
32.750	0.00	2.46	2.945	IO	|	|	|	4.38
32.833	0.00	2.46	2.928	IO	|	|	|	4.37
32.917	0.00	2.45	2.911	IO	|	|	|	4.36
33.000	0.00	2.44	2.895	IO	|	|	|	4.35
33.083	0.00	2.43	2.878	IO	|	|	|	4.34
33.167	0.00	2.42	2.861	IO	|	|	|	4.33
33.250	0.00	2.42	2.844	IO	|	|	|	4.32
33.333	0.00	2.41	2.828	IO	|	|	|	4.31
33.417	0.00	2.40	2.811	IO	|	|	|	4.29
33.500	0.00	2.39	2.795	IO	|	|	|	4.28
33.583	0.00	2.38	2.778	IO	|	|	|	4.27
33.667	0.00	2.38	2.762	IO	|	|	|	4.26
33.750	0.00	2.37	2.745	IO	|	|	|	4.25
33.833	0.00	2.36	2.729	IO	|	|	|	4.24
33.917	0.00	2.35	2.713	IO	|	|	|	4.23
34.000	0.00	2.35	2.697	IO	|	|	|	4.22
34.083	0.00	2.34	2.681	IO	|	|	|	4.21
34.167	0.00	2.33	2.665	IO	|	|	|	4.20
34.250	0.00	2.32	2.649	IO	|	|	|	4.19
34.333	0.00	2.31	2.633	IO	|	|	|	4.18
34.417	0.00	2.31	2.617	IO	|	|	|	4.17
34.500	0.00	2.30	2.601	IO	|	|	|	4.15
34.583	0.00	2.29	2.585	IO	|	|	|	4.14
34.667	0.00	2.28	2.569	IO	|	|	|	4.13
34.750	0.00	2.28	2.554	IO	|	|	|	4.12
34.833	0.00	2.27	2.538	IO	|	|	|	4.11
34.917	0.00	2.26	2.522	IO	|	|	|	4.10
35.000	0.00	2.25	2.507	IO	|	|	|	4.09
35.083	0.00	2.25	2.491	IO	|	|	|	4.08
35.167	0.00	2.24	2.476	IO	|	|	|	4.07
35.250	0.00	2.23	2.460	IO	|	|	|	4.06
35.333	0.00	2.22	2.445	IO	|	|	|	4.05
35.417	0.00	2.22	2.430	IO	|	|	|	4.04
35.500	0.00	2.21	2.414	IO	|	|	|	4.03
35.583	0.00	2.20	2.399	IO	|	|	|	4.02
35.667	0.00	2.20	2.384	IO	|	|	|	4.01
35.750	0.00	2.19	2.369	IO	|	|	|	4.00
35.833	0.00	2.18	2.354	IO	|	|	|	3.99
35.917	0.00	2.17	2.339	IO	|	|	|	3.98
36.000	0.00	2.16	2.324	IO	|	|	|	3.97
36.083	0.00	2.15	2.309	IO	|	|	|	3.96
36.167	0.00	2.15	2.294	IO	|	|	|	3.95
36.250	0.00	2.14	2.280	IO	|	|	|	3.94
36.333	0.00	2.13	2.265	IO	|	|	|	3.93
36.417	0.00	2.12	2.250	IO	|	|	|	3.92
36.500	0.00	2.11	2.236	IO	|	|	|	3.91
36.583	0.00	2.10	2.221	IO	|	|	|	3.90
36.667	0.00	2.09	2.207	IO	|	|	|	3.89
36.750	0.00	2.09	2.192	IO	|	|	|	3.88
36.833	0.00	2.08	2.178	IO	|	|	|	3.87
36.917	0.00	2.07	2.164	IO	|	|	|	3.86
37.000	0.00	2.06	2.150	IO	|	|	|	3.85
37.083	0.00	2.05	2.135	IO	|	|	|	3.85

37.167	0.00	2.05	2.121	IO					3.84
37.250	0.00	2.04	2.107	IO					3.83
37.333	0.00	2.03	2.093	IO					3.82
37.417	0.00	2.02	2.079	IO					3.81
37.500	0.00	2.01	2.065	IO					3.80
37.583	0.00	2.01	2.052	IO					3.79
37.667	0.00	2.00	2.038	IO					3.78
37.750	0.00	1.99	2.024	IO					3.77
37.833	0.00	1.98	2.010	IO					3.76
37.917	0.00	1.97	1.997	IO					3.75
38.000	0.00	1.97	1.983	IO					3.74
38.083	0.00	1.96	1.970	IO					3.73
38.167	0.00	1.95	1.956	IO					3.73
38.250	0.00	1.94	1.943	IO					3.72
38.333	0.00	1.93	1.929	IO					3.71
38.417	0.00	1.93	1.916	IO					3.70
38.500	0.00	1.92	1.903	IO					3.69
38.583	0.00	1.91	1.890	IO					3.68
38.667	0.00	1.90	1.877	IO					3.67
38.750	0.00	1.90	1.864	IO					3.66
38.833	0.00	1.89	1.850	IO					3.66
38.917	0.00	1.88	1.837	IO					3.65
39.000	0.00	1.87	1.825	IO					3.64
39.083	0.00	1.87	1.812	IO					3.63
39.167	0.00	1.86	1.799	IO					3.62
39.250	0.00	1.85	1.786	IO					3.61
39.333	0.00	1.84	1.773	IO					3.60
39.417	0.00	1.84	1.761	IO					3.60
39.500	0.00	1.83	1.748	IO					3.59
39.583	0.00	1.82	1.735	IO					3.58
39.667	0.00	1.82	1.723	IO					3.57
39.750	0.00	1.81	1.710	IO					3.56
39.833	0.00	1.80	1.698	IO					3.55
39.917	0.00	1.79	1.686	IO					3.55
40.000	0.00	1.79	1.673	IO					3.54
40.083	0.00	1.78	1.661	IO					3.53
40.167	0.00	1.77	1.649	IO					3.52
40.250	0.00	1.77	1.637	IO					3.51
40.333	0.00	1.76	1.625	IO					3.50
40.417	0.00	1.75	1.612	IO					3.50
40.500	0.00	1.74	1.600	IO					3.49
40.583	0.00	1.73	1.588	IO					3.48
40.667	0.00	1.72	1.577	IO					3.47
40.750	0.00	1.71	1.565	IO					3.46
40.833	0.00	1.70	1.553	IO					3.46
40.917	0.00	1.69	1.541	IO					3.45
41.000	0.00	1.68	1.530	IO					3.44
41.083	0.00	1.68	1.518	IO					3.43
41.167	0.00	1.67	1.507	IO					3.43
41.250	0.00	1.66	1.495	IO					3.42
41.333	0.00	1.65	1.484	IO					3.41
41.417	0.00	1.64	1.472	IO					3.40
41.500	0.00	1.63	1.461	IO					3.39
41.583	0.00	1.62	1.450	IO					3.39
41.667	0.00	1.61	1.439	IO					3.38
41.750	0.00	1.60	1.428	IO					3.37
41.833	0.00	1.60	1.417	IO					3.36
41.917	0.00	1.59	1.406	IO					3.36
42.000	0.00	1.58	1.395	IO					3.35
42.083	0.00	1.57	1.384	IO					3.34
42.167	0.00	1.56	1.373	IO					3.34
42.250	0.00	1.55	1.362	IO					3.33
42.333	0.00	1.54	1.352	IO					3.32
42.417	0.00	1.54	1.341	IO					3.31
42.500	0.00	1.53	1.331	IO					3.31
42.583	0.00	1.52	1.320	IO					3.30
42.667	0.00	1.51	1.310	IO					3.29
42.750	0.00	1.50	1.299	IO					3.29
42.833	0.00	1.49	1.289	IO					3.28
42.917	0.00	1.49	1.279	IO					3.27
43.000	0.00	1.48	1.269	IO					3.26
43.083	0.00	1.47	1.258	IO					3.26
43.167	0.00	1.46	1.248	IO					3.25
43.250	0.00	1.45	1.238	IO					3.24
43.333	0.00	1.45	1.228	IO					3.24

43.417	0.00	1.44	1.218	IO					3.23
43.500	0.00	1.43	1.208	IO					3.22
43.583	0.00	1.42	1.199	IO					3.22
43.667	0.00	1.42	1.189	IO					3.21
43.750	0.00	1.41	1.179	IO					3.20
43.833	0.00	1.40	1.170	IO					3.20
43.917	0.00	1.39	1.160	IO					3.19
44.000	0.00	1.38	1.150	IO					3.18
44.083	0.00	1.38	1.141	IO					3.18
44.167	0.00	1.37	1.131	IO					3.17
44.250	0.00	1.36	1.122	IO					3.17
44.333	0.00	1.35	1.113	IO					3.16
44.417	0.00	1.35	1.103	IO					3.15
44.500	0.00	1.34	1.094	IO					3.15
44.583	0.00	1.33	1.085	IO					3.14
44.667	0.00	1.33	1.076	IO					3.13
44.750	0.00	1.32	1.067	IO					3.13
44.833	0.00	1.31	1.058	IO					3.12
44.917	0.00	1.30	1.049	IO					3.12
45.000	0.00	1.30	1.040	O					3.11
45.083	0.00	1.29	1.031	O					3.10
45.167	0.00	1.28	1.022	O					3.10
45.250	0.00	1.28	1.013	O					3.09
45.333	0.00	1.27	1.004	O					3.09
45.417	0.00	1.26	0.996	O					3.08
45.500	0.00	1.26	0.987	O					3.07
45.583	0.00	1.25	0.978	O					3.07
45.667	0.00	1.24	0.970	O					3.06
45.750	0.00	1.23	0.961	O					3.06
45.833	0.00	1.23	0.953	O					3.05
45.917	0.00	1.22	0.944	O					3.04
46.000	0.00	1.21	0.936	O					3.04
46.083	0.00	1.21	0.927	O					3.03
46.167	0.00	1.20	0.919	O					3.03
46.250	0.00	1.20	0.911	O					3.02
46.333	0.00	1.19	0.903	O					3.02
46.417	0.00	1.18	0.895	O					3.01
46.500	0.00	1.18	0.886	O					3.01
46.583	0.00	1.17	0.878	O					3.00
46.667	0.00	1.15	0.870	O					2.99
46.750	0.00	1.14	0.862	O					2.99
46.833	0.00	1.12	0.855	O					2.98
46.917	0.00	1.11	0.847	O					2.98
47.000	0.00	1.09	0.839	O					2.97
47.083	0.00	1.08	0.832	O					2.97
47.167	0.00	1.06	0.825	O					2.96
47.250	0.00	1.05	0.817	O					2.96
47.333	0.00	1.03	0.810	O					2.95
47.417	0.00	1.02	0.803	O					2.95
47.500	0.00	1.00	0.796	O					2.94
47.583	0.00	0.99	0.789	O					2.94
47.667	0.00	0.98	0.783	O					2.93
47.750	0.00	0.96	0.776	O					2.93
47.833	0.00	0.95	0.769	O					2.92
47.917	0.00	0.94	0.763	O					2.92
48.000	0.00	0.92	0.756	O					2.92
48.083	0.00	0.91	0.750	O					2.91
48.167	0.00	0.90	0.744	O					2.91
48.250	0.00	0.88	0.738	O					2.90
48.333	0.00	0.87	0.732	O					2.90
48.417	0.00	0.86	0.726	O					2.89
48.500	0.00	0.85	0.720	O					2.89
48.583	0.00	0.84	0.714	O					2.89
48.667	0.00	0.82	0.708	O					2.88
48.750	0.00	0.81	0.703	O					2.88
48.833	0.00	0.80	0.697	O					2.87
48.917	0.00	0.79	0.692	O					2.87
49.000	0.00	0.78	0.686	O					2.87
49.083	0.00	0.77	0.681	O					2.86
49.167	0.00	0.76	0.676	O					2.86
49.250	0.00	0.75	0.671	O					2.86
49.333	0.00	0.74	0.665	O					2.85
49.417	0.00	0.73	0.660	O					2.85
49.500	0.00	0.72	0.655	O					2.85
49.583	0.00	0.71	0.651	O					2.84

49.667	0.00	0.70	0.646	o	|	|	|	|	2.84
49.750	0.00	0.69	0.641	o	|	|	|	|	2.84
49.833	0.00	0.68	0.636	o	|	|	|	|	2.83
49.917	0.00	0.67	0.632	o	|	|	|	|	2.83
50.000	0.00	0.66	0.627	o	|	|	|	|	2.83
50.083	0.00	0.65	0.622	o	|	|	|	|	2.82
50.167	0.00	0.64	0.618	o	|	|	|	|	2.82
50.250	0.00	0.63	0.614	o	|	|	|	|	2.82
50.333	0.00	0.62	0.609	o	|	|	|	|	2.81
50.417	0.00	0.61	0.605	o	|	|	|	|	2.81
50.500	0.00	0.61	0.601	o	|	|	|	|	2.81
50.583	0.00	0.60	0.597	o	|	|	|	|	2.80
50.667	0.00	0.59	0.593	o	|	|	|	|	2.80
50.750	0.00	0.58	0.589	o	|	|	|	|	2.80
50.833	0.00	0.57	0.585	o	|	|	|	|	2.80
50.917	0.00	0.57	0.581	o	|	|	|	|	2.79
51.000	0.00	0.56	0.577	o	|	|	|	|	2.79
51.083	0.00	0.55	0.573	o	|	|	|	|	2.79
51.167	0.00	0.54	0.569	o	|	|	|	|	2.79
51.250	0.00	0.53	0.566	o	|	|	|	|	2.78
51.333	0.00	0.53	0.562	o	|	|	|	|	2.78
51.417	0.00	0.52	0.558	o	|	|	|	|	2.78
51.500	0.00	0.51	0.555	o	|	|	|	|	2.78
51.583	0.00	0.51	0.551	o	|	|	|	|	2.77
51.667	0.00	0.50	0.548	o	|	|	|	|	2.77
51.750	0.00	0.49	0.544	o	|	|	|	|	2.77
51.833	0.00	0.48	0.541	o	|	|	|	|	2.77
51.917	0.00	0.48	0.538	o	|	|	|	|	2.76
52.000	0.00	0.47	0.534	o	|	|	|	|	2.76
52.083	0.00	0.46	0.531	o	|	|	|	|	2.76
52.167	0.00	0.46	0.528	o	|	|	|	|	2.76
52.250	0.00	0.45	0.525	o	|	|	|	|	2.75
52.333	0.00	0.45	0.522	o	|	|	|	|	2.75
52.417	0.00	0.44	0.519	o	|	|	|	|	2.75
52.500	0.00	0.43	0.516	o	|	|	|	|	2.75
52.583	0.00	0.43	0.513	o	|	|	|	|	2.75
52.667	0.00	0.42	0.510	o	|	|	|	|	2.74
52.750	0.00	0.42	0.507	o	|	|	|	|	2.74
52.833	0.00	0.41	0.504	o	|	|	|	|	2.74
52.917	0.00	0.40	0.501	o	|	|	|	|	2.74
53.000	0.00	0.40	0.499	o	|	|	|	|	2.74
53.083	0.00	0.39	0.496	o	|	|	|	|	2.73
53.167	0.00	0.39	0.493	o	|	|	|	|	2.73
53.250	0.00	0.38	0.491	o	|	|	|	|	2.73
53.333	0.00	0.38	0.488	o	|	|	|	|	2.73
53.417	0.00	0.37	0.485	o	|	|	|	|	2.73
53.500	0.00	0.37	0.483	o	|	|	|	|	2.73
53.583	0.00	0.36	0.480	o	|	|	|	|	2.72
53.667	0.00	0.36	0.478	o	|	|	|	|	2.72
53.750	0.00	0.35	0.475	o	|	|	|	|	2.72
53.833	0.00	0.35	0.473	o	|	|	|	|	2.72
53.917	0.00	0.34	0.471	o	|	|	|	|	2.72
54.000	0.00	0.34	0.468	o	|	|	|	|	2.71
54.083	0.00	0.33	0.466	o	|	|	|	|	2.71
54.167	0.00	0.33	0.464	o	|	|	|	|	2.71
54.250	0.00	0.32	0.461	o	|	|	|	|	2.71
54.333	0.00	0.32	0.459	o	|	|	|	|	2.71
54.417	0.00	0.31	0.457	o	|	|	|	|	2.71
54.500	0.00	0.31	0.455	o	|	|	|	|	2.71
54.583	0.00	0.31	0.453	o	|	|	|	|	2.70
54.667	0.00	0.30	0.451	o	|	|	|	|	2.70
54.750	0.00	0.30	0.449	o	|	|	|	|	2.70
54.833	0.00	0.29	0.447	o	|	|	|	|	2.70
54.917	0.00	0.29	0.445	o	|	|	|	|	2.70
55.000	0.00	0.28	0.443	o	|	|	|	|	2.70
55.083	0.00	0.28	0.441	o	|	|	|	|	2.70
55.167	0.00	0.28	0.439	o	|	|	|	|	2.69
55.250	0.00	0.27	0.437	o	|	|	|	|	2.69
55.333	0.00	0.27	0.435	o	|	|	|	|	2.69
55.417	0.00	0.27	0.433	o	|	|	|	|	2.69
55.500	0.00	0.26	0.431	o	|	|	|	|	2.69
55.583	0.00	0.26	0.430	o	|	|	|	|	2.69
55.667	0.00	0.25	0.428	o	|	|	|	|	2.69
55.750	0.00	0.25	0.426	o	|	|	|	|	2.69
55.833	0.00	0.25	0.424	o	|	|	|	|	2.68

55.917	0.00	0.24	0.423	o	|	|	|	|	2.68
56.000	0.00	0.24	0.421	o	|	|	|	|	2.68
56.083	0.00	0.24	0.419	o	|	|	|	|	2.68
56.167	0.00	0.23	0.418	o	|	|	|	|	2.68
56.250	0.00	0.23	0.416	o	|	|	|	|	2.68
56.333	0.00	0.23	0.415	o	|	|	|	|	2.68
56.417	0.00	0.22	0.413	o	|	|	|	|	2.68
56.500	0.00	0.22	0.411	o	|	|	|	|	2.68
56.583	0.00	0.22	0.410	o	|	|	|	|	2.67
56.667	0.00	0.22	0.408	o	|	|	|	|	2.67
56.750	0.00	0.21	0.407	o	|	|	|	|	2.67
56.833	0.00	0.21	0.406	o	|	|	|	|	2.67
56.917	0.00	0.21	0.404	o	|	|	|	|	2.67
57.000	0.00	0.20	0.403	o	|	|	|	|	2.67
57.083	0.00	0.20	0.401	o	|	|	|	|	2.67
57.167	0.00	0.20	0.400	o	|	|	|	|	2.67
57.250	0.00	0.20	0.399	o	|	|	|	|	2.67
57.333	0.00	0.19	0.397	o	|	|	|	|	2.67
57.417	0.00	0.19	0.396	o	|	|	|	|	2.66
57.500	0.00	0.19	0.395	o	|	|	|	|	2.66
57.583	0.00	0.18	0.393	o	|	|	|	|	2.66
57.667	0.00	0.18	0.392	o	|	|	|	|	2.66
57.750	0.00	0.18	0.391	o	|	|	|	|	2.66
57.833	0.00	0.18	0.390	o	|	|	|	|	2.66
57.917	0.00	0.17	0.388	o	|	|	|	|	2.66
58.000	0.00	0.17	0.387	o	|	|	|	|	2.66
58.083	0.00	0.17	0.386	o	|	|	|	|	2.66
58.167	0.00	0.17	0.385	o	|	|	|	|	2.66
58.250	0.00	0.16	0.384	o	|	|	|	|	2.66
58.333	0.00	0.16	0.383	o	|	|	|	|	2.66
58.417	0.00	0.16	0.381	o	|	|	|	|	2.65
58.500	0.00	0.16	0.380	o	|	|	|	|	2.65
58.583	0.00	0.16	0.379	o	|	|	|	|	2.65
58.667	0.00	0.15	0.378	o	|	|	|	|	2.65
58.750	0.00	0.15	0.377	o	|	|	|	|	2.65
58.833	0.00	0.15	0.376	o	|	|	|	|	2.65
58.917	0.00	0.15	0.375	o	|	|	|	|	2.65
59.000	0.00	0.15	0.374	o	|	|	|	|	2.65
59.083	0.00	0.14	0.373	o	|	|	|	|	2.65
59.167	0.00	0.14	0.372	o	|	|	|	|	2.65
59.250	0.00	0.14	0.371	o	|	|	|	|	2.65
59.333	0.00	0.14	0.370	o	|	|	|	|	2.65
59.417	0.00	0.14	0.369	o	|	|	|	|	2.65
59.500	0.00	0.13	0.368	o	|	|	|	|	2.65
59.583	0.00	0.13	0.367	o	|	|	|	|	2.64
59.667	0.00	0.13	0.367	o	|	|	|	|	2.64
59.750	0.00	0.13	0.366	o	|	|	|	|	2.64
59.833	0.00	0.13	0.365	o	|	|	|	|	2.64
59.917	0.00	0.12	0.364	o	|	|	|	|	2.64
60.000	0.00	0.12	0.363	o	|	|	|	|	2.64
60.083	0.00	0.12	0.362	o	|	|	|	|	2.64
60.167	0.00	0.12	0.361	o	|	|	|	|	2.64
60.250	0.00	0.12	0.361	o	|	|	|	|	2.64
60.333	0.00	0.12	0.360	o	|	|	|	|	2.64
60.417	0.00	0.11	0.359	o	|	|	|	|	2.64
60.500	0.00	0.11	0.358	o	|	|	|	|	2.64
60.583	0.00	0.11	0.357	o	|	|	|	|	2.64
60.667	0.00	0.11	0.357	o	|	|	|	|	2.64
60.750	0.00	0.11	0.356	o	|	|	|	|	2.64
60.833	0.00	0.11	0.355	o	|	|	|	|	2.64
60.917	0.00	0.11	0.354	o	|	|	|	|	2.64
61.000	0.00	0.10	0.354	o	|	|	|	|	2.64
61.083	0.00	0.10	0.353	o	|	|	|	|	2.63
61.167	0.00	0.10	0.352	o	|	|	|	|	2.63
61.250	0.00	0.10	0.352	o	|	|	|	|	2.63
61.333	0.00	0.10	0.351	o	|	|	|	|	2.63
61.417	0.00	0.10	0.350	o	|	|	|	|	2.63
61.500	0.00	0.10	0.350	o	|	|	|	|	2.63
61.583	0.00	0.09	0.349	o	|	|	|	|	2.63
61.667	0.00	0.09	0.348	o	|	|	|	|	2.63
61.750	0.00	0.09	0.348	o	|	|	|	|	2.63
61.833	0.00	0.09	0.347	o	|	|	|	|	2.63
61.917	0.00	0.09	0.346	o	|	|	|	|	2.63
62.000	0.00	0.09	0.346	o	|	|	|	|	2.63
62.083	0.00	0.09	0.345	o	|	|	|	|	2.63

62.167	0.00	0.09	0.345	o	|	|	|	|	2.63
62.250	0.00	0.08	0.344	o	|	|	|	|	2.63
62.333	0.00	0.08	0.343	o	|	|	|	|	2.63
62.417	0.00	0.08	0.343	o	|	|	|	|	2.63
62.500	0.00	0.08	0.342	o	|	|	|	|	2.63
62.583	0.00	0.08	0.342	o	|	|	|	|	2.63
62.667	0.00	0.08	0.341	o	|	|	|	|	2.63
62.750	0.00	0.08	0.341	o	|	|	|	|	2.63
62.833	0.00	0.08	0.340	o	|	|	|	|	2.63
62.917	0.00	0.08	0.340	o	|	|	|	|	2.63
63.000	0.00	0.07	0.339	o	|	|	|	|	2.63
63.083	0.00	0.07	0.339	o	|	|	|	|	2.62
63.167	0.00	0.07	0.338	o	|	|	|	|	2.62
63.250	0.00	0.07	0.338	o	|	|	|	|	2.62
63.333	0.00	0.07	0.337	o	|	|	|	|	2.62
63.417	0.00	0.07	0.337	o	|	|	|	|	2.62
63.500	0.00	0.07	0.336	o	|	|	|	|	2.62
63.583	0.00	0.07	0.336	o	|	|	|	|	2.62
63.667	0.00	0.07	0.335	o	|	|	|	|	2.62
63.750	0.00	0.07	0.335	o	|	|	|	|	2.62
63.833	0.00	0.06	0.334	o	|	|	|	|	2.62
63.917	0.00	0.06	0.334	o	|	|	|	|	2.62
64.000	0.00	0.06	0.333	o	|	|	|	|	2.62
64.083	0.00	0.06	0.333	o	|	|	|	|	2.62
64.167	0.00	0.06	0.333	o	|	|	|	|	2.62
64.250	0.00	0.06	0.332	o	|	|	|	|	2.62
64.333	0.00	0.06	0.332	o	|	|	|	|	2.62
64.417	0.00	0.06	0.331	o	|	|	|	|	2.62
64.500	0.00	0.06	0.331	o	|	|	|	|	2.62
64.583	0.00	0.06	0.331	o	|	|	|	|	2.62
64.667	0.00	0.06	0.330	o	|	|	|	|	2.62
64.750	0.00	0.06	0.330	o	|	|	|	|	2.62
64.833	0.00	0.05	0.329	o	|	|	|	|	2.62
64.917	0.00	0.05	0.329	o	|	|	|	|	2.62
65.000	0.00	0.05	0.329	o	|	|	|	|	2.62
65.083	0.00	0.05	0.328	o	|	|	|	|	2.62
65.167	0.00	0.05	0.328	o	|	|	|	|	2.62
65.250	0.00	0.05	0.328	o	|	|	|	|	2.62
65.333	0.00	0.05	0.327	o	|	|	|	|	2.62
65.417	0.00	0.05	0.327	o	|	|	|	|	2.62
65.500	0.00	0.05	0.327	o	|	|	|	|	2.62
65.583	0.00	0.05	0.326	o	|	|	|	|	2.62
65.667	0.00	0.05	0.326	o	|	|	|	|	2.62
65.750	0.00	0.05	0.326	o	|	|	|	|	2.62
65.833	0.00	0.05	0.325	o	|	|	|	|	2.62
65.917	0.00	0.05	0.325	o	|	|	|	|	2.62
66.000	0.00	0.04	0.325	o	|	|	|	|	2.62
66.083	0.00	0.04	0.324	o	|	|	|	|	2.61
66.167	0.00	0.04	0.324	o	|	|	|	|	2.61
66.250	0.00	0.04	0.324	o	|	|	|	|	2.61
66.333	0.00	0.04	0.323	o	|	|	|	|	2.61
66.417	0.00	0.04	0.323	o	|	|	|	|	2.61
66.500	0.00	0.04	0.323	o	|	|	|	|	2.61
66.583	0.00	0.04	0.323	o	|	|	|	|	2.61
66.667	0.00	0.04	0.322	o	|	|	|	|	2.61
66.750	0.00	0.04	0.322	o	|	|	|	|	2.61
66.833	0.00	0.04	0.322	o	|	|	|	|	2.61
66.917	0.00	0.04	0.321	o	|	|	|	|	2.61
67.000	0.00	0.04	0.321	o	|	|	|	|	2.61
67.083	0.00	0.04	0.321	o	|	|	|	|	2.61
67.167	0.00	0.04	0.321	o	|	|	|	|	2.61
67.250	0.00	0.04	0.320	o	|	|	|	|	2.61
67.333	0.00	0.04	0.320	o	|	|	|	|	2.61
67.417	0.00	0.04	0.320	o	|	|	|	|	2.61
67.500	0.00	0.03	0.320	o	|	|	|	|	2.61
67.583	0.00	0.03	0.319	o	|	|	|	|	2.61
67.667	0.00	0.03	0.319	o	|	|	|	|	2.61
67.750	0.00	0.03	0.319	o	|	|	|	|	2.61
67.833	0.00	0.03	0.319	o	|	|	|	|	2.61
67.917	0.00	0.03	0.319	o	|	|	|	|	2.61
68.000	0.00	0.03	0.318	o	|	|	|	|	2.61
68.083	0.00	0.03	0.318	o	|	|	|	|	2.61
68.167	0.00	0.03	0.318	o	|	|	|	|	2.61
68.250	0.00	0.03	0.318	o	|	|	|	|	2.61
68.333	0.00	0.03	0.317	o	|	|	|	|	2.61

68.417	0.00	0.03	0.317	o	|	|	|	|	2.61
68.500	0.00	0.03	0.317	o	|	|	|	|	2.61
68.583	0.00	0.03	0.317	o	|	|	|	|	2.61
68.667	0.00	0.03	0.317	o	|	|	|	|	2.61
68.750	0.00	0.03	0.316	o	|	|	|	|	2.61
68.833	0.00	0.03	0.316	o	|	|	|	|	2.61
68.917	0.00	0.03	0.316	o	|	|	|	|	2.61
69.000	0.00	0.03	0.316	o	|	|	|	|	2.61
69.083	0.00	0.03	0.316	o	|	|	|	|	2.61
69.167	0.00	0.03	0.316	o	|	|	|	|	2.61
69.250	0.00	0.03	0.315	o	|	|	|	|	2.61
69.333	0.00	0.03	0.315	o	|	|	|	|	2.61
69.417	0.00	0.03	0.315	o	|	|	|	|	2.61
69.500	0.00	0.02	0.315	o	|	|	|	|	2.61
69.583	0.00	0.02	0.315	o	|	|	|	|	2.61
69.667	0.00	0.02	0.314	o	|	|	|	|	2.61
69.750	0.00	0.02	0.314	o	|	|	|	|	2.61
69.833	0.00	0.02	0.314	o	|	|	|	|	2.61
69.917	0.00	0.02	0.314	o	|	|	|	|	2.61
70.000	0.00	0.02	0.314	o	|	|	|	|	2.61
70.083	0.00	0.02	0.314	o	|	|	|	|	2.61
70.167	0.00	0.02	0.313	o	|	|	|	|	2.61
70.250	0.00	0.02	0.313	o	|	|	|	|	2.61
70.333	0.00	0.02	0.313	o	|	|	|	|	2.61
70.417	0.00	0.02	0.313	o	|	|	|	|	2.61
70.500	0.00	0.02	0.313	o	|	|	|	|	2.61
70.583	0.00	0.02	0.313	o	|	|	|	|	2.61
70.667	0.00	0.02	0.313	o	|	|	|	|	2.61
70.750	0.00	0.02	0.312	o	|	|	|	|	2.61
70.833	0.00	0.02	0.312	o	|	|	|	|	2.61
70.917	0.00	0.02	0.312	o	|	|	|	|	2.61
71.000	0.00	0.02	0.312	o	|	|	|	|	2.61
71.083	0.00	0.02	0.312	o	|	|	|	|	2.61
71.167	0.00	0.02	0.312	o	|	|	|	|	2.61
71.250	0.00	0.02	0.312	o	|	|	|	|	2.61
71.333	0.00	0.02	0.312	o	|	|	|	|	2.61
71.417	0.00	0.02	0.311	o	|	|	|	|	2.61
71.500	0.00	0.02	0.311	o	|	|	|	|	2.61
71.583	0.00	0.02	0.311	o	|	|	|	|	2.61
71.667	0.00	0.02	0.311	o	|	|	|	|	2.61
71.750	0.00	0.02	0.311	o	|	|	|	|	2.61
71.833	0.00	0.02	0.311	o	|	|	|	|	2.61
71.917	0.00	0.02	0.311	o	|	|	|	|	2.61
72.000	0.00	0.02	0.311	o	|	|	|	|	2.61
72.083	0.00	0.02	0.310	o	|	|	|	|	2.61
72.167	0.00	0.02	0.310	o	|	|	|	|	2.61
72.250	0.00	0.02	0.310	o	|	|	|	|	2.61
72.333	0.00	0.02	0.310	o	|	|	|	|	2.60
72.417	0.00	0.02	0.310	o	|	|	|	|	2.60
72.500	0.00	0.02	0.310	o	|	|	|	|	2.60
72.583	0.00	0.01	0.310	o	|	|	|	|	2.60
72.667	0.00	0.01	0.310	o	|	|	|	|	2.60
72.750	0.00	0.01	0.310	o	|	|	|	|	2.60
72.833	0.00	0.01	0.310	o	|	|	|	|	2.60
72.917	0.00	0.01	0.309	o	|	|	|	|	2.60
73.000	0.00	0.01	0.309	o	|	|	|	|	2.60
73.083	0.00	0.01	0.309	o	|	|	|	|	2.60
73.167	0.00	0.01	0.309	o	|	|	|	|	2.60
73.250	0.00	0.01	0.309	o	|	|	|	|	2.60
73.333	0.00	0.01	0.309	o	|	|	|	|	2.60
73.417	0.00	0.01	0.309	o	|	|	|	|	2.60
73.500	0.00	0.01	0.309	o	|	|	|	|	2.60
73.583	0.00	0.01	0.309	o	|	|	|	|	2.60
73.667	0.00	0.01	0.309	o	|	|	|	|	2.60
73.750	0.00	0.01	0.309	o	|	|	|	|	2.60
73.833	0.00	0.01	0.308	o	|	|	|	|	2.60
73.917	0.00	0.01	0.308	o	|	|	|	|	2.60
74.000	0.00	0.01	0.308	o	|	|	|	|	2.60
74.083	0.00	0.01	0.308	o	|	|	|	|	2.60
74.167	0.00	0.01	0.308	o	|	|	|	|	2.60
74.250	0.00	0.01	0.308	o	|	|	|	|	2.60
74.333	0.00	0.01	0.308	o	|	|	|	|	2.60
74.417	0.00	0.01	0.308	o	|	|	|	|	2.60
74.500	0.00	0.01	0.308	o	|	|	|	|	2.60
74.583	0.00	0.01	0.308	o	|	|	|	|	2.60

74.667	0.00	0.01	0.308	o	|	|	|	|	2.60
74.750	0.00	0.01	0.308	o	|	|	|	|	2.60
74.833	0.00	0.01	0.308	o	|	|	|	|	2.60
74.917	0.00	0.01	0.307	o	|	|	|	|	2.60
75.000	0.00	0.01	0.307	o	|	|	|	|	2.60
75.083	0.00	0.01	0.307	o	|	|	|	|	2.60
75.167	0.00	0.01	0.307	o	|	|	|	|	2.60
75.250	0.00	0.01	0.307	o	|	|	|	|	2.60
75.333	0.00	0.01	0.307	o	|	|	|	|	2.60
75.417	0.00	0.01	0.307	o	|	|	|	|	2.60
75.500	0.00	0.01	0.307	o	|	|	|	|	2.60
75.583	0.00	0.01	0.307	o	|	|	|	|	2.60
75.667	0.00	0.01	0.307	o	|	|	|	|	2.60
75.750	0.00	0.01	0.307	o	|	|	|	|	2.60
75.833	0.00	0.01	0.307	o	|	|	|	|	2.60
75.917	0.00	0.01	0.307	o	|	|	|	|	2.60
76.000	0.00	0.01	0.307	o	|	|	|	|	2.60
76.083	0.00	0.01	0.307	o	|	|	|	|	2.60
76.167	0.00	0.01	0.307	o	|	|	|	|	2.60
76.250	0.00	0.01	0.306	o	|	|	|	|	2.60
76.333	0.00	0.01	0.306	o	|	|	|	|	2.60
76.417	0.00	0.01	0.306	o	|	|	|	|	2.60
76.500	0.00	0.01	0.306	o	|	|	|	|	2.60
76.583	0.00	0.01	0.306	o	|	|	|	|	2.60
76.667	0.00	0.01	0.306	o	|	|	|	|	2.60
76.750	0.00	0.01	0.306	o	|	|	|	|	2.60
76.833	0.00	0.01	0.306	o	|	|	|	|	2.60
76.917	0.00	0.01	0.306	o	|	|	|	|	2.60
77.000	0.00	0.01	0.306	o	|	|	|	|	2.60
77.083	0.00	0.01	0.306	o	|	|	|	|	2.60
77.167	0.00	0.01	0.306	o	|	|	|	|	2.60
77.250	0.00	0.01	0.306	o	|	|	|	|	2.60
77.333	0.00	0.01	0.306	o	|	|	|	|	2.60
77.417	0.00	0.01	0.306	o	|	|	|	|	2.60
77.500	0.00	0.01	0.306	o	|	|	|	|	2.60
77.583	0.00	0.01	0.306	o	|	|	|	|	2.60
77.667	0.00	0.01	0.306	o	|	|	|	|	2.60
77.750	0.00	0.01	0.306	o	|	|	|	|	2.60
77.833	0.00	0.01	0.306	o	|	|	|	|	2.60
77.917	0.00	0.01	0.305	o	|	|	|	|	2.60
78.000	0.00	0.01	0.305	o	|	|	|	|	2.60
78.083	0.00	0.01	0.305	o	|	|	|	|	2.60
78.167	0.00	0.01	0.305	o	|	|	|	|	2.60
78.250	0.00	0.01	0.305	o	|	|	|	|	2.60
78.333	0.00	0.01	0.305	o	|	|	|	|	2.60
78.417	0.00	0.01	0.305	o	|	|	|	|	2.60
78.500	0.00	0.01	0.305	o	|	|	|	|	2.60
78.583	0.00	0.01	0.305	o	|	|	|	|	2.60
78.667	0.00	0.01	0.305	o	|	|	|	|	2.60
78.750	0.00	0.01	0.305	o	|	|	|	|	2.60
78.833	0.00	0.01	0.305	o	|	|	|	|	2.60
78.917	0.00	0.01	0.305	o	|	|	|	|	2.60
79.000	0.00	0.01	0.305	o	|	|	|	|	2.60
79.083	0.00	0.00	0.305	o	|	|	|	|	2.60
79.167	0.00	0.00	0.305	o	|	|	|	|	2.60
79.250	0.00	0.00	0.305	o	|	|	|	|	2.60
79.333	0.00	0.00	0.305	o	|	|	|	|	2.60
79.417	0.00	0.00	0.305	o	|	|	|	|	2.60
79.500	0.00	0.00	0.305	o	|	|	|	|	2.60
79.583	0.00	0.00	0.305	o	|	|	|	|	2.60
79.667	0.00	0.00	0.305	o	|	|	|	|	2.60
79.750	0.00	0.00	0.305	o	|	|	|	|	2.60
79.833	0.00	0.00	0.305	o	|	|	|	|	2.60
79.917	0.00	0.00	0.305	o	|	|	|	|	2.60
80.000	0.00	0.00	0.305	o	|	|	|	|	2.60
80.083	0.00	0.00	0.305	o	|	|	|	|	2.60
80.167	0.00	0.00	0.305	o	|	|	|	|	2.60
80.250	0.00	0.00	0.305	o	|	|	|	|	2.60
80.333	0.00	0.00	0.305	o	|	|	|	|	2.60
80.417	0.00	0.00	0.304	o	|	|	|	|	2.60
80.500	0.00	0.00	0.304	o	|	|	|	|	2.60
80.583	0.00	0.00	0.304	o	|	|	|	|	2.60
80.667	0.00	0.00	0.304	o	|	|	|	|	2.60
80.750	0.00	0.00	0.304	o	|	|	|	|	2.60
80.833	0.00	0.00	0.304	o	|	|	|	|	2.60

80.917	0.00	0.00	0.304	o	|	|	|	|	2.60
81.000	0.00	0.00	0.304	o	|	|	|	|	2.60
81.083	0.00	0.00	0.304	o	|	|	|	|	2.60
81.167	0.00	0.00	0.304	o	|	|	|	|	2.60
81.250	0.00	0.00	0.304	o	|	|	|	|	2.60
81.333	0.00	0.00	0.304	o	|	|	|	|	2.60
81.417	0.00	0.00	0.304	o	|	|	|	|	2.60
81.500	0.00	0.00	0.304	o	|	|	|	|	2.60
81.583	0.00	0.00	0.304	o	|	|	|	|	2.60
81.667	0.00	0.00	0.304	o	|	|	|	|	2.60
81.750	0.00	0.00	0.304	o	|	|	|	|	2.60
81.833	0.00	0.00	0.304	o	|	|	|	|	2.60
81.917	0.00	0.00	0.304	o	|	|	|	|	2.60
82.000	0.00	0.00	0.304	o	|	|	|	|	2.60
82.083	0.00	0.00	0.304	o	|	|	|	|	2.60
82.167	0.00	0.00	0.304	o	|	|	|	|	2.60
82.250	0.00	0.00	0.304	o	|	|	|	|	2.60
82.333	0.00	0.00	0.304	o	|	|	|	|	2.60
82.417	0.00	0.00	0.304	o	|	|	|	|	2.60
82.500	0.00	0.00	0.304	o	|	|	|	|	2.60
82.583	0.00	0.00	0.304	o	|	|	|	|	2.60
82.667	0.00	0.00	0.304	o	|	|	|	|	2.60
82.750	0.00	0.00	0.304	o	|	|	|	|	2.60
82.833	0.00	0.00	0.304	o	|	|	|	|	2.60
82.917	0.00	0.00	0.304	o	|	|	|	|	2.60
83.000	0.00	0.00	0.304	o	|	|	|	|	2.60
83.083	0.00	0.00	0.304	o	|	|	|	|	2.60
83.167	0.00	0.00	0.304	o	|	|	|	|	2.60
83.250	0.00	0.00	0.304	o	|	|	|	|	2.60
83.333	0.00	0.00	0.304	o	|	|	|	|	2.60
83.417	0.00	0.00	0.304	o	|	|	|	|	2.60
83.500	0.00	0.00	0.304	o	|	|	|	|	2.60
83.583	0.00	0.00	0.304	o	|	|	|	|	2.60
83.667	0.00	0.00	0.304	o	|	|	|	|	2.60
83.750	0.00	0.00	0.304	o	|	|	|	|	2.60
83.833	0.00	0.00	0.304	o	|	|	|	|	2.60
83.917	0.00	0.00	0.304	o	|	|	|	|	2.60
84.000	0.00	0.00	0.304	o	|	|	|	|	2.60
84.083	0.00	0.00	0.304	o	|	|	|	|	2.60
84.167	0.00	0.00	0.304	o	|	|	|	|	2.60
84.250	0.00	0.00	0.304	o	|	|	|	|	2.60
84.333	0.00	0.00	0.304	o	|	|	|	|	2.60
84.417	0.00	0.00	0.304	o	|	|	|	|	2.60
84.500	0.00	0.00	0.303	o	|	|	|	|	2.60
84.583	0.00	0.00	0.303	o	|	|	|	|	2.60
84.667	0.00	0.00	0.303	o	|	|	|	|	2.60
84.750	0.00	0.00	0.303	o	|	|	|	|	2.60
84.833	0.00	0.00	0.303	o	|	|	|	|	2.60
84.917	0.00	0.00	0.303	o	|	|	|	|	2.60
85.000	0.00	0.00	0.303	o	|	|	|	|	2.60
85.083	0.00	0.00	0.303	o	|	|	|	|	2.60
85.167	0.00	0.00	0.303	o	|	|	|	|	2.60
85.250	0.00	0.00	0.303	o	|	|	|	|	2.60
85.333	0.00	0.00	0.303	o	|	|	|	|	2.60
85.417	0.00	0.00	0.303	o	|	|	|	|	2.60
85.500	0.00	0.00	0.303	o	|	|	|	|	2.60
85.583	0.00	0.00	0.303	o	|	|	|	|	2.60
85.667	0.00	0.00	0.303	o	|	|	|	|	2.60
85.750	0.00	0.00	0.303	o	|	|	|	|	2.60
85.833	0.00	0.00	0.303	o	|	|	|	|	2.60
85.917	0.00	0.00	0.303	o	|	|	|	|	2.60
86.000	0.00	0.00	0.303	o	|	|	|	|	2.60
86.083	0.00	0.00	0.303	o	|	|	|	|	2.60
86.167	0.00	0.00	0.303	o	|	|	|	|	2.60
86.250	0.00	0.00	0.303	o	|	|	|	|	2.60
86.333	0.00	0.00	0.303	o	|	|	|	|	2.60
86.417	0.00	0.00	0.303	o	|	|	|	|	2.60
86.500	0.00	0.00	0.303	o	|	|	|	|	2.60
86.583	0.00	0.00	0.303	o	|	|	|	|	2.60
86.667	0.00	0.00	0.303	o	|	|	|	|	2.60
86.750	0.00	0.00	0.303	o	|	|	|	|	2.60
86.833	0.00	0.00	0.303	o	|	|	|	|	2.60
86.917	0.00	0.00	0.303	o	|	|	|	|	2.60
87.000	0.00	0.00	0.303	o	|	|	|	|	2.60
87.083	0.00	0.00	0.303	o	|	|	|	|	2.60

87.167	0.00	0.00	0.303	o	|	|	|	2.60
87.250	0.00	0.00	0.303	o	|	|	|	2.60
87.333	0.00	0.00	0.303	o	|	|	|	2.60
87.417	0.00	0.00	0.303	o	|	|	|	2.60
87.500	0.00	0.00	0.303	o	|	|	|	2.60
87.583	0.00	0.00	0.303	o	|	|	|	2.60
87.667	0.00	0.00	0.303	o	|	|	|	2.60
87.750	0.00	0.00	0.303	o	|	|	|	2.60
87.833	0.00	0.00	0.303	o	|	|	|	2.60
87.917	0.00	0.00	0.303	o	|	|	|	2.60
88.000	0.00	0.00	0.303	o	|	|	|	2.60
88.083	0.00	0.00	0.303	o	|	|	|	2.60
88.167	0.00	0.00	0.303	o	|	|	|	2.60
88.250	0.00	0.00	0.303	o	|	|	|	2.60
88.333	0.00	0.00	0.303	o	|	|	|	2.60
88.417	0.00	0.00	0.303	o	|	|	|	2.60
88.500	0.00	0.00	0.303	o	|	|	|	2.60
88.583	0.00	0.00	0.303	o	|	|	|	2.60
88.667	0.00	0.00	0.303	o	|	|	|	2.60

Remaining water in basin = 0.30 (Ac.Ft)

**********HYDROGRAPH DATA**********

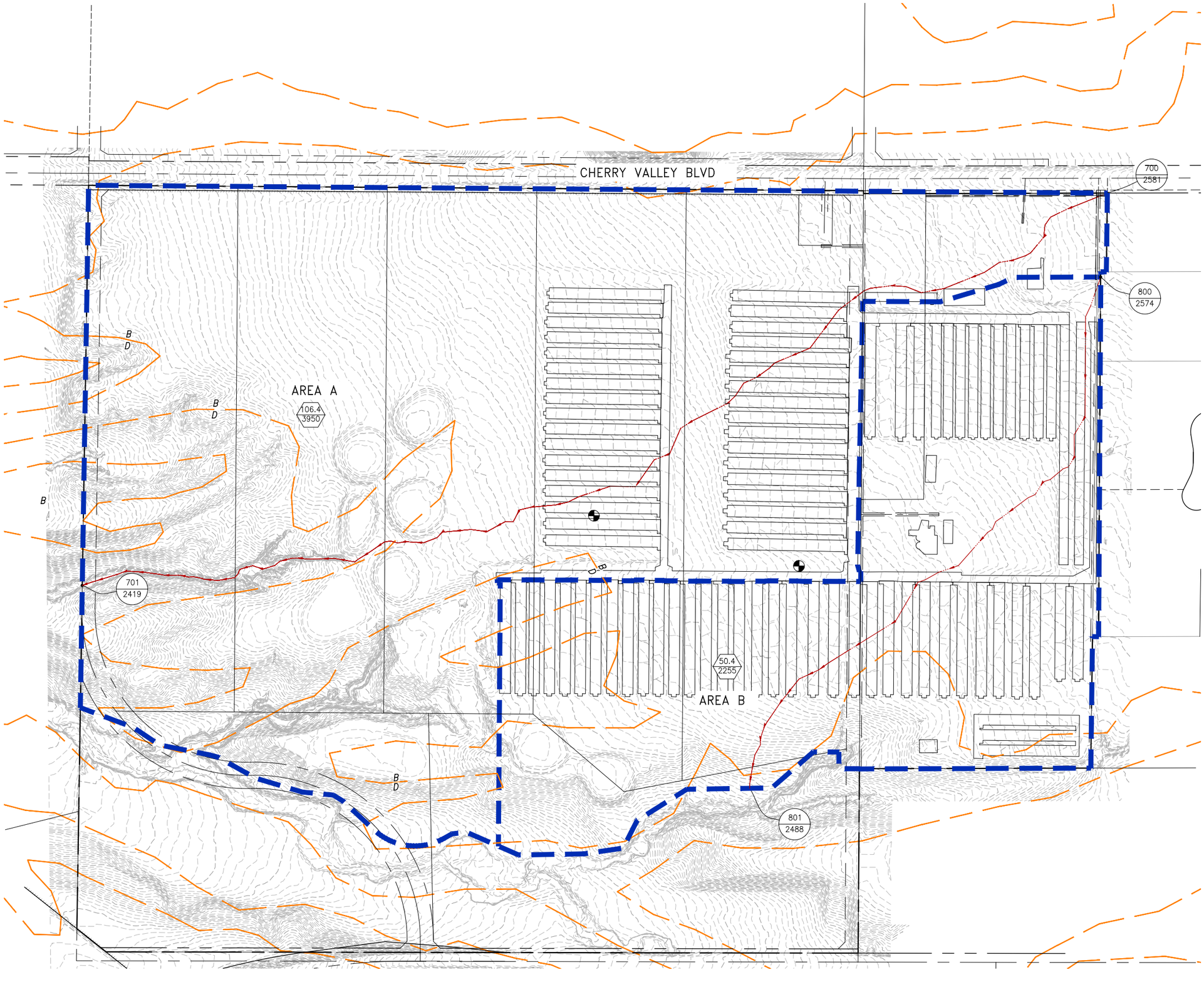
Number of intervals = 1064
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 40.748 (CFS)
Total volume = 21.462 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

UNIT HYDROGRAPH HYDROLOGY MAP



EXISTING AREA A	
TOTAL AREA	106.4 AC
L_T	3950 Ft
L_{CA}	1805 Ft
ΔH	162.0 Ft

EXISTING AREA B	
TOTAL AREA	50.4 AC
L_T	2255 Ft
L_{CA}	615 Ft
ΔH	86.0 Ft

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- AC / FT – AREA (AC) / LENGTH (FT)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY

N W E S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 6
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE:	1"=X'
DATE:	8/10/2021
DESIGNED:	EP
CHECKED:	
PLN CK REF:	
F.B.	

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O.	21-0044
SHEET	1
OF	3 SHEETS
DWG. NO.	

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CHERRY VALLEY BLVD

AREA A

88.8 ACRES

17.7 ACRES

AREA B

B
D

LEGEND

- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY
- PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED WEST AREA (83.4% AREA A)
- PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED NORTH AREA (16.6% AREA A)

N
W WEBB E
S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 7
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION AREA A PORTIONS
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/10/2021			SHEET 2
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

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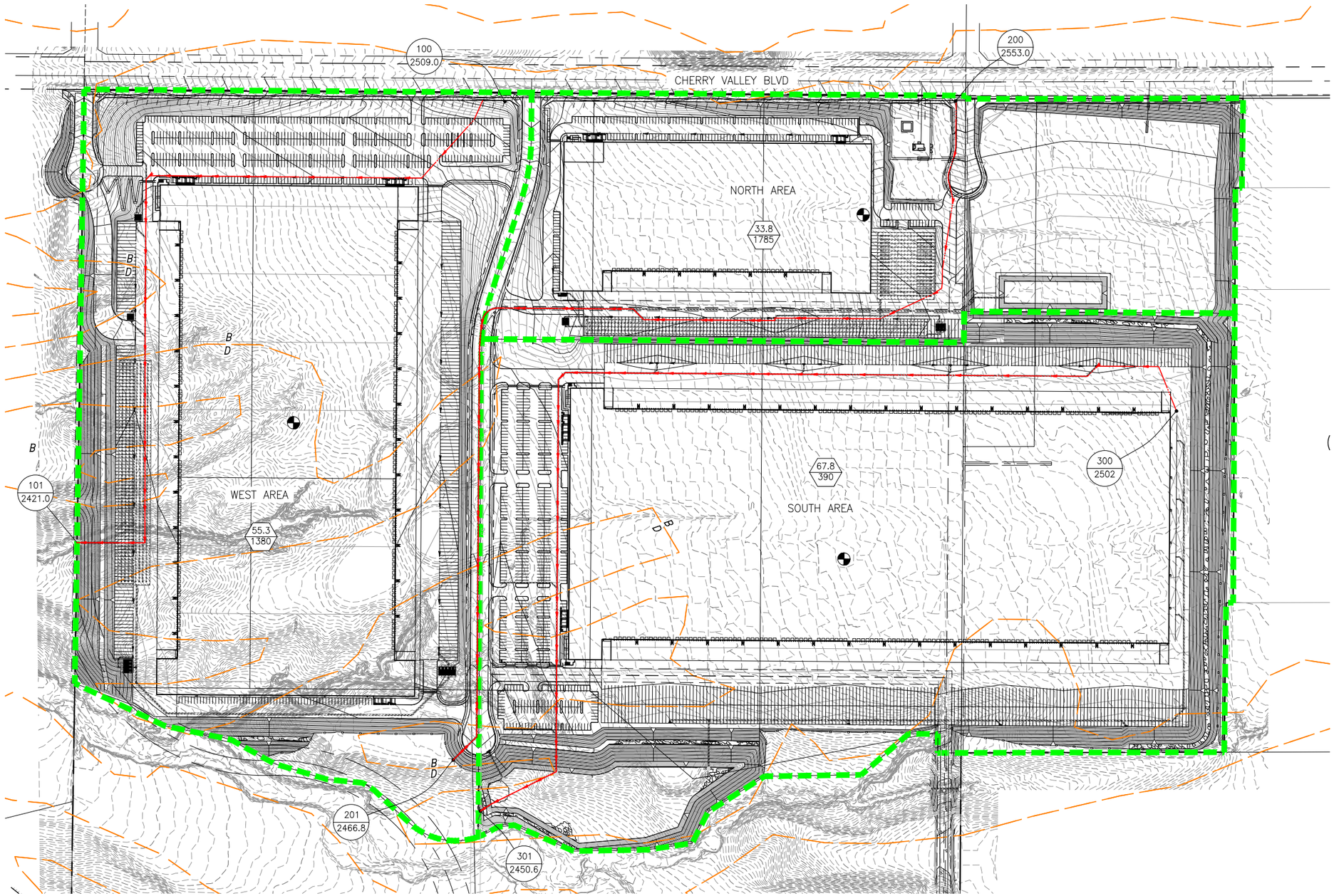

PROPOSED WEST AREA	
TOTAL AREA	55.3 AC
L_T	1380 Ft
L_{CA}	695 Ft
ΔH	12.0 Ft

PROPOSED NORTH AREA	
TOTAL AREA	33.8 AC
L_T	1785 Ft
L_{CA}	1340 Ft
ΔH	27.0 Ft

PROPOSED SOUTH AREA	
TOTAL AREA	67.8 AC
L_T	390 Ft
L_{CA}	360 Ft
ΔH	9.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER / ELEVATION (FT)

AC / FT – AREA (AC) / LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W E S WEBB

1" = 150'

150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 8
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 7/20/2021			SHEET 3
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

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APPENDIX D – REFERENCES

RELEVANT EXCERPTS FROM "BEAUMONT SUMMIT STATION PRELIMINARY DRAINAGE STUDY"

SECTION 4 - BASIN ANALYSIS

ON-SITE UNIT HYDROGRAPH METHOD HYDROLOGY

The unit hydrograph method was used to determine the peak flow rates and volumes in order to adequately size the proposed basin and chamber detention systems to address increased runoff mitigation. Unit hydrographs were performed for both the 24-hour existing condition and developed condition only in the preliminary condition since it was assumed that the 24-hour condition will require the greatest mitigation volume. The existing condition is used to establish a baseline for comparative purposes. The developed condition is used for design purposes, it was utilized in the basin routing analysis in order to size and analyze the proposed basin and chamber detention systems. The unit hydrograph analysis for both the existing and developed condition was conducted for a total of 156.8 acres. This comprises the entirety of the proposed development with the BSS project site.

In the existing condition analysis, the overall project site was broken up into two areas. Approximately 106.4 acres are labelled as Area A and is tributary to the existing streambed area to the west of the project site. The remaining 50.4 acres are labelled as Area B and are tributary to a region of the streambed to the south of the project site. In the proposed condition, Area A is divided into a West Area and North Area (corresponding to Building 1 and Building 3, respectively). The West Area consists of approximately 55.3 acres while the North area is approximately 33.8 acres. Area B is referred to as the South Area in the developed condition and corresponds to the Building 2 project site, consisting of approximately 67.8 acres. In the developed condition, approximately 17.4 acres of area which was tributary to Area A in the existing condition have been included in the development of the South Area (part of the existing condition Area B). Therefore, the developed South Area will be over mitigating for flows as a greater area, and therefore greater discharge, is included in the developed condition analysis. While the existing condition Area A will be under mitigated once developed, the overall BSS site will be mass graded together as grading will require cut from the Building 2 area, in Area B, to be used in fill for mass grading of the Building 1 project site. Therefore, overall the BSS project will be fully mitigated once developed.

The following table summarizes the results of the unit hydrograph analysis:

Table 4 – Unit Hydrograph Results

EXISTING CONDITION - AREA A (WEST & NORTH)					EXISTING CONDITION - AREA B (SOUTH)				
AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)
EX100YRA	100	1	8.9	*235.28*	*EX100YRB*	100	1	4.2	*147.87*
		3	11.7	*150.79*			3	5.7	*80.72*
		6	14.5	*146.20*			6	7.5	*74.35*
		24	27.3	*70.90*			24	14.7	*34.45*
EX10YRA	10	1	5.2	*149.05*	*EX10YRB*	10	1	2.5	*95.19*
		3	6.4	*94.83*			3	3.3	*51.45*
		6	8.2	*92.02*			6	4.5	*47.26*
		24	12.4	*36.93*			24	7.6	*18.23*
EX5YRA	5	1	3.1	*105.39*	*EX5YRB*	5	1	1.7	*72.26*
		3	3.5	*59.58*			3	2.3	*35.60*
		6	4.5	*57.43*			6	3.1	*32.86*
		24	6.1	*10.83*			24	5.3	*8.78*
EX2YRA	2	1	2.1	*72.68*	*EX2YRB*	2	1	1.2	*51.91*
		3	2.4	*38.48*			3	1.7	*24.06*
		6	3.1	*36.56*			6	2.3	*22.47*
		24	2.7	*4.33*			24	3.9	*6.39*

DEVELOPED CONDITION - WEST					DEVELOPED CONDITION - NORTH					DEVELOPED CONDITION - SOUTH				
AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)
WEST100YR	100	1	5	164.42	NORTH100YR	100	1	3.1	101.13	SOUTH100YR	100	1	6.2	198.82
		3	7.5	92.35			3	4.6	56.59			3	9.2	112.81
		6	10.6	87.55			6	6.6	52.80			6	13.1	106.26
		24	21.8	41.63			24	13.7	25.34			24	27	50.90
WEST10YR	10	1	3.2	107.30	NORTH10YR	10	1	1.9	65.99	SOUTH10YR	10	1	3.9	129.69
		3	4.8	60.37			3	3	36.98			3	6	73.73
		6	6.9	57.27			6	4.3	34.61			6	8.5	69.58
		24	13	23.78			24	8.3	14.44			24	16.3	29.05
WEST5YR	5	1	2.5	86.26	NORTH5YR	5	1	1.6	53.56	SOUTH5YR	5	1	3.1	104.72
		3	3.9	46.71			3	2.5	29.08			3	4.9	57.66
		6	5.6	44.08			6	3.6	27.35			6	7.1	54.62
		24	10.6	17.46			24	6.9	11.30			24	13.4	22.01
WEST2YR	2	1	1.9	64.36	NORTH2YR	2	1	1.2	39.96	SOUTH2YR	2	1	2.3	78.02
		3	3	34.16			3	1.9	21.45			3	3.8	42.40
		6	4.4	32.10			6	2.8	20.29			6	5.5	40.35
		24	7.7	12.70			24	5	8.22			24	9.7	16.01

The unit hydrograph output files and hydrology map have been included in Appendix C.

BASIN ROUTING ANALYSIS

A routing analysis was completed to demonstrate that the basin and CMP chamber systems contain substantial volume needed to mitigate flows down to existing condition peak flow rates.

Basin routing calculations were conducted for each building area (west, north and south). A stage-storage-discharge table was determined for each area. The stage-storage-discharge tables provide input data at select elevations in the basin and/or chambers which will determine the storage and discharge at each point based on the mitigation configuration of the outlet structures.

In the proposed condition unit hydrograph analysis, the North Area outlets to the south of the Building 1 project site. Runoff from this region will connect with the outlet of the existing condition Area A, as the streambed into which Area A outlets runs from the southern portion of the Building 1 project area to the northwest along the western boundary. In the existing condition, the entire Area A generally drains to the southwest. Approximately 16.6% of Area A drains more towards the southern boundary before being conveyed to the west along the streambed. This area corresponds to the developed North Area (Building 3). The remaining portion, approximately 83.4%, correlates to the developed West Area (Building 1) and drains directly to the western boundary of Area A. For the developed condition West Area and North Area, a ratio of the areas was used to determine the existing peak flow rates which serve as the limits for the routing analysis of each area. An exhibit showing the portion of the existing condition Area A which flows south can be found in Appendix C.

For the BSS – Building 1 area, the proposed outlet structure consists of four 4-inch orifices with an invert set at the water quality ponding elevation of 2.4 ft above the chamber bottom. This orifice mitigates the 2-year storm event. A 1.5-ft weir is proposed at the maximum ponding depth for the 2-year, 24-hour storm (a depth of approximately 5.82 ft). This orifice mitigates for the 5-year storm event and creates a maximum ponding depth of 6.96 ft above the chamber bottom. At the 5-year ponding depth, a 7-ft weir is proposed to mitigate the 10-year and 100-year storm event. The 100-year storm produces a maximum ponding of 7.99 ft, which is below the 8 ft depth of the top of the chambers. The routing analysis produced a maximum drawdown time of 88.6 hours within the chambers. While this exceeds the 72-hour limit for above ground basins to prevent vector issues, the CMP detention system consists of underground chambers and therefore vector issues are not anticipated even with a high drawdown time.

For the BSS – Building 2 area, a constant flow rate of 9.4 cfs was assumed for the basin in order to account for the expected infiltration within the basin extents. This value was determined based on a recommended infiltration rate of 11.5 in/hr within the basin (see Appendix D for the infiltration report), the bottom basin area, and a factor of safety of 3. The water quality volume produces a maximum ponding of 1.4 ft above the basin bottom. Routing of the 2-year, 24-hour storm event shows that the infiltration within the basin is sufficient to meet the existing condition flow rates while producing 2.15 ft of ponding above the basin bottom. The proposed outlet structure consists of a rectangular weir with a length of 6 ft set at the 2-year storm ponding depth. This weir mitigates the 5-year storm event and produces a ponding depth of 2.67 ft. A 6-ft weir mitigates for the 10-year storm event and creates a maximum ponding depth of 2.98 ft within the basin. At the 10-year ponding elevation, a 6-ft weir mitigates for the 100-year storm. The 100-year storm creates a total ponding of 3.36 ft from the basin bottom, allowing at least 1 ft of freeboard below the top of the basin.

For the BSS- Building 3 area, the proposed outlet structure consists of a 3.5-inch orifice plate with an invert set at the bottom of the chambers. The water quality flows will be pumped out to be treated by the proposed bioretention basin therefore the chambers do not hold the water quality volume. This orifice mitigates the 2-year storm event. A 5-inch orifice is proposed at the maximum ponding depth for the 2-year, 24-hour storm (a depth of approximately 3.49 ft). This orifice mitigates for the 5-year storm event and creates a maximum ponding depth of 4.46 ft within the chambers. At this depth, a 0.8 ft weir is proposed to mitigate for the 10-year and 100-year storm events. The 10-year, 24-hour storm event creates

a maximum ponding of 5.16 ft while the 100-year storm creates a maximum ponding of 7.03 ft, which is below 9 ft depth of the top of the gravel which provides storage above the chambers as well. The routing analysis for the BSS – Building 3 detention chambers resulted in a maximum drawdown time of approximately 228 hours. While this exceeds the 72-hour limit for above ground basins to prevent vector issues the CMP detention system consists of underground chambers and therefore vector issues are not anticipated even with a high drawdown time. This is due to this area over mitigating as the developed Building 3 project area is larger than the portion of the existing condition Area A which is used as the limit for the routing analysis of this region. While the mitigation for both Building 3 and Parcel 4 are included in the BSS – Building 3 Area, Parcel 4 will be required to treat for water quality separately from Building 3.

The following tables present the result of routing analysis for the 2-, 5-, 10- and 100-year 24-hour storm events to demonstrate that the basin and CMP chamber systems provide the necessary storage volume needed to restrict the outflow to existing condition flow rates.

Table 5 – Basin Routing Results

		Existing Condition							
		Area A (106.4 ac)		83.4% A	16.6% A	Area B (50.4 ac)		Total (156.8 ac)	
Storm Event		Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)
2-Year	1-Hour	2.1	72.7	**60.6**	12.1	1.2	**51.9**	3.3	124.6
	3-Hour	2.4	38.5	**32.1**	6.4	1.7	**24.1**	4.1	62.5
	6-Hour	3.1	36.6	**30.5**	6.1	2.3	**22.5**	5.4	59.0
	24-Hour	2.7	4.3	**3.6**	0.7	3.9	**6.4**	6.6	10.7
5-Year	1-Hour	3.1	105.4	**87.9**	17.5	1.7	**72.3**	4.8	177.7
	3-Hour	3.5	59.6	49.7	9.9	2.3	**35.6**	5.8	95.2
	6-Hour	4.5	57.4	47.9	9.5	3.1	**32.9**	7.6	90.3
	24-Hour	6.1	10.8	9.0	1.8	5.3	**8.8**	11.4	19.6
10-Year	1-Hour	5.2	149.1	**124.3**	24.7	2.5	**95.2**	7.7	244.2
	3-Hour	6.4	94.8	79.1	15.7	3.3	**51.5**	9.7	146.3
	6-Hour	8.2	92.0	76.7	15.3	4.5	**47.3**	12.7	139.3
	24-Hour	12.4	36.9	30.8	6.1	7.6	**18.2**	20.0	55.2
100-Year	1-Hour	8.9	235.28	196.0	39.1	4.2	**147.9**	13.1	383.2
	3-Hour	11.7	150.79	125.6	25.0	5.7	**80.7**	17.4	231.5
	6-Hour	14.5	146.20	121.8	24.3	7.5	**74.4**	22.0	220.6
	24-Hour	27.3	70.90	59.1	11.8	14.7	**34.5**	42.0	105.4

Storm Event		Developed Condition										Basin Routing Results				
		West Area (55.3 ac)		North Area (33.8 ac)		Combined (89.1 ac)		South Area (67.8 ac)		Total (156.8 ac)		West Area	North Area	Combined	South Area	Total
		Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	*Peak Flow (cfs)	**Peak Flow (cfs)	Peak Flow (cfs)
2-Year	1-Hour	1.9	64.4	1.2	40.0	3.1	104.3	2.30	78.02	5.40	*182.34*	*To be analyzed during Final Engineering*				
	3-Hour	3.0	34.2	1.9	21.5	4.9	55.6	3.80	42.40	8.70	*98.01*					
	6-Hour	4.4	32.1	2.8	20.3	7.2	52.4	5.50	40.35	12.70	*92.74*					
	24-Hour	7.7	12.7	5.0	8.2	12.7	20.9	9.70	16.01	22.40	*36.93*	*3.31*	*0.65*	*3.96*	*0*	*3.96*
5-Year	1-Hour	2.5	86.3	1.6	53.6	4.1	139.8	3.10	104.72	7.20	*244.54*	*To be analyzed during Final Engineering*				
	3-Hour	3.9	46.7	2.5	29.1	6.4	75.8	4.90	57.66	11.30	*133.45*					
	6-Hour	5.6	44.1	3.6	27.4	9.2	71.4	7.10	54.62	16.30	*126.05*					
	24-Hour	10.6	17.5	6.9	11.3	17.5	28.8	13.40	22.01	30.90	*50.77*	*9.37*	*1.44*	*10.81*	*8.10*	*18.91*
10-Year	1-Hour	3.2	107.3	1.9	66.0	5.1	173.3	3.90	129.69	9.00	*302.98*	*To be analyzed during Final Engineering*				
	3-Hour	4.8	60.4	3.0	37.0	7.8	97.4	6.00	73.73	13.80	*171.08*					
	6-Hour	6.9	57.3	4.3	34.6	11.2	91.9	8.50	69.58	19.70	*161.46*					
	24-Hour	13.0	23.8	8.3	14.4	21.3	38.2	16.30	29.05	37.60	*67.27*	*16.43*	*3.18*	*19.61*	*16.86*	*36.47*
100-Year	1-Hour	5.0	164.4	3.1	101.1	8.1	265.5	6.2	198.82	14.3	*464.32*	*To be analyzed during Final Engineering*				
	3-Hour	7.5	92.4	4.6	56.6	12.1	149.0	9.2	112.81	21.3	*261.81*					
	6-Hour	10.6	87.6	6.6	52.8	17.2	140.4	13.1	106.26	30.3	*246.66*					
	24-Hour	21.8	41.6	13.7	25.3	35.5	66.9	27.0	50.90	62.5	*117.80*	*40.75*	*12.18*	*52.93*	*39.9*	*92.83*

Note:

**The Combined Peak Flow describes the flows exiting the site along the western and southwestern boundary of the site. This value is the sum of the peak flow rates generated by the West and North Areas in the proposed condition which have been routed to be less than the existing condition peak flow for Area A or within 10% of this value.*

***For the routing analysis of the South Area (Building 2), a constant flow rate of 9.4 cfs is assumed to be infiltrating within the basin extents (based on 11.5 in/hr infiltration rate, the basin bottom area, and a factor of safety of 3) and has been subtracted from the peak flow results from the routing analysis.*

The basin routing calculations and other hydraulic calculations have been provided in Appendix C. Based on the table above, the proposed infiltration basin and detention chambers for each building area have the capacity to mitigate for all the required HCOC storm events. All discharge flow rates in the developed condition are lower than or within ten percent of the flow rate exiting the site in the existing condition.

RELEVANT EXCERPTS FROM "BEAUMONT SUMMIT STATION – BUILDING 3 PRELIMINARY DRAINAGE STUDY"

PROPOSED CONDITION UNIT HYDROGRAPHS

PROPOSED CONDITION
2-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: NORTH2YR32.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.95	32.11

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.05	69.29

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 0.950(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.950(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)			Effective
	(Hr.)	Percent	(In/Hr)	Max		Low	(In/Hr)
1	0.08	1.30	0.148	(0.223)		0.043	0.105
2	0.17	1.30	0.148	(0.223)		0.043	0.105
3	0.25	1.10	0.125	(0.223)		0.036	0.089
4	0.33	1.50	0.171	(0.223)		0.050	0.121
5	0.42	1.50	0.171	(0.223)		0.050	0.121
6	0.50	1.80	0.205	(0.223)		0.059	0.146
7	0.58	1.50	0.171	(0.223)		0.050	0.121
8	0.67	1.80	0.205	(0.223)		0.059	0.146
9	0.75	1.80	0.205	(0.223)		0.059	0.146
10	0.83	1.50	0.171	(0.223)		0.050	0.121
11	0.92	1.60	0.182	(0.223)		0.053	0.129
12	1.00	1.80	0.205	(0.223)		0.059	0.146
13	1.08	2.20	0.251	(0.223)		0.073	0.178
14	1.17	2.20	0.251	(0.223)		0.073	0.178
15	1.25	2.20	0.251	(0.223)		0.073	0.178
16	1.33	2.00	0.228	(0.223)		0.066	0.162
17	1.42	2.60	0.296	(0.223)		0.086	0.210
18	1.50	2.70	0.308	(0.223)		0.089	0.219
19	1.58	2.40	0.274	(0.223)		0.079	0.194
20	1.67	2.70	0.308	(0.223)		0.089	0.219
21	1.75	3.30	0.376	(0.223)		0.109	0.267
22	1.83	3.10	0.353	(0.223)		0.102	0.251
23	1.92	2.90	0.331	(0.223)		0.096	0.235
24	2.00	3.00	0.342	(0.223)		0.099	0.243
25	2.08	3.10	0.353	(0.223)		0.102	0.251
26	2.17	4.20	0.479	(0.223)		0.139	0.340
27	2.25	5.00	0.570	(0.223)		0.165	0.405
28	2.33	3.50	0.399	(0.223)		0.116	0.283
29	2.42	6.80	0.775	0.223	(	0.225)	0.552
30	2.50	7.30	0.832	0.223	(	0.241)	0.609
31	2.58	8.20	0.935	0.223	(	0.271)	0.712
32	2.67	5.90	0.673	(0.223)		0.195	0.477
33	2.75	2.00	0.228	(0.223)		0.066	0.162
34	2.83	1.80	0.205	(0.223)		0.059	0.146
35	2.92	1.80	0.205	(0.223)		0.059	0.146
36	3.00	0.60	0.068	(0.223)		0.020	0.049
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	8.2

Flood volume = Effective rainfall 0.68(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 1.9(Ac.Ft)
Total soil loss = 0.27(In)
Total soil loss = 0.760(Ac.Ft)

```
      Total rainfall =      0.95(In)
      Flood volume =       83438.5 Cubic Feet
      Total soil loss =       33103.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     21.451(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
 ------------------------------------------------------------------------
   0+ 5       0.0031      0.45  Q         |         |         |         |
   0+10       0.0197      2.41  V  Q      |         |         |         |
   0+15       0.0407      3.05  V   Q     |         |         |         |
   0+20       0.0625      3.17  |V  Q     |         |         |         |
   0+25       0.0886      3.78  |V   Q    |         |         |         |
   0+30       0.1168      4.09  | V  Q    |         |         |         |
   0+35       0.1480      4.54  |  V  Q   |         |         |         |
   0+40       0.1782      4.39  |  V Q    |         |         |         |
   0+45       0.2109      4.75  |   V Q   |         |         |         |
   0+50       0.2438      4.78  |    VQ   |         |         |         |
   0+55       0.2742      4.41  |    Q    |         |         |         |
   1+ 0       0.3051      4.49  |    QV   |         |         |         |
   1+ 5       0.3390      4.92  |     QV  |         |         |         |
   1+10       0.3778      5.63  |      Q  |         |         |         |
   1+15       0.4184      5.90  |      QV |         |         |         |
   1+20       0.4593      5.93  |      Q V|         |         |         |
   1+25       0.4998      5.88  |      Q  V         |         |         |
   1+30       0.5461      6.72  |       Q |V        |         |         |
   1+35       0.5947      7.06  |        Q| V       |         |         |
   1+40       0.6422      6.89  |        Q|  V      |         |         |
   1+45       0.6935      7.45  |         Q|   V    |         |         |
   1+50       0.7514      8.41  |          |Q   V   |         |         |
   1+55       0.8093      8.41  |          |Q    V  |         |         |
   2+ 0       0.8657      8.19  |          Q       V|         |         |
   2+ 5       0.9228      8.28  |          |Q       V|         |         |
   2+10       0.9835      8.82  |          |Q        V         |         |
   2+15       1.0581     10.83  |          |   Q     | V       |         |
   2+20       1.1418     12.14  |          |     Q   |  V      |         |
   2+25       1.2224     11.70  |          |    Q    |    V    |         |
   2+30       1.3355     16.43  |          |         |Q     V  |         |
   2+35       1.4698     19.49  |          |         |    Q    V         |
   2+40       1.6175     21.45  |          |         |       Q |  V      |
   2+45       1.7335     16.85  |          |         | Q       |    V    |
   2+50       1.8005      9.73  |          | Q       |         |     V   |
   2+55       1.8477      6.84  |         Q|         |         |      V  |
   3+ 0       1.8840      5.27  |       Q  |         |         |       V |
   3+ 5       1.9034      2.82  |  Q       |         |         |        V|
   3+10       1.9110      1.10  |Q         |         |         |        V|
   3+15       1.9139      0.42  Q          |         |         |        V|
   3+20       1.9149      0.15  Q          |         |         |        V|
   3+25       1.9153      0.06  Q          |         |         |        V|
   3+30       1.9155      0.02  Q          |         |         |        V|
   3+35       1.9155      0.00  Q          |         |         |         V
------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH2YR62.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.40	47.32

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	3.00	101.40

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.400(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.400(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

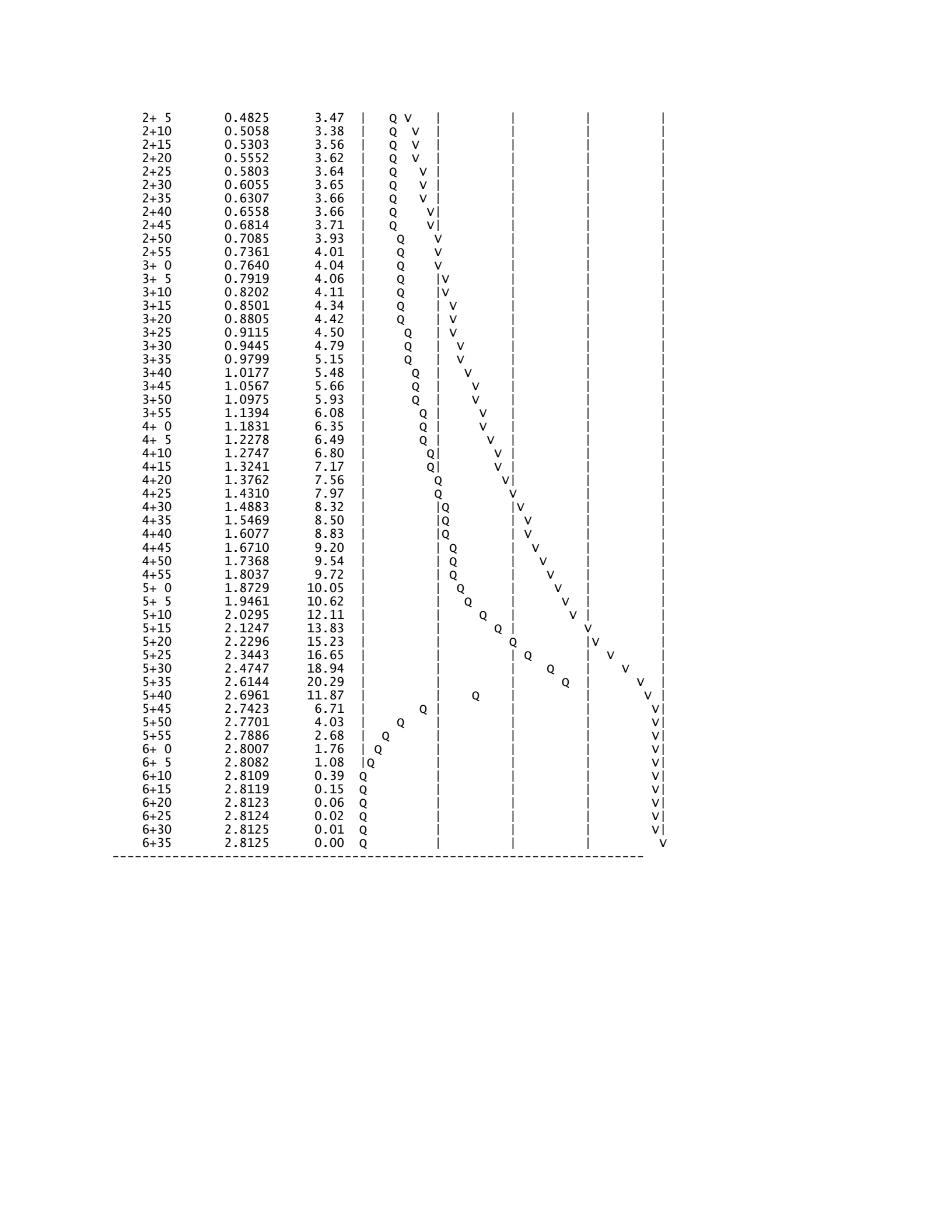
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.50	0.084	(0.223)	0.024	0.060
2	0.17	0.60	0.101	(0.223)	0.029	0.072
3	0.25	0.60	0.101	(0.223)	0.029	0.072
4	0.33	0.60	0.101	(0.223)	0.029	0.072
5	0.42	0.60	0.101	(0.223)	0.029	0.072
6	0.50	0.70	0.118	(0.223)	0.034	0.083
7	0.58	0.70	0.118	(0.223)	0.034	0.083
8	0.67	0.70	0.118	(0.223)	0.034	0.083
9	0.75	0.70	0.118	(0.223)	0.034	0.083
10	0.83	0.70	0.118	(0.223)	0.034	0.083
11	0.92	0.70	0.118	(0.223)	0.034	0.083
12	1.00	0.80	0.134	(0.223)	0.039	0.095
13	1.08	0.80	0.134	(0.223)	0.039	0.095
14	1.17	0.80	0.134	(0.223)	0.039	0.095
15	1.25	0.80	0.134	(0.223)	0.039	0.095
16	1.33	0.80	0.134	(0.223)	0.039	0.095
17	1.42	0.80	0.134	(0.223)	0.039	0.095
18	1.50	0.80	0.134	(0.223)	0.039	0.095
19	1.58	0.80	0.134	(0.223)	0.039	0.095
20	1.67	0.80	0.134	(0.223)	0.039	0.095
21	1.75	0.80	0.134	(0.223)	0.039	0.095
22	1.83	0.80	0.134	(0.223)	0.039	0.095
23	1.92	0.80	0.134	(0.223)	0.039	0.095
24	2.00	0.90	0.151	(0.223)	0.044	0.107
25	2.08	0.80	0.134	(0.223)	0.039	0.095
26	2.17	0.90	0.151	(0.223)	0.044	0.107
27	2.25	0.90	0.151	(0.223)	0.044	0.107
28	2.33	0.90	0.151	(0.223)	0.044	0.107
29	2.42	0.90	0.151	(0.223)	0.044	0.107
30	2.50	0.90	0.151	(0.223)	0.044	0.107
31	2.58	0.90	0.151	(0.223)	0.044	0.107
32	2.67	0.90	0.151	(0.223)	0.044	0.107
33	2.75	1.00	0.168	(0.223)	0.049	0.119
34	2.83	1.00	0.168	(0.223)	0.049	0.119
35	2.92	1.00	0.168	(0.223)	0.049	0.119
36	3.00	1.00	0.168	(0.223)	0.049	0.119
37	3.08	1.00	0.168	(0.223)	0.049	0.119
38	3.17	1.10	0.185	(0.223)	0.054	0.131
39	3.25	1.10	0.185	(0.223)	0.054	0.131
40	3.33	1.10	0.185	(0.223)	0.054	0.131
41	3.42	1.20	0.202	(0.223)	0.058	0.143
42	3.50	1.30	0.218	(0.223)	0.063	0.155

```
43   3.58     1.40      0.235       (  0.223)       0.068        0.167
44   3.67     1.40      0.235       (  0.223)       0.068        0.167
45   3.75     1.50      0.252       (  0.223)       0.073        0.179
46   3.83     1.50      0.252       (  0.223)       0.073        0.179
47   3.92     1.60      0.269       (  0.223)       0.078        0.191
48   4.00     1.60      0.269       (  0.223)       0.078        0.191
49   4.08     1.70      0.286       (  0.223)       0.083        0.203
50   4.17     1.80      0.302       (  0.223)       0.088        0.215
51   4.25     1.90      0.319       (  0.223)       0.093        0.227
52   4.33     2.00      0.336       (  0.223)       0.097        0.239
53   4.42     2.10      0.353       (  0.223)       0.102        0.250
54   4.50     2.10      0.353       (  0.223)       0.102        0.250
55   4.58     2.20      0.370       (  0.223)       0.107        0.262
56   4.67     2.30      0.386       (  0.223)       0.112        0.274
57   4.75     2.40      0.403       (  0.223)       0.117        0.286
58   4.83     2.40      0.403       (  0.223)       0.117        0.286
59   4.92     2.50      0.420       (  0.223)       0.122        0.298
60   5.00     2.60      0.437       (  0.223)       0.127        0.310
61   5.08     3.10      0.521       (  0.223)       0.151        0.370
62   5.17     3.60      0.605       (  0.223)       0.175        0.429
63   5.25     3.90      0.655       (  0.223)       0.190        0.465
64   5.33     4.20      0.706       (  0.223)       0.205        0.501
65   5.42     4.70      0.790          0.223    (  0.229)       0.566
66   5.50     5.60      0.941          0.223    (  0.273)       0.718
67   5.58     1.90      0.319       (  0.223)       0.093        0.227
68   5.67     0.90      0.151       (  0.223)       0.044        0.107
69   5.75     0.60      0.101       (  0.223)       0.029        0.072
70   5.83     0.50      0.084       (  0.223)       0.024        0.060
71   5.92     0.30      0.050       (  0.223)       0.015        0.036
72   6.00     0.20      0.034       (  0.223)       0.010        0.024
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    12.0
      Flood volume = Effective rainfall      1.00(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       2.8(Ac.Ft)
      Total soil loss =      0.40(In)
      Total soil loss =     1.130(Ac.Ft)
      Total rainfall =      1.40(In)
      Flood volume =      122511.8 Cubic Feet
      Total soil loss =       49239.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     20.285(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0017      0.25  Q          |          |          |          |
  0+10       0.0115      1.42  VQ         |          |          |          |
  0+15       0.0256      2.04  V Q        |          |          |          |
  0+20       0.0413      2.28  V  Q       |          |          |          |
  0+25       0.0577      2.38  V  Q       |          |          |          |
  0+30       0.0747      2.46  |V Q       |          |          |          |
  0+35       0.0933      2.70  |V Q       |          |          |          |
  0+40       0.1125      2.79  |V Q       |          |          |          |
  0+45       0.1320      2.83  |V Q       |          |          |          |
  0+50       0.1515      2.84  | VQ       |          |          |          |
  0+55       0.1711      2.84  | VQ       |          |          |          |
  1+ 0       0.1910      2.89  | VQ       |          |          |          |
  1+ 5       0.2125      3.12  |  VQ      |          |          |          |
  1+10       0.2345      3.20  |  VQ      |          |          |          |
  1+15       0.2568      3.23  |  VQ      |          |          |          |
  1+20       0.2791      3.24  |  VQ      |          |          |          |
  1+25       0.3015      3.25  |   Q      |          |          |          |
  1+30       0.3239      3.25  |   Q      |          |          |          |
  1+35       0.3463      3.25  |   Q      |          |          |          |
  1+40       0.3687      3.25  |   QV     |          |          |          |
  1+45       0.3911      3.25  |   QV     |          |          |          |
  1+50       0.4135      3.25  |   QV     |          |          |          |
  1+55       0.4358      3.25  |   Q V    |          |          |          |
  2+ 0       0.4586      3.30  |   Q V    |          |          |          |
```


2+ 5 0.4825 3.47
2+10 0.5058 3.38
2+15 0.5303 3.56
2+20 0.5552 3.62
2+25 0.5803 3.64
2+30 0.6055 3.65
2+35 0.6307 3.66
2+40 0.6558 3.66
2+45 0.6814 3.71
2+50 0.7085 3.93
2+55 0.7361 4.01
3+ 0 0.7640 4.04
3+ 5 0.7919 4.06
3+10 0.8202 4.11
3+15 0.8501 4.34
3+20 0.8805 4.42
3+25 0.9115 4.50
3+30 0.9445 4.79
3+35 0.9799 5.15
3+40 1.0177 5.48
3+45 1.0567 5.66
3+50 1.0975 5.93
3+55 1.1394 6.08
4+ 0 1.1831 6.35
4+ 5 1.2278 6.49
4+10 1.2747 6.80
4+15 1.3241 7.17
4+20 1.3762 7.56
4+25 1.4310 7.97
4+30 1.4883 8.32
4+35 1.5469 8.50
4+40 1.6077 8.83
4+45 1.6710 9.20
4+50 1.7368 9.54
4+55 1.8037 9.72
5+ 0 1.8729 10.05
5+ 5 1.9461 10.62
5+10 2.0295 12.11
5+15 2.1247 13.83
5+20 2.2296 15.23
5+25 2.3443 16.65
5+30 2.4747 18.94
5+35 2.6144 20.29
5+40 2.6961 11.87
5+45 2.7423 6.71
5+50 2.7701 4.03
5+55 2.7886 2.68
6+ 0 2.8007 1.76
6+ 5 2.8082 1.08
6+10 2.8109 0.39
6+15 2.8119 0.15
6+20 2.8123 0.06
6+25 2.8124 0.02
6+30 2.8125 0.01
6+35 2.8125 0.00

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH2YR12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.55	18.59

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.25	42.25

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

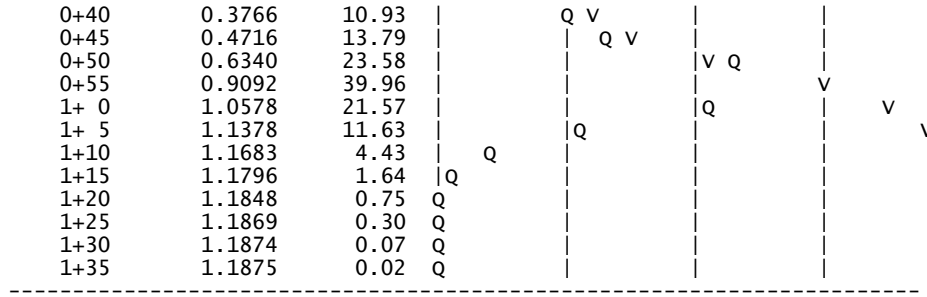
```
      56.0  36.0      0.706     0.760        0.223       1.000      0.223
                                                        Sum (F) =   0.223
      Area averaged mean soil loss (F) (In/Hr) =  0.223
      Minimum soil loss rate ((In/Hr)) =  0.112
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.290
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         94.204         12.469             4.247
          2   0.167        188.409         54.814            18.672
          3   0.250        282.613         19.639             6.690
          4   0.333        376.818          8.096             2.758
          5   0.417        471.022          3.119             1.063
          6   0.500        565.227          0.957             0.326
          7   0.583        659.431          0.629             0.214
          8   0.667        753.636          0.277             0.094
                                   Sum = 100.000   Sum=      34.064
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.224       (  0.223)       0.065        0.159
   2   0.17     4.70      0.310       (  0.223)       0.090        0.220
   3   0.25     4.70      0.310       (  0.223)       0.090        0.220
   4   0.33     5.10      0.336       (  0.223)       0.098        0.239
   5   0.42     5.80      0.383       (  0.223)       0.111        0.272
   6   0.50     5.90      0.389       (  0.223)       0.113        0.276
   7   0.58     7.10      0.468       (  0.223)       0.136        0.333
   8   0.67     8.70      0.574       (  0.223)       0.166        0.408
   9   0.75    13.20      0.871          0.223    (  0.253)        0.648
  10   0.83    29.70      1.960          0.223    (  0.568)        1.737
  11   0.92     7.70      0.508       (  0.223)       0.147        0.361
  12   1.00     4.00      0.264       (  0.223)       0.077        0.187
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     5.1
        Flood volume = Effective rainfall      0.42(In)
         times area      33.8(Ac.)/[(In)/(Ft.)] =       1.2(Ac.Ft)
        Total soil loss =      0.13(In)
        Total soil loss =     0.361(Ac.Ft)
        Total rainfall =      0.55(In)
        Flood volume =       51728.1 Cubic Feet
        Total soil loss =       15733.0 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =     39.959(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
  ------------------------------------------------------------------------
    0+ 5       0.0047      0.68  Q         |         |         |         |
    0+10       0.0316      3.91  |V Q      |         |         |         |
    0+15       0.0737      6.11  | V   Q   |         |         |         |
    0+20       0.1222      7.04  |   V  Q  |         |         |         |
    0+25       0.1764      7.87  |    V Q  |         |         |         |
    0+30       0.2366      8.74  |      VQ |         |         |         |
    0+35       0.3013      9.39  |        QV         |         |         |
```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0+45 0.4716 13.79
0+50 0.6340 23.58
0+55 0.9092 39.96
1+ 0 1.0578 21.57
1+ 5 1.1378 11.63
1+10 1.1683 4.43
1+15 1.1796 1.64
1+20 1.1848 0.75
1+25 1.1869 0.30
1+30 1.1874 0.07
1+35 1.1875 0.02

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.395)	0.006	0.014
2	0.17	0.07	0.020	(0.394)	0.006	0.014
3	0.25	0.07	0.020	(0.392)	0.006	0.014
4	0.33	0.10	0.030	(0.391)	0.009	0.021
5	0.42	0.10	0.030	(0.389)	0.009	0.021
6	0.50	0.10	0.030	(0.388)	0.009	0.021
7	0.58	0.10	0.030	(0.386)	0.009	0.021
8	0.67	0.10	0.030	(0.385)	0.009	0.021
9	0.75	0.10	0.030	(0.383)	0.009	0.021
10	0.83	0.13	0.040	(0.382)	0.012	0.028
11	0.92	0.13	0.040	(0.380)	0.012	0.028
12	1.00	0.13	0.040	(0.379)	0.012	0.028
13	1.08	0.10	0.030	(0.377)	0.009	0.021
14	1.17	0.10	0.030	(0.376)	0.009	0.021
15	1.25	0.10	0.030	(0.374)	0.009	0.021
16	1.33	0.10	0.030	(0.373)	0.009	0.021
17	1.42	0.10	0.030	(0.371)	0.009	0.021
18	1.50	0.10	0.030	(0.370)	0.009	0.021
19	1.58	0.10	0.030	(0.368)	0.009	0.021
20	1.67	0.10	0.030	(0.367)	0.009	0.021
21	1.75	0.10	0.030	(0.365)	0.009	0.021
22	1.83	0.13	0.040	(0.364)	0.012	0.028
23	1.92	0.13	0.040	(0.363)	0.012	0.028
24	2.00	0.13	0.040	(0.361)	0.012	0.028
25	2.08	0.13	0.040	(0.360)	0.012	0.028
26	2.17	0.13	0.040	(0.358)	0.012	0.028
27	2.25	0.13	0.040	(0.357)	0.012	0.028
28	2.33	0.13	0.040	(0.355)	0.012	0.028
29	2.42	0.13	0.040	(0.354)	0.012	0.028
30	2.50	0.13	0.040	(0.352)	0.012	0.028
31	2.58	0.17	0.050	(0.351)	0.014	0.035
32	2.67	0.17	0.050	(0.349)	0.014	0.035
33	2.75	0.17	0.050	(0.348)	0.014	0.035
34	2.83	0.17	0.050	(0.347)	0.014	0.035
35	2.92	0.17	0.050	(0.345)	0.014	0.035
36	3.00	0.17	0.050	(0.344)	0.014	0.035
37	3.08	0.17	0.050	(0.342)	0.014	0.035
38	3.17	0.17	0.050	(0.341)	0.014	0.035
39	3.25	0.17	0.050	(0.339)	0.014	0.035
40	3.33	0.17	0.050	(0.338)	0.014	0.035
41	3.42	0.17	0.050	(0.337)	0.014	0.035
42	3.50	0.17	0.050	(0.335)	0.014	0.035

43	3.58	0.17	0.050	(0.334)	0.014	0.035
44	3.67	0.17	0.050	(0.332)	0.014	0.035
45	3.75	0.17	0.050	(0.331)	0.014	0.035
46	3.83	0.20	0.060	(0.330)	0.017	0.043
47	3.92	0.20	0.060	(0.328)	0.017	0.043
48	4.00	0.20	0.060	(0.327)	0.017	0.043
49	4.08	0.20	0.060	(0.325)	0.017	0.043
50	4.17	0.20	0.060	(0.324)	0.017	0.043
51	4.25	0.20	0.060	(0.323)	0.017	0.043
52	4.33	0.23	0.070	(0.321)	0.020	0.050
53	4.42	0.23	0.070	(0.320)	0.020	0.050
54	4.50	0.23	0.070	(0.319)	0.020	0.050
55	4.58	0.23	0.070	(0.317)	0.020	0.050
56	4.67	0.23	0.070	(0.316)	0.020	0.050
57	4.75	0.23	0.070	(0.314)	0.020	0.050
58	4.83	0.27	0.080	(0.313)	0.023	0.057
59	4.92	0.27	0.080	(0.312)	0.023	0.057
60	5.00	0.27	0.080	(0.310)	0.023	0.057
61	5.08	0.20	0.060	(0.309)	0.017	0.043
62	5.17	0.20	0.060	(0.308)	0.017	0.043
63	5.25	0.20	0.060	(0.306)	0.017	0.043
64	5.33	0.23	0.070	(0.305)	0.020	0.050
65	5.42	0.23	0.070	(0.304)	0.020	0.050
66	5.50	0.23	0.070	(0.302)	0.020	0.050
67	5.58	0.27	0.080	(0.301)	0.023	0.057
68	5.67	0.27	0.080	(0.300)	0.023	0.057
69	5.75	0.27	0.080	(0.298)	0.023	0.057
70	5.83	0.27	0.080	(0.297)	0.023	0.057
71	5.92	0.27	0.080	(0.296)	0.023	0.057
72	6.00	0.27	0.080	(0.294)	0.023	0.057
73	6.08	0.30	0.090	(0.293)	0.026	0.064
74	6.17	0.30	0.090	(0.292)	0.026	0.064
75	6.25	0.30	0.090	(0.291)	0.026	0.064
76	6.33	0.30	0.090	(0.289)	0.026	0.064
77	6.42	0.30	0.090	(0.288)	0.026	0.064
78	6.50	0.30	0.090	(0.287)	0.026	0.064
79	6.58	0.33	0.100	(0.285)	0.029	0.071
80	6.67	0.33	0.100	(0.284)	0.029	0.071
81	6.75	0.33	0.100	(0.283)	0.029	0.071
82	6.83	0.33	0.100	(0.282)	0.029	0.071
83	6.92	0.33	0.100	(0.280)	0.029	0.071
84	7.00	0.33	0.100	(0.279)	0.029	0.071
85	7.08	0.33	0.100	(0.278)	0.029	0.071
86	7.17	0.33	0.100	(0.276)	0.029	0.071
87	7.25	0.33	0.100	(0.275)	0.029	0.071
88	7.33	0.37	0.110	(0.274)	0.032	0.078
89	7.42	0.37	0.110	(0.273)	0.032	0.078
90	7.50	0.37	0.110	(0.271)	0.032	0.078
91	7.58	0.40	0.120	(0.270)	0.035	0.085
92	7.67	0.40	0.120	(0.269)	0.035	0.085
93	7.75	0.40	0.120	(0.268)	0.035	0.085
94	7.83	0.43	0.130	(0.266)	0.038	0.092
95	7.92	0.43	0.130	(0.265)	0.038	0.092
96	8.00	0.43	0.130	(0.264)	0.038	0.092
97	8.08	0.50	0.150	(0.263)	0.043	0.106
98	8.17	0.50	0.150	(0.262)	0.043	0.106
99	8.25	0.50	0.150	(0.260)	0.043	0.106
100	8.33	0.50	0.150	(0.259)	0.043	0.106
101	8.42	0.50	0.150	(0.258)	0.043	0.106
102	8.50	0.50	0.150	(0.257)	0.043	0.106
103	8.58	0.53	0.160	(0.256)	0.046	0.114
104	8.67	0.53	0.160	(0.254)	0.046	0.114
105	8.75	0.53	0.160	(0.253)	0.046	0.114
106	8.83	0.57	0.170	(0.252)	0.049	0.121
107	8.92	0.57	0.170	(0.251)	0.049	0.121
108	9.00	0.57	0.170	(0.250)	0.049	0.121
109	9.08	0.63	0.190	(0.248)	0.055	0.135
110	9.17	0.63	0.190	(0.247)	0.055	0.135
111	9.25	0.63	0.190	(0.246)	0.055	0.135
112	9.33	0.67	0.200	(0.245)	0.058	0.142
113	9.42	0.67	0.200	(0.244)	0.058	0.142
114	9.50	0.67	0.200	(0.243)	0.058	0.142
115	9.58	0.70	0.210	(0.241)	0.061	0.149
116	9.67	0.70	0.210	(0.240)	0.061	0.149
117	9.75	0.70	0.210	(0.239)	0.061	0.149

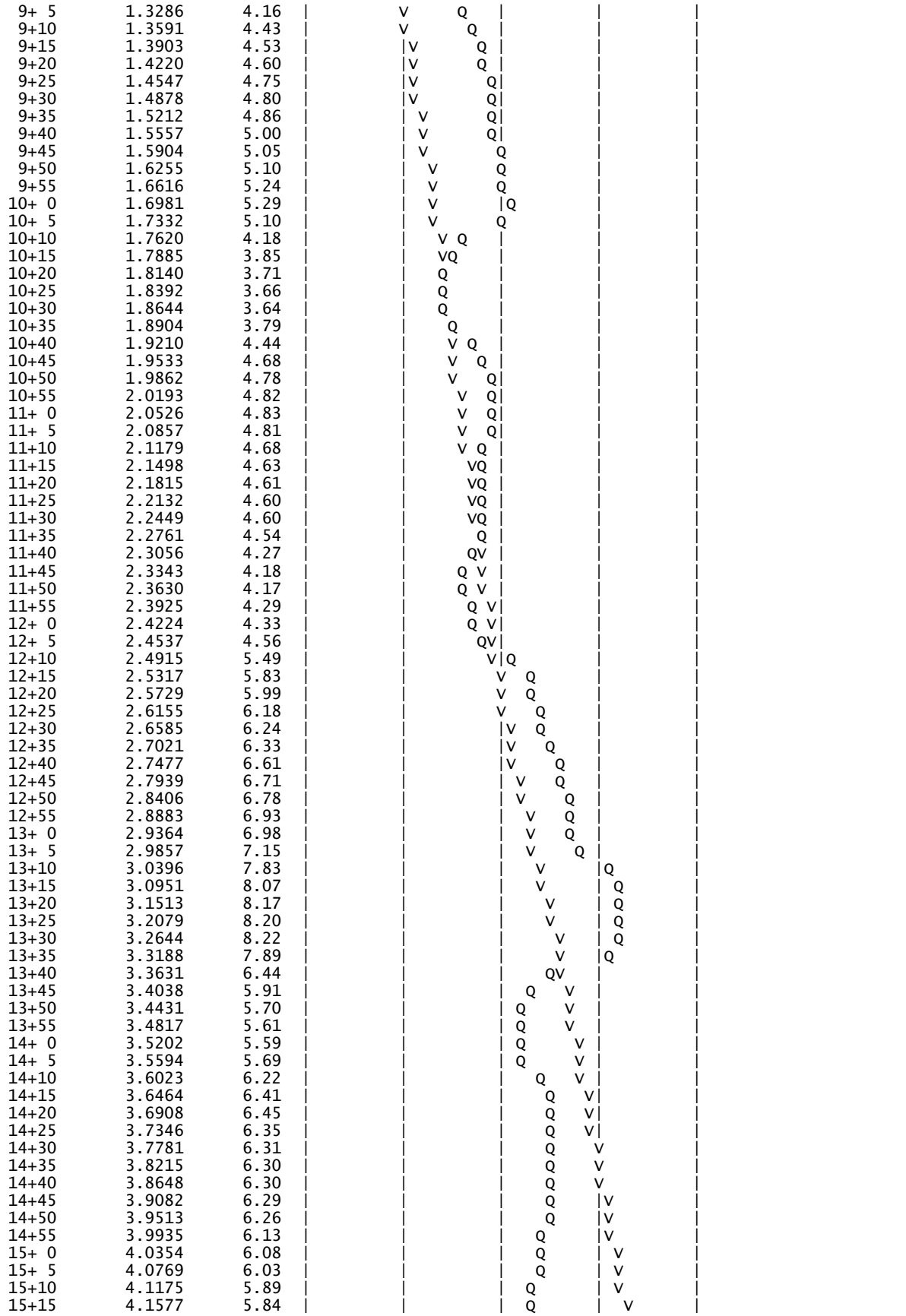
118	9.83	0.73	0.220	(0.238)	0.064	0.156
119	9.92	0.73	0.220	(0.237)	0.064	0.156
120	10.00	0.73	0.220	(0.236)	0.064	0.156
121	10.08	0.50	0.150	(0.234)	0.043	0.106
122	10.17	0.50	0.150	(0.233)	0.043	0.106
123	10.25	0.50	0.150	(0.232)	0.043	0.106
124	10.33	0.50	0.150	(0.231)	0.043	0.106
125	10.42	0.50	0.150	(0.230)	0.043	0.106
126	10.50	0.50	0.150	(0.229)	0.043	0.106
127	10.58	0.67	0.200	(0.228)	0.058	0.142
128	10.67	0.67	0.200	(0.227)	0.058	0.142
129	10.75	0.67	0.200	(0.225)	0.058	0.142
130	10.83	0.67	0.200	(0.224)	0.058	0.142
131	10.92	0.67	0.200	(0.223)	0.058	0.142
132	11.00	0.67	0.200	(0.222)	0.058	0.142
133	11.08	0.63	0.190	(0.221)	0.055	0.135
134	11.17	0.63	0.190	(0.220)	0.055	0.135
135	11.25	0.63	0.190	(0.219)	0.055	0.135
136	11.33	0.63	0.190	(0.218)	0.055	0.135
137	11.42	0.63	0.190	(0.217)	0.055	0.135
138	11.50	0.63	0.190	(0.216)	0.055	0.135
139	11.58	0.57	0.170	(0.215)	0.049	0.121
140	11.67	0.57	0.170	(0.214)	0.049	0.121
141	11.75	0.57	0.170	(0.212)	0.049	0.121
142	11.83	0.60	0.180	(0.211)	0.052	0.128
143	11.92	0.60	0.180	(0.210)	0.052	0.128
144	12.00	0.60	0.180	(0.209)	0.052	0.128
145	12.08	0.83	0.250	(0.208)	0.072	0.177
146	12.17	0.83	0.250	(0.207)	0.072	0.177
147	12.25	0.83	0.250	(0.206)	0.072	0.177
148	12.33	0.87	0.260	(0.205)	0.075	0.185
149	12.42	0.87	0.260	(0.204)	0.075	0.185
150	12.50	0.87	0.260	(0.203)	0.075	0.185
151	12.58	0.93	0.280	(0.202)	0.081	0.199
152	12.67	0.93	0.280	(0.201)	0.081	0.199
153	12.75	0.93	0.280	(0.200)	0.081	0.199
154	12.83	0.97	0.290	(0.199)	0.084	0.206
155	12.92	0.97	0.290	(0.198)	0.084	0.206
156	13.00	0.97	0.290	(0.197)	0.084	0.206
157	13.08	1.13	0.340	(0.196)	0.099	0.241
158	13.17	1.13	0.340	(0.195)	0.099	0.241
159	13.25	1.13	0.340	(0.194)	0.099	0.241
160	13.33	1.13	0.340	(0.193)	0.099	0.241
161	13.42	1.13	0.340	(0.192)	0.099	0.241
162	13.50	1.13	0.340	(0.191)	0.099	0.241
163	13.58	0.77	0.230	(0.190)	0.067	0.163
164	13.67	0.77	0.230	(0.189)	0.067	0.163
165	13.75	0.77	0.230	(0.188)	0.067	0.163
166	13.83	0.77	0.230	(0.187)	0.067	0.163
167	13.92	0.77	0.230	(0.186)	0.067	0.163
168	14.00	0.77	0.230	(0.185)	0.067	0.163
169	14.08	0.90	0.270	(0.184)	0.078	0.192
170	14.17	0.90	0.270	(0.183)	0.078	0.192
171	14.25	0.90	0.270	(0.182)	0.078	0.192
172	14.33	0.87	0.260	(0.182)	0.075	0.185
173	14.42	0.87	0.260	(0.181)	0.075	0.185
174	14.50	0.87	0.260	(0.180)	0.075	0.185
175	14.58	0.87	0.260	(0.179)	0.075	0.185
176	14.67	0.87	0.260	(0.178)	0.075	0.185
177	14.75	0.87	0.260	(0.177)	0.075	0.185
178	14.83	0.83	0.250	(0.176)	0.072	0.177
179	14.92	0.83	0.250	(0.175)	0.072	0.177
180	15.00	0.83	0.250	(0.174)	0.072	0.177
181	15.08	0.80	0.240	(0.173)	0.070	0.170
182	15.17	0.80	0.240	(0.172)	0.070	0.170
183	15.25	0.80	0.240	(0.172)	0.070	0.170
184	15.33	0.77	0.230	(0.171)	0.067	0.163
185	15.42	0.77	0.230	(0.170)	0.067	0.163
186	15.50	0.77	0.230	(0.169)	0.067	0.163
187	15.58	0.63	0.190	(0.168)	0.055	0.135
188	15.67	0.63	0.190	(0.167)	0.055	0.135
189	15.75	0.63	0.190	(0.166)	0.055	0.135
190	15.83	0.63	0.190	(0.166)	0.055	0.135
191	15.92	0.63	0.190	(0.165)	0.055	0.135
192	16.00	0.63	0.190	(0.164)	0.055	0.135

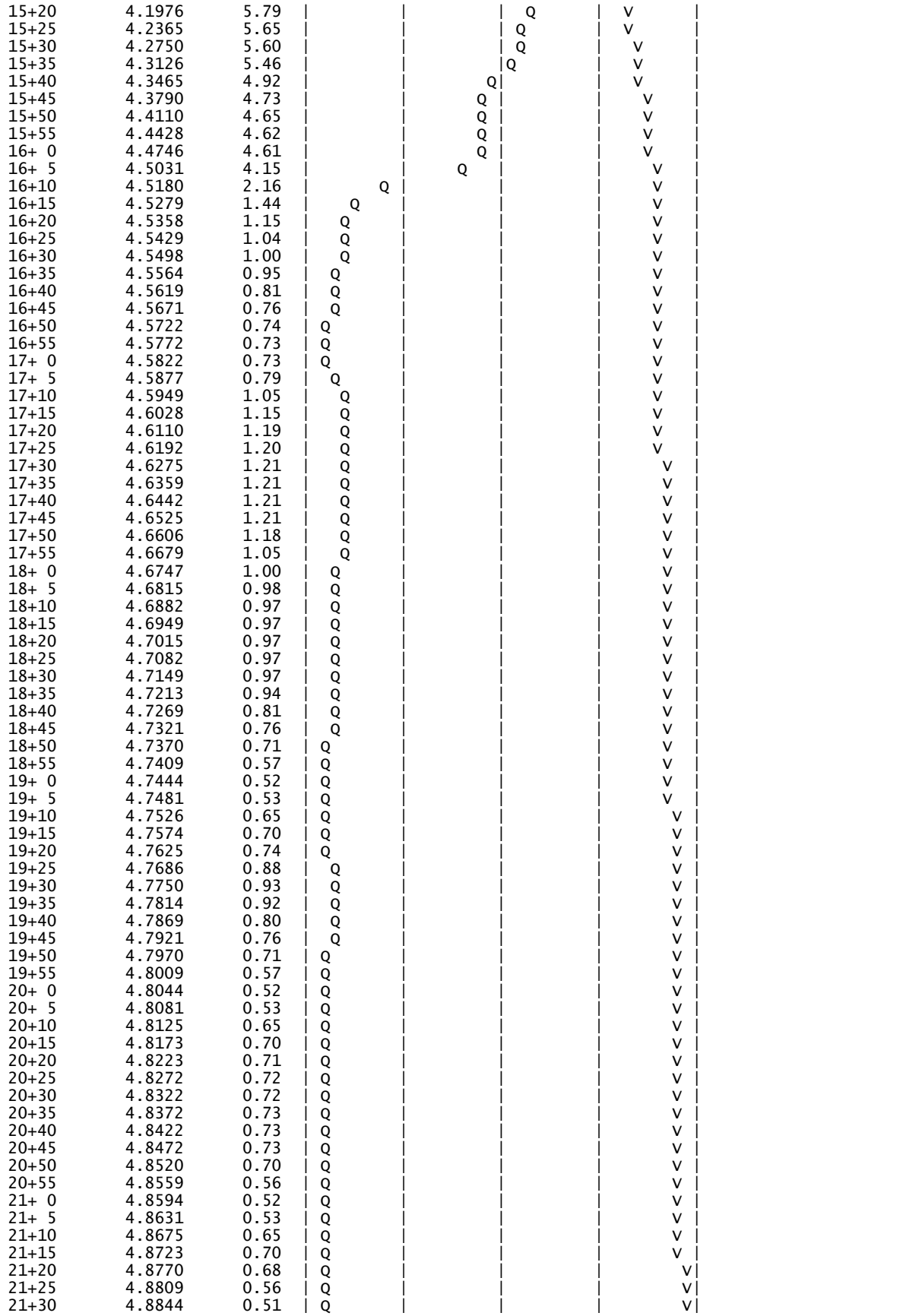
193	16.08	0.13	0.040	(0.163)	0.012	0.028
194	16.17	0.13	0.040	(0.162)	0.012	0.028
195	16.25	0.13	0.040	(0.161)	0.012	0.028
196	16.33	0.13	0.040	(0.161)	0.012	0.028
197	16.42	0.13	0.040	(0.160)	0.012	0.028
198	16.50	0.13	0.040	(0.159)	0.012	0.028
199	16.58	0.10	0.030	(0.158)	0.009	0.021
200	16.67	0.10	0.030	(0.157)	0.009	0.021
201	16.75	0.10	0.030	(0.156)	0.009	0.021
202	16.83	0.10	0.030	(0.156)	0.009	0.021
203	16.92	0.10	0.030	(0.155)	0.009	0.021
204	17.00	0.10	0.030	(0.154)	0.009	0.021
205	17.08	0.17	0.050	(0.153)	0.014	0.035
206	17.17	0.17	0.050	(0.153)	0.014	0.035
207	17.25	0.17	0.050	(0.152)	0.014	0.035
208	17.33	0.17	0.050	(0.151)	0.014	0.035
209	17.42	0.17	0.050	(0.150)	0.014	0.035
210	17.50	0.17	0.050	(0.150)	0.014	0.035
211	17.58	0.17	0.050	(0.149)	0.014	0.035
212	17.67	0.17	0.050	(0.148)	0.014	0.035
213	17.75	0.17	0.050	(0.147)	0.014	0.035
214	17.83	0.13	0.040	(0.147)	0.012	0.028
215	17.92	0.13	0.040	(0.146)	0.012	0.028
216	18.00	0.13	0.040	(0.145)	0.012	0.028
217	18.08	0.13	0.040	(0.144)	0.012	0.028
218	18.17	0.13	0.040	(0.144)	0.012	0.028
219	18.25	0.13	0.040	(0.143)	0.012	0.028
220	18.33	0.13	0.040	(0.142)	0.012	0.028
221	18.42	0.13	0.040	(0.142)	0.012	0.028
222	18.50	0.13	0.040	(0.141)	0.012	0.028
223	18.58	0.10	0.030	(0.140)	0.009	0.021
224	18.67	0.10	0.030	(0.140)	0.009	0.021
225	18.75	0.10	0.030	(0.139)	0.009	0.021
226	18.83	0.07	0.020	(0.138)	0.006	0.014
227	18.92	0.07	0.020	(0.138)	0.006	0.014
228	19.00	0.07	0.020	(0.137)	0.006	0.014
229	19.08	0.10	0.030	(0.136)	0.009	0.021
230	19.17	0.10	0.030	(0.136)	0.009	0.021
231	19.25	0.10	0.030	(0.135)	0.009	0.021
232	19.33	0.13	0.040	(0.134)	0.012	0.028
233	19.42	0.13	0.040	(0.134)	0.012	0.028
234	19.50	0.13	0.040	(0.133)	0.012	0.028
235	19.58	0.10	0.030	(0.133)	0.009	0.021
236	19.67	0.10	0.030	(0.132)	0.009	0.021
237	19.75	0.10	0.030	(0.131)	0.009	0.021
238	19.83	0.07	0.020	(0.131)	0.006	0.014
239	19.92	0.07	0.020	(0.130)	0.006	0.014
240	20.00	0.07	0.020	(0.130)	0.006	0.014
241	20.08	0.10	0.030	(0.129)	0.009	0.021
242	20.17	0.10	0.030	(0.128)	0.009	0.021
243	20.25	0.10	0.030	(0.128)	0.009	0.021
244	20.33	0.10	0.030	(0.127)	0.009	0.021
245	20.42	0.10	0.030	(0.127)	0.009	0.021
246	20.50	0.10	0.030	(0.126)	0.009	0.021
247	20.58	0.10	0.030	(0.126)	0.009	0.021
248	20.67	0.10	0.030	(0.125)	0.009	0.021
249	20.75	0.10	0.030	(0.125)	0.009	0.021
250	20.83	0.07	0.020	(0.124)	0.006	0.014
251	20.92	0.07	0.020	(0.124)	0.006	0.014
252	21.00	0.07	0.020	(0.123)	0.006	0.014
253	21.08	0.10	0.030	(0.123)	0.009	0.021
254	21.17	0.10	0.030	(0.122)	0.009	0.021
255	21.25	0.10	0.030	(0.122)	0.009	0.021
256	21.33	0.07	0.020	(0.121)	0.006	0.014
257	21.42	0.07	0.020	(0.121)	0.006	0.014
258	21.50	0.07	0.020	(0.120)	0.006	0.014
259	21.58	0.10	0.030	(0.120)	0.009	0.021
260	21.67	0.10	0.030	(0.119)	0.009	0.021
261	21.75	0.10	0.030	(0.119)	0.009	0.021
262	21.83	0.07	0.020	(0.119)	0.006	0.014
263	21.92	0.07	0.020	(0.118)	0.006	0.014
264	22.00	0.07	0.020	(0.118)	0.006	0.014
265	22.08	0.10	0.030	(0.117)	0.009	0.021
266	22.17	0.10	0.030	(0.117)	0.009	0.021
267	22.25	0.10	0.030	(0.117)	0.009	0.021

```
268  22.33     0.07      0.020       (  0.116)       0.006        0.014
269  22.42     0.07      0.020       (  0.116)       0.006        0.014
270  22.50     0.07      0.020       (  0.116)       0.006        0.014
271  22.58     0.07      0.020       (  0.115)       0.006        0.014
272  22.67     0.07      0.020       (  0.115)       0.006        0.014
273  22.75     0.07      0.020       (  0.115)       0.006        0.014
274  22.83     0.07      0.020       (  0.114)       0.006        0.014
275  22.92     0.07      0.020       (  0.114)       0.006        0.014
276  23.00     0.07      0.020       (  0.114)       0.006        0.014
277  23.08     0.07      0.020       (  0.113)       0.006        0.014
278  23.17     0.07      0.020       (  0.113)       0.006        0.014
279  23.25     0.07      0.020       (  0.113)       0.006        0.014
280  23.33     0.07      0.020       (  0.113)       0.006        0.014
281  23.42     0.07      0.020       (  0.113)       0.006        0.014
282  23.50     0.07      0.020       (  0.112)       0.006        0.014
283  23.58     0.07      0.020       (  0.112)       0.006        0.014
284  23.67     0.07      0.020       (  0.112)       0.006        0.014
285  23.75     0.07      0.020       (  0.112)       0.006        0.014
286  23.83     0.07      0.020       (  0.112)       0.006        0.014
287  23.92     0.07      0.020       (  0.112)       0.006        0.014
288  24.00     0.07      0.020       (  0.112)       0.006        0.014
               (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    21.3
      Flood volume = Effective rainfall      1.77(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       5.0(Ac.Ft)
      Total soil loss =      0.72(In)
      Total soil loss =     2.042(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =      217767.5 Cubic Feet
      Total soil loss =       88947.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      8.216(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0004      0.06  Q         |         |         |         |
   0+10       0.0027      0.33  VQ        |         |         |         |
   0+15       0.0056      0.42  VQ        |         |         |         |
   0+20       0.0089      0.49  VQ        |         |         |         |
   0+25       0.0133      0.64  V Q       |         |         |         |
   0+30       0.0181      0.69  V Q       |         |         |         |
   0+35       0.0230      0.71  V Q       |         |         |         |
   0+40       0.0279      0.72  V Q       |         |         |         |
   0+45       0.0329      0.72  V Q       |         |         |         |
   0+50       0.0381      0.76  V  Q      |         |         |         |
   0+55       0.0443      0.89  V  Q      |         |         |         |
   1+ 0       0.0507      0.94  V  Q      |         |         |         |
   1+ 5       0.0571      0.93  V  Q      |         |         |         |
   1+10       0.0626      0.80  V  Q      |         |         |         |
   1+15       0.0678      0.76  V  Q      |         |         |         |
   1+20       0.0729      0.74  V Q       |         |         |         |
   1+25       0.0779      0.73  V Q       |         |         |         |
   1+30       0.0829      0.73  V Q       |         |         |         |
   1+35       0.0879      0.73  V Q       |         |         |         |
   1+40       0.0929      0.73  V Q       |         |         |         |
   1+45       0.0979      0.73  V Q       |         |         |         |
   1+50       0.1031      0.76  V  Q      |         |         |         |
   1+55       0.1092      0.89  V  Q      |         |         |         |
   2+ 0       0.1157      0.94  V  Q      |         |         |         |
   2+ 5       0.1223      0.96  V  Q      |         |         |         |
   2+10       0.1289      0.96  |V Q       |         |         |         |
   2+15       0.1356      0.97  |V Q       |         |         |         |
   2+20       0.1422      0.97  |V Q       |         |         |         |
   2+25       0.1489      0.97  |V Q       |         |         |         |
   2+30       0.1556      0.97  |V Q       |         |         |         |
   2+35       0.1624      1.00  |V Q       |         |         |         |
   2+40       0.1702      1.13  |V  Q      |         |         |         |
   2+45       0.1783      1.18  |V  Q      |         |         |         |
```

```
2+50       0.1866      1.20  |V  Q     |         |         |         |
2+55       0.1949      1.21  |V  Q     |         |         |         |
3+ 0       0.2032      1.21  |V  Q     |         |         |         |
3+ 5       0.2115      1.21  |V  Q     |         |         |         |
3+10       0.2199      1.21  |V  Q     |         |         |         |
3+15       0.2282      1.21  |V  Q     |         |         |         |
3+20       0.2365      1.21  |V  Q     |         |         |         |
3+25       0.2449      1.21  |V  Q     |         |         |         |
3+30       0.2532      1.21  | V Q     |         |         |         |
3+35       0.2615      1.21  | V Q     |         |         |         |
3+40       0.2698      1.21  | V Q     |         |         |         |
3+45       0.2782      1.21  | V Q     |         |         |         |
3+50       0.2867      1.24  | V Q     |         |         |         |
3+55       0.2962      1.37  | V  Q    |         |         |         |
4+ 0       0.3060      1.42  | V  Q    |         |         |         |
4+ 5       0.3159      1.44  | V  Q    |         |         |         |
4+10       0.3258      1.45  | V  Q    |         |         |         |
4+15       0.3358      1.45  | V  Q    |         |         |         |
4+20       0.3460      1.48  | V  Q    |         |         |         |
4+25       0.3571      1.61  | V   Q   |         |         |         |
4+30       0.3686      1.66  | V   Q   |         |         |         |
4+35       0.3802      1.68  |  V  Q   |         |         |         |
4+40       0.3918      1.69  |  V  Q   |         |         |         |
4+45       0.4035      1.69  |  V  Q   |         |         |         |
4+50       0.4153      1.72  |  V  Q   |         |         |         |
4+55       0.4281      1.86  |  V   Q  |         |         |         |
5+ 0       0.4412      1.90  |  V   Q  |         |         |         |
5+ 5       0.4541      1.86  |  V   Q  |         |         |         |
5+10       0.4651      1.61  |  V  Q   |         |         |         |
5+15       0.4755      1.51  |  V  Q   |         |         |         |
5+20       0.4859      1.51  |  V  Q   |         |         |         |
5+25       0.4971      1.62  |  V  Q   |         |         |         |
5+30       0.5086      1.67  |   V Q   |         |         |         |
5+35       0.5204      1.71  |   V Q   |         |         |         |
5+40       0.5331      1.85  |   V  Q  |         |         |         |
5+45       0.5462      1.90  |   V  Q  |         |         |         |
5+50       0.5595      1.92  |   V  Q  |         |         |         |
5+55       0.5728      1.93  |   V  Q  |         |         |         |
6+ 0       0.5861      1.93  |   V  Q  |         |         |         |
6+ 5       0.5996      1.97  |   V  Q  |         |         |         |
6+10       0.6141      2.10  |   V   Q |         |         |         |
6+15       0.6288      2.15  |    V  Q |         |         |         |
6+20       0.6438      2.17  |    V  Q |         |         |         |
6+25       0.6587      2.17  |    V  Q |         |         |         |
6+30       0.6737      2.18  |    V  Q |         |         |         |
6+35       0.6889      2.21  |    V  Q |         |         |         |
6+40       0.7050      2.34  |    V   Q|         |         |         |
6+45       0.7215      2.39  |    V   Q|         |         |         |
6+50       0.7380      2.41  |    V   Q|         |         |         |
6+55       0.7547      2.42  |     V  Q|         |         |         |
7+ 0       0.7713      2.42  |     V  Q|         |         |         |
7+ 5       0.7880      2.42  |     V  Q|         |         |         |
7+10       0.8047      2.42  |     V  Q|         |         |         |
7+15       0.8213      2.42  |     V  Q|         |         |         |
7+20       0.8382      2.45  |     V  Q|         |         |         |
7+25       0.8560      2.58  |     V   Q         |         |         |
7+30       0.8741      2.63  |     V   Q         |         |         |
7+35       0.8925      2.68  |      V  Q         |         |         |
7+40       0.9120      2.82  |      V  |Q        |         |         |
7+45       0.9317      2.87  |      V  |Q        |         |         |
7+50       0.9518      2.92  |      V  |Q        |         |         |
7+55       0.9729      3.06  |      V  | Q       |         |         |
8+ 0       0.9944      3.11  |      V  | Q       |         |         |
8+ 5       1.0164      3.19  |       V | Q       |         |         |
8+10       1.0402      3.47  |       V |  Q      |         |         |
8+15       1.0648      3.56  |       V |   Q     |         |         |
8+20       1.0896      3.60  |       V |   Q     |         |         |
8+25       1.1145      3.62  |       V |   Q     |         |         |
8+30       1.1395      3.63  |        V|   Q     |         |         |
8+35       1.1647      3.66  |        V|   Q     |         |         |
8+40       1.1908      3.79  |        V|    Q    |         |         |
8+45       1.2173      3.84  |        V|    Q    |         |         |
8+50       1.2440      3.89  |        V|    Q    |         |         |
8+55       1.2718      4.03  |         V     Q   |         |         |
9+ 0       1.2999      4.08  |         V     Q   |         |         |
```





```
  21+35       4.8880      0.53  | Q       |         |         |        V|
  21+40       4.8925      0.65  | Q       |         |         |        V|
  21+45       4.8973      0.70  | Q       |         |         |        V|
  21+50       4.9020      0.68  | Q       |         |         |        V|
  21+55       4.9059      0.56  | Q       |         |         |        V|
  22+ 0       4.9094      0.51  | Q       |         |         |        V|
  22+ 5       4.9130      0.53  | Q       |         |         |        V|
  22+10       4.9175      0.65  | Q       |         |         |        V|
  22+15       4.9223      0.70  | Q       |         |         |        V|
  22+20       4.9270      0.68  | Q       |         |         |        V|
  22+25       4.9309      0.56  | Q       |         |         |        V|
  22+30       4.9344      0.51  | Q       |         |         |        V|
  22+35       4.9378      0.50  |Q        |         |         |        V|
  22+40       4.9412      0.49  |Q        |         |         |        V|
  22+45       4.9445      0.49  |Q        |         |         |        V|
  22+50       4.9479      0.48  |Q        |         |         |        V|
  22+55       4.9512      0.48  |Q        |         |         |        V|
  23+ 0       4.9545      0.48  |Q        |         |         |        V|
  23+ 5       4.9579      0.48  |Q        |         |         |        V|
  23+10       4.9612      0.48  |Q        |         |         |        V|
  23+15       4.9645      0.48  |Q        |         |         |        V|
  23+20       4.9679      0.48  |Q        |         |         |        V|
  23+25       4.9712      0.48  |Q        |         |         |        V|
  23+30       4.9745      0.48  |Q        |         |         |        V|
  23+35       4.9779      0.48  |Q        |         |         |        V|
  23+40       4.9812      0.48  |Q        |         |         |        V|
  23+45       4.9845      0.48  |Q        |         |         |        V|
  23+50       4.9879      0.48  |Q        |         |         |        V|
  23+55       4.9912      0.48  |Q        |         |         |        V|
  24+ 0       4.9945      0.48  |Q        |         |         |        V|
  24+ 5       4.9975      0.42  |Q        |         |         |        V|
  24+10       4.9985      0.16  Q         |         |         |        V|
  24+15       4.9990      0.06  Q         |         |         |        V|
  24+20       4.9992      0.02  Q         |         |         |        V|
  24+25       4.9992      0.01  Q         |         |         |        V|
  24+30       4.9992      0.00  Q         |         |         |        V|
  24+35       4.9993      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

PROPOSED CONDITION
5-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH5YR15.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.55	18.59

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.25	42.25

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.714(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 0.714(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

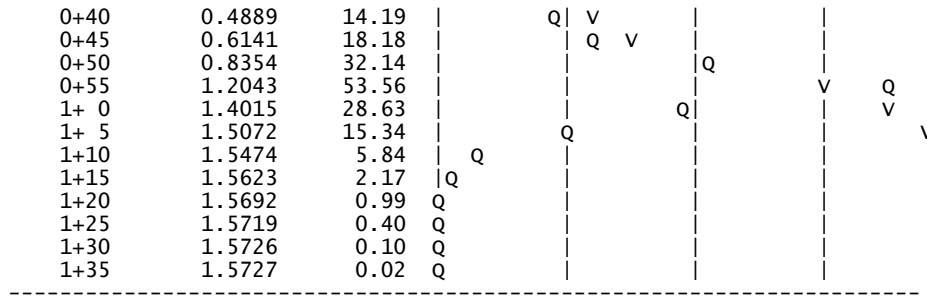
```
      56.0  36.0      0.706     0.760        0.223       1.000      0.223
                                                        Sum (F) =   0.223
      Area averaged mean soil loss (F) (In/Hr) =  0.223
      Minimum soil loss rate ((In/Hr)) =  0.112
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.290
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         94.204         12.469             4.247
          2   0.167        188.409         54.814            18.672
          3   0.250        282.613         19.639             6.690
          4   0.333        376.818          8.096             2.758
          5   0.417        471.022          3.119             1.063
          6   0.500        565.227          0.957             0.326
          7   0.583        659.431          0.629             0.214
          8   0.667        753.636          0.277             0.094
                                  Sum = 100.000   Sum=      34.064
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
    1   0.08     3.40      0.291       (  0.223)       0.084        0.207
    2   0.17     4.70      0.403       (  0.223)       0.117        0.286
    3   0.25     4.70      0.403       (  0.223)       0.117        0.286
    4   0.33     5.10      0.437       (  0.223)       0.127        0.310
    5   0.42     5.80      0.497       (  0.223)       0.144        0.353
    6   0.50     5.90      0.505       (  0.223)       0.147        0.359
    7   0.58     7.10      0.608       (  0.223)       0.176        0.432
    8   0.67     8.70      0.745       (  0.223)       0.216        0.529
    9   0.75    13.20      1.131          0.223    (  0.328)        0.907
   10   0.83    29.70      2.544          0.223    (  0.738)        2.321
   11   0.92     7.70      0.659       (  0.223)       0.191        0.468
   12   1.00     4.00      0.343       (  0.223)       0.099        0.243
              (Loss Rate Not Used)
      Sum =     100.0                                  Sum =     6.7
         Flood volume = Effective rainfall      0.56(In)
          times area      33.8(Ac.)/[(In)/(Ft.)] =       1.6(Ac.Ft)
         Total soil loss =      0.16(In)
         Total soil loss =     0.438(Ac.Ft)
         Total rainfall =      0.71(In)
         Flood volume =       68508.4 Cubic Feet
         Total soil loss =       19063.0 Cubic Feet
         ---------------------------------------------------------------------
          Peak flow rate of this hydrograph =     53.558(CFS)
         ---------------------------------------------------------------------
         +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
         ---------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

         ---------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
  ------------------------------------------------------------------------
    0+ 5       0.0061      0.88  Q         |         |         |         |
    0+10       0.0410      5.08  |V Q      |         |         |         |
    0+15       0.0957      7.94  | V  Q    |         |         |         |
    0+20       0.1586      9.14  |   V Q   |         |         |         |
    0+25       0.2290     10.21  |    VQ   |         |         |         |
    0+30       0.3071     11.35  |      Q  |         |         |         |
    0+35       0.3911     12.20  |       QV|         |         |         |
```


0+40 0.4889 14.19
0+45 0.6141 18.18
0+50 0.8354 32.14
0+55 1.2043 53.56
1+ 0 1.4015 28.63
1+ 5 1.5072 15.34
1+10 1.5474 5.84
1+15 1.5623 2.17
1+20 1.5692 0.99
1+25 1.5719 0.40
1+30 1.5726 0.10
1+35 1.5727 0.02

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH5YR35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.95	32.11

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.05	69.29

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.208(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.207(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
      56.0  36.0      0.706     0.760        0.223       1.000      0.223
                                                        Sum (F) =   0.223
      Area averaged mean soil loss (F) (In/Hr) =  0.223
      Minimum soil loss rate ((In/Hr)) =  0.112
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.290
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                           Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         94.204         12.469             4.247
          2   0.167        188.409         54.814            18.672
          3   0.250        282.613         19.639             6.690
          4   0.333        376.818          8.096             2.758
          5   0.417        471.022          3.119             1.063
          6   0.500        565.227          0.957             0.326
          7   0.583        659.431          0.629             0.214
          8   0.667        753.636          0.277             0.094
                                    Sum = 100.000    Sum=      34.064
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     1.30      0.188       (  0.223)       0.055        0.134
   2   0.17     1.30      0.188       (  0.223)       0.055        0.134
   3   0.25     1.10      0.159       (  0.223)       0.046        0.113
   4   0.33     1.50      0.217       (  0.223)       0.063        0.154
   5   0.42     1.50      0.217       (  0.223)       0.063        0.154
   6   0.50     1.80      0.261       (  0.223)       0.076        0.185
   7   0.58     1.50      0.217       (  0.223)       0.063        0.154
   8   0.67     1.80      0.261       (  0.223)       0.076        0.185
   9   0.75     1.80      0.261       (  0.223)       0.076        0.185
  10   0.83     1.50      0.217       (  0.223)       0.063        0.154
  11   0.92     1.60      0.232       (  0.223)       0.067        0.165
  12   1.00     1.80      0.261       (  0.223)       0.076        0.185
  13   1.08     2.20      0.319       (  0.223)       0.092        0.226
  14   1.17     2.20      0.319       (  0.223)       0.092        0.226
  15   1.25     2.20      0.319       (  0.223)       0.092        0.226
  16   1.33     2.00      0.290       (  0.223)       0.084        0.206
  17   1.42     2.60      0.377       (  0.223)       0.109        0.267
  18   1.50     2.70      0.391       (  0.223)       0.113        0.278
  19   1.58     2.40      0.348       (  0.223)       0.101        0.247
  20   1.67     2.70      0.391       (  0.223)       0.113        0.278
  21   1.75     3.30      0.478       (  0.223)       0.139        0.339
  22   1.83     3.10      0.449       (  0.223)       0.130        0.319
  23   1.92     2.90      0.420       (  0.223)       0.122        0.298
  24   2.00     3.00      0.435       (  0.223)       0.126        0.309
  25   2.08     3.10      0.449       (  0.223)       0.130        0.319
  26   2.17     4.20      0.609       (  0.223)       0.176        0.432
  27   2.25     5.00      0.724       (  0.223)       0.210        0.514
  28   2.33     3.50      0.507       (  0.223)       0.147        0.360
  29   2.42     6.80      0.985          0.223    (  0.286)        0.762
  30   2.50     7.30      1.058          0.223    (  0.307)        0.835
  31   2.58     8.20      1.188          0.223    (  0.345)        0.965
  32   2.67     5.90      0.855          0.223    (  0.248)        0.632
  33   2.75     2.00      0.290       (  0.223)       0.084        0.206
  34   2.83     1.80      0.261       (  0.223)       0.076        0.185
  35   2.92     1.80      0.261       (  0.223)       0.076        0.185
  36   3.00     0.60      0.087       (  0.223)       0.025        0.062
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =    10.6
       Flood volume = Effective rainfall      0.88(In)
        times area      33.8(Ac.)/[(In)/(Ft.)] =       2.5(Ac.Ft)
       Total soil loss =      0.33(In)
       Total soil loss =     0.918(Ac.Ft)
```

```
      Total rainfall =      1.21(In)
      Flood volume =      108177.3 Cubic Feet
      Total soil loss =       39971.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     29.076(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
 ---------------------------------------------------------------------------
   0+ 5       0.0039      0.57  Q         |         |         |         |
   0+10       0.0250      3.07  V   Q     |         |         |         |
   0+15       0.0517      3.87  V    Q    |         |         |         |
   0+20       0.0795      4.03  |V   Q    |         |         |         |
   0+25       0.1126      4.81  |V    Q   |         |         |         |
   0+30       0.1484      5.20  | V   Q   |         |         |         |
   0+35       0.1881      5.77  |  V   Q  |         |         |         |
   0+40       0.2266      5.58  |  V   Q  |         |         |         |
   0+45       0.2682      6.04  |   V   Q |         |         |         |
   0+50       0.3100      6.07  |   V   Q |         |         |         |
   0+55       0.3486      5.60  |    V Q  |         |         |         |
   1+ 0       0.3879      5.71  |     VQ  |         |         |         |
   1+ 5       0.4310      6.26  |     V Q |         |         |         |
   1+10       0.4803      7.16  |      V Q|         |         |         |
   1+15       0.5319      7.50  |       VQ|         |         |         |
   1+20       0.5839      7.54  |        VQ         |         |         |
   1+25       0.6353      7.47  |        QV         |         |         |
   1+30       0.6942      8.55  |         |Q        |         |         |
   1+35       0.7560      8.98  |         |QV       |         |         |
   1+40       0.8163      8.75  |         |Q V      |         |         |
   1+45       0.8815      9.47  |         | Q V     |         |         |
   1+50       0.9551     10.69  |         |   QV    |         |         |
   1+55       1.0288     10.69  |         |   Q V   |         |         |
   2+ 0       1.1005     10.42  |         |  Q   V  |         |         |
   2+ 5       1.1730     10.53  |         |   Q   V |         |         |
   2+10       1.2503     11.22  |         |   Q     V         |         |
   2+15       1.3451     13.76  |         |       Q |V        |         |
   2+20       1.4514     15.44  |         |         Q  V      |         |
   2+25       1.5556     15.13  |         |         Q    V    |         |
   2+30       1.7090     22.27  |         |         |      V Q|         |
   2+35       1.8920     26.57  |         |         |         V    Q    |
   2+40       2.0923     29.08  |         |         |         |  V    Q |
   2+45       2.2474     22.52  |         |         |         Q     V   |
   2+50       2.3354     12.78  |         |       Q |         |      V  |
   2+55       2.3965      8.86  |         |Q        |         |       V |
   3+ 0       2.4431      6.77  |         |Q        |         |         V|
   3+ 5       2.4679      3.61  |    Q    |         |         |         V|
   3+10       2.4777      1.41  |Q        |         |         |         V|
   3+15       2.4813      0.53  Q         |         |         |         V|
   3+20       2.4826      0.19  Q         |         |         |         V|
   3+25       2.4832      0.08  Q         |         |         |         V|
   3+30       2.4834      0.03  Q         |         |         |         V|
   3+35       2.4834      0.01  Q         |         |         |         V|
 ---------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH5YR65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.40	47.32

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	3.00	101.40

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.775(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.775(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0 36.0 0.706 0.760 0.223 1.000 0.223
Sum (F) = 0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

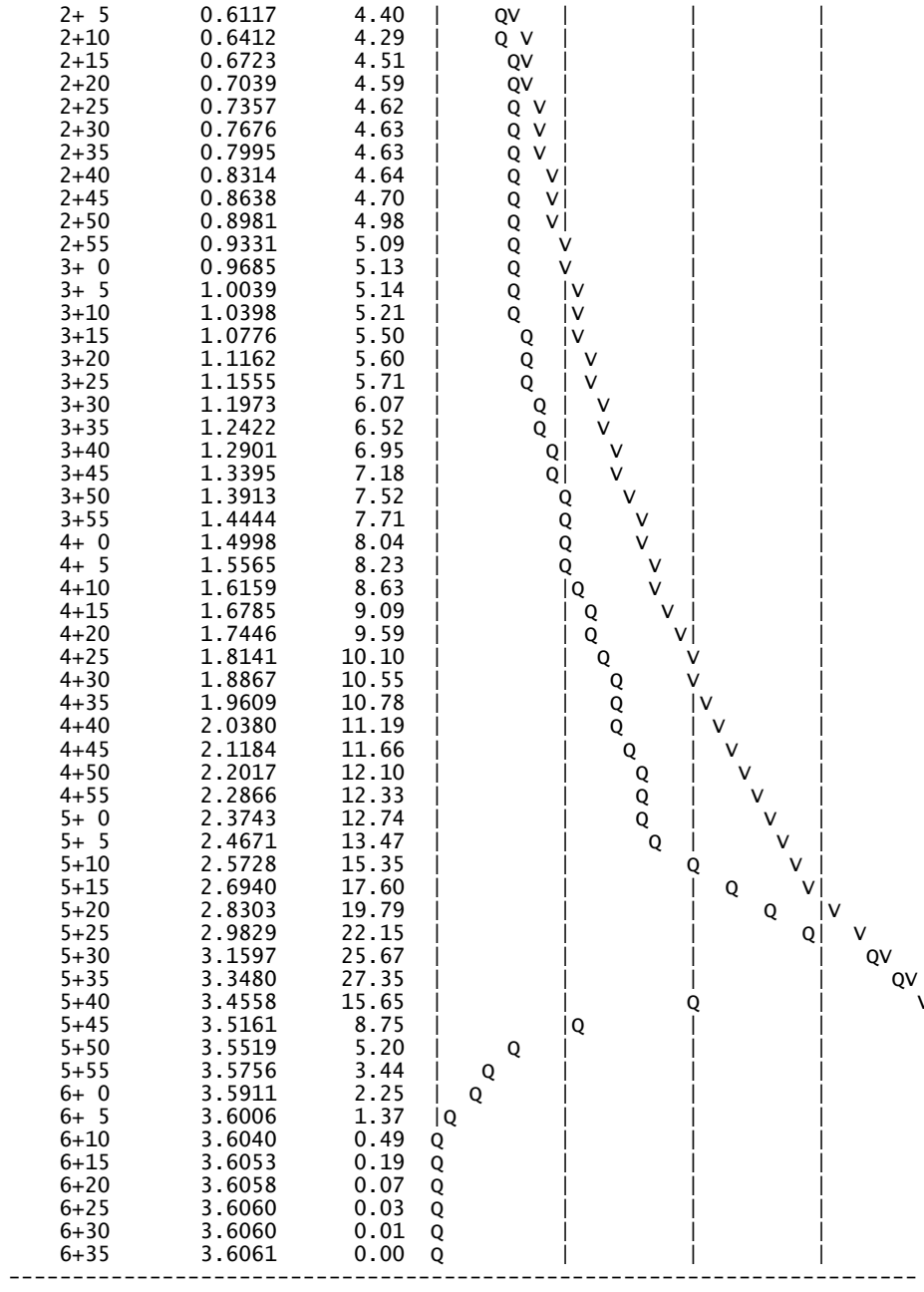
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.106	(0.223)	0.031	0.076
2	0.17	0.60	0.128	(0.223)	0.037	0.091
3	0.25	0.60	0.128	(0.223)	0.037	0.091
4	0.33	0.60	0.128	(0.223)	0.037	0.091
5	0.42	0.60	0.128	(0.223)	0.037	0.091
6	0.50	0.70	0.149	(0.223)	0.043	0.106
7	0.58	0.70	0.149	(0.223)	0.043	0.106
8	0.67	0.70	0.149	(0.223)	0.043	0.106
9	0.75	0.70	0.149	(0.223)	0.043	0.106
10	0.83	0.70	0.149	(0.223)	0.043	0.106
11	0.92	0.70	0.149	(0.223)	0.043	0.106
12	1.00	0.80	0.170	(0.223)	0.049	0.121
13	1.08	0.80	0.170	(0.223)	0.049	0.121
14	1.17	0.80	0.170	(0.223)	0.049	0.121
15	1.25	0.80	0.170	(0.223)	0.049	0.121
16	1.33	0.80	0.170	(0.223)	0.049	0.121
17	1.42	0.80	0.170	(0.223)	0.049	0.121
18	1.50	0.80	0.170	(0.223)	0.049	0.121
19	1.58	0.80	0.170	(0.223)	0.049	0.121
20	1.67	0.80	0.170	(0.223)	0.049	0.121
21	1.75	0.80	0.170	(0.223)	0.049	0.121
22	1.83	0.80	0.170	(0.223)	0.049	0.121
23	1.92	0.80	0.170	(0.223)	0.049	0.121
24	2.00	0.90	0.192	(0.223)	0.056	0.136
25	2.08	0.80	0.170	(0.223)	0.049	0.121
26	2.17	0.90	0.192	(0.223)	0.056	0.136
27	2.25	0.90	0.192	(0.223)	0.056	0.136
28	2.33	0.90	0.192	(0.223)	0.056	0.136
29	2.42	0.90	0.192	(0.223)	0.056	0.136
30	2.50	0.90	0.192	(0.223)	0.056	0.136
31	2.58	0.90	0.192	(0.223)	0.056	0.136
32	2.67	0.90	0.192	(0.223)	0.056	0.136
33	2.75	1.00	0.213	(0.223)	0.062	0.151
34	2.83	1.00	0.213	(0.223)	0.062	0.151
35	2.92	1.00	0.213	(0.223)	0.062	0.151
36	3.00	1.00	0.213	(0.223)	0.062	0.151
37	3.08	1.00	0.213	(0.223)	0.062	0.151
38	3.17	1.10	0.234	(0.223)	0.068	0.166
39	3.25	1.10	0.234	(0.223)	0.068	0.166
40	3.33	1.10	0.234	(0.223)	0.068	0.166
41	3.42	1.20	0.256	(0.223)	0.074	0.181
42	3.50	1.30	0.277	(0.223)	0.080	0.197

```
43   3.58     1.40      0.298       (  0.223)       0.086        0.212
44   3.67     1.40      0.298       (  0.223)       0.086        0.212
45   3.75     1.50      0.319       (  0.223)       0.093        0.227
46   3.83     1.50      0.319       (  0.223)       0.093        0.227
47   3.92     1.60      0.341       (  0.223)       0.099        0.242
48   4.00     1.60      0.341       (  0.223)       0.099        0.242
49   4.08     1.70      0.362       (  0.223)       0.105        0.257
50   4.17     1.80      0.383       (  0.223)       0.111        0.272
51   4.25     1.90      0.405       (  0.223)       0.117        0.287
52   4.33     2.00      0.426       (  0.223)       0.124        0.302
53   4.42     2.10      0.447       (  0.223)       0.130        0.318
54   4.50     2.10      0.447       (  0.223)       0.130        0.318
55   4.58     2.20      0.468       (  0.223)       0.136        0.333
56   4.67     2.30      0.490       (  0.223)       0.142        0.348
57   4.75     2.40      0.511       (  0.223)       0.148        0.363
58   4.83     2.40      0.511       (  0.223)       0.148        0.363
59   4.92     2.50      0.532       (  0.223)       0.154        0.378
60   5.00     2.60      0.554       (  0.223)       0.161        0.393
61   5.08     3.10      0.660       (  0.223)       0.191        0.469
62   5.17     3.60      0.767       (  0.223)       0.222        0.544
63   5.25     3.90      0.830          0.223    (  0.241)       0.607
64   5.33     4.20      0.894          0.223    (  0.259)       0.671
65   5.42     4.70      1.001          0.223    (  0.290)       0.778
66   5.50     5.60      1.192          0.223    (  0.346)       0.969
67   5.58     1.90      0.405       (  0.223)       0.117        0.287
68   5.67     0.90      0.192       (  0.223)       0.056        0.136
69   5.75     0.60      0.128       (  0.223)       0.037        0.091
70   5.83     0.50      0.106       (  0.223)       0.031        0.076
71   5.92     0.30      0.064       (  0.223)       0.019        0.045
72   6.00     0.20      0.043       (  0.223)       0.012        0.030
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    15.4
      Flood volume = Effective rainfall      1.28(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       3.6(Ac.Ft)
      Total soil loss =      0.49(In)
      Total soil loss =     1.392(Ac.Ft)
      Total rainfall =      1.77(In)
      Flood volume =      157079.9 Cubic Feet
      Total soil loss =       60647.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     27.349(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0022      0.32  Q          |          |          |          |
  0+10       0.0146      1.80  V Q        |          |          |          |
  0+15       0.0324      2.59  V  Q       |          |          |          |
  0+20       0.0523      2.90  V  Q       |          |          |          |
  0+25       0.0731      3.02  V   Q      |          |          |          |
  0+30       0.0946      3.12  |V  Q      |          |          |          |
  0+35       0.1182      3.43  |V  Q      |          |          |          |
  0+40       0.1426      3.54  |V  Q      |          |          |          |
  0+45       0.1673      3.58  |V  Q      |          |          |          |
  0+50       0.1921      3.60  | V Q      |          |          |          |
  0+55       0.2169      3.60  | V Q      |          |          |          |
  1+ 0       0.2421      3.67  | V Q      |          |          |          |
  1+ 5       0.2694      3.95  | V  Q     |          |          |          |
  1+10       0.2973      4.05  |  V Q     |          |          |          |
  1+15       0.3255      4.10  |  V Q     |          |          |          |
  1+20       0.3538      4.11  |  V Q     |          |          |          |
  1+25       0.3822      4.12  |   VQ     |          |          |          |
  1+30       0.4106      4.12  |   VQ     |          |          |          |
  1+35       0.4390      4.12  |   VQ     |          |          |          |
  1+40       0.4673      4.12  |    Q     |          |          |          |
  1+45       0.4957      4.12  |    Q     |          |          |          |
  1+50       0.5241      4.12  |    Q     |          |          |          |
  1+55       0.5525      4.12  |    QV    |          |          |          |
  2+ 0       0.5814      4.19  |    QV    |          |          |          |
```



U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH5YR245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 3.437(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.437(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	(0.395)	0.008	0.020
2	0.17	0.07	0.027	(0.394)	0.008	0.020
3	0.25	0.07	0.027	(0.392)	0.008	0.020
4	0.33	0.10	0.041	(0.391)	0.012	0.029
5	0.42	0.10	0.041	(0.389)	0.012	0.029
6	0.50	0.10	0.041	(0.388)	0.012	0.029
7	0.58	0.10	0.041	(0.386)	0.012	0.029
8	0.67	0.10	0.041	(0.385)	0.012	0.029
9	0.75	0.10	0.041	(0.383)	0.012	0.029
10	0.83	0.13	0.055	(0.382)	0.016	0.039
11	0.92	0.13	0.055	(0.380)	0.016	0.039
12	1.00	0.13	0.055	(0.379)	0.016	0.039
13	1.08	0.10	0.041	(0.377)	0.012	0.029
14	1.17	0.10	0.041	(0.376)	0.012	0.029
15	1.25	0.10	0.041	(0.374)	0.012	0.029
16	1.33	0.10	0.041	(0.373)	0.012	0.029
17	1.42	0.10	0.041	(0.371)	0.012	0.029
18	1.50	0.10	0.041	(0.370)	0.012	0.029
19	1.58	0.10	0.041	(0.368)	0.012	0.029
20	1.67	0.10	0.041	(0.367)	0.012	0.029
21	1.75	0.10	0.041	(0.365)	0.012	0.029
22	1.83	0.13	0.055	(0.364)	0.016	0.039
23	1.92	0.13	0.055	(0.363)	0.016	0.039
24	2.00	0.13	0.055	(0.361)	0.016	0.039
25	2.08	0.13	0.055	(0.360)	0.016	0.039
26	2.17	0.13	0.055	(0.358)	0.016	0.039
27	2.25	0.13	0.055	(0.357)	0.016	0.039
28	2.33	0.13	0.055	(0.355)	0.016	0.039
29	2.42	0.13	0.055	(0.354)	0.016	0.039
30	2.50	0.13	0.055	(0.352)	0.016	0.039
31	2.58	0.17	0.069	(0.351)	0.020	0.049
32	2.67	0.17	0.069	(0.349)	0.020	0.049
33	2.75	0.17	0.069	(0.348)	0.020	0.049
34	2.83	0.17	0.069	(0.347)	0.020	0.049
35	2.92	0.17	0.069	(0.345)	0.020	0.049
36	3.00	0.17	0.069	(0.344)	0.020	0.049
37	3.08	0.17	0.069	(0.342)	0.020	0.049
38	3.17	0.17	0.069	(0.341)	0.020	0.049
39	3.25	0.17	0.069	(0.339)	0.020	0.049
40	3.33	0.17	0.069	(0.338)	0.020	0.049
41	3.42	0.17	0.069	(0.337)	0.020	0.049
42	3.50	0.17	0.069	(0.335)	0.020	0.049

43	3.58	0.17	0.069	(0.334)	0.020	0.049
44	3.67	0.17	0.069	(0.332)	0.020	0.049
45	3.75	0.17	0.069	(0.331)	0.020	0.049
46	3.83	0.20	0.082	(0.330)	0.024	0.059
47	3.92	0.20	0.082	(0.328)	0.024	0.059
48	4.00	0.20	0.082	(0.327)	0.024	0.059
49	4.08	0.20	0.082	(0.325)	0.024	0.059
50	4.17	0.20	0.082	(0.324)	0.024	0.059
51	4.25	0.20	0.082	(0.323)	0.024	0.059
52	4.33	0.23	0.096	(0.321)	0.028	0.068
53	4.42	0.23	0.096	(0.320)	0.028	0.068
54	4.50	0.23	0.096	(0.319)	0.028	0.068
55	4.58	0.23	0.096	(0.317)	0.028	0.068
56	4.67	0.23	0.096	(0.316)	0.028	0.068
57	4.75	0.23	0.096	(0.314)	0.028	0.068
58	4.83	0.27	0.110	(0.313)	0.032	0.078
59	4.92	0.27	0.110	(0.312)	0.032	0.078
60	5.00	0.27	0.110	(0.310)	0.032	0.078
61	5.08	0.20	0.082	(0.309)	0.024	0.059
62	5.17	0.20	0.082	(0.308)	0.024	0.059
63	5.25	0.20	0.082	(0.306)	0.024	0.059
64	5.33	0.23	0.096	(0.305)	0.028	0.068
65	5.42	0.23	0.096	(0.304)	0.028	0.068
66	5.50	0.23	0.096	(0.302)	0.028	0.068
67	5.58	0.27	0.110	(0.301)	0.032	0.078
68	5.67	0.27	0.110	(0.300)	0.032	0.078
69	5.75	0.27	0.110	(0.298)	0.032	0.078
70	5.83	0.27	0.110	(0.297)	0.032	0.078
71	5.92	0.27	0.110	(0.296)	0.032	0.078
72	6.00	0.27	0.110	(0.294)	0.032	0.078
73	6.08	0.30	0.124	(0.293)	0.036	0.088
74	6.17	0.30	0.124	(0.292)	0.036	0.088
75	6.25	0.30	0.124	(0.291)	0.036	0.088
76	6.33	0.30	0.124	(0.289)	0.036	0.088
77	6.42	0.30	0.124	(0.288)	0.036	0.088
78	6.50	0.30	0.124	(0.287)	0.036	0.088
79	6.58	0.33	0.137	(0.285)	0.040	0.098
80	6.67	0.33	0.137	(0.284)	0.040	0.098
81	6.75	0.33	0.137	(0.283)	0.040	0.098
82	6.83	0.33	0.137	(0.282)	0.040	0.098
83	6.92	0.33	0.137	(0.280)	0.040	0.098
84	7.00	0.33	0.137	(0.279)	0.040	0.098
85	7.08	0.33	0.137	(0.278)	0.040	0.098
86	7.17	0.33	0.137	(0.276)	0.040	0.098
87	7.25	0.33	0.137	(0.275)	0.040	0.098
88	7.33	0.37	0.151	(0.274)	0.044	0.107
89	7.42	0.37	0.151	(0.273)	0.044	0.107
90	7.50	0.37	0.151	(0.271)	0.044	0.107
91	7.58	0.40	0.165	(0.270)	0.048	0.117
92	7.67	0.40	0.165	(0.269)	0.048	0.117
93	7.75	0.40	0.165	(0.268)	0.048	0.117
94	7.83	0.43	0.179	(0.266)	0.052	0.127
95	7.92	0.43	0.179	(0.265)	0.052	0.127
96	8.00	0.43	0.179	(0.264)	0.052	0.127
97	8.08	0.50	0.206	(0.263)	0.060	0.146
98	8.17	0.50	0.206	(0.262)	0.060	0.146
99	8.25	0.50	0.206	(0.260)	0.060	0.146
100	8.33	0.50	0.206	(0.259)	0.060	0.146
101	8.42	0.50	0.206	(0.258)	0.060	0.146
102	8.50	0.50	0.206	(0.257)	0.060	0.146
103	8.58	0.53	0.220	(0.256)	0.064	0.156
104	8.67	0.53	0.220	(0.254)	0.064	0.156
105	8.75	0.53	0.220	(0.253)	0.064	0.156
106	8.83	0.57	0.234	(0.252)	0.068	0.166
107	8.92	0.57	0.234	(0.251)	0.068	0.166
108	9.00	0.57	0.234	(0.250)	0.068	0.166
109	9.08	0.63	0.261	(0.248)	0.076	0.185
110	9.17	0.63	0.261	(0.247)	0.076	0.185
111	9.25	0.63	0.261	(0.246)	0.076	0.185
112	9.33	0.67	0.275	(0.245)	0.080	0.195
113	9.42	0.67	0.275	(0.244)	0.080	0.195
114	9.50	0.67	0.275	(0.243)	0.080	0.195
115	9.58	0.70	0.289	(0.241)	0.084	0.205
116	9.67	0.70	0.289	(0.240)	0.084	0.205
117	9.75	0.70	0.289	(0.239)	0.084	0.205

118	9.83	0.73	0.302	(0.238)	0.088	0.215
119	9.92	0.73	0.302	(0.237)	0.088	0.215
120	10.00	0.73	0.302	(0.236)	0.088	0.215
121	10.08	0.50	0.206	(0.234)	0.060	0.146
122	10.17	0.50	0.206	(0.233)	0.060	0.146
123	10.25	0.50	0.206	(0.232)	0.060	0.146
124	10.33	0.50	0.206	(0.231)	0.060	0.146
125	10.42	0.50	0.206	(0.230)	0.060	0.146
126	10.50	0.50	0.206	(0.229)	0.060	0.146
127	10.58	0.67	0.275	(0.228)	0.080	0.195
128	10.67	0.67	0.275	(0.227)	0.080	0.195
129	10.75	0.67	0.275	(0.225)	0.080	0.195
130	10.83	0.67	0.275	(0.224)	0.080	0.195
131	10.92	0.67	0.275	(0.223)	0.080	0.195
132	11.00	0.67	0.275	(0.222)	0.080	0.195
133	11.08	0.63	0.261	(0.221)	0.076	0.185
134	11.17	0.63	0.261	(0.220)	0.076	0.185
135	11.25	0.63	0.261	(0.219)	0.076	0.185
136	11.33	0.63	0.261	(0.218)	0.076	0.185
137	11.42	0.63	0.261	(0.217)	0.076	0.185
138	11.50	0.63	0.261	(0.216)	0.076	0.185
139	11.58	0.57	0.234	(0.215)	0.068	0.166
140	11.67	0.57	0.234	(0.214)	0.068	0.166
141	11.75	0.57	0.234	(0.212)	0.068	0.166
142	11.83	0.60	0.247	(0.211)	0.072	0.176
143	11.92	0.60	0.247	(0.210)	0.072	0.176
144	12.00	0.60	0.247	(0.209)	0.072	0.176
145	12.08	0.83	0.344	(0.208)	0.100	0.244
146	12.17	0.83	0.344	(0.207)	0.100	0.244
147	12.25	0.83	0.344	(0.206)	0.100	0.244
148	12.33	0.87	0.357	(0.205)	0.104	0.254
149	12.42	0.87	0.357	(0.204)	0.104	0.254
150	12.50	0.87	0.357	(0.203)	0.104	0.254
151	12.58	0.93	0.385	(0.202)	0.112	0.273
152	12.67	0.93	0.385	(0.201)	0.112	0.273
153	12.75	0.93	0.385	(0.200)	0.112	0.273
154	12.83	0.97	0.399	(0.199)	0.116	0.283
155	12.92	0.97	0.399	(0.198)	0.116	0.283
156	13.00	0.97	0.399	(0.197)	0.116	0.283
157	13.08	1.13	0.467	(0.196)	0.136	0.332
158	13.17	1.13	0.467	(0.195)	0.136	0.332
159	13.25	1.13	0.467	(0.194)	0.136	0.332
160	13.33	1.13	0.467	(0.193)	0.136	0.332
161	13.42	1.13	0.467	(0.192)	0.136	0.332
162	13.50	1.13	0.467	(0.191)	0.136	0.332
163	13.58	0.77	0.316	(0.190)	0.092	0.224
164	13.67	0.77	0.316	(0.189)	0.092	0.224
165	13.75	0.77	0.316	(0.188)	0.092	0.224
166	13.83	0.77	0.316	(0.187)	0.092	0.224
167	13.92	0.77	0.316	(0.186)	0.092	0.224
168	14.00	0.77	0.316	(0.185)	0.092	0.224
169	14.08	0.90	0.371	(0.184)	0.108	0.264
170	14.17	0.90	0.371	(0.183)	0.108	0.264
171	14.25	0.90	0.371	(0.182)	0.108	0.264
172	14.33	0.87	0.357	(0.182)	0.104	0.254
173	14.42	0.87	0.357	(0.181)	0.104	0.254
174	14.50	0.87	0.357	(0.180)	0.104	0.254
175	14.58	0.87	0.357	(0.179)	0.104	0.254
176	14.67	0.87	0.357	(0.178)	0.104	0.254
177	14.75	0.87	0.357	(0.177)	0.104	0.254
178	14.83	0.83	0.344	(0.176)	0.100	0.244
179	14.92	0.83	0.344	(0.175)	0.100	0.244
180	15.00	0.83	0.344	(0.174)	0.100	0.244
181	15.08	0.80	0.330	(0.173)	0.096	0.234
182	15.17	0.80	0.330	(0.172)	0.096	0.234
183	15.25	0.80	0.330	(0.172)	0.096	0.234
184	15.33	0.77	0.316	(0.171)	0.092	0.224
185	15.42	0.77	0.316	(0.170)	0.092	0.224
186	15.50	0.77	0.316	(0.169)	0.092	0.224
187	15.58	0.63	0.261	(0.168)	0.076	0.185
188	15.67	0.63	0.261	(0.167)	0.076	0.185
189	15.75	0.63	0.261	(0.166)	0.076	0.185
190	15.83	0.63	0.261	(0.166)	0.076	0.185
191	15.92	0.63	0.261	(0.165)	0.076	0.185
192	16.00	0.63	0.261	(0.164)	0.076	0.185

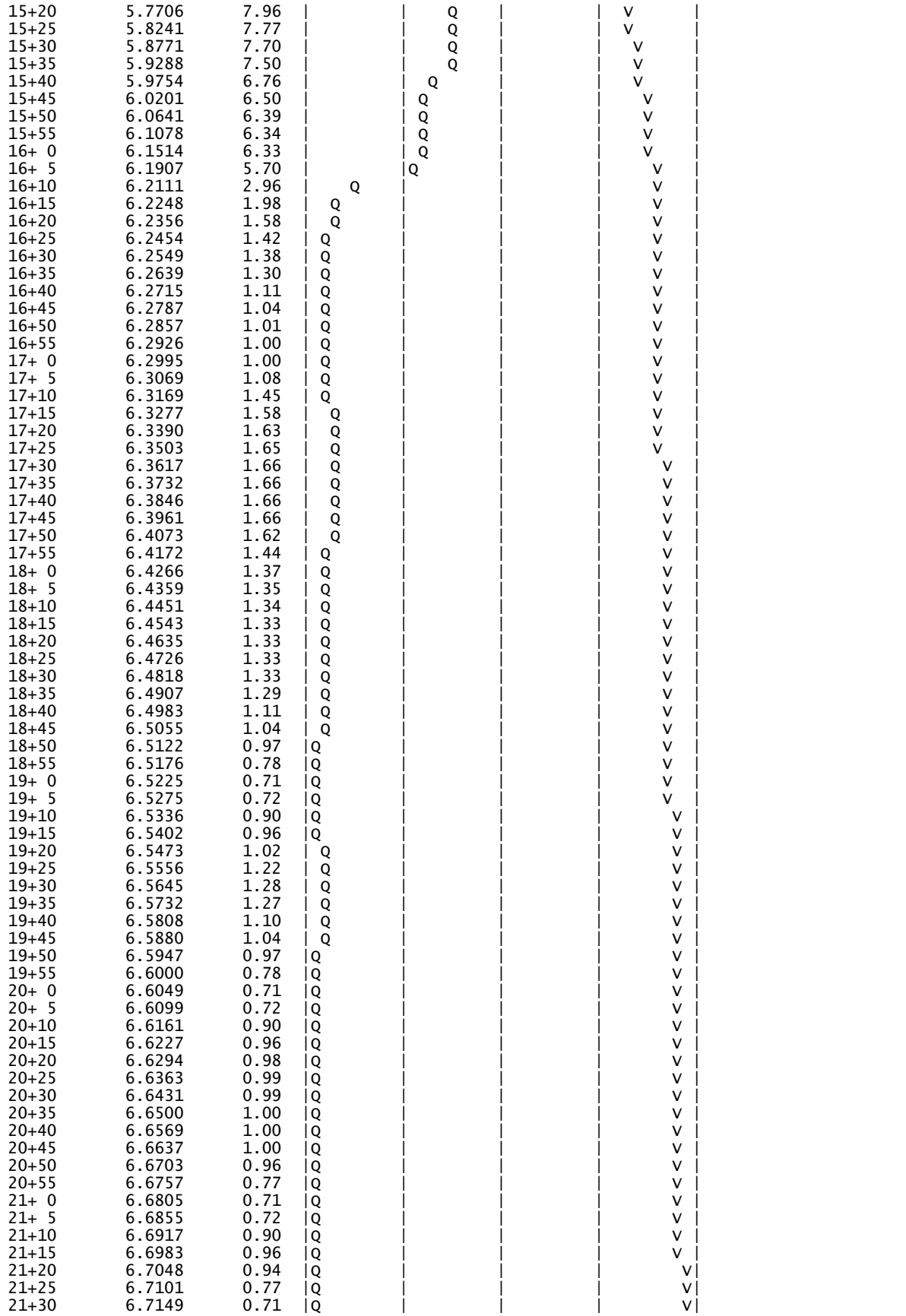
193	16.08	0.13	0.055	(0.163)	0.016	0.039
194	16.17	0.13	0.055	(0.162)	0.016	0.039
195	16.25	0.13	0.055	(0.161)	0.016	0.039
196	16.33	0.13	0.055	(0.161)	0.016	0.039
197	16.42	0.13	0.055	(0.160)	0.016	0.039
198	16.50	0.13	0.055	(0.159)	0.016	0.039
199	16.58	0.10	0.041	(0.158)	0.012	0.029
200	16.67	0.10	0.041	(0.157)	0.012	0.029
201	16.75	0.10	0.041	(0.156)	0.012	0.029
202	16.83	0.10	0.041	(0.156)	0.012	0.029
203	16.92	0.10	0.041	(0.155)	0.012	0.029
204	17.00	0.10	0.041	(0.154)	0.012	0.029
205	17.08	0.17	0.069	(0.153)	0.020	0.049
206	17.17	0.17	0.069	(0.153)	0.020	0.049
207	17.25	0.17	0.069	(0.152)	0.020	0.049
208	17.33	0.17	0.069	(0.151)	0.020	0.049
209	17.42	0.17	0.069	(0.150)	0.020	0.049
210	17.50	0.17	0.069	(0.150)	0.020	0.049
211	17.58	0.17	0.069	(0.149)	0.020	0.049
212	17.67	0.17	0.069	(0.148)	0.020	0.049
213	17.75	0.17	0.069	(0.147)	0.020	0.049
214	17.83	0.13	0.055	(0.147)	0.016	0.039
215	17.92	0.13	0.055	(0.146)	0.016	0.039
216	18.00	0.13	0.055	(0.145)	0.016	0.039
217	18.08	0.13	0.055	(0.144)	0.016	0.039
218	18.17	0.13	0.055	(0.144)	0.016	0.039
219	18.25	0.13	0.055	(0.143)	0.016	0.039
220	18.33	0.13	0.055	(0.142)	0.016	0.039
221	18.42	0.13	0.055	(0.142)	0.016	0.039
222	18.50	0.13	0.055	(0.141)	0.016	0.039
223	18.58	0.10	0.041	(0.140)	0.012	0.029
224	18.67	0.10	0.041	(0.140)	0.012	0.029
225	18.75	0.10	0.041	(0.139)	0.012	0.029
226	18.83	0.07	0.027	(0.138)	0.008	0.020
227	18.92	0.07	0.027	(0.138)	0.008	0.020
228	19.00	0.07	0.027	(0.137)	0.008	0.020
229	19.08	0.10	0.041	(0.136)	0.012	0.029
230	19.17	0.10	0.041	(0.136)	0.012	0.029
231	19.25	0.10	0.041	(0.135)	0.012	0.029
232	19.33	0.13	0.055	(0.134)	0.016	0.039
233	19.42	0.13	0.055	(0.134)	0.016	0.039
234	19.50	0.13	0.055	(0.133)	0.016	0.039
235	19.58	0.10	0.041	(0.133)	0.012	0.029
236	19.67	0.10	0.041	(0.132)	0.012	0.029
237	19.75	0.10	0.041	(0.131)	0.012	0.029
238	19.83	0.07	0.027	(0.131)	0.008	0.020
239	19.92	0.07	0.027	(0.130)	0.008	0.020
240	20.00	0.07	0.027	(0.130)	0.008	0.020
241	20.08	0.10	0.041	(0.129)	0.012	0.029
242	20.17	0.10	0.041	(0.128)	0.012	0.029
243	20.25	0.10	0.041	(0.128)	0.012	0.029
244	20.33	0.10	0.041	(0.127)	0.012	0.029
245	20.42	0.10	0.041	(0.127)	0.012	0.029
246	20.50	0.10	0.041	(0.126)	0.012	0.029
247	20.58	0.10	0.041	(0.126)	0.012	0.029
248	20.67	0.10	0.041	(0.125)	0.012	0.029
249	20.75	0.10	0.041	(0.125)	0.012	0.029
250	20.83	0.07	0.027	(0.124)	0.008	0.020
251	20.92	0.07	0.027	(0.124)	0.008	0.020
252	21.00	0.07	0.027	(0.123)	0.008	0.020
253	21.08	0.10	0.041	(0.123)	0.012	0.029
254	21.17	0.10	0.041	(0.122)	0.012	0.029
255	21.25	0.10	0.041	(0.122)	0.012	0.029
256	21.33	0.07	0.027	(0.121)	0.008	0.020
257	21.42	0.07	0.027	(0.121)	0.008	0.020
258	21.50	0.07	0.027	(0.120)	0.008	0.020
259	21.58	0.10	0.041	(0.120)	0.012	0.029
260	21.67	0.10	0.041	(0.119)	0.012	0.029
261	21.75	0.10	0.041	(0.119)	0.012	0.029
262	21.83	0.07	0.027	(0.119)	0.008	0.020
263	21.92	0.07	0.027	(0.118)	0.008	0.020
264	22.00	0.07	0.027	(0.118)	0.008	0.020
265	22.08	0.10	0.041	(0.117)	0.012	0.029
266	22.17	0.10	0.041	(0.117)	0.012	0.029
267	22.25	0.10	0.041	(0.117)	0.012	0.029

```
268  22.33     0.07      0.027       (  0.116)       0.008        0.020
269  22.42     0.07      0.027       (  0.116)       0.008        0.020
270  22.50     0.07      0.027       (  0.116)       0.008        0.020
271  22.58     0.07      0.027       (  0.115)       0.008        0.020
272  22.67     0.07      0.027       (  0.115)       0.008        0.020
273  22.75     0.07      0.027       (  0.115)       0.008        0.020
274  22.83     0.07      0.027       (  0.114)       0.008        0.020
275  22.92     0.07      0.027       (  0.114)       0.008        0.020
276  23.00     0.07      0.027       (  0.114)       0.008        0.020
277  23.08     0.07      0.027       (  0.113)       0.008        0.020
278  23.17     0.07      0.027       (  0.113)       0.008        0.020
279  23.25     0.07      0.027       (  0.113)       0.008        0.020
280  23.33     0.07      0.027       (  0.113)       0.008        0.020
281  23.42     0.07      0.027       (  0.113)       0.008        0.020
282  23.50     0.07      0.027       (  0.112)       0.008        0.020
283  23.58     0.07      0.027       (  0.112)       0.008        0.020
284  23.67     0.07      0.027       (  0.112)       0.008        0.020
285  23.75     0.07      0.027       (  0.112)       0.008        0.020
286  23.83     0.07      0.027       (  0.112)       0.008        0.020
287  23.92     0.07      0.027       (  0.112)       0.008        0.020
288  24.00     0.07      0.027       (  0.112)       0.008        0.020
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    29.3
      Flood volume = Effective rainfall      2.44(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       6.9(Ac.Ft)
      Total soil loss =      1.00(In)
      Total soil loss =     2.807(Ac.Ft)
      Total rainfall =      3.44(In)
      Flood volume =      299377.8 Cubic Feet
      Total soil loss =      122281.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     11.295(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0006      0.08  Q         |          |          |          |
   0+10       0.0037      0.45  Q         |          |          |          |
   0+15       0.0076      0.58  VQ        |          |          |          |
   0+20       0.0123      0.67  VQ        |          |          |          |
   0+25       0.0183      0.88  VQ        |          |          |          |
   0+30       0.0248      0.95  VQ        |          |          |          |
   0+35       0.0316      0.98  VQ        |          |          |          |
   0+40       0.0384      0.99  VQ        |          |          |          |
   0+45       0.0453      0.99  VQ        |          |          |          |
   0+50       0.0524      1.04  V Q       |          |          |          |
   0+55       0.0608      1.22  V Q       |          |          |          |
   1+ 0       0.0697      1.29  V Q       |          |          |          |
   1+ 5       0.0785      1.27  V Q       |          |          |          |
   1+10       0.0860      1.10  V Q       |          |          |          |
   1+15       0.0932      1.04  V Q       |          |          |          |
   1+20       0.1002      1.01  V Q       |          |          |          |
   1+25       0.1071      1.00  V Q       |          |          |          |
   1+30       0.1140      1.00  V Q       |          |          |          |
   1+35       0.1209      1.00  VQ        |          |          |          |
   1+40       0.1277      1.00  VQ        |          |          |          |
   1+45       0.1346      1.00  VQ        |          |          |          |
   1+50       0.1418      1.04  V Q       |          |          |          |
   1+55       0.1502      1.22  V Q       |          |          |          |
   2+ 0       0.1590      1.29  V Q       |          |          |          |
   2+ 5       0.1681      1.31  V Q       |          |          |          |
   2+10       0.1772      1.32  |VQ       |          |          |          |
   2+15       0.1864      1.33  |VQ       |          |          |          |
   2+20       0.1955      1.33  |VQ       |          |          |          |
   2+25       0.2047      1.33  |VQ       |          |          |          |
   2+30       0.2138      1.33  |VQ       |          |          |          |
   2+35       0.2233      1.37  |VQ       |          |          |          |
   2+40       0.2340      1.55  |V Q      |          |          |          |
   2+45       0.2452      1.62  |V Q      |          |          |          |
```

```
2+50       0.2565      1.65  |V Q       |          |          |          |
2+55       0.2679      1.66  |V Q       |          |          |          |
3+ 0       0.2793      1.66  |V Q       |          |          |          |
3+ 5       0.2908      1.66  |V Q       |          |          |          |
3+10       0.3022      1.66  |V Q       |          |          |          |
3+15       0.3137      1.66  |V Q       |          |          |          |
3+20       0.3252      1.66  |V Q       |          |          |          |
3+25       0.3366      1.66  |V Q       |          |          |          |
3+30       0.3481      1.66  | VQ       |          |          |          |
3+35       0.3595      1.66  | VQ       |          |          |          |
3+40       0.3710      1.66  | VQ       |          |          |          |
3+45       0.3824      1.66  | VQ       |          |          |          |
3+50       0.3942      1.70  | VQ       |          |          |          |
3+55       0.4072      1.89  | VQ       |          |          |          |
4+ 0       0.4206      1.95  | VQ       |          |          |          |
4+ 5       0.4342      1.98  | VQ       |          |          |          |
4+10       0.4479      1.99  | VQ       |          |          |          |
4+15       0.4617      1.99  | VQ       |          |          |          |
4+20       0.4757      2.04  | V Q      |          |          |          |
4+25       0.4910      2.22  | V Q      |          |          |          |
4+30       0.5067      2.28  | V Q      |          |          |          |
4+35       0.5226      2.31  |  VQ      |          |          |          |
4+40       0.5386      2.32  |  VQ      |          |          |          |
4+45       0.5547      2.33  |  VQ      |          |          |          |
4+50       0.5710      2.37  |  VQ      |          |          |          |
4+55       0.5885      2.55  |  V Q     |          |          |          |
5+ 0       0.6066      2.62  |  V Q     |          |          |          |
5+ 5       0.6242      2.56  |  V Q     |          |          |          |
5+10       0.6394      2.21  |  VQ      |          |          |          |
5+15       0.6537      2.08  |  VQ      |          |          |          |
5+20       0.6680      2.07  |  VQ      |          |          |          |
5+25       0.6834      2.23  |  VQ      |          |          |          |
5+30       0.6991      2.29  |   Q      |          |          |          |
5+35       0.7154      2.36  |   Q      |          |          |          |
5+40       0.7329      2.55  |   VQ     |          |          |          |
5+45       0.7509      2.61  |   VQ     |          |          |          |
5+50       0.7691      2.64  |   VQ     |          |          |          |
5+55       0.7874      2.65  |   VQ     |          |          |          |
6+ 0       0.8057      2.66  |   VQ     |          |          |          |
6+ 5       0.8243      2.70  |   VQ     |          |          |          |
6+10       0.8442      2.88  |   VQ     |          |          |          |
6+15       0.8645      2.95  |    Q     |          |          |          |
6+20       0.8850      2.98  |    Q     |          |          |          |
6+25       0.9056      2.99  |    Q     |          |          |          |
6+30       0.9262      2.99  |    Q     |          |          |          |
6+35       0.9471      3.03  |    VQ    |          |          |          |
6+40       0.9692      3.22  |    VQ    |          |          |          |
6+45       0.9918      3.28  |    VQ    |          |          |          |
6+50       1.0146      3.31  |    VQ    |          |          |          |
6+55       1.0375      3.32  |     Q    |          |          |          |
7+ 0       1.0604      3.32  |     Q    |          |          |          |
7+ 5       1.0833      3.33  |     Q    |          |          |          |
7+10       1.1062      3.33  |     Q    |          |          |          |
7+15       1.1291      3.33  |     Q    |          |          |          |
7+20       1.1523      3.37  |     Q    |          |          |          |
7+25       1.1768      3.55  |     VQ   |          |          |          |
7+30       1.2017      3.62  |     VQ   |          |          |          |
7+35       1.2270      3.68  |      Q   |          |          |          |
7+40       1.2537      3.88  |      Q   |          |          |          |
7+45       1.2809      3.95  |      Q   |          |          |          |
7+50       1.3086      4.02  |      VQ  |          |          |          |
7+55       1.3375      4.21  |      VQ  |          |          |          |
8+ 0       1.3670      4.28  |      VQ  |          |          |          |
8+ 5       1.3972      4.39  |       Q  |          |          |          |
8+10       1.4301      4.77  |       VQ|          |          |          |
8+15       1.4638      4.90  |       VQ|          |          |          |
8+20       1.4979      4.96  |       VQ|          |          |          |
8+25       1.5322      4.98  |       VQ|          |          |          |
8+30       1.5665      4.98  |        Q|          |          |          |
8+35       1.6012      5.03  |         VQ         |          |          |
8+40       1.6371      5.21  |         VQ         |          |          |
8+45       1.6734      5.28  |         VQ         |          |          |
8+50       1.7103      5.35  |         VQ         |          |          |
8+55       1.7484      5.54  |          VQ        |          |          |
9+ 0       1.7870      5.61  |          VQ        |          |          |
```

9+ 5	1.8264	5.72	VQ			
9+10	1.8684	6.10	V Q			
9+15	1.9113	6.23	|VQ			
9+20	1.9549	6.33	|VQ			
9+25	1.9999	6.53	|V Q			
9+30	2.0454	6.60	|V Q			
9+35	2.0913	6.68	| VQ			
9+40	2.1387	6.87	| VQ			
9+45	2.1865	6.94	| VQ			
9+50	2.2347	7.01	| VQ			
9+55	2.2843	7.20	| VQ			
10+ 0	2.3344	7.27	| VQ			
10+ 5	2.3827	7.01	| VQ			
10+10	2.4223	5.75	|Q V			
10+15	2.4587	5.29	Q V			
10+20	2.4939	5.10	Q V			
10+25	2.5285	5.03	Q V			
10+30	2.5630	5.01	Q V			
10+35	2.5989	5.20	Q V			
10+40	2.6409	6.11	| Q V			
10+45	2.6853	6.44	| Q V			
10+50	2.7305	6.57	| Q V			
10+55	2.7761	6.62	| Q V			
11+ 0	2.8218	6.64	| Q V			
11+ 5	2.8673	6.61	| Q V			
11+10	2.9116	6.43	| Q V			
11+15	2.9554	6.36	| Q V			
11+20	2.9991	6.34	| Q V			
11+25	3.0426	6.33	| Q V			
11+30	3.0862	6.32	| Q V			
11+35	3.1292	6.24	| Q V			
11+40	3.1696	5.87	|Q V			
11+45	3.2091	5.74	|Q V			
11+50	3.2486	5.73	|Q V			
11+55	3.2892	5.89	|Q V|			
12+ 0	3.3302	5.95	|Q V|			
12+ 5	3.3733	6.26	| Q V|			
12+10	3.4253	7.55	| Q V|			
12+15	3.4804	8.01	| Q V			
12+20	3.5372	8.24	| Q V			
12+25	3.5957	8.50	| Q V			
12+30	3.6548	8.58	| Q |V			
12+35	3.7148	8.71	| Q |V			
12+40	3.7774	9.09	| Q |V			
12+45	3.8409	9.22	| Q | V			
12+50	3.9051	9.32	| Q | V			
12+55	3.9707	9.53	| Q| V			
13+ 0	4.0368	9.60	| Q| V			
13+ 5	4.1046	9.84	| Q| V			
13+10	4.1787	10.76	| |Q V			
13+15	4.2550	11.09	| | Q V			
13+20	4.3323	11.23	| | Q V			
13+25	4.4100	11.28	| | Q V			
13+30	4.4878	11.29	| | Q V			
13+35	4.5625	10.85	| |Q V			
13+40	4.6235	8.85	| Q | V			
13+45	4.6794	8.13	| Q | V			
13+50	4.7334	7.83	| Q | V			
13+55	4.7866	7.72	| Q | V			
14+ 0	4.8395	7.68	| Q | V			
14+ 5	4.8934	7.83	| Q | V			
14+10	4.9522	8.55	| Q | V			
14+15	5.0129	8.81	| Q | V|			
14+20	5.0740	8.87	| Q | V|			
14+25	5.1341	8.73	| Q | V|			
14+30	5.1939	8.68	| Q | V			
14+35	5.2536	8.66	| Q | V			
14+40	5.3132	8.65	| Q | V			
14+45	5.3728	8.65	| Q | |V			
14+50	5.4321	8.61	| Q | |V			
14+55	5.4901	8.42	| Q | |V			
15+ 0	5.5477	8.36	| Q | | V			
15+ 5	5.6048	8.29	| Q | | V			
15+10	5.6605	8.10	| Q | | V			
15+15	5.7158	8.03	| Q | | V			



```
   21+35       6.7199      0.72  |Q        |         |         |        v|
   21+40       6.7261      0.90  |Q        |         |         |        v|
   21+45       6.7326      0.96  |Q        |         |         |        v|
   21+50       6.7391      0.94  |Q        |         |         |        v|
   21+55       6.7444      0.77  |Q        |         |         |        v|
   22+ 0       6.7493      0.71  |Q        |         |         |        v|
   22+ 5       6.7543      0.72  |Q        |         |         |        v|
   22+10       6.7604      0.90  |Q        |         |         |        v|
   22+15       6.7670      0.96  |Q        |         |         |        v|
   22+20       6.7735      0.94  |Q        |         |         |        v|
   22+25       6.7788      0.77  |Q        |         |         |        v|
   22+30       6.7836      0.71  |Q        |         |         |        v|
   22+35       6.7883      0.68  |Q        |         |         |        v|
   22+40       6.7930      0.67  |Q        |         |         |        v|
   22+45       6.7976      0.67  |Q        |         |         |        v|
   22+50       6.8021      0.67  |Q        |         |         |        v|
   22+55       6.8067      0.67  |Q        |         |         |        v|
   23+ 0       6.8113      0.67  |Q        |         |         |        v|
   23+ 5       6.8159      0.67  |Q        |         |         |        v|
   23+10       6.8205      0.67  |Q        |         |         |        v|
   23+15       6.8251      0.67  |Q        |         |         |        v|
   23+20       6.8296      0.67  |Q        |         |         |        v|
   23+25       6.8342      0.67  |Q        |         |         |        v|
   23+30       6.8388      0.67  |Q        |         |         |        v|
   23+35       6.8434      0.67  |Q        |         |         |        v|
   23+40       6.8480      0.67  |Q        |         |         |        v|
   23+45       6.8525      0.67  |Q        |         |         |        v|
   23+50       6.8571      0.67  |Q        |         |         |        v|
   23+55       6.8617      0.67  |Q        |         |         |        v|
   24+ 0       6.8663      0.67  |Q        |         |         |        v|
   24+ 5       6.8703      0.58  |Q        |         |         |        v|
   24+10       6.8718      0.22  Q         |         |         |        v|
   24+15       6.8724      0.09  Q         |         |         |        v|
   24+20       6.8726      0.03  Q         |         |         |        v|
   24+25       6.8727      0.01  Q         |         |         |        v|
   24+30       6.8728      0.01  Q         |         |         |        v|
   24+35       6.8728      0.00  Q         |         |         |         v
-------------------------------------------------------------------------
```

PROPOSED CONDITION
10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: NORTH10YR110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.55	18.59

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.25	42.25

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.838(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 0.838(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

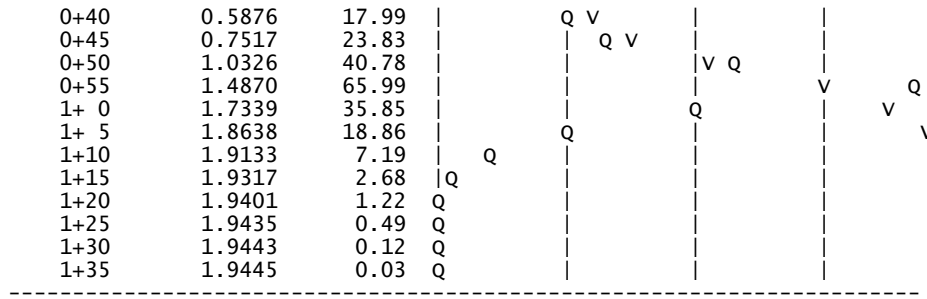
```
      56.0  56.0      0.511     0.760        0.161       1.000      0.161
                                                        Sum (F) =   0.161
      Area averaged mean soil loss (F) (In/Hr) =  0.161
      Minimum soil loss rate ((In/Hr)) =  0.081
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.290
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         94.204         12.469             4.247
          2   0.167        188.409         54.814            18.672
          3   0.250        282.613         19.639             6.690
          4   0.333        376.818          8.096             2.758
          5   0.417        471.022          3.119             1.063
          6   0.500        565.227          0.957             0.326
          7   0.583        659.431          0.629             0.214
          8   0.667        753.636          0.277             0.094
                                  Sum = 100.000   Sum=      34.064
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.342       (  0.161)       0.099        0.243
   2   0.17     4.70      0.472       (  0.161)       0.137        0.335
   3   0.25     4.70      0.472       (  0.161)       0.137        0.335
   4   0.33     5.10      0.513       (  0.161)       0.149        0.364
   5   0.42     5.80      0.583          0.161    (  0.169)        0.422
   6   0.50     5.90      0.593          0.161    (  0.172)        0.432
   7   0.58     7.10      0.714          0.161    (  0.207)        0.552
   8   0.67     8.70      0.875          0.161    (  0.254)        0.713
   9   0.75    13.20      1.327          0.161    (  0.385)        1.166
  10   0.83    29.70      2.986          0.161    (  0.866)        2.824
  11   0.92     7.70      0.774          0.161    (  0.224)        0.613
  12   1.00     4.00      0.402       (  0.161)       0.117        0.285
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     8.3
        Flood volume = Effective rainfall      0.69(In)
         times area      33.8(Ac.)/[(In)/(Ft.)] =       1.9(Ac.Ft)
        Total soil loss =      0.15(In)
        Total soil loss =     0.415(Ac.Ft)
        Total rainfall =      0.84(In)
        Flood volume =       84703.9 Cubic Feet
        Total soil loss =       18080.4 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =     65.987(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f     H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       17.5      35.0      52.5      70.0
  ----------------------------------------------------------------------------
    0+ 5       0.0071      1.03  Q         |         |         |         |
    0+10       0.0481      5.96  V  Q      |         |         |         |
    0+15       0.1123      9.32  | V  Q    |         |         |         |
    0+20       0.1862     10.73  |  V  Q   |         |         |         |
    0+25       0.2690     12.02  |    VQ   |         |         |         |
    0+30       0.3620     13.51  |      Q  |         |         |         |
    0+35       0.4637     14.76  |       QV|         |         |         |
```


0+40 0.5876 17.99
0+45 0.7517 23.83
0+50 1.0326 40.78
0+55 1.4870 65.99
1+ 0 1.7339 35.85
1+ 5 1.8638 18.86
1+10 1.9133 7.19
1+15 1.9317 2.68
1+20 1.9401 1.22
1+25 1.9435 0.49
1+30 1.9443 0.12
1+35 1.9445 0.03

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH10YR310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.95	32.11

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.05	69.29

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.403(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	1.30	0.219	(0.161)	0.063	0.155
2	0.17	1.30	0.219	(0.161)	0.063	0.155
3	0.25	1.10	0.185	(0.161)	0.054	0.131
4	0.33	1.50	0.252	(0.161)	0.073	0.179
5	0.42	1.50	0.252	(0.161)	0.073	0.179
6	0.50	1.80	0.303	(0.161)	0.088	0.215
7	0.58	1.50	0.252	(0.161)	0.073	0.179
8	0.67	1.80	0.303	(0.161)	0.088	0.215
9	0.75	1.80	0.303	(0.161)	0.088	0.215
10	0.83	1.50	0.252	(0.161)	0.073	0.179
11	0.92	1.60	0.269	(0.161)	0.078	0.191
12	1.00	1.80	0.303	(0.161)	0.088	0.215
13	1.08	2.20	0.370	(0.161)	0.107	0.263
14	1.17	2.20	0.370	(0.161)	0.107	0.263
15	1.25	2.20	0.370	(0.161)	0.107	0.263
16	1.33	2.00	0.337	(0.161)	0.098	0.239
17	1.42	2.60	0.438	(0.161)	0.127	0.311
18	1.50	2.70	0.454	(0.161)	0.132	0.323
19	1.58	2.40	0.404	(0.161)	0.117	0.287
20	1.67	2.70	0.454	(0.161)	0.132	0.323
21	1.75	3.30	0.555	(0.161)	0.161	0.394
22	1.83	3.10	0.522	(0.161)	0.151	0.370
23	1.92	2.90	0.488	(0.161)	0.142	0.346
24	2.00	3.00	0.505	(0.161)	0.146	0.358
25	2.08	3.10	0.522	(0.161)	0.151	0.370
26	2.17	4.20	0.707	0.161	(0.205)	0.545
27	2.25	5.00	0.841	0.161	(0.244)	0.680
28	2.33	3.50	0.589	0.161	(0.171)	0.428
29	2.42	6.80	1.144	0.161	(0.332)	0.983
30	2.50	7.30	1.228	0.161	(0.356)	1.067
31	2.58	8.20	1.380	0.161	(0.400)	1.218
32	2.67	5.90	0.993	0.161	(0.288)	0.831
33	2.75	2.00	0.337	(0.161)	0.098	0.239
34	2.83	1.80	0.303	(0.161)	0.088	0.215
35	2.92	1.80	0.303	(0.161)	0.088	0.215
36	3.00	0.60	0.101	(0.161)	0.029	0.072
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	12.8

Flood volume = Effective rainfall 1.07(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)
Total soil loss = 0.33(In)
Total soil loss = 0.942(Ac.Ft)

Total rainfall = 1.40(In)
Flood volume = 131017.2 Cubic Feet
Total soil loss = 41041.7 Cubic Feet

Peak flow rate of this hydrograph = 36.979(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 10.0 20.0 30.0 40.0
0+ 5	0.0045	0.66	Q
0+10	0.0291	3.56	V Q
0+15	0.0601	4.50	V Q
0+20	0.0923	4.69	V Q
0+25	0.1308	5.58	V Q
0+30	0.1724	6.04	V Q
0+35	0.2185	6.70	V Q
0+40	0.2631	6.48	V Q
0+45	0.3114	7.02	V Q
0+50	0.3600	7.05	V Q
0+55	0.4048	6.51	VQ
1+ 0	0.4505	6.63	VQ
1+ 5	0.5005	7.27	VQ
1+10	0.5578	8.32	VQ
1+15	0.6178	8.71	Q
1+20	0.6781	8.76	QV
1+25	0.7379	8.68	QV
1+30	0.8062	9.93	QV
1+35	0.8781	10.43	QV
1+40	0.9481	10.17	Q V
1+45	1.0238	11.00	Q V
1+50	1.1093	12.41	Q V
1+55	1.1948	12.42	Q V
2+ 0	1.2782	12.10	Q V
2+ 5	1.3624	12.23	Q V
2+10	1.4533	13.21	Q V
2+15	1.5715	17.15	Q V
2+20	1.7078	19.80	Q V
2+25	1.8376	18.84	Q V
2+30	2.0335	28.44	VQ
2+35	2.2669	33.88	V Q
2+40	2.5215	36.98	V Q
2+45	2.7215	29.03	Q V
2+50	2.8311	15.92	Q V
2+55	2.9049	10.72	Q V
3+ 0	2.9602	8.02	Q V
3+ 5	2.9895	4.26	Q V
3+10	3.0010	1.67	Q V
3+15	3.0053	0.63	Q V
3+20	3.0068	0.22	Q V
3+25	3.0074	0.09	Q V
3+30	3.0077	0.04	Q V
3+35	3.0077	0.01	Q V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH10YR610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.40	47.32

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	3.00	101.40

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 2.058(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.058(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

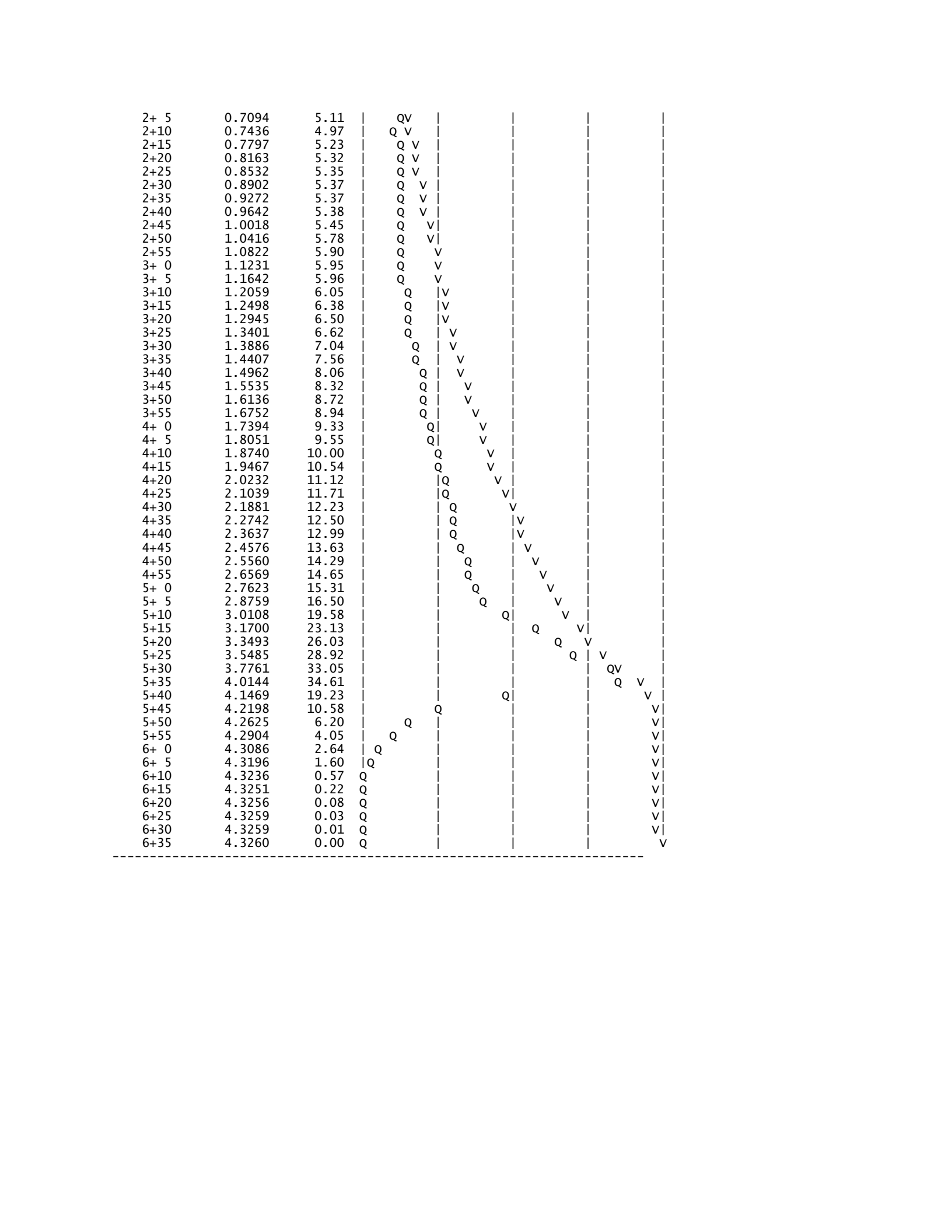
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.50	0.123	(0.161)	0.036	0.088
2	0.17	0.60	0.148	(0.161)	0.043	0.105
3	0.25	0.60	0.148	(0.161)	0.043	0.105
4	0.33	0.60	0.148	(0.161)	0.043	0.105
5	0.42	0.60	0.148	(0.161)	0.043	0.105
6	0.50	0.70	0.173	(0.161)	0.050	0.123
7	0.58	0.70	0.173	(0.161)	0.050	0.123
8	0.67	0.70	0.173	(0.161)	0.050	0.123
9	0.75	0.70	0.173	(0.161)	0.050	0.123
10	0.83	0.70	0.173	(0.161)	0.050	0.123
11	0.92	0.70	0.173	(0.161)	0.050	0.123
12	1.00	0.80	0.198	(0.161)	0.057	0.140
13	1.08	0.80	0.198	(0.161)	0.057	0.140
14	1.17	0.80	0.198	(0.161)	0.057	0.140
15	1.25	0.80	0.198	(0.161)	0.057	0.140
16	1.33	0.80	0.198	(0.161)	0.057	0.140
17	1.42	0.80	0.198	(0.161)	0.057	0.140
18	1.50	0.80	0.198	(0.161)	0.057	0.140
19	1.58	0.80	0.198	(0.161)	0.057	0.140
20	1.67	0.80	0.198	(0.161)	0.057	0.140
21	1.75	0.80	0.198	(0.161)	0.057	0.140
22	1.83	0.80	0.198	(0.161)	0.057	0.140
23	1.92	0.80	0.198	(0.161)	0.057	0.140
24	2.00	0.90	0.222	(0.161)	0.064	0.158
25	2.08	0.80	0.198	(0.161)	0.057	0.140
26	2.17	0.90	0.222	(0.161)	0.064	0.158
27	2.25	0.90	0.222	(0.161)	0.064	0.158
28	2.33	0.90	0.222	(0.161)	0.064	0.158
29	2.42	0.90	0.222	(0.161)	0.064	0.158
30	2.50	0.90	0.222	(0.161)	0.064	0.158
31	2.58	0.90	0.222	(0.161)	0.064	0.158
32	2.67	0.90	0.222	(0.161)	0.064	0.158
33	2.75	1.00	0.247	(0.161)	0.072	0.175
34	2.83	1.00	0.247	(0.161)	0.072	0.175
35	2.92	1.00	0.247	(0.161)	0.072	0.175
36	3.00	1.00	0.247	(0.161)	0.072	0.175
37	3.08	1.00	0.247	(0.161)	0.072	0.175
38	3.17	1.10	0.272	(0.161)	0.079	0.193
39	3.25	1.10	0.272	(0.161)	0.079	0.193
40	3.33	1.10	0.272	(0.161)	0.079	0.193
41	3.42	1.20	0.296	(0.161)	0.086	0.210
42	3.50	1.30	0.321	(0.161)	0.093	0.228

```
43   3.58     1.40      0.346       (  0.161)       0.100        0.245
44   3.67     1.40      0.346       (  0.161)       0.100        0.245
45   3.75     1.50      0.370       (  0.161)       0.107        0.263
46   3.83     1.50      0.370       (  0.161)       0.107        0.263
47   3.92     1.60      0.395       (  0.161)       0.115        0.281
48   4.00     1.60      0.395       (  0.161)       0.115        0.281
49   4.08     1.70      0.420       (  0.161)       0.122        0.298
50   4.17     1.80      0.445       (  0.161)       0.129        0.316
51   4.25     1.90      0.469       (  0.161)       0.136        0.333
52   4.33     2.00      0.494       (  0.161)       0.143        0.351
53   4.42     2.10      0.519       (  0.161)       0.150        0.368
54   4.50     2.10      0.519       (  0.161)       0.150        0.368
55   4.58     2.20      0.543       (  0.161)       0.158        0.386
56   4.67     2.30      0.568          0.161    (  0.165)       0.407
57   4.75     2.40      0.593          0.161    (  0.172)       0.431
58   4.83     2.40      0.593          0.161    (  0.172)       0.431
59   4.92     2.50      0.617          0.161    (  0.179)       0.456
60   5.00     2.60      0.642          0.161    (  0.186)       0.481
61   5.08     3.10      0.766          0.161    (  0.222)       0.604
62   5.17     3.60      0.889          0.161    (  0.258)       0.728
63   5.25     3.90      0.963          0.161    (  0.279)       0.802
64   5.33     4.20      1.037          0.161    (  0.301)       0.876
65   5.42     4.70      1.161          0.161    (  0.337)       0.999
66   5.50     5.60      1.383          0.161    (  0.401)       1.222
67   5.58     1.90      0.469       (  0.161)       0.136        0.333
68   5.67     0.90      0.222       (  0.161)       0.064        0.158
69   5.75     0.60      0.148       (  0.161)       0.043        0.105
70   5.83     0.50      0.123       (  0.161)       0.036        0.088
71   5.92     0.30      0.074       (  0.161)       0.021        0.053
72   6.00     0.20      0.049       (  0.161)       0.014        0.035
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    18.4
      Flood volume = Effective rainfall      1.54(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       4.3(Ac.Ft)
      Total soil loss =      0.52(In)
      Total soil loss =     1.471(Ac.Ft)
      Total rainfall =      2.06(In)
      Flood volume =      188438.8 Cubic Feet
      Total soil loss =       64067.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     34.606(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------------
  0+ 5       0.0026      0.37  Q          |         |         |         |
  0+10       0.0169      2.08  V Q        |         |         |         |
  0+15       0.0376      3.00  V Q        |         |         |         |
  0+20       0.0607      3.36  V  Q       |         |         |         |
  0+25       0.0848      3.50  V  Q       |         |         |         |
  0+30       0.1098      3.62  |V Q       |         |         |         |
  0+35       0.1371      3.97  |V Q       |         |         |         |
  0+40       0.1654      4.10  |V  Q      |         |         |         |
  0+45       0.1940      4.15  |V  Q      |         |         |         |
  0+50       0.2227      4.17  | V Q      |         |         |         |
  0+55       0.2515      4.18  | V Q      |         |         |         |
  1+ 0       0.2808      4.26  | V Q      |         |         |         |
  1+ 5       0.3124      4.59  | V Q      |         |         |         |
  1+10       0.3448      4.70  |  VQ      |         |         |         |
  1+15       0.3775      4.75  |  VQ      |         |         |         |
  1+20       0.4103      4.77  |  VQ      |         |         |         |
  1+25       0.4432      4.78  |   Q      |         |         |         |
  1+30       0.4761      4.78  |   Q      |         |         |         |
  1+35       0.5091      4.78  |   Q      |         |         |         |
  1+40       0.5420      4.78  |   QV     |         |         |         |
  1+45       0.5749      4.78  |   QV     |         |         |         |
  1+50       0.6079      4.78  |   QV     |         |         |         |
  1+55       0.6408      4.78  |   QV     |         |         |         |
  2+ 0       0.6742      4.86  |   Q V    |         |         |         |
```



U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH10YR2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.145(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time	(Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	(0.286)	0.010	0.024
2	0.17	0.07	0.033	(0.285)	0.010	0.024
3	0.25	0.07	0.033	(0.284)	0.010	0.024
4	0.33	0.10	0.050	(0.283)	0.014	0.035
5	0.42	0.10	0.050	(0.282)	0.014	0.035
6	0.50	0.10	0.050	(0.281)	0.014	0.035
7	0.58	0.10	0.050	(0.280)	0.014	0.035
8	0.67	0.10	0.050	(0.278)	0.014	0.035
9	0.75	0.10	0.050	(0.277)	0.014	0.035
10	0.83	0.13	0.066	(0.276)	0.019	0.047
11	0.92	0.13	0.066	(0.275)	0.019	0.047
12	1.00	0.13	0.066	(0.274)	0.019	0.047
13	1.08	0.10	0.050	(0.273)	0.014	0.035
14	1.17	0.10	0.050	(0.272)	0.014	0.035
15	1.25	0.10	0.050	(0.271)	0.014	0.035
16	1.33	0.10	0.050	(0.270)	0.014	0.035
17	1.42	0.10	0.050	(0.269)	0.014	0.035
18	1.50	0.10	0.050	(0.268)	0.014	0.035
19	1.58	0.10	0.050	(0.267)	0.014	0.035
20	1.67	0.10	0.050	(0.265)	0.014	0.035
21	1.75	0.10	0.050	(0.264)	0.014	0.035
22	1.83	0.13	0.066	(0.263)	0.019	0.047
23	1.92	0.13	0.066	(0.262)	0.019	0.047
24	2.00	0.13	0.066	(0.261)	0.019	0.047
25	2.08	0.13	0.066	(0.260)	0.019	0.047
26	2.17	0.13	0.066	(0.259)	0.019	0.047
27	2.25	0.13	0.066	(0.258)	0.019	0.047
28	2.33	0.13	0.066	(0.257)	0.019	0.047
29	2.42	0.13	0.066	(0.256)	0.019	0.047
30	2.50	0.13	0.066	(0.255)	0.019	0.047
31	2.58	0.17	0.083	(0.254)	0.024	0.059
32	2.67	0.17	0.083	(0.253)	0.024	0.059
33	2.75	0.17	0.083	(0.252)	0.024	0.059
34	2.83	0.17	0.083	(0.251)	0.024	0.059
35	2.92	0.17	0.083	(0.250)	0.024	0.059
36	3.00	0.17	0.083	(0.249)	0.024	0.059
37	3.08	0.17	0.083	(0.248)	0.024	0.059
38	3.17	0.17	0.083	(0.247)	0.024	0.059
39	3.25	0.17	0.083	(0.246)	0.024	0.059
40	3.33	0.17	0.083	(0.245)	0.024	0.059
41	3.42	0.17	0.083	(0.244)	0.024	0.059
42	3.50	0.17	0.083	(0.243)	0.024	0.059

43	3.58	0.17	0.083	(0.242)	0.024	0.059
44	3.67	0.17	0.083	(0.241)	0.024	0.059
45	3.75	0.17	0.083	(0.240)	0.024	0.059
46	3.83	0.20	0.099	(0.238)	0.029	0.071
47	3.92	0.20	0.099	(0.237)	0.029	0.071
48	4.00	0.20	0.099	(0.236)	0.029	0.071
49	4.08	0.20	0.099	(0.235)	0.029	0.071
50	4.17	0.20	0.099	(0.234)	0.029	0.071
51	4.25	0.20	0.099	(0.233)	0.029	0.071
52	4.33	0.23	0.116	(0.232)	0.034	0.082
53	4.42	0.23	0.116	(0.231)	0.034	0.082
54	4.50	0.23	0.116	(0.231)	0.034	0.082
55	4.58	0.23	0.116	(0.230)	0.034	0.082
56	4.67	0.23	0.116	(0.229)	0.034	0.082
57	4.75	0.23	0.116	(0.228)	0.034	0.082
58	4.83	0.27	0.133	(0.227)	0.038	0.094
59	4.92	0.27	0.133	(0.226)	0.038	0.094
60	5.00	0.27	0.133	(0.225)	0.038	0.094
61	5.08	0.20	0.099	(0.224)	0.029	0.071
62	5.17	0.20	0.099	(0.223)	0.029	0.071
63	5.25	0.20	0.099	(0.222)	0.029	0.071
64	5.33	0.23	0.116	(0.221)	0.034	0.082
65	5.42	0.23	0.116	(0.220)	0.034	0.082
66	5.50	0.23	0.116	(0.219)	0.034	0.082
67	5.58	0.27	0.133	(0.218)	0.038	0.094
68	5.67	0.27	0.133	(0.217)	0.038	0.094
69	5.75	0.27	0.133	(0.216)	0.038	0.094
70	5.83	0.27	0.133	(0.215)	0.038	0.094
71	5.92	0.27	0.133	(0.214)	0.038	0.094
72	6.00	0.27	0.133	(0.213)	0.038	0.094
73	6.08	0.30	0.149	(0.212)	0.043	0.106
74	6.17	0.30	0.149	(0.211)	0.043	0.106
75	6.25	0.30	0.149	(0.210)	0.043	0.106
76	6.33	0.30	0.149	(0.209)	0.043	0.106
77	6.42	0.30	0.149	(0.208)	0.043	0.106
78	6.50	0.30	0.149	(0.207)	0.043	0.106
79	6.58	0.33	0.166	(0.206)	0.048	0.118
80	6.67	0.33	0.166	(0.206)	0.048	0.118
81	6.75	0.33	0.166	(0.205)	0.048	0.118
82	6.83	0.33	0.166	(0.204)	0.048	0.118
83	6.92	0.33	0.166	(0.203)	0.048	0.118
84	7.00	0.33	0.166	(0.202)	0.048	0.118
85	7.08	0.33	0.166	(0.201)	0.048	0.118
86	7.17	0.33	0.166	(0.200)	0.048	0.118
87	7.25	0.33	0.166	(0.199)	0.048	0.118
88	7.33	0.37	0.182	(0.198)	0.053	0.130
89	7.42	0.37	0.182	(0.197)	0.053	0.130
90	7.50	0.37	0.182	(0.196)	0.053	0.130
91	7.58	0.40	0.199	(0.195)	0.058	0.141
92	7.67	0.40	0.199	(0.195)	0.058	0.141
93	7.75	0.40	0.199	(0.194)	0.058	0.141
94	7.83	0.43	0.216	(0.193)	0.063	0.153
95	7.92	0.43	0.216	(0.192)	0.063	0.153
96	8.00	0.43	0.216	(0.191)	0.063	0.153
97	8.08	0.50	0.249	(0.190)	0.072	0.177
98	8.17	0.50	0.249	(0.189)	0.072	0.177
99	8.25	0.50	0.249	(0.188)	0.072	0.177
100	8.33	0.50	0.249	(0.187)	0.072	0.177
101	8.42	0.50	0.249	(0.187)	0.072	0.177
102	8.50	0.50	0.249	(0.186)	0.072	0.177
103	8.58	0.53	0.265	(0.185)	0.077	0.188
104	8.67	0.53	0.265	(0.184)	0.077	0.188
105	8.75	0.53	0.265	(0.183)	0.077	0.188
106	8.83	0.57	0.282	(0.182)	0.082	0.200
107	8.92	0.57	0.282	(0.181)	0.082	0.200
108	9.00	0.57	0.282	(0.181)	0.082	0.200
109	9.08	0.63	0.315	(0.180)	0.091	0.224
110	9.17	0.63	0.315	(0.179)	0.091	0.224
111	9.25	0.63	0.315	(0.178)	0.091	0.224
112	9.33	0.67	0.332	(0.177)	0.096	0.235
113	9.42	0.67	0.332	(0.176)	0.096	0.235
114	9.50	0.67	0.332	(0.175)	0.096	0.235
115	9.58	0.70	0.348	(0.175)	0.101	0.247
116	9.67	0.70	0.348	(0.174)	0.101	0.247
117	9.75	0.70	0.348	(0.173)	0.101	0.247

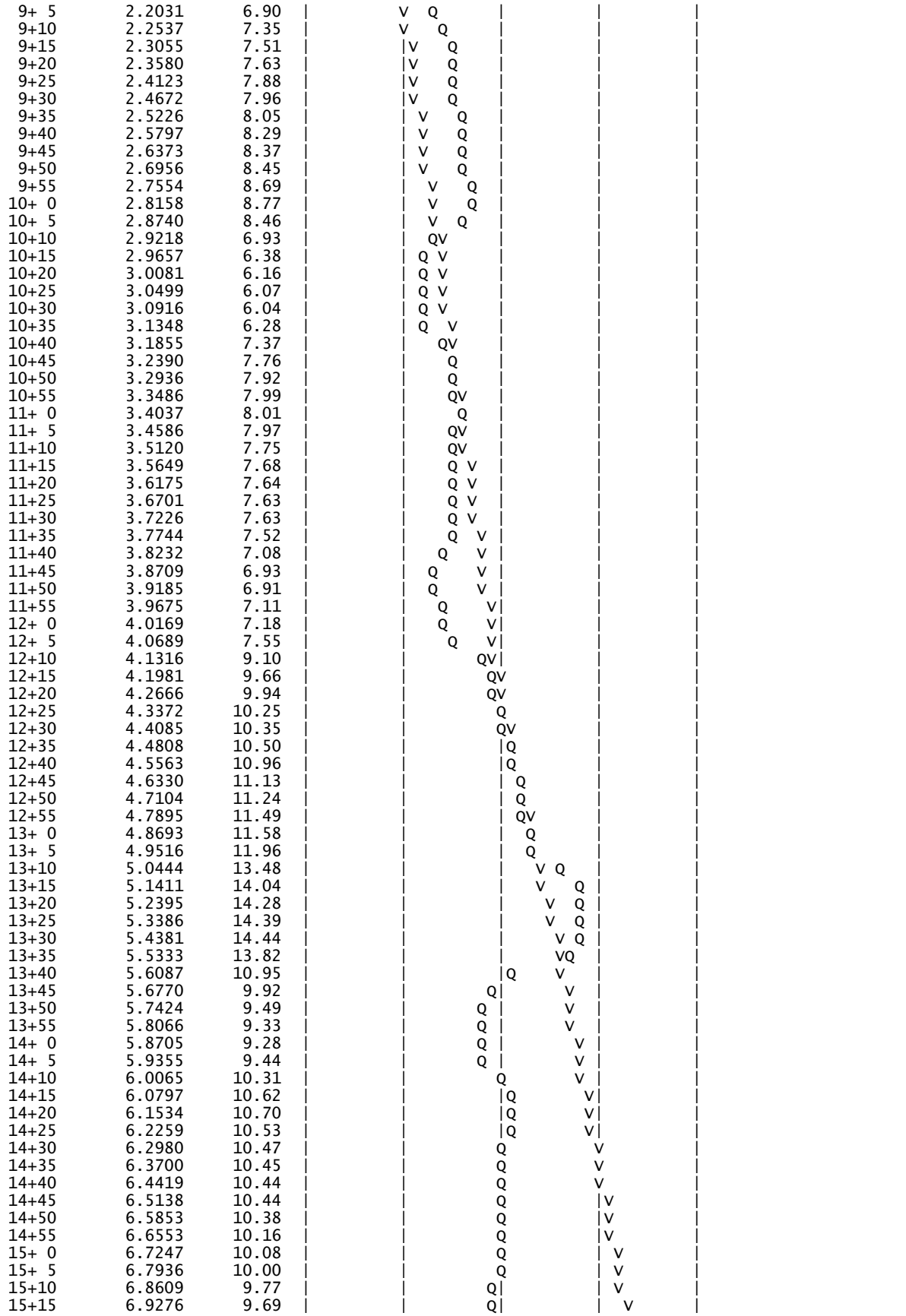
118	9.83	0.73	0.365	(0.172)	0.106	0.259
119	9.92	0.73	0.365	(0.171)	0.106	0.259
120	10.00	0.73	0.365	(0.170)	0.106	0.259
121	10.08	0.50	0.249	(0.170)	0.072	0.177
122	10.17	0.50	0.249	(0.169)	0.072	0.177
123	10.25	0.50	0.249	(0.168)	0.072	0.177
124	10.33	0.50	0.249	(0.167)	0.072	0.177
125	10.42	0.50	0.249	(0.166)	0.072	0.177
126	10.50	0.50	0.249	(0.166)	0.072	0.177
127	10.58	0.67	0.332	(0.165)	0.096	0.235
128	10.67	0.67	0.332	(0.164)	0.096	0.235
129	10.75	0.67	0.332	(0.163)	0.096	0.235
130	10.83	0.67	0.332	(0.162)	0.096	0.235
131	10.92	0.67	0.332	(0.162)	0.096	0.235
132	11.00	0.67	0.332	(0.161)	0.096	0.235
133	11.08	0.63	0.315	(0.160)	0.091	0.224
134	11.17	0.63	0.315	(0.159)	0.091	0.224
135	11.25	0.63	0.315	(0.158)	0.091	0.224
136	11.33	0.63	0.315	(0.158)	0.091	0.224
137	11.42	0.63	0.315	(0.157)	0.091	0.224
138	11.50	0.63	0.315	(0.156)	0.091	0.224
139	11.58	0.57	0.282	(0.155)	0.082	0.200
140	11.67	0.57	0.282	(0.154)	0.082	0.200
141	11.75	0.57	0.282	(0.154)	0.082	0.200
142	11.83	0.60	0.298	(0.153)	0.087	0.212
143	11.92	0.60	0.298	(0.152)	0.087	0.212
144	12.00	0.60	0.298	(0.151)	0.087	0.212
145	12.08	0.83	0.415	(0.151)	0.120	0.294
146	12.17	0.83	0.415	(0.150)	0.120	0.294
147	12.25	0.83	0.415	(0.149)	0.120	0.294
148	12.33	0.87	0.431	(0.148)	0.125	0.306
149	12.42	0.87	0.431	(0.148)	0.125	0.306
150	12.50	0.87	0.431	(0.147)	0.125	0.306
151	12.58	0.93	0.464	(0.146)	0.135	0.330
152	12.67	0.93	0.464	(0.145)	0.135	0.330
153	12.75	0.93	0.464	(0.145)	0.135	0.330
154	12.83	0.97	0.481	(0.144)	0.139	0.341
155	12.92	0.97	0.481	(0.143)	0.139	0.341
156	13.00	0.97	0.481	(0.143)	0.139	0.341
157	13.08	1.13	0.564	0.142	(0.163)	0.422
158	13.17	1.13	0.564	0.141	(0.163)	0.423
159	13.25	1.13	0.564	0.140	(0.163)	0.423
160	13.33	1.13	0.564	0.140	(0.163)	0.424
161	13.42	1.13	0.564	0.139	(0.163)	0.425
162	13.50	1.13	0.564	0.138	(0.163)	0.426
163	13.58	0.77	0.381	(0.138)	0.111	0.271
164	13.67	0.77	0.381	(0.137)	0.111	0.271
165	13.75	0.77	0.381	(0.136)	0.111	0.271
166	13.83	0.77	0.381	(0.135)	0.111	0.271
167	13.92	0.77	0.381	(0.135)	0.111	0.271
168	14.00	0.77	0.381	(0.134)	0.111	0.271
169	14.08	0.90	0.448	(0.133)	0.130	0.318
170	14.17	0.90	0.448	(0.133)	0.130	0.318
171	14.25	0.90	0.448	(0.132)	0.130	0.318
172	14.33	0.87	0.431	(0.131)	0.125	0.306
173	14.42	0.87	0.431	(0.131)	0.125	0.306
174	14.50	0.87	0.431	(0.130)	0.125	0.306
175	14.58	0.87	0.431	(0.129)	0.125	0.306
176	14.67	0.87	0.431	(0.129)	0.125	0.306
177	14.75	0.87	0.431	(0.128)	0.125	0.306
178	14.83	0.83	0.415	(0.127)	0.120	0.294
179	14.92	0.83	0.415	(0.127)	0.120	0.294
180	15.00	0.83	0.415	(0.126)	0.120	0.294
181	15.08	0.80	0.398	(0.125)	0.115	0.283
182	15.17	0.80	0.398	(0.125)	0.115	0.283
183	15.25	0.80	0.398	(0.124)	0.115	0.283
184	15.33	0.77	0.381	(0.124)	0.111	0.271
185	15.42	0.77	0.381	(0.123)	0.111	0.271
186	15.50	0.77	0.381	(0.122)	0.111	0.271
187	15.58	0.63	0.315	(0.122)	0.091	0.224
188	15.67	0.63	0.315	(0.121)	0.091	0.224
189	15.75	0.63	0.315	(0.120)	0.091	0.224
190	15.83	0.63	0.315	(0.120)	0.091	0.224
191	15.92	0.63	0.315	(0.119)	0.091	0.224
192	16.00	0.63	0.315	(0.119)	0.091	0.224

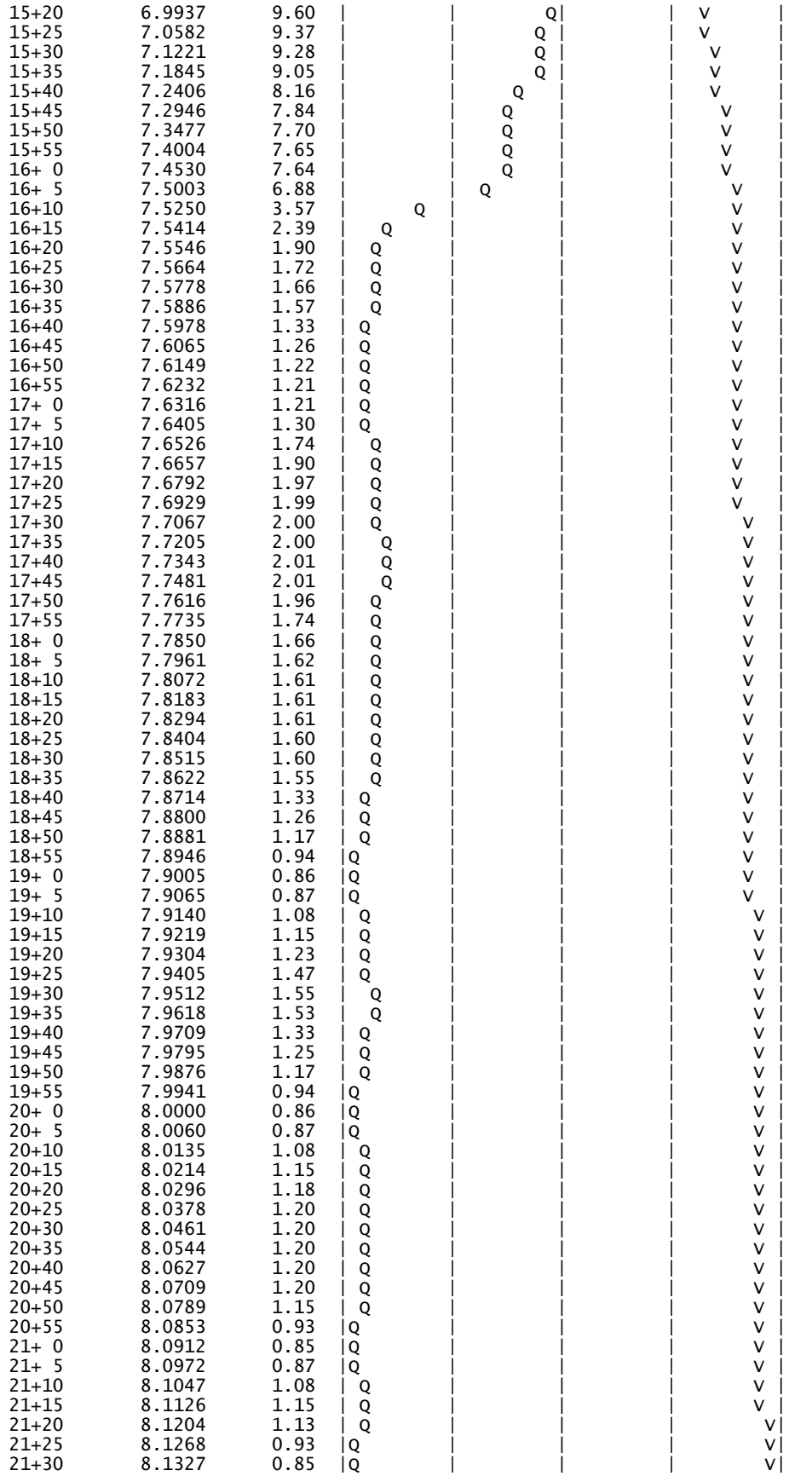
193	16.08	0.13	0.066	(0.118)	0.019	0.047
194	16.17	0.13	0.066	(0.117)	0.019	0.047
195	16.25	0.13	0.066	(0.117)	0.019	0.047
196	16.33	0.13	0.066	(0.116)	0.019	0.047
197	16.42	0.13	0.066	(0.116)	0.019	0.047
198	16.50	0.13	0.066	(0.115)	0.019	0.047
199	16.58	0.10	0.050	(0.114)	0.014	0.035
200	16.67	0.10	0.050	(0.114)	0.014	0.035
201	16.75	0.10	0.050	(0.113)	0.014	0.035
202	16.83	0.10	0.050	(0.113)	0.014	0.035
203	16.92	0.10	0.050	(0.112)	0.014	0.035
204	17.00	0.10	0.050	(0.111)	0.014	0.035
205	17.08	0.17	0.083	(0.111)	0.024	0.059
206	17.17	0.17	0.083	(0.110)	0.024	0.059
207	17.25	0.17	0.083	(0.110)	0.024	0.059
208	17.33	0.17	0.083	(0.109)	0.024	0.059
209	17.42	0.17	0.083	(0.109)	0.024	0.059
210	17.50	0.17	0.083	(0.108)	0.024	0.059
211	17.58	0.17	0.083	(0.108)	0.024	0.059
212	17.67	0.17	0.083	(0.107)	0.024	0.059
213	17.75	0.17	0.083	(0.107)	0.024	0.059
214	17.83	0.13	0.066	(0.106)	0.019	0.047
215	17.92	0.13	0.066	(0.106)	0.019	0.047
216	18.00	0.13	0.066	(0.105)	0.019	0.047
217	18.08	0.13	0.066	(0.104)	0.019	0.047
218	18.17	0.13	0.066	(0.104)	0.019	0.047
219	18.25	0.13	0.066	(0.103)	0.019	0.047
220	18.33	0.13	0.066	(0.103)	0.019	0.047
221	18.42	0.13	0.066	(0.102)	0.019	0.047
222	18.50	0.13	0.066	(0.102)	0.019	0.047
223	18.58	0.10	0.050	(0.101)	0.014	0.035
224	18.67	0.10	0.050	(0.101)	0.014	0.035
225	18.75	0.10	0.050	(0.100)	0.014	0.035
226	18.83	0.07	0.033	(0.100)	0.010	0.024
227	18.92	0.07	0.033	(0.100)	0.010	0.024
228	19.00	0.07	0.033	(0.099)	0.010	0.024
229	19.08	0.10	0.050	(0.099)	0.014	0.035
230	19.17	0.10	0.050	(0.098)	0.014	0.035
231	19.25	0.10	0.050	(0.098)	0.014	0.035
232	19.33	0.13	0.066	(0.097)	0.019	0.047
233	19.42	0.13	0.066	(0.097)	0.019	0.047
234	19.50	0.13	0.066	(0.096)	0.019	0.047
235	19.58	0.10	0.050	(0.096)	0.014	0.035
236	19.67	0.10	0.050	(0.095)	0.014	0.035
237	19.75	0.10	0.050	(0.095)	0.014	0.035
238	19.83	0.07	0.033	(0.095)	0.010	0.024
239	19.92	0.07	0.033	(0.094)	0.010	0.024
240	20.00	0.07	0.033	(0.094)	0.010	0.024
241	20.08	0.10	0.050	(0.093)	0.014	0.035
242	20.17	0.10	0.050	(0.093)	0.014	0.035
243	20.25	0.10	0.050	(0.093)	0.014	0.035
244	20.33	0.10	0.050	(0.092)	0.014	0.035
245	20.42	0.10	0.050	(0.092)	0.014	0.035
246	20.50	0.10	0.050	(0.091)	0.014	0.035
247	20.58	0.10	0.050	(0.091)	0.014	0.035
248	20.67	0.10	0.050	(0.091)	0.014	0.035
249	20.75	0.10	0.050	(0.090)	0.014	0.035
250	20.83	0.07	0.033	(0.090)	0.010	0.024
251	20.92	0.07	0.033	(0.089)	0.010	0.024
252	21.00	0.07	0.033	(0.089)	0.010	0.024
253	21.08	0.10	0.050	(0.089)	0.014	0.035
254	21.17	0.10	0.050	(0.088)	0.014	0.035
255	21.25	0.10	0.050	(0.088)	0.014	0.035
256	21.33	0.07	0.033	(0.088)	0.010	0.024
257	21.42	0.07	0.033	(0.087)	0.010	0.024
258	21.50	0.07	0.033	(0.087)	0.010	0.024
259	21.58	0.10	0.050	(0.087)	0.014	0.035
260	21.67	0.10	0.050	(0.086)	0.014	0.035
261	21.75	0.10	0.050	(0.086)	0.014	0.035
262	21.83	0.07	0.033	(0.086)	0.010	0.024
263	21.92	0.07	0.033	(0.086)	0.010	0.024
264	22.00	0.07	0.033	(0.085)	0.010	0.024
265	22.08	0.10	0.050	(0.085)	0.014	0.035
266	22.17	0.10	0.050	(0.085)	0.014	0.035
267	22.25	0.10	0.050	(0.084)	0.014	0.035

```
268  22.33     0.07      0.033       (  0.084)       0.010        0.024
269  22.42     0.07      0.033       (  0.084)       0.010        0.024
270  22.50     0.07      0.033       (  0.084)       0.010        0.024
271  22.58     0.07      0.033       (  0.083)       0.010        0.024
272  22.67     0.07      0.033       (  0.083)       0.010        0.024
273  22.75     0.07      0.033       (  0.083)       0.010        0.024
274  22.83     0.07      0.033       (  0.083)       0.010        0.024
275  22.92     0.07      0.033       (  0.083)       0.010        0.024
276  23.00     0.07      0.033       (  0.082)       0.010        0.024
277  23.08     0.07      0.033       (  0.082)       0.010        0.024
278  23.17     0.07      0.033       (  0.082)       0.010        0.024
279  23.25     0.07      0.033       (  0.082)       0.010        0.024
280  23.33     0.07      0.033       (  0.082)       0.010        0.024
281  23.42     0.07      0.033       (  0.081)       0.010        0.024
282  23.50     0.07      0.033       (  0.081)       0.010        0.024
283  23.58     0.07      0.033       (  0.081)       0.010        0.024
284  23.67     0.07      0.033       (  0.081)       0.010        0.024
285  23.75     0.07      0.033       (  0.081)       0.010        0.024
286  23.83     0.07      0.033       (  0.081)       0.010        0.024
287  23.92     0.07      0.033       (  0.081)       0.010        0.024
288  24.00     0.07      0.033       (  0.081)       0.010        0.024
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    35.5
      Flood volume = Effective rainfall      2.95(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       8.3(Ac.Ft)
      Total soil loss =      1.19(In)
      Total soil loss =     3.353(Ac.Ft)
      Total rainfall =      4.15(In)
      Flood volume =      362552.9 Cubic Feet
      Total soil loss =      146057.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     14.444(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0007      0.10  Q         |          |          |          |
   0+10       0.0044      0.54  VQ        |          |          |          |
   0+15       0.0092      0.70  VQ        |          |          |          |
   0+20       0.0148      0.81  VQ        |          |          |          |
   0+25       0.0221      1.06  V Q       |          |          |          |
   0+30       0.0300      1.14  V Q       |          |          |          |
   0+35       0.0381      1.18  V Q       |          |          |          |
   0+40       0.0463      1.20  V Q       |          |          |          |
   0+45       0.0546      1.20  V Q       |          |          |          |
   0+50       0.0632      1.25  V Q       |          |          |          |
   0+55       0.0734      1.47  V Q       |          |          |          |
   1+ 0       0.0841      1.55  V  Q      |          |          |          |
   1+ 5       0.0946      1.53  V  Q      |          |          |          |
   1+10       0.1038      1.33  V Q       |          |          |          |
   1+15       0.1124      1.25  V Q       |          |          |          |
   1+20       0.1208      1.22  V Q       |          |          |          |
   1+25       0.1292      1.21  V Q       |          |          |          |
   1+30       0.1375      1.21  V Q       |          |          |          |
   1+35       0.1458      1.20  V Q       |          |          |          |
   1+40       0.1541      1.20  V Q       |          |          |          |
   1+45       0.1624      1.20  V Q       |          |          |          |
   1+50       0.1710      1.25  V Q       |          |          |          |
   1+55       0.1812      1.47  V Q       |          |          |          |
   2+ 0       0.1918      1.55  V  Q      |          |          |          |
   2+ 5       0.2028      1.58  V  Q      |          |          |          |
   2+10       0.2138      1.60  |V Q      |          |          |          |
   2+15       0.2248      1.60  |V Q      |          |          |          |
   2+20       0.2358      1.60  |V Q      |          |          |          |
   2+25       0.2469      1.60  |V Q      |          |          |          |
   2+30       0.2579      1.60  |V Q      |          |          |          |
   2+35       0.2693      1.65  |V Q      |          |          |          |
   2+40       0.2823      1.87  |V Q      |          |          |          |
   2+45       0.2957      1.95  |V Q      |          |          |          |
```

2+50	0.3094	1.99	V Q			
2+55	0.3232	2.00	V Q			
3+ 0	0.3369	2.00	V Q			
3+ 5	0.3508	2.01	V Q			
3+10	0.3646	2.01	V Q			
3+15	0.3784	2.01	V Q			
3+20	0.3922	2.01	V Q			
3+25	0.4060	2.01	V Q			
3+30	0.4198	2.01	V Q			
3+35	0.4337	2.01	V Q			
3+40	0.4475	2.01	V Q			
3+45	0.4613	2.01	V Q			
3+50	0.4755	2.06	V Q			
3+55	0.4911	2.28	V Q			
4+ 0	0.5073	2.35	V Q			
4+ 5	0.5238	2.39	V Q			
4+10	0.5403	2.40	V Q			
4+15	0.5569	2.40	V Q			
4+20	0.5738	2.46	V Q			
4+25	0.5922	2.68	V Q			
4+30	0.6112	2.76	V Q			
4+35	0.6304	2.79	V Q			
4+40	0.6497	2.80	V Q			
4+45	0.6690	2.81	V Q			
4+50	0.6887	2.86	V Q			
4+55	0.7099	3.08	V Q			
5+ 0	0.7317	3.16	V Q			
5+ 5	0.7529	3.09	V Q			
5+10	0.7713	2.66	V Q			
5+15	0.7885	2.51	V Q			
5+20	0.8057	2.50	VQ			
5+25	0.8243	2.69	V Q			
5+30	0.8433	2.76	VQ			
5+35	0.8629	2.84	VQ			
5+40	0.8840	3.07	V Q			
5+45	0.9058	3.15	V Q			
5+50	0.9277	3.19	V Q			
5+55	0.9498	3.20	V Q			
6+ 0	0.9719	3.21	V Q			
6+ 5	0.9943	3.26	V Q			
6+10	1.0183	3.48	V Q			
6+15	1.0428	3.56	V Q			
6+20	1.0675	3.59	V Q			
6+25	1.0923	3.60	V Q			
6+30	1.1172	3.61	V Q			
6+35	1.1424	3.66	V Q			
6+40	1.1691	3.88	V Q			
6+45	1.1964	3.96	V Q			
6+50	1.2239	3.99	V Q			
6+55	1.2515	4.00	V Q			
7+ 0	1.2791	4.01	V Q			
7+ 5	1.3067	4.01	V Q			
7+10	1.3343	4.01	V Q			
7+15	1.3620	4.01	V Q			
7+20	1.3899	4.06	V Q			
7+25	1.4194	4.28	V Q			
7+30	1.4495	4.36	V Q			
7+35	1.4801	4.44	VQ			
7+40	1.5123	4.68	V Q			
7+45	1.5450	4.76	V Q			
7+50	1.5784	4.84	V Q			
7+55	1.6134	5.08	V Q			
8+ 0	1.6489	5.16	V Q			
8+ 5	1.6854	5.30	V Q			
8+10	1.7250	5.75	V |Q			
8+15	1.7657	5.91	V |Q			
8+20	1.8068	5.98	V |Q			
8+25	1.8482	6.00	V	Q			
8+30	1.8896	6.01	V| Q			
8+35	1.9314	6.07	V| Q			
8+40	1.9747	6.29	V| Q			
8+45	2.0185	6.37	V| Q			
8+50	2.0629	6.45	V| Q			
8+55	2.1090	6.68	V Q			
9+ 0	2.1556	6.76	V Q			





```
   21+35       8.1387      0.87  |Q        |         |         |        v|
   21+40       8.1461      1.08  | Q       |         |         |        v|
   21+45       8.1541      1.15  | Q       |         |         |        v|
   21+50       8.1619      1.13  | Q       |         |         |        v|
   21+55       8.1682      0.93  |Q        |         |         |        v|
   22+ 0       8.1741      0.85  |Q        |         |         |        v|
   22+ 5       8.1801      0.87  |Q        |         |         |        v|
   22+10       8.1876      1.08  | Q       |         |         |        v|
   22+15       8.1955      1.15  | Q       |         |         |        v|
   22+20       8.2033      1.13  | Q       |         |         |        v|
   22+25       8.2097      0.93  |Q        |         |         |        v|
   22+30       8.2156      0.85  |Q        |         |         |        v|
   22+35       8.2212      0.82  |Q        |         |         |        v|
   22+40       8.2268      0.81  |Q        |         |         |        v|
   22+45       8.2323      0.81  |Q        |         |         |        v|
   22+50       8.2379      0.80  |Q        |         |         |        v|
   22+55       8.2434      0.80  |Q        |         |         |        v|
   23+ 0       8.2489      0.80  |Q        |         |         |        v|
   23+ 5       8.2545      0.80  |Q        |         |         |        v|
   23+10       8.2600      0.80  |Q        |         |         |        v|
   23+15       8.2655      0.80  |Q        |         |         |        v|
   23+20       8.2710      0.80  |Q        |         |         |        v|
   23+25       8.2766      0.80  |Q        |         |         |        v|
   23+30       8.2821      0.80  |Q        |         |         |        v|
   23+35       8.2876      0.80  |Q        |         |         |        v|
   23+40       8.2932      0.80  |Q        |         |         |        v|
   23+45       8.2987      0.80  |Q        |         |         |        v|
   23+50       8.3042      0.80  |Q        |         |         |        v|
   23+55       8.3097      0.80  |Q        |         |         |        v|
   24+ 0       8.3153      0.80  |Q        |         |         |        v|
   24+ 5       8.3201      0.70  |Q        |         |         |        v|
   24+10       8.3219      0.26  Q         |         |         |        v|
   24+15       8.3226      0.10  Q         |         |         |        v|
   24+20       8.3229      0.04  Q         |         |         |        v|
   24+25       8.3230      0.01  Q         |         |         |        v|
   24+30       8.3231      0.01  Q         |         |         |        v|
   24+35       8.3231      0.00  Q         |         |         |        v|
-------------------------------------------------------------------------
```

PROPOSED CONDITION
100-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: NORTH100YR1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.55	18.59

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.25	42.25

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 1.250(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 1.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F

AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

Slope of intensity-duration curve for a 1 hour storm =0.5300

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
		Sum = 100.000	Sum=	34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	3.40	0.510	(0.161)	0.148	0.362
2	0.17	4.70	0.705	0.161	(0.204)	0.543
3	0.25	4.70	0.705	0.161	(0.204)	0.543
4	0.33	5.10	0.765	0.161	(0.222)	0.603
5	0.42	5.80	0.870	0.161	(0.252)	0.708
6	0.50	5.90	0.885	0.161	(0.257)	0.723
7	0.58	7.10	1.065	0.161	(0.309)	0.903
8	0.67	8.70	1.305	0.161	(0.378)	1.143
9	0.75	13.20	1.979	0.161	(0.574)	1.818
10	0.83	29.70	4.454	0.161	(1.292)	4.292
11	0.92	7.70	1.155	0.161	(0.335)	0.993
12	1.00	4.00	0.600	0.161	(0.174)	0.438
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	13.1

Flood volume = Effective rainfall 1.09(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 3.1(Ac.Ft)
Total soil loss = 0.16(In)
Total soil loss = 0.451(Ac.Ft)
Total rainfall = 1.25(In)
Flood volume = 133654.8 Cubic Feet
Total soil loss = 19665.8 Cubic Feet

Peak flow rate of this hydrograph = 101.134(CFS)

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1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	50.0	100.0	150.0	200.0
0+ 5	0.0106	1.54	Q				
0+10	0.0731	9.07	VQ				
0+15	0.1756	14.88	| Q				
0+20	0.2951	17.35	| Q				
0+25	0.4314	19.80	| Q V				
0+30	0.5867	22.54	| Q V				

```
    0+35       0.7560     24.59  |   Q    V|         |         |         |
    0+40       0.9592     29.50  |    Q    | V       |         |         |
    0+45       1.2225     38.24  |      Q  |    V    |         |         |
    0+50       1.6601     63.53  |         | Q       |V        |         |
    0+55       2.3566    101.13  |         |         Q         V         |
    1+ 0       2.7415     55.89  |         |Q        |         |    V    |
    1+ 5       2.9430     29.25  |    Q    |         |         |       V |
    1+10       3.0198     11.16  | Q       |         |         |        V|
    1+15       3.0485      4.16  Q         |         |         |        V|
    1+20       3.0615      1.88  Q         |         |         |        V|
    1+25       3.0667      0.76  Q         |         |         |        V|
    1+30       3.0680      0.19  Q         |         |         |        V|
    1+35       3.0683      0.04  Q         |         |         |        V|
-------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: NORTH100YR3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

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Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.95	32.11

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.05	69.29

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 2.050(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.050(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)			Effective
	(Hr.)	Percent	(In/Hr)	Max		Low	(In/Hr)
1	0.08	1.30	0.320	(0.161)		0.093	0.227
2	0.17	1.30	0.320	(0.161)		0.093	0.227
3	0.25	1.10	0.271	(0.161)		0.078	0.192
4	0.33	1.50	0.369	(0.161)		0.107	0.262
5	0.42	1.50	0.369	(0.161)		0.107	0.262
6	0.50	1.80	0.443	(0.161)		0.128	0.314
7	0.58	1.50	0.369	(0.161)		0.107	0.262
8	0.67	1.80	0.443	(0.161)		0.128	0.314
9	0.75	1.80	0.443	(0.161)		0.128	0.314
10	0.83	1.50	0.369	(0.161)		0.107	0.262
11	0.92	1.60	0.394	(0.161)		0.114	0.279
12	1.00	1.80	0.443	(0.161)		0.128	0.314
13	1.08	2.20	0.541	(0.161)		0.157	0.384
14	1.17	2.20	0.541	(0.161)		0.157	0.384
15	1.25	2.20	0.541	(0.161)		0.157	0.384
16	1.33	2.00	0.492	(0.161)		0.143	0.349
17	1.42	2.60	0.640	0.161	(	0.185)	0.478
18	1.50	2.70	0.664	0.161	(	0.193)	0.503
19	1.58	2.40	0.590	0.161	(	0.171)	0.429
20	1.67	2.70	0.664	0.161	(	0.193)	0.503
21	1.75	3.30	0.812	0.161	(	0.235)	0.650
22	1.83	3.10	0.762	0.161	(	0.221)	0.601
23	1.92	2.90	0.713	0.161	(	0.207)	0.552
24	2.00	3.00	0.738	0.161	(	0.214)	0.576
25	2.08	3.10	0.762	0.161	(	0.221)	0.601
26	2.17	4.20	1.033	0.161	(	0.300)	0.872
27	2.25	5.00	1.230	0.161	(	0.357)	1.068
28	2.33	3.50	0.861	0.161	(	0.250)	0.699
29	2.42	6.80	1.673	0.161	(	0.485)	1.511
30	2.50	7.30	1.796	0.161	(	0.521)	1.634
31	2.58	8.20	2.017	0.161	(	0.585)	1.855
32	2.67	5.90	1.451	0.161	(	0.421)	1.290
33	2.75	2.00	0.492	(0.161)		0.143	0.349
34	2.83	1.80	0.443	(0.161)		0.128	0.314
35	2.92	1.80	0.443	(0.161)		0.128	0.314
36	3.00	0.60	0.148	(0.161)		0.043	0.105
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	19.6

Flood volume = Effective rainfall 1.64(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 4.6(Ac.Ft)
Total soil loss = 0.41(In)
Total soil loss = 1.164(Ac.Ft)

Total rainfall = 2.05(In)
Flood volume = 200793.7 Cubic Feet
Total soil loss = 50691.8 Cubic Feet

Peak flow rate of this hydrograph = 56.587(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	15.0	30.0	45.0	60.0
0+ 5	0.0066	0.96	Q				
0+10	0.0425	5.21	V Q				
0+15	0.0878	6.58	V Q				
0+20	0.1350	6.85	V Q				
0+25	0.1912	8.16	V Q				
0+30	0.2520	8.83	V Q				
0+35	0.3194	9.79	V Q				
0+40	0.3846	9.47	V Q				
0+45	0.4552	10.26	V Q				
0+50	0.5262	10.31	V Q				
0+55	0.5917	9.51	VQ				
1+ 0	0.6584	9.69	VQ				
1+ 5	0.7316	10.62	VQ				
1+10	0.8153	12.16	VQ				
1+15	0.9030	12.73	VQ				
1+20	0.9912	12.80	Q				
1+25	1.0792	12.78	QV				
1+30	1.1831	15.09	Q				
1+35	1.2935	16.02	QV				
1+40	1.3999	15.45	Q V				
1+45	1.5180	17.15	Q V				
1+50	1.6561	20.05	QV				
1+55	1.7943	20.07	Q V				
2+ 0	1.9280	19.40	Q V				
2+ 5	2.0634	19.67	Q V				
2+10	2.2102	21.31	Q V				
2+15	2.3990	27.41	Q V				
2+20	2.6153	31.41	Q V				
2+25	2.8222	30.05	Q V				
2+30	3.1260	44.10	V Q				
2+35	3.4845	52.06	V Q				
2+40	3.8742	56.59	V Q				
2+45	4.1818	44.65	Q V				
2+50	4.3477	24.09	Q V				
2+55	4.4579	16.00	Q V				
3+ 0	4.5395	11.85	Q V				
3+ 5	4.5827	6.27	Q V				
3+10	4.5997	2.47	Q V				
3+15	4.6061	0.92	Q V				
3+20	4.6083	0.31	Q V				
3+25	4.6092	0.13	Q V				
3+30	4.6095	0.05	Q V				
3+35	4.6096	0.01	Q V				

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: NORTH100YR6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.40	47.32

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	3.00	101.40

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

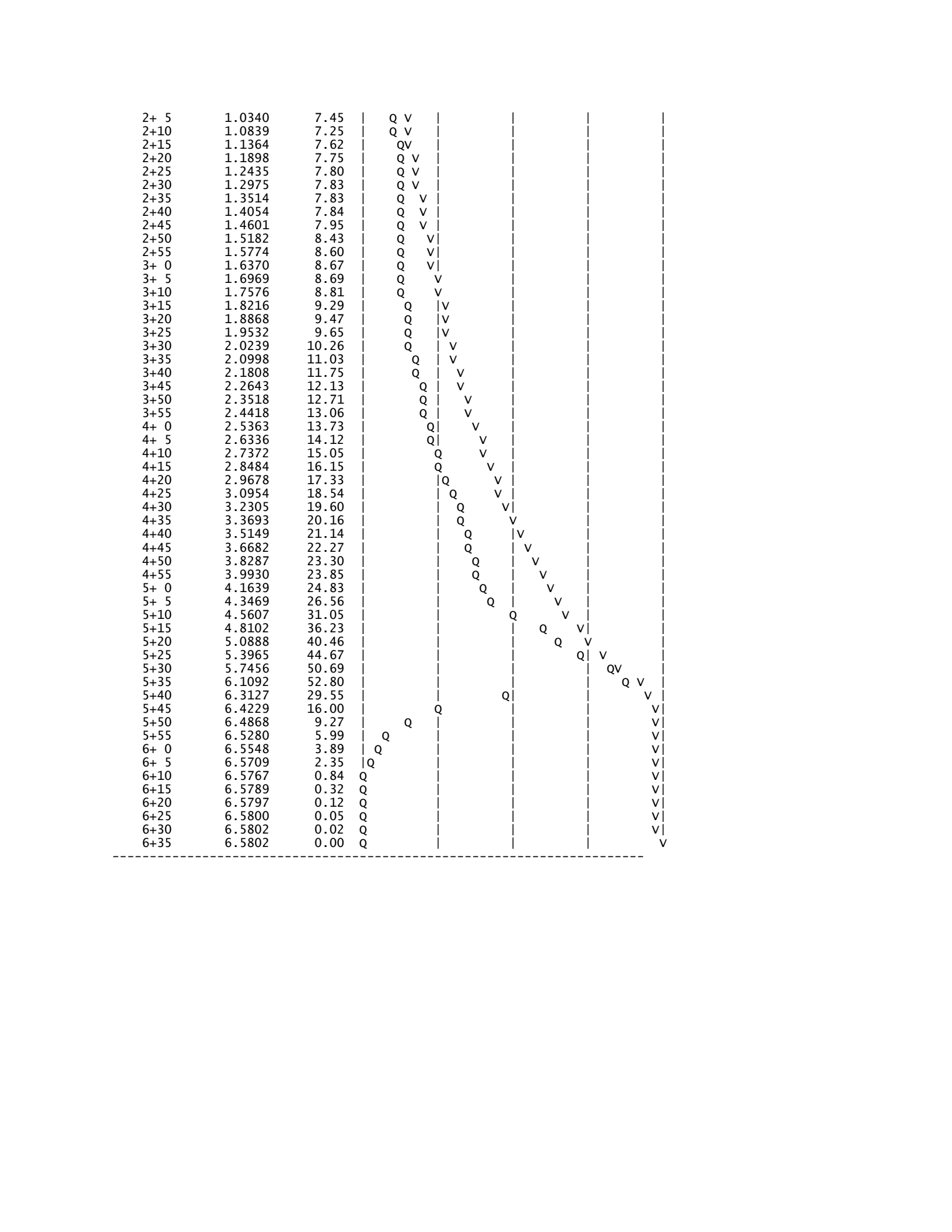
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.180	(0.161)	0.052	0.128
2	0.17	0.60	0.216	(0.161)	0.063	0.153
3	0.25	0.60	0.216	(0.161)	0.063	0.153
4	0.33	0.60	0.216	(0.161)	0.063	0.153
5	0.42	0.60	0.216	(0.161)	0.063	0.153
6	0.50	0.70	0.252	(0.161)	0.073	0.179
7	0.58	0.70	0.252	(0.161)	0.073	0.179
8	0.67	0.70	0.252	(0.161)	0.073	0.179
9	0.75	0.70	0.252	(0.161)	0.073	0.179
10	0.83	0.70	0.252	(0.161)	0.073	0.179
11	0.92	0.70	0.252	(0.161)	0.073	0.179
12	1.00	0.80	0.288	(0.161)	0.084	0.204
13	1.08	0.80	0.288	(0.161)	0.084	0.204
14	1.17	0.80	0.288	(0.161)	0.084	0.204
15	1.25	0.80	0.288	(0.161)	0.084	0.204
16	1.33	0.80	0.288	(0.161)	0.084	0.204
17	1.42	0.80	0.288	(0.161)	0.084	0.204
18	1.50	0.80	0.288	(0.161)	0.084	0.204
19	1.58	0.80	0.288	(0.161)	0.084	0.204
20	1.67	0.80	0.288	(0.161)	0.084	0.204
21	1.75	0.80	0.288	(0.161)	0.084	0.204
22	1.83	0.80	0.288	(0.161)	0.084	0.204
23	1.92	0.80	0.288	(0.161)	0.084	0.204
24	2.00	0.90	0.324	(0.161)	0.094	0.230
25	2.08	0.80	0.288	(0.161)	0.084	0.204
26	2.17	0.90	0.324	(0.161)	0.094	0.230
27	2.25	0.90	0.324	(0.161)	0.094	0.230
28	2.33	0.90	0.324	(0.161)	0.094	0.230
29	2.42	0.90	0.324	(0.161)	0.094	0.230
30	2.50	0.90	0.324	(0.161)	0.094	0.230
31	2.58	0.90	0.324	(0.161)	0.094	0.230
32	2.67	0.90	0.324	(0.161)	0.094	0.230
33	2.75	1.00	0.360	(0.161)	0.104	0.256
34	2.83	1.00	0.360	(0.161)	0.104	0.256
35	2.92	1.00	0.360	(0.161)	0.104	0.256
36	3.00	1.00	0.360	(0.161)	0.104	0.256
37	3.08	1.00	0.360	(0.161)	0.104	0.256
38	3.17	1.10	0.396	(0.161)	0.115	0.281
39	3.25	1.10	0.396	(0.161)	0.115	0.281
40	3.33	1.10	0.396	(0.161)	0.115	0.281
41	3.42	1.20	0.432	(0.161)	0.125	0.307
42	3.50	1.30	0.468	(0.161)	0.136	0.332

```
43   3.58     1.40      0.504       (  0.161)       0.146        0.358
44   3.67     1.40      0.504       (  0.161)       0.146        0.358
45   3.75     1.50      0.540       (  0.161)       0.157        0.383
46   3.83     1.50      0.540       (  0.161)       0.157        0.383
47   3.92     1.60      0.576          0.161    (  0.167)        0.415
48   4.00     1.60      0.576          0.161    (  0.167)        0.415
49   4.08     1.70      0.612          0.161    (  0.177)        0.451
50   4.17     1.80      0.648          0.161    (  0.188)        0.487
51   4.25     1.90      0.684          0.161    (  0.198)        0.523
52   4.33     2.00      0.720          0.161    (  0.209)        0.559
53   4.42     2.10      0.756          0.161    (  0.219)        0.594
54   4.50     2.10      0.756          0.161    (  0.219)        0.594
55   4.58     2.20      0.792          0.161    (  0.230)        0.630
56   4.67     2.30      0.828          0.161    (  0.240)        0.666
57   4.75     2.40      0.864          0.161    (  0.251)        0.702
58   4.83     2.40      0.864          0.161    (  0.251)        0.702
59   4.92     2.50      0.900          0.161    (  0.261)        0.738
60   5.00     2.60      0.936          0.161    (  0.271)        0.774
61   5.08     3.10      1.116          0.161    (  0.324)        0.954
62   5.17     3.60      1.296          0.161    (  0.376)        1.134
63   5.25     3.90      1.404          0.161    (  0.407)        1.242
64   5.33     4.20      1.512          0.161    (  0.438)        1.350
65   5.42     4.70      1.692          0.161    (  0.491)        1.530
66   5.50     5.60      2.016          0.161    (  0.585)        1.854
67   5.58     1.90      0.684          0.161    (  0.198)        0.523
68   5.67     0.90      0.324       (  0.161)       0.094        0.230
69   5.75     0.60      0.216       (  0.161)       0.063        0.153
70   5.83     0.50      0.180       (  0.161)       0.052        0.128
71   5.92     0.30      0.108       (  0.161)       0.031        0.077
72   6.00     0.20      0.072       (  0.161)       0.021        0.051
              (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    28.0
      Flood volume = Effective rainfall      2.34(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       6.6(Ac.Ft)
      Total soil loss =      0.66(In)
      Total soil loss =     1.869(Ac.Ft)
      Total rainfall =      3.00(In)
      Flood volume =      286633.2 Cubic Feet
      Total soil loss =       81406.0 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     52.800(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0037      0.54  Q          |         |         |         |
  0+10       0.0247      3.04  V Q        |         |         |         |
  0+15       0.0548      4.37  V Q        |         |         |         |
  0+20       0.0885      4.90  V  Q       |         |         |         |
  0+25       0.1236      5.10  V  Q       |         |         |         |
  0+30       0.1600      5.28  V  Q       |         |         |         |
  0+35       0.1999      5.79  |V Q       |         |         |         |
  0+40       0.2411      5.98  |V Q       |         |         |         |
  0+45       0.2828      6.05  |V  Q      |         |         |         |
  0+50       0.3246      6.08  |V  Q      |         |         |         |
  0+55       0.3666      6.09  | V Q      |         |         |         |
  1+ 0       0.4093      6.20  | V Q      |         |         |         |
  1+ 5       0.4553      6.68  | V Q      |         |         |         |
  1+10       0.5025      6.85  |  VQ      |         |         |         |
  1+15       0.5502      6.92  |  VQ      |         |         |         |
  1+20       0.5981      6.95  |  VQ      |         |         |         |
  1+25       0.6460      6.96  |  VQ      |         |         |         |
  1+30       0.6940      6.97  |   Q      |         |         |         |
  1+35       0.7420      6.97  |   Q      |         |         |         |
  1+40       0.7900      6.97  |   Q      |         |         |         |
  1+45       0.8380      6.97  |   QV     |         |         |         |
  1+50       0.8860      6.97  |   QV     |         |         |         |
  1+55       0.9340      6.97  |   QV     |         |         |         |
  2+ 0       0.9827      7.08  |   QV     |         |         |         |
```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2+10 1.0839 7.25
2+15 1.1364 7.62
2+20 1.1898 7.75
2+25 1.2435 7.80
2+30 1.2975 7.83
2+35 1.3514 7.83
2+40 1.4054 7.84
2+45 1.4601 7.95
2+50 1.5182 8.43
2+55 1.5774 8.60
3+ 0 1.6370 8.67
3+ 5 1.6969 8.69
3+10 1.7576 8.81
3+15 1.8216 9.29
3+20 1.8868 9.47
3+25 1.9532 9.65
3+30 2.0239 10.26
3+35 2.0998 11.03
3+40 2.1808 11.75
3+45 2.2643 12.13
3+50 2.3518 12.71
3+55 2.4418 13.06
4+ 0 2.5363 13.73
4+ 5 2.6336 14.12
4+10 2.7372 15.05
4+15 2.8484 16.15
4+20 2.9678 17.33
4+25 3.0954 18.54
4+30 3.2305 19.60
4+35 3.3693 20.16
4+40 3.5149 21.14
4+45 3.6682 22.27
4+50 3.8287 23.30
4+55 3.9930 23.85
5+ 0 4.1639 24.83
5+ 5 4.3469 26.56
5+10 4.5607 31.05
5+15 4.8102 36.23
5+20 5.0888 40.46
5+25 5.3965 44.67
5+30 5.7456 50.69
5+35 6.1092 52.80
5+40 6.3127 29.55
5+45 6.4229 16.00
5+50 6.4868 9.27
5+55 6.5280 5.99
6+ 0 6.5548 3.89
6+ 5 6.5709 2.35
6+10 6.5767 0.84
6+15 6.5789 0.32
6+20 6.5797 0.12
6+25 6.5800 0.05
6+30 6.5802 0.02
6+35 6.5802 0.00

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: NORTH100YR24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 6.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 6.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.07	0.052	(0.286)	0.015	0.037
2	0.17	0.07	0.052	(0.285)	0.015	0.037
3	0.25	0.07	0.052	(0.284)	0.015	0.037
4	0.33	0.10	0.078	(0.283)	0.023	0.055
5	0.42	0.10	0.078	(0.282)	0.023	0.055
6	0.50	0.10	0.078	(0.281)	0.023	0.055
7	0.58	0.10	0.078	(0.280)	0.023	0.055
8	0.67	0.10	0.078	(0.278)	0.023	0.055
9	0.75	0.10	0.078	(0.277)	0.023	0.055
10	0.83	0.13	0.104	(0.276)	0.030	0.074
11	0.92	0.13	0.104	(0.275)	0.030	0.074
12	1.00	0.13	0.104	(0.274)	0.030	0.074
13	1.08	0.10	0.078	(0.273)	0.023	0.055
14	1.17	0.10	0.078	(0.272)	0.023	0.055
15	1.25	0.10	0.078	(0.271)	0.023	0.055
16	1.33	0.10	0.078	(0.270)	0.023	0.055
17	1.42	0.10	0.078	(0.269)	0.023	0.055
18	1.50	0.10	0.078	(0.268)	0.023	0.055
19	1.58	0.10	0.078	(0.267)	0.023	0.055
20	1.67	0.10	0.078	(0.265)	0.023	0.055
21	1.75	0.10	0.078	(0.264)	0.023	0.055
22	1.83	0.13	0.104	(0.263)	0.030	0.074
23	1.92	0.13	0.104	(0.262)	0.030	0.074
24	2.00	0.13	0.104	(0.261)	0.030	0.074
25	2.08	0.13	0.104	(0.260)	0.030	0.074
26	2.17	0.13	0.104	(0.259)	0.030	0.074
27	2.25	0.13	0.104	(0.258)	0.030	0.074
28	2.33	0.13	0.104	(0.257)	0.030	0.074
29	2.42	0.13	0.104	(0.256)	0.030	0.074
30	2.50	0.13	0.104	(0.255)	0.030	0.074
31	2.58	0.17	0.130	(0.254)	0.038	0.092
32	2.67	0.17	0.130	(0.253)	0.038	0.092
33	2.75	0.17	0.130	(0.252)	0.038	0.092
34	2.83	0.17	0.130	(0.251)	0.038	0.092
35	2.92	0.17	0.130	(0.250)	0.038	0.092
36	3.00	0.17	0.130	(0.249)	0.038	0.092
37	3.08	0.17	0.130	(0.248)	0.038	0.092
38	3.17	0.17	0.130	(0.247)	0.038	0.092
39	3.25	0.17	0.130	(0.246)	0.038	0.092
40	3.33	0.17	0.130	(0.245)	0.038	0.092
41	3.42	0.17	0.130	(0.244)	0.038	0.092
42	3.50	0.17	0.130	(0.243)	0.038	0.092

43	3.58	0.17	0.130	(0.242)	0.038	0.092
44	3.67	0.17	0.130	(0.241)	0.038	0.092
45	3.75	0.17	0.130	(0.240)	0.038	0.092
46	3.83	0.20	0.156	(0.238)	0.045	0.111
47	3.92	0.20	0.156	(0.237)	0.045	0.111
48	4.00	0.20	0.156	(0.236)	0.045	0.111
49	4.08	0.20	0.156	(0.235)	0.045	0.111
50	4.17	0.20	0.156	(0.234)	0.045	0.111
51	4.25	0.20	0.156	(0.233)	0.045	0.111
52	4.33	0.23	0.182	(0.232)	0.053	0.129
53	4.42	0.23	0.182	(0.231)	0.053	0.129
54	4.50	0.23	0.182	(0.231)	0.053	0.129
55	4.58	0.23	0.182	(0.230)	0.053	0.129
56	4.67	0.23	0.182	(0.229)	0.053	0.129
57	4.75	0.23	0.182	(0.228)	0.053	0.129
58	4.83	0.27	0.208	(0.227)	0.060	0.148
59	4.92	0.27	0.208	(0.226)	0.060	0.148
60	5.00	0.27	0.208	(0.225)	0.060	0.148
61	5.08	0.20	0.156	(0.224)	0.045	0.111
62	5.17	0.20	0.156	(0.223)	0.045	0.111
63	5.25	0.20	0.156	(0.222)	0.045	0.111
64	5.33	0.23	0.182	(0.221)	0.053	0.129
65	5.42	0.23	0.182	(0.220)	0.053	0.129
66	5.50	0.23	0.182	(0.219)	0.053	0.129
67	5.58	0.27	0.208	(0.218)	0.060	0.148
68	5.67	0.27	0.208	(0.217)	0.060	0.148
69	5.75	0.27	0.208	(0.216)	0.060	0.148
70	5.83	0.27	0.208	(0.215)	0.060	0.148
71	5.92	0.27	0.208	(0.214)	0.060	0.148
72	6.00	0.27	0.208	(0.213)	0.060	0.148
73	6.08	0.30	0.234	(0.212)	0.068	0.166
74	6.17	0.30	0.234	(0.211)	0.068	0.166
75	6.25	0.30	0.234	(0.210)	0.068	0.166
76	6.33	0.30	0.234	(0.209)	0.068	0.166
77	6.42	0.30	0.234	(0.208)	0.068	0.166
78	6.50	0.30	0.234	(0.207)	0.068	0.166
79	6.58	0.33	0.260	(0.206)	0.075	0.185
80	6.67	0.33	0.260	(0.206)	0.075	0.185
81	6.75	0.33	0.260	(0.205)	0.075	0.185
82	6.83	0.33	0.260	(0.204)	0.075	0.185
83	6.92	0.33	0.260	(0.203)	0.075	0.185
84	7.00	0.33	0.260	(0.202)	0.075	0.185
85	7.08	0.33	0.260	(0.201)	0.075	0.185
86	7.17	0.33	0.260	(0.200)	0.075	0.185
87	7.25	0.33	0.260	(0.199)	0.075	0.185
88	7.33	0.37	0.286	(0.198)	0.083	0.203
89	7.42	0.37	0.286	(0.197)	0.083	0.203
90	7.50	0.37	0.286	(0.196)	0.083	0.203
91	7.58	0.40	0.312	(0.195)	0.090	0.222
92	7.67	0.40	0.312	(0.195)	0.090	0.222
93	7.75	0.40	0.312	(0.194)	0.090	0.222
94	7.83	0.43	0.338	(0.193)	0.098	0.240
95	7.92	0.43	0.338	(0.192)	0.098	0.240
96	8.00	0.43	0.338	(0.191)	0.098	0.240
97	8.08	0.50	0.390	(0.190)	0.113	0.277
98	8.17	0.50	0.390	(0.189)	0.113	0.277
99	8.25	0.50	0.390	(0.188)	0.113	0.277
100	8.33	0.50	0.390	(0.187)	0.113	0.277
101	8.42	0.50	0.390	(0.187)	0.113	0.277
102	8.50	0.50	0.390	(0.186)	0.113	0.277
103	8.58	0.53	0.416	(0.185)	0.121	0.295
104	8.67	0.53	0.416	(0.184)	0.121	0.295
105	8.75	0.53	0.416	(0.183)	0.121	0.295
106	8.83	0.57	0.442	(0.182)	0.128	0.314
107	8.92	0.57	0.442	(0.181)	0.128	0.314
108	9.00	0.57	0.442	(0.181)	0.128	0.314
109	9.08	0.63	0.494	(0.180)	0.143	0.351
110	9.17	0.63	0.494	(0.179)	0.143	0.351
111	9.25	0.63	0.494	(0.178)	0.143	0.351
112	9.33	0.67	0.520	(0.177)	0.151	0.369
113	9.42	0.67	0.520	(0.176)	0.151	0.369
114	9.50	0.67	0.520	(0.175)	0.151	0.369
115	9.58	0.70	0.546	(0.175)	0.158	0.388
116	9.67	0.70	0.546	(0.174)	0.158	0.388
117	9.75	0.70	0.546	(0.173)	0.158	0.388

118	9.83	0.73	0.572	(	0.172)	0.166	0.406
119	9.92	0.73	0.572	(	0.171)	0.166	0.406
120	10.00	0.73	0.572	(	0.170)	0.166	0.406
121	10.08	0.50	0.390	(	0.170)	0.113	0.277
122	10.17	0.50	0.390	(	0.169)	0.113	0.277
123	10.25	0.50	0.390	(	0.168)	0.113	0.277
124	10.33	0.50	0.390	(	0.167)	0.113	0.277
125	10.42	0.50	0.390	(	0.166)	0.113	0.277
126	10.50	0.50	0.390	(	0.166)	0.113	0.277
127	10.58	0.67	0.520	(	0.165)	0.151	0.369
128	10.67	0.67	0.520	(	0.164)	0.151	0.369
129	10.75	0.67	0.520	(	0.163)	0.151	0.369
130	10.83	0.67	0.520	(	0.162)	0.151	0.369
131	10.92	0.67	0.520	(	0.162)	0.151	0.369
132	11.00	0.67	0.520	(	0.161)	0.151	0.369
133	11.08	0.63	0.494	(	0.160)	0.143	0.351
134	11.17	0.63	0.494	(	0.159)	0.143	0.351
135	11.25	0.63	0.494	(	0.158)	0.143	0.351
136	11.33	0.63	0.494	(	0.158)	0.143	0.351
137	11.42	0.63	0.494	(	0.157)	0.143	0.351
138	11.50	0.63	0.494	(	0.156)	0.143	0.351
139	11.58	0.57	0.442	(	0.155)	0.128	0.314
140	11.67	0.57	0.442	(	0.154)	0.128	0.314
141	11.75	0.57	0.442	(	0.154)	0.128	0.314
142	11.83	0.60	0.468	(	0.153)	0.136	0.332
143	11.92	0.60	0.468	(	0.152)	0.136	0.332
144	12.00	0.60	0.468	(	0.151)	0.136	0.332
145	12.08	0.83	0.650		0.151	(0.188)	0.499
146	12.17	0.83	0.650		0.150	(0.188)	0.500
147	12.25	0.83	0.650		0.149	(0.188)	0.501
148	12.33	0.87	0.676		0.148	(0.196)	0.528
149	12.42	0.87	0.676		0.148	(0.196)	0.528
150	12.50	0.87	0.676		0.147	(0.196)	0.529
151	12.58	0.93	0.728		0.146	(0.211)	0.582
152	12.67	0.93	0.728		0.145	(0.211)	0.582
153	12.75	0.93	0.728		0.145	(0.211)	0.583
154	12.83	0.97	0.754		0.144	(0.219)	0.610
155	12.92	0.97	0.754		0.143	(0.219)	0.611
156	13.00	0.97	0.754		0.143	(0.219)	0.611
157	13.08	1.13	0.884		0.142	(0.256)	0.742
158	13.17	1.13	0.884		0.141	(0.256)	0.743
159	13.25	1.13	0.884		0.140	(0.256)	0.744
160	13.33	1.13	0.884		0.140	(0.256)	0.744
161	13.42	1.13	0.884		0.139	(0.256)	0.745
162	13.50	1.13	0.884		0.138	(0.256)	0.746
163	13.58	0.77	0.598		0.138	(0.173)	0.460
164	13.67	0.77	0.598		0.137	(0.173)	0.461
165	13.75	0.77	0.598		0.136	(0.173)	0.462
166	13.83	0.77	0.598		0.135	(0.173)	0.463
167	13.92	0.77	0.598		0.135	(0.173)	0.463
168	14.00	0.77	0.598		0.134	(0.173)	0.464
169	14.08	0.90	0.702		0.133	(0.204)	0.569
170	14.17	0.90	0.702		0.133	(0.204)	0.569
171	14.25	0.90	0.702		0.132	(0.204)	0.570
172	14.33	0.87	0.676		0.131	(0.196)	0.545
173	14.42	0.87	0.676		0.131	(0.196)	0.545
174	14.50	0.87	0.676		0.130	(0.196)	0.546
175	14.58	0.87	0.676		0.129	(0.196)	0.547
176	14.67	0.87	0.676		0.129	(0.196)	0.547
177	14.75	0.87	0.676		0.128	(0.196)	0.548
178	14.83	0.83	0.650		0.127	(0.188)	0.523
179	14.92	0.83	0.650		0.127	(0.188)	0.523
180	15.00	0.83	0.650		0.126	(0.188)	0.524
181	15.08	0.80	0.624		0.125	(0.181)	0.499
182	15.17	0.80	0.624		0.125	(0.181)	0.499
183	15.25	0.80	0.624		0.124	(0.181)	0.500
184	15.33	0.77	0.598		0.124	(0.173)	0.474
185	15.42	0.77	0.598		0.123	(0.173)	0.475
186	15.50	0.77	0.598		0.122	(0.173)	0.476
187	15.58	0.63	0.494		0.122	(0.143)	0.372
188	15.67	0.63	0.494		0.121	(0.143)	0.373
189	15.75	0.63	0.494		0.120	(0.143)	0.374
190	15.83	0.63	0.494		0.120	(0.143)	0.374
191	15.92	0.63	0.494		0.119	(0.143)	0.375
192	16.00	0.63	0.494		0.119	(0.143)	0.375

193	16.08	0.13	0.104	(0.118)	0.030	0.074
194	16.17	0.13	0.104	(0.117)	0.030	0.074
195	16.25	0.13	0.104	(0.117)	0.030	0.074
196	16.33	0.13	0.104	(0.116)	0.030	0.074
197	16.42	0.13	0.104	(0.116)	0.030	0.074
198	16.50	0.13	0.104	(0.115)	0.030	0.074
199	16.58	0.10	0.078	(0.114)	0.023	0.055
200	16.67	0.10	0.078	(0.114)	0.023	0.055
201	16.75	0.10	0.078	(0.113)	0.023	0.055
202	16.83	0.10	0.078	(0.113)	0.023	0.055
203	16.92	0.10	0.078	(0.112)	0.023	0.055
204	17.00	0.10	0.078	(0.111)	0.023	0.055
205	17.08	0.17	0.130	(0.111)	0.038	0.092
206	17.17	0.17	0.130	(0.110)	0.038	0.092
207	17.25	0.17	0.130	(0.110)	0.038	0.092
208	17.33	0.17	0.130	(0.109)	0.038	0.092
209	17.42	0.17	0.130	(0.109)	0.038	0.092
210	17.50	0.17	0.130	(0.108)	0.038	0.092
211	17.58	0.17	0.130	(0.108)	0.038	0.092
212	17.67	0.17	0.130	(0.107)	0.038	0.092
213	17.75	0.17	0.130	(0.107)	0.038	0.092
214	17.83	0.13	0.104	(0.106)	0.030	0.074
215	17.92	0.13	0.104	(0.106)	0.030	0.074
216	18.00	0.13	0.104	(0.105)	0.030	0.074
217	18.08	0.13	0.104	(0.104)	0.030	0.074
218	18.17	0.13	0.104	(0.104)	0.030	0.074
219	18.25	0.13	0.104	(0.103)	0.030	0.074
220	18.33	0.13	0.104	(0.103)	0.030	0.074
221	18.42	0.13	0.104	(0.102)	0.030	0.074
222	18.50	0.13	0.104	(0.102)	0.030	0.074
223	18.58	0.10	0.078	(0.101)	0.023	0.055
224	18.67	0.10	0.078	(0.101)	0.023	0.055
225	18.75	0.10	0.078	(0.100)	0.023	0.055
226	18.83	0.07	0.052	(0.100)	0.015	0.037
227	18.92	0.07	0.052	(0.100)	0.015	0.037
228	19.00	0.07	0.052	(0.099)	0.015	0.037
229	19.08	0.10	0.078	(0.099)	0.023	0.055
230	19.17	0.10	0.078	(0.098)	0.023	0.055
231	19.25	0.10	0.078	(0.098)	0.023	0.055
232	19.33	0.13	0.104	(0.097)	0.030	0.074
233	19.42	0.13	0.104	(0.097)	0.030	0.074
234	19.50	0.13	0.104	(0.096)	0.030	0.074
235	19.58	0.10	0.078	(0.096)	0.023	0.055
236	19.67	0.10	0.078	(0.095)	0.023	0.055
237	19.75	0.10	0.078	(0.095)	0.023	0.055
238	19.83	0.07	0.052	(0.095)	0.015	0.037
239	19.92	0.07	0.052	(0.094)	0.015	0.037
240	20.00	0.07	0.052	(0.094)	0.015	0.037
241	20.08	0.10	0.078	(0.093)	0.023	0.055
242	20.17	0.10	0.078	(0.093)	0.023	0.055
243	20.25	0.10	0.078	(0.093)	0.023	0.055
244	20.33	0.10	0.078	(0.092)	0.023	0.055
245	20.42	0.10	0.078	(0.092)	0.023	0.055
246	20.50	0.10	0.078	(0.091)	0.023	0.055
247	20.58	0.10	0.078	(0.091)	0.023	0.055
248	20.67	0.10	0.078	(0.091)	0.023	0.055
249	20.75	0.10	0.078	(0.090)	0.023	0.055
250	20.83	0.07	0.052	(0.090)	0.015	0.037
251	20.92	0.07	0.052	(0.089)	0.015	0.037
252	21.00	0.07	0.052	(0.089)	0.015	0.037
253	21.08	0.10	0.078	(0.089)	0.023	0.055
254	21.17	0.10	0.078	(0.088)	0.023	0.055
255	21.25	0.10	0.078	(0.088)	0.023	0.055
256	21.33	0.07	0.052	(0.088)	0.015	0.037
257	21.42	0.07	0.052	(0.087)	0.015	0.037
258	21.50	0.07	0.052	(0.087)	0.015	0.037
259	21.58	0.10	0.078	(0.087)	0.023	0.055
260	21.67	0.10	0.078	(0.086)	0.023	0.055
261	21.75	0.10	0.078	(0.086)	0.023	0.055
262	21.83	0.07	0.052	(0.086)	0.015	0.037
263	21.92	0.07	0.052	(0.086)	0.015	0.037
264	22.00	0.07	0.052	(0.085)	0.015	0.037
265	22.08	0.10	0.078	(0.085)	0.023	0.055
266	22.17	0.10	0.078	(0.085)	0.023	0.055
267	22.25	0.10	0.078	(0.084)	0.023	0.055

268	22.33	0.07	0.052	(0.084)	0.015	0.037
269	22.42	0.07	0.052	(0.084)	0.015	0.037
270	22.50	0.07	0.052	(0.084)	0.015	0.037
271	22.58	0.07	0.052	(0.083)	0.015	0.037
272	22.67	0.07	0.052	(0.083)	0.015	0.037
273	22.75	0.07	0.052	(0.083)	0.015	0.037
274	22.83	0.07	0.052	(0.083)	0.015	0.037
275	22.92	0.07	0.052	(0.083)	0.015	0.037
276	23.00	0.07	0.052	(0.082)	0.015	0.037
277	23.08	0.07	0.052	(0.082)	0.015	0.037
278	23.17	0.07	0.052	(0.082)	0.015	0.037
279	23.25	0.07	0.052	(0.082)	0.015	0.037
280	23.33	0.07	0.052	(0.082)	0.015	0.037
281	23.42	0.07	0.052	(0.081)	0.015	0.037
282	23.50	0.07	0.052	(0.081)	0.015	0.037
283	23.58	0.07	0.052	(0.081)	0.015	0.037
284	23.67	0.07	0.052	(0.081)	0.015	0.037
285	23.75	0.07	0.052	(0.081)	0.015	0.037
286	23.83	0.07	0.052	(0.081)	0.015	0.037
287	23.92	0.07	0.052	(0.081)	0.015	0.037
288	24.00	0.07	0.052	(0.081)	0.015	0.037

(Loss Rate Not Used)

Sum = 100.0 Sum = 58.2

Flood volume = Effective rainfall 4.85(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 13.7(Ac.Ft)
Total soil loss = 1.65(In)
Total soil loss = 4.637(Ac.Ft)
Total rainfall = 6.50(In)
Flood volume = 595462.3 Cubic Feet
Total soil loss = 201996.1 Cubic Feet

Peak flow rate of this hydrograph = 25.340(CFS)

++

24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5	30.0
0+ 5	0.0011	0.16	Q				
0+10	0.0069	0.85	VQ				
0+15	0.0144	1.09	VQ				
0+20	0.0232	1.27	VQ				
0+25	0.0346	1.66	V Q				
0+30	0.0470	1.79	V Q				
0+35	0.0597	1.85	V Q				
0+40	0.0727	1.88	V Q				
0+45	0.0856	1.88	V Q				
0+50	0.0991	1.96	V Q				
0+55	0.1151	2.31	V Q				
1+ 0	0.1318	2.43	V Q				
1+ 5	0.1484	2.41	V Q				
1+10	0.1627	2.08	V Q				
1+15	0.1763	1.96	V Q				
1+20	0.1895	1.92	V Q				
1+25	0.2025	1.90	V Q				
1+30	0.2156	1.89	V Q				
1+35	0.2286	1.89	V Q				
1+40	0.2416	1.89	V Q				
1+45	0.2546	1.89	V Q				
1+50	0.2681	1.97	V Q				
1+55	0.2840	2.31	V Q				
2+ 0	0.3008	2.43	V Q				
2+ 5	0.3179	2.49	V Q				
2+10	0.3352	2.50	V Q				
2+15	0.3525	2.51	|V Q				
2+20	0.3698	2.51	|V Q				
2+25	0.3871	2.52	|V Q				
2+30	0.4044	2.52	|V Q				
2+35	0.4223	2.59	|V Q				
2+40	0.4426	2.94	|V Q				
2+45	0.4637	3.06	|V Q				

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2+50       0.4851      3.11  |V  Q     |         |         |         |
2+55       0.5067      3.13  |V  Q     |         |         |         |
3+ 0       0.5283      3.14  |V  Q     |         |         |         |
3+ 5       0.5500      3.14  |V  Q     |         |         |         |
3+10       0.5716      3.15  |V  Q     |         |         |         |
3+15       0.5933      3.15  |V  Q     |         |         |         |
3+20       0.6149      3.15  |V  Q     |         |         |         |
3+25       0.6366      3.15  |V  Q     |         |         |         |
3+30       0.6583      3.15  |V  Q     |         |         |         |
3+35       0.6799      3.15  |V  Q     |         |         |         |
3+40       0.7016      3.15  | V Q     |         |         |         |
3+45       0.7233      3.15  | V Q     |         |         |         |
3+50       0.7455      3.22  | V Q     |         |         |         |
3+55       0.7700      3.57  | V Q     |         |         |         |
4+ 0       0.7955      3.69  | V Q     |         |         |         |
4+ 5       0.8213      3.74  | V Q     |         |         |         |
4+10       0.8472      3.76  | V  Q    |         |         |         |
4+15       0.8731      3.77  | V  Q    |         |         |         |
4+20       0.8997      3.85  | V  Q    |         |         |         |
4+25       0.9286      4.20  | V  Q    |         |         |         |
4+30       0.9583      4.32  | V  Q    |         |         |         |
4+35       0.9884      4.37  | V  Q    |         |         |         |
4+40       1.0187      4.39  | V  Q    |         |         |         |
4+45       1.0490      4.40  |  V Q    |         |         |         |
4+50       1.0798      4.48  |  V Q    |         |         |         |
4+55       1.1131      4.83  |  V  Q   |         |         |         |
5+ 0       1.1472      4.95  |  V  Q   |         |         |         |
5+ 5       1.1805      4.84  |  V  Q   |         |         |         |
5+10       1.2093      4.17  |  V Q    |         |         |         |
5+15       1.2364      3.93  |  V Q    |         |         |         |
5+20       1.2633      3.91  |  V Q    |         |         |         |
5+25       1.2924      4.22  |  V Q    |         |         |         |
5+30       1.3222      4.33  |  V Q    |         |         |         |
5+35       1.3529      4.45  |  V Q    |         |         |         |
5+40       1.3861      4.82  |   V Q   |         |         |         |
5+45       1.4201      4.94  |   V Q   |         |         |         |
5+50       1.4546      5.00  |   V Q   |         |         |         |
5+55       1.4892      5.02  |   V Q   |         |         |         |
6+ 0       1.5238      5.03  |   V Q   |         |         |         |
6+ 5       1.5590      5.11  |   V Q   |         |         |         |
6+10       1.5965      5.46  |   V  Q  |         |         |         |
6+15       1.6350      5.58  |   V  Q  |         |         |         |
6+20       1.6738      5.63  |   V  Q  |         |         |         |
6+25       1.7127      5.65  |    V Q  |         |         |         |
6+30       1.7516      5.66  |    V Q  |         |         |         |
6+35       1.7911      5.74  |    V Q  |         |         |         |
6+40       1.8331      6.09  |    V  Q |         |         |         |
6+45       1.8758      6.21  |    V  Q |         |         |         |
6+50       1.9189      6.26  |    V  Q |         |         |         |
6+55       1.9622      6.28  |    V  Q |         |         |         |
7+ 0       2.0055      6.29  |    V  Q |         |         |         |
7+ 5       2.0488      6.29  |    V  Q |         |         |         |
7+10       2.0921      6.29  |     V Q |         |         |         |
7+15       2.1354      6.29  |     V Q |         |         |         |
7+20       2.1793      6.37  |     V Q |         |         |         |
7+25       2.2255      6.71  |     V Q |         |         |         |
7+30       2.2726      6.84  |     V  Q|         |         |         |
7+35       2.3206      6.97  |     V  Q|         |         |         |
7+40       2.3711      7.33  |     V  Q|         |         |         |
7+45       2.4225      7.46  |      V Q|         |         |         |
7+50       2.4748      7.59  |      V  Q         |         |         |
7+55       2.5296      7.96  |      V  Q         |         |         |
8+ 0       2.5853      8.09  |      V  Q         |         |         |
8+ 5       2.6425      8.30  |      V  |Q        |         |         |
8+10       2.7046      9.01  |      V  | Q       |         |         |
8+15       2.7684      9.27  |       V | Q       |         |         |
8+20       2.8330      9.37  |       V | Q       |         |         |
8+25       2.8978      9.41  |       V | Q       |         |         |
8+30       2.9627      9.43  |       V | Q       |         |         |
8+35       3.0282      9.51  |       V | Q       |         |         |
8+40       3.0961      9.86  |        V|  Q      |         |         |
8+45       3.1649      9.98  |        V|  Q      |         |         |
8+50       3.2345     10.11  |        V|  Q      |         |         |
8+55       3.3067     10.48  |        V|  Q      |         |         |
9+ 0       3.3797     10.61  |        V|   Q     |         |         |
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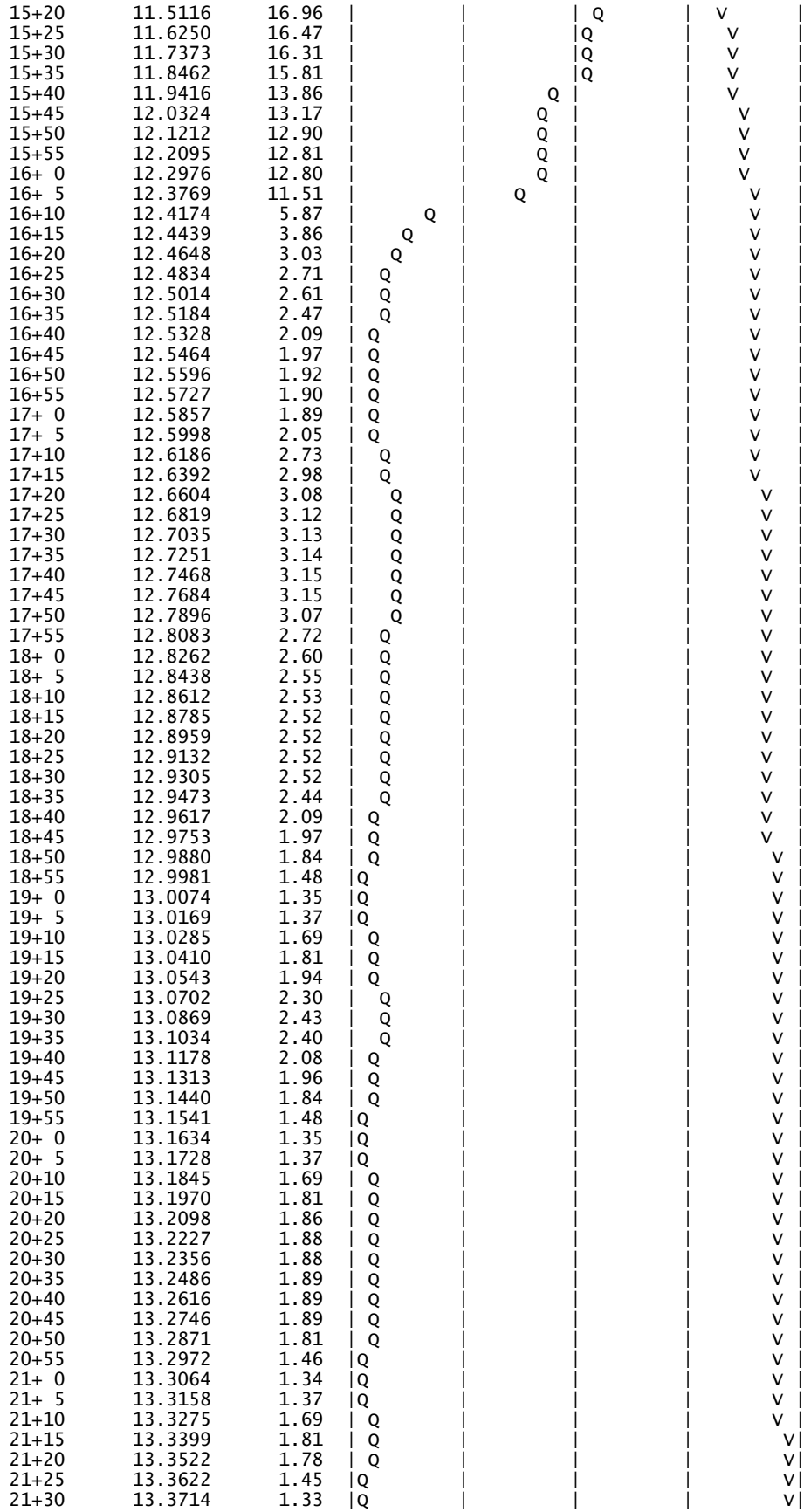
9+ 5	3.4542	10.82	V Q				
9+10	3.5336	11.53	V Q				
9+15	3.6148	11.78	V Q				
9+20	3.6972	11.97	V Q				
9+25	3.7823	12.35	|V Q				
9+30	3.8683	12.49	|V Q				
9+35	3.9552	12.63	|V Q				
9+40	4.0447	12.99	|V Q				
9+45	4.1351	13.12	| V Q				
9+50	4.2264	13.26	| V Q				
9+55	4.3202	13.62	| V Q				
10+ 0	4.4149	13.75	| V Q				
10+ 5	4.5063	13.26	| V Q				
10+10	4.5811	10.87	| VQ				
10+15	4.6500	10.01	| Q				
10+20	4.7165	9.65	| QV				
10+25	4.7820	9.52	| QV				
10+30	4.8473	9.48	| Q V				
10+35	4.9151	9.84	| QV				
10+40	4.9947	11.55	| VQ				
10+45	5.0785	12.17	| V Q				
10+50	5.1640	12.43	| VQ				
10+55	5.2503	12.52	| VQ				
11+ 0	5.3368	12.55	| VQ				
11+ 5	5.4228	12.49	| VQ				
11+10	5.5065	12.16	| Q				
11+15	5.5894	12.04	| Q				
11+20	5.6720	11.98	| QV				
11+25	5.7544	11.96	| QV				
11+30	5.8367	11.96	| Q V				
11+35	5.9180	11.80	| Q V				
11+40	5.9945	11.11	| Q V				
11+45	6.0693	10.86	| Q V				
11+50	6.1439	10.84	| Q V				
11+55	6.2206	11.14	| Q V				
12+ 0	6.2981	11.25	| Q V				
12+ 5	6.3808	12.01	| Q V				
12+10	6.4851	15.15	| V Q				
12+15	6.5973	16.29	| V|Q				
12+20	6.7136	16.88	| V| Q				
12+25	6.8346	17.57	| V| Q				
12+30	6.9574	17.83	| V Q				
12+35	7.0826	18.18	| V Q				
12+40	7.2150	19.22	| |V Q				
12+45	7.3500	19.60	| |V Q				
12+50	7.4869	19.89	| |V Q				
12+55	7.6278	20.46	| | V Q				
13+ 0	7.7702	20.67	| | V Q				
13+ 5	7.9171	21.33	| | V Q				
13+10	8.0811	23.82	| | V |Q				
13+15	8.2513	24.72	| | V | Q				
13+20	8.4243	25.11	| | V | Q				
13+25	8.5983	25.27	| | V | Q				
13+30	8.7728	25.34	| | V | Q				
13+35	8.9393	24.18	| | V | Q				
13+40	9.0693	18.87	| | QV |				
13+45	9.1862	16.98	| | Q V |				
13+50	9.2979	16.21	| |Q V |				
13+55	9.4077	15.93	| |Q V |				
14+ 0	9.5169	15.86	| |Q V |				
14+ 5	9.6290	16.27	| |Q V |				
14+10	9.7544	18.21	| | Q V |				
14+15	9.8847	18.93	| | Q V |				
14+20	10.0165	19.13	| | Q V|				
14+25	10.1458	18.78	| | Q V|				
14+30	10.2743	18.66	| | Q V				
14+35	10.4026	18.63	| | Q V				
14+40	10.5309	18.64	| | Q V				
14+45	10.6594	18.65	| | Q |V				
14+50	10.7872	18.56	| | Q |V				
14+55	10.9118	18.09	| | Q |V				
15+ 0	11.0353	17.94	| | Q | V				
15+ 5	11.1578	17.78	| | Q | V				
15+10	11.2768	17.29	| | Q | V				
15+15	11.3948	17.13	| | Q | V				



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   21+35      13.3808      1.37  |Q        |         |         |        v|
   21+40      13.3925      1.69  | Q       |         |         |        v|
   21+45      13.4049      1.81  | Q       |         |         |        v|
   21+50      13.4172      1.78  | Q       |         |         |        v|
   21+55      13.4272      1.45  |Q        |         |         |        v|
   22+ 0      13.4364      1.33  |Q        |         |         |        v|
   22+ 5      13.4458      1.37  |Q        |         |         |        v|
   22+10      13.4575      1.69  | Q       |         |         |        v|
   22+15      13.4699      1.81  | Q       |         |         |        v|
   22+20      13.4822      1.78  | Q       |         |         |        v|
   22+25      13.4922      1.45  |Q        |         |         |        v|
   22+30      13.5014      1.33  |Q        |         |         |        v|
   22+35      13.5102      1.29  |Q        |         |         |        v|
   22+40      13.5190      1.27  |Q        |         |         |        v|
   22+45      13.5277      1.26  |Q        |         |         |        v|
   22+50      13.5364      1.26  |Q        |         |         |        v|
   22+55      13.5450      1.26  |Q        |         |         |        v|
   23+ 0      13.5537      1.26  |Q        |         |         |        v|
   23+ 5      13.5624      1.26  |Q        |         |         |        v|
   23+10      13.5710      1.26  |Q        |         |         |        v|
   23+15      13.5797      1.26  |Q        |         |         |        v|
   23+20      13.5884      1.26  |Q        |         |         |        v|
   23+25      13.5970      1.26  |Q        |         |         |        v|
   23+30      13.6057      1.26  |Q        |         |         |        v|
   23+35      13.6144      1.26  |Q        |         |         |        v|
   23+40      13.6230      1.26  |Q        |         |         |        v|
   23+45      13.6317      1.26  |Q        |         |         |        v|
   23+50      13.6404      1.26  |Q        |         |         |        v|
   23+55      13.6490      1.26  |Q        |         |         |        v|
   24+ 0      13.6577      1.26  |Q        |         |         |        v|
   24+ 5      13.6653      1.10  |Q        |         |         |        v|
   24+10      13.6681      0.41  Q         |         |         |        v|
   24+15      13.6692      0.16  Q         |         |         |        v|
   24+20      13.6697      0.06  Q         |         |         |        v|
   24+25      13.6698      0.02  Q         |         |         |        v|
   24+30      13.6699      0.01  Q         |         |         |        v|
   24+35      13.6699      0.00  Q         |         |         |        v|
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STAGE-STORAGE/OUTFLOW TABLE

Building 3 CMP Chambers - Stage/Storage/Outflow Table
W.O.# 21-0044

Basin Information: Infiltration Basin		2-Year	ORIFICE	5-YEAR	ORIFICE	10/100-Year	WEIR
Tributary Area:	30.10 AC	Q EXISTING	0.72	Q EXISTING	1.8	Q EXISTING	6.1/11.8
Bottom Elevation:	2501.50 FT	Opening (in)	3.5	Opening (in)	5	L(ft)	0.8
		# of Orifices	1	# of Orifices	1	C	3
Bottom Chamber Area:	77638 SF	Orifice Area (sf)	0.0668	Orifice Area (sf)	0.1364		
Bottom Slope:	0 %	Orifice Diameter (ft)	0.2917	Orifice Diameter (ft)	0.4167		
Constant Infiltration:	0.0 cfs	Total Area (sf)	0.0668	Total Area (sf)	0.1364		
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$		G (ft/s^2)	32.2	G (ft/s^2)	32.2		
Q_{WEIR}= C*L*H$^{3/2}$		Cd	0.66	Cd	0.66		
		Invert H (ft)	0	Invert H (ft)	4.24	Invert H (ft)	5.48

#	Elevation (ft)	Depth (ft)	Storage (cf)	Storage (ac-ft)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	Total Q (cfs) 2 Year	Total Q (cfs) 5 Year	Total Q (cfs) 10/100 Year	Comments
1	2501.5	0	0.00	0.000							0.00	0.00	0.00	**Bottom of Chambers/Inv of 2 Yr**
2	2501.6458	0.14583	4528.88	0.104	0.00						0.00	0.00	0.00	**Middle of 2 Yr Orifice**
3	**2502**	**0.5**	**15527.60**	0.356	0.35	0.21					0.21	0.21	0.21	
4	2502.5	1	**36636.90**	0.841	0.85	0.33					0.33	0.33	0.33	
5	**2503**	1.5	**62057.78**	1.425	1.35	0.41					0.41	0.41	0.41	
6	2503.5	2	**89951.27**	2.065	1.85	0.48					0.48	0.48	0.48	
7	**2504**	2.5	**119571.59**	2.745	2.35	0.54					0.54	0.54	0.54	
8	2504.5	3	**150432.47**	3.453	2.85	0.60					0.60	0.60	0.60	
9	**2504.99**	3.49	**181526.47**	4.167	3.34	0.65	0				0.65	0.65	0.65	**Top of 2 Yr Ponding/Inv of 5 Yr**
10	2505	**3.5**	**182161.04**	4.182	3.35	0.65	**0.01**	**0.07**			0.65	0.72	0.72	
	2505.5	**4**	**214442.99**	4.923	3.85	0.69	**0.51**	**0.52**				1.21	1.21	
11	**2505.96**	**4.46**	**244390.69**	5.610	4.31	0.74	**0.97**	**0.71**	**0.00**		0.74	1.45	1.45	**Top of 5 Yr Ponding/Inv of 10/100 Yr**
12	2506	**4.5**	**246994.83**	5.670	4.35	0.74	**1.01**	**0.73**	**0.04**	**0.02**	0.74	1.46	1.48	
13	2506.5	5	**279546.68**	6.418	4.85	0.78	**1.51**	**0.89**	**0.54**	**0.95**	0.78	1.67	2.62	
14	**2506.66**	**5.16**	**289876.90**	6.655	5.01	0.79	**1.67**	**0.93**	**0.70**	**1.41**	0.79	1.73	3.13	**Top of 10 Yr Ponding**
15	2507	**5.5**	**311828.62**	7.159	5.35	0.82	**2.01**	**1.02**	**1.04**	**2.55**	0.82	1.84	4.39	
16	**2507.5**	**6**	**343557.20**	7.887	5.85	0.86	**2.51**	**1.14**	**1.54**	**4.59**	0.86	2.00	6.59	
17	2508	**6.5**	**374418.07**	8.595	6.35	0.89	**3.01**	**1.25**	**2.04**	**6.99**	0.89	2.14	9.14	
18	**2508.5**	**7**	**404038.39**	9.275	6.85	0.93	**3.51**	**1.35**	**2.54**	**9.72**	0.93	2.28	11.99	
	2508.53	**7.03**	**405712.00**	9.314	6.88	0.93	**3.54**	**1.36**	**2.57**	**9.89**	0.93	2.29	12.18	**Top of 100 Yr Ponding**
19	2509	**7.5**	**431931.89**	9.916	7.35	0.96	**4.01**	**1.45**	**3.04**	**12.72**	0.96	2.41	15.13	
20	2509.5	**8**	**457352.77**	10.499	7.85	0.99	**4.51**	**1.53**	**3.54**	**15.99**	0.99	2.53	18.51	**Top of Chambers**
21	**2510**	**8.5**	**478462.07**	10.984	8.35	1.02	**5.01**	**1.62**	**4.04**	**19.49**	1.02	2.64	22.13	
22	2510.5	**9**	**493989.67**	11.340	8.85	1.05	**5.51**	**1.70**	**4.54**	**23.22**	1.05	2.75	25.96	**Top of Gravel**

BASIN ROUTING
2-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 02/17/22

EXETER BSS BUILDING 3
2-YEAR 24-HOUR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH2YR242.rte
**********HYDROGRAPH DATA**********
Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 8.216 (CFS)
Total volume = 4.999 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
1.500	1.425	0.412	1.424	1.426
2.000	2.065	0.482	2.063	2.067
2.500	2.745	0.543	2.743	2.747
3.000	3.453	0.598	3.451	3.455
3.500	4.182	0.648	4.180	4.184
4.000	4.923	0.695	4.921	4.925
4.500	5.670	0.738	5.667	5.673
5.000	6.418	0.780	6.415	6.421
5.500	7.159	0.819	7.156	7.162
6.000	7.887	0.856	7.884	7.890
6.500	8.595	0.892	8.592	8.598
7.000	9.275	0.926	9.272	9.278
7.500	9.916	0.960	9.913	9.919
8.000	10.499	0.992	10.496	10.502
8.500	10.984	1.023	10.980	10.988

9.000 11.340 1.053 11.336 11.344

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	2.1	4.11	6.16	8.22	Depth (Ft.)
0.083	0.06	0.00	0.000	O					0.00
0.167	0.33	0.00	0.002	OI					0.00
0.250	0.42	0.00	0.004	OI					0.01
0.333	0.49	0.00	0.007	OI					0.01
0.417	0.64	0.00	0.011	O I					0.02
0.500	0.69	0.00	0.016	O I					0.02
0.583	0.71	0.00	0.021	O I					0.03
0.667	0.72	0.00	0.025	O I					0.04
0.750	0.72	0.00	0.030	O I					0.04
0.833	0.76	0.00	0.036	O I					0.05
0.917	0.89	0.00	0.041	O I					0.06
1.000	0.94	0.00	0.047	O I					0.07
1.083	0.93	0.00	0.054	O I					0.08
1.167	0.80	0.00	0.060	O I					0.08
1.250	0.76	0.00	0.065	O I					0.09
1.333	0.74	0.00	0.070	O I					0.10
1.417	0.73	0.00	0.075	O I					0.11
1.500	0.73	0.00	0.080	O I					0.11
1.583	0.73	0.00	0.085	O I					0.12
1.667	0.73	0.00	0.090	O I					0.13
1.750	0.73	0.00	0.095	O I					0.13
1.833	0.76	0.00	0.100	O I					0.14
1.917	0.89	0.00	0.106	O I					0.15
2.000	0.94	0.01	0.112	O I					0.16
2.083	0.96	0.01	0.119	O I					0.17
2.167	0.96	0.02	0.125	O I					0.18
2.250	0.97	0.02	0.132	O I					0.19
2.333	0.97	0.03	0.138	O I					0.19
2.417	0.97	0.03	0.145	O I					0.20
2.500	0.97	0.04	0.151	O I					0.21
2.583	1.00	0.05	0.158	O I					0.22
2.667	1.13	0.05	0.165	O I					0.23
2.750	1.18	0.06	0.172	O I					0.24
2.833	1.20	0.06	0.180	O I					0.25
2.917	1.21	0.07	0.188	O I					0.26
3.000	1.21	0.08	0.196	O I					0.27
3.083	1.21	0.08	0.203	O I					0.29
3.167	1.21	0.09	0.211	O I					0.30
3.250	1.21	0.10	0.219	O I					0.31
3.333	1.21	0.10	0.226	O I					0.32
3.417	1.21	0.11	0.234	O I					0.33
3.500	1.21	0.12	0.242	O I					0.34
3.583	1.21	0.12	0.249	O I					0.35
3.667	1.21	0.13	0.257	O I					0.36
3.750	1.21	0.13	0.264	O I					0.37
3.833	1.24	0.14	0.271	O I					0.38
3.917	1.37	0.15	0.279	O I					0.39
4.000	1.42	0.15	0.288	O I					0.40
4.083	1.44	0.16	0.297	O I					0.42
4.167	1.45	0.17	0.306	O I					0.43
4.250	1.45	0.18	0.314	O I					0.44
4.333	1.48	0.18	0.323	O I					0.45
4.417	1.61	0.19	0.333	O I					0.47
4.500	1.66	0.20	0.343	O I					0.48
4.583	1.68	0.21	0.353	O I					0.50
4.667	1.69	0.21	0.363	O I					0.51
4.750	1.69	0.22	0.373	O I					0.52
4.833	1.72	0.22	0.383	O I					0.53
4.917	1.86	0.22	0.394	O I					0.54
5.000	1.90	0.22	0.405	O I					0.55
5.083	1.86	0.23	0.417	O I					0.56
5.167	1.61	0.23	0.427	O I					0.57
5.250	1.51	0.23	0.436	O I					0.58
5.333	1.51	0.23	0.445	O I					0.59
5.417	1.62	0.23	0.454	O I					0.60
5.500	1.67	0.24	0.464	O I					0.61

5.583	1.71	0.24	0.474	o	I	|	|	|	0.62
5.667	1.85	0.24	0.485	o	I	|	|	|	0.63
5.750	1.90	0.24	0.496	o	I	|	|	|	0.64
5.833	1.92	0.25	0.507	o	I	|	|	|	0.66
5.917	1.93	0.25	0.519	o	I	|	|	|	0.67
6.000	1.93	0.25	0.531	o	I	|	|	|	0.68
6.083	1.97	0.26	0.542	o	I	|	|	|	0.69
6.167	2.10	0.26	0.554	|o	I	|	|	|	0.70
6.250	2.15	0.26	0.567	|o	I	|	|	|	0.72
6.333	2.17	0.26	0.580	|o	I	|	|	|	0.73
6.417	2.17	0.27	0.593	|o	I	|	|	|	0.74
6.500	2.18	0.27	0.607	|o	I	|	|	|	0.76
6.583	2.21	0.27	0.620	|o	I	|	|	|	0.77
6.667	2.34	0.28	0.634	|o	|I	|	|	|	0.79
6.750	2.39	0.28	0.648	|o	|I	|	|	|	0.80
6.833	2.41	0.28	0.662	|o	|I	|	|	|	0.82
6.917	2.42	0.29	0.677	|o	|I	|	|	|	0.83
7.000	2.42	0.29	0.692	|o	|I	|	|	|	0.85
7.083	2.42	0.29	0.706	|o	|I	|	|	|	0.86
7.167	2.42	0.30	0.721	|o	|I	|	|	|	0.88
7.250	2.42	0.30	0.736	|o	|I	|	|	|	0.89
7.333	2.45	0.31	0.750	|o	|I	|	|	|	0.91
7.417	2.58	0.31	0.766	|o	| I	|	|	|	0.92
7.500	2.63	0.31	0.781	|o	| I	|	|	|	0.94
7.583	2.68	0.32	0.797	|o	| I	|	|	|	0.96
7.667	2.82	0.32	0.814	|o	| I	|	|	|	0.97
7.750	2.87	0.32	0.832	|o	| I	|	|	|	0.99
7.833	2.92	0.33	0.849	|o	| I	|	|	|	1.01
7.917	3.06	0.33	0.868	|o	| I	|	|	|	1.02
8.000	3.11	0.33	0.887	|o	| I	|	|	|	1.04
8.083	3.19	0.34	0.906	|o	| I	|	|	|	1.06
8.167	3.47	0.34	0.927	|o	| I	|	|	|	1.07
8.250	3.56	0.34	0.948	|o	| I	|	|	|	1.09
8.333	3.60	0.35	0.971	|o	| I	|	|	|	1.11
8.417	3.62	0.35	0.993	|o	| I	|	|	|	1.13
8.500	3.63	0.35	1.016	|o	| I	|	|	|	1.15
8.583	3.66	0.36	1.038	|o	| I	|	|	|	1.17
8.667	3.79	0.36	1.062	|o	| I	|	|	|	1.19
8.750	3.84	0.36	1.085	|o	| I	|	|	|	1.21
8.833	3.89	0.37	1.109	|o	| I	|	|	|	1.23
8.917	4.03	0.37	1.134	|o	| I	|	|	|	1.25
9.000	4.08	0.37	1.160	|o	| I	|	|	|	1.27
9.083	4.16	0.38	1.185	|o	| I	|	|	|	1.29
9.167	4.43	0.38	1.212	|o	| |I	|	|	|	1.32
9.250	4.53	0.39	1.241	|o	| |I	|	|	|	1.34
9.333	4.60	0.39	1.269	|o	| |I	|	|	|	1.37
9.417	4.75	0.39	1.299	|o	| | I	|	|	|	1.39
9.500	4.80	0.40	1.329	|o	| | I	|	|	|	1.42
9.583	4.86	0.40	1.360	|o	| | I	|	|	|	1.44
9.667	5.00	0.41	1.391	|o	| | I	|	|	|	1.47
9.750	5.05	0.41	1.423	|o	| | I	|	|	|	1.50
9.833	5.10	0.42	1.455	|o	| | I	|	|	|	1.52
9.917	5.24	0.42	1.487	|o	| | I	|	|	|	1.55
10.000	5.29	0.42	1.521	|o	| | I	|	|	|	1.57
10.083	5.10	0.43	1.554	|o	| | I	|	|	|	1.60
10.167	4.18	0.43	1.583	|o	| I	|	|	|	1.62
10.250	3.85	0.43	1.607	|o	| I	|	|	|	1.64
10.333	3.71	0.43	1.630	|o	| I	|	|	|	1.66
10.417	3.66	0.44	1.653	|o	| I	|	|	|	1.68
10.500	3.64	0.44	1.675	|o	| I	|	|	|	1.70
10.583	3.79	0.44	1.697	|o	| I	|	|	|	1.71
10.667	4.44	0.44	1.723	|o	| |I	|	|	|	1.73
10.750	4.68	0.45	1.751	|o	| | I	|	|	|	1.75
10.833	4.78	0.45	1.780	|o	| | I	|	|	|	1.78
10.917	4.82	0.45	1.810	|o	| | I	|	|	|	1.80
11.000	4.83	0.46	1.840	|o	| | I	|	|	|	1.82
11.083	4.81	0.46	1.870	|o	| | I	|	|	|	1.85
11.167	4.68	0.46	1.900	|o	| | I	|	|	|	1.87
11.250	4.63	0.47	1.929	|o	| | I	|	|	|	1.89
11.333	4.61	0.47	1.957	|o	| |I	|	|	|	1.92
11.417	4.60	0.47	1.986	|o	| |I	|	|	|	1.94
11.500	4.60	0.48	2.014	|o	| |I	|	|	|	1.96
11.583	4.54	0.48	2.042	|o	| |I	|	|	|	1.98
11.667	4.27	0.48	2.069	|o	| I	|	|	|	2.00
11.750	4.18	0.48	2.095	|o	| I	|	|	|	2.02

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11.833    4.17    0.49      2.121  |O      |       I       |       |     2.04
11.917    4.29    0.49      2.146  |O      |       I       |       |     2.06
12.000    4.33    0.49      2.173  |O      |       I       |       |     2.08
12.083    4.56    0.49      2.200  |O      |       |I      |       |     2.10
12.167    5.49    0.50      2.231  |O      |       |    I  |       |     2.12
12.250    5.83    0.50      2.267  |O      |       |     I |       |     2.15
12.333    5.99    0.50      2.304  |O      |       |      I|       |     2.18
12.417    6.18    0.51      2.342  |O      |       |       I       |     2.20
12.500    6.24    0.51      2.382  |O      |       |       I       |     2.23
12.583    6.33    0.51      2.421  | O     |       |       I       |     2.26
12.667    6.61    0.52      2.462  | O     |       |       |I      |     2.29
12.750    6.71    0.52      2.505  | O     |       |       | I     |     2.32
12.833    6.78    0.53      2.547  | O     |       |       | I     |     2.35
12.917    6.93    0.53      2.591  | O     |       |       | I     |     2.39
13.000    6.98    0.53      2.635  | O     |       |       |  I    |     2.42
13.083    7.15    0.54      2.680  | O     |       |       |  I    |     2.45
13.167    7.83    0.54      2.728  | O     |       |       |     I |     2.49
13.250    8.07    0.55      2.779  | O     |       |       |      I|     2.52
13.333    8.17    0.55      2.831  | O     |       |       |      I|     2.56
13.417    8.20    0.55      2.884  | O     |       |       |      I|     2.60
13.500    8.22    0.56      2.937  | O     |       |       |       I     2.64
13.583    7.89    0.56      2.988  | O     |       |       |     I |     2.67
13.667    6.44    0.57      3.034  | O     |       |       |I      |     2.70
13.750    5.91    0.57      3.072  | O     |       |      I|       |     2.73
13.833    5.70    0.57      3.108  | O     |       |     I |       |     2.76
13.917    5.61    0.57      3.143  | O     |       |    I  |       |     2.78
14.000    5.59    0.58      3.178  | O     |       |    I  |       |     2.81
14.083    5.69    0.58      3.213  | O     |       |     I |       |     2.83
14.167    6.22    0.58      3.250  | O     |       |       I       |     2.86
14.250    6.41    0.59      3.289  | O     |       |       I       |     2.88
14.333    6.45    0.59      3.330  | O     |       |       |I      |     2.91
14.417    6.35    0.59      3.370  | O     |       |       I       |     2.94
14.500    6.31    0.59      3.409  | O     |       |       I       |     2.97
14.583    6.30    0.60      3.448  | O     |       |       I       |     3.00
14.667    6.30    0.60      3.488  | O     |       |       I       |     3.02
14.750    6.29    0.60      3.527  | O     |       |       I       |     3.05
14.833    6.26    0.61      3.566  | O     |       |       I       |     3.08
14.917    6.13    0.61      3.604  | O     |       |      I|       |     3.10
15.000    6.08    0.61      3.642  | O     |       |      I|       |     3.13
15.083    6.03    0.61      3.680  | O     |       |      I|       |     3.16
15.167    5.89    0.62      3.717  | O     |       |     I |       |     3.18
15.250    5.84    0.62      3.753  | O     |       |     I |       |     3.21
15.333    5.79    0.62      3.788  | O     |       |     I |       |     3.23
15.417    5.65    0.62      3.824  | O     |       |     I |       |     3.25
15.500    5.60    0.63      3.858  | O     |       |    I  |       |     3.28
15.583    5.46    0.63      3.892  | O     |       |    I  |       |     3.30
15.667    4.92    0.63      3.923  | O     |       |  I    |       |     3.32
15.750    4.73    0.63      3.952  | O     |       | I     |       |     3.34
15.833    4.65    0.63      3.980  | O     |       | I     |       |     3.36
15.917    4.62    0.64      4.007  | O     |       |I      |       |     3.38
16.000    4.61    0.64      4.035  | O     |       |I      |       |     3.40
16.083    4.15    0.64      4.061  | O     |       I       |       |     3.42
16.167    2.16    0.64      4.078  | O     I       |       |       |     3.43
16.250    1.44    0.64      4.086  | O  I  |       |       |       |     3.43
16.333    1.15    0.64      4.090  | O I   |       |       |       |     3.44
16.417    1.04    0.64      4.093  | O I   |       |       |       |     3.44
16.500    1.00    0.64      4.096  | OI    |       |       |       |     3.44
16.583    0.95    0.64      4.098  | OI    |       |       |       |     3.44
16.667    0.81    0.64      4.100  | OI    |       |       |       |     3.44
16.750    0.76    0.64      4.101  | O     |       |       |       |     3.44
16.833    0.74    0.64      4.102  | O     |       |       |       |     3.44
16.917    0.73    0.64      4.102  | O     |       |       |       |     3.45
17.000    0.73    0.64      4.103  | O     |       |       |       |     3.45
17.083    0.79    0.64      4.104  | OI    |       |       |       |     3.45
17.167    1.05    0.64      4.106  | O I   |       |       |       |     3.45
17.250    1.15    0.64      4.109  | O I   |       |       |       |     3.45
17.333    1.19    0.64      4.112  | O I   |       |       |       |     3.45
17.417    1.20    0.64      4.116  | O I   |       |       |       |     3.45
17.500    1.21    0.64      4.120  | O I   |       |       |       |     3.46
17.583    1.21    0.64      4.124  | O I   |       |       |       |     3.46
17.667    1.21    0.64      4.128  | O I   |       |       |       |     3.46
17.750    1.21    0.64      4.132  | O I   |       |       |       |     3.47
17.833    1.18    0.64      4.135  | O I   |       |       |       |     3.47
17.917    1.05    0.65      4.139  | O I   |       |       |       |     3.47
18.000    1.00    0.65      4.141  | OI    |       |       |       |     3.47
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18.083	0.98	0.65	4.144	OI				3.47
18.167	0.97	0.65	4.146	OI				3.48
18.250	0.97	0.65	4.148	OI				3.48
18.333	0.97	0.65	4.150	OI				3.48
18.417	0.97	0.65	4.153	OI				3.48
18.500	0.97	0.65	4.155	OI				3.48
18.583	0.94	0.65	4.157	OI				3.48
18.667	0.81	0.65	4.158	OI				3.48
18.750	0.76	0.65	4.159	O				3.48
18.833	0.71	0.65	4.160	O				3.48
18.917	0.57	0.65	4.160	O				3.48
19.000	0.52	0.65	4.159	O				3.48
19.083	0.53	0.65	4.158	O				3.48
19.167	0.65	0.65	4.158	O				3.48
19.250	0.70	0.65	4.158	O				3.48
19.333	0.74	0.65	4.159	O				3.48
19.417	0.88	0.65	4.160	OI				3.48
19.500	0.93	0.65	4.162	OI				3.49
19.583	0.92	0.65	4.164	OI				3.49
19.667	0.80	0.65	4.165	OI				3.49
19.750	0.76	0.65	4.166	O				3.49
19.833	0.71	0.65	4.167	O				3.49
19.917	0.57	0.65	4.166	O				3.49
20.000	0.52	0.65	4.166	O				3.49
20.083	0.53	0.65	4.165	O				3.49
20.167	0.65	0.65	4.164	O				3.49
20.250	0.70	0.65	4.165	O				3.49
20.333	0.71	0.65	4.165	O				3.49
20.417	0.72	0.65	4.166	O				3.49
20.500	0.72	0.65	4.166	O				3.49
20.583	0.73	0.65	4.167	O				3.49
20.667	0.73	0.65	4.167	O				3.49
20.750	0.73	0.65	4.168	O				3.49
20.833	0.70	0.65	4.168	O				3.49
20.917	0.56	0.65	4.168	O				3.49
21.000	0.52	0.65	4.167	O				3.49
21.083	0.53	0.65	4.166	O				3.49
21.167	0.65	0.65	4.166	O				3.49
21.250	0.70	0.65	4.166	O				3.49
21.333	0.68	0.65	4.166	O				3.49
21.417	0.56	0.65	4.166	O				3.49
21.500	0.51	0.65	4.166	IO				3.49
21.583	0.53	0.65	4.165	O				3.49
21.667	0.65	0.65	4.164	O				3.49
21.750	0.70	0.65	4.164	O				3.49
21.833	0.68	0.65	4.165	O				3.49
21.917	0.56	0.65	4.165	O				3.49
22.000	0.51	0.65	4.164	IO				3.49
22.083	0.53	0.65	4.163	O				3.49
22.167	0.65	0.65	4.163	O				3.49
22.250	0.70	0.65	4.163	O				3.49
22.333	0.68	0.65	4.163	O				3.49
22.417	0.56	0.65	4.163	O				3.49
22.500	0.51	0.65	4.162	IO				3.49
22.583	0.50	0.65	4.161	IO				3.49
22.667	0.49	0.65	4.160	IO				3.48
22.750	0.49	0.65	4.159	IO				3.48
22.833	0.48	0.65	4.158	IO				3.48
22.917	0.48	0.65	4.157	IO				3.48
23.000	0.48	0.65	4.156	IO				3.48
23.083	0.48	0.65	4.154	IO				3.48
23.167	0.48	0.65	4.153	IO				3.48
23.250	0.48	0.65	4.152	IO				3.48
23.333	0.48	0.65	4.151	IO				3.48
23.417	0.48	0.65	4.150	IO				3.48
23.500	0.48	0.65	4.149	IO				3.48
23.583	0.48	0.65	4.148	IO				3.48
23.667	0.48	0.65	4.147	IO				3.48
23.750	0.48	0.65	4.146	IO				3.48
23.833	0.48	0.65	4.144	IO				3.47
23.917	0.48	0.65	4.143	IO				3.47
24.000	0.48	0.65	4.142	IO				3.47
24.083	0.42	0.65	4.141	IO				3.47
24.167	0.16	0.65	4.138	I O				3.47
24.250	0.06	0.64	4.135	I O				3.47

24.333	0.02	0.64	4.131	I	O	|	|	|	3.46
24.417	0.01	0.64	4.126	I	O	|	|	|	3.46
24.500	0.00	0.64	4.122	I	O	|	|	|	3.46
24.583	0.00	0.64	4.118	I	O	|	|	|	3.46
24.667	0.00	0.64	4.113	I	O	|	|	|	3.45
24.750	0.00	0.64	4.109	I	O	|	|	|	3.45
24.833	0.00	0.64	4.104	I	O	|	|	|	3.45
24.917	0.00	0.64	4.100	I	O	|	|	|	3.44
25.000	0.00	0.64	4.095	I	O	|	|	|	3.44
25.083	0.00	0.64	4.091	I	O	|	|	|	3.44
25.167	0.00	0.64	4.087	I	O	|	|	|	3.43
25.250	0.00	0.64	4.082	I	O	|	|	|	3.43
25.333	0.00	0.64	4.078	I	O	|	|	|	3.43
25.417	0.00	0.64	4.073	I	O	|	|	|	3.43
25.500	0.00	0.64	4.069	I	O	|	|	|	3.42
25.583	0.00	0.64	4.065	I	O	|	|	|	3.42
25.667	0.00	0.64	4.060	I	O	|	|	|	3.42
25.750	0.00	0.64	4.056	I	O	|	|	|	3.41
25.833	0.00	0.64	4.051	I	O	|	|	|	3.41
25.917	0.00	0.64	4.047	I	O	|	|	|	3.41
26.000	0.00	0.64	4.042	I	O	|	|	|	3.40
26.083	0.00	0.64	4.038	I	O	|	|	|	3.40
26.167	0.00	0.64	4.034	I	O	|	|	|	3.40
26.250	0.00	0.64	4.029	I	O	|	|	|	3.40
26.333	0.00	0.64	4.025	I	O	|	|	|	3.39
26.417	0.00	0.64	4.021	I	O	|	|	|	3.39
26.500	0.00	0.64	4.016	I	O	|	|	|	3.39
26.583	0.00	0.64	4.012	I	O	|	|	|	3.38
26.667	0.00	0.64	4.007	I	O	|	|	|	3.38
26.750	0.00	0.64	4.003	I	O	|	|	|	3.38
26.833	0.00	0.64	3.999	I	O	|	|	|	3.37
26.917	0.00	0.64	3.994	I	O	|	|	|	3.37
27.000	0.00	0.63	3.990	I	O	|	|	|	3.37
27.083	0.00	0.63	3.986	I	O	|	|	|	3.37
27.167	0.00	0.63	3.981	I	O	|	|	|	3.36
27.250	0.00	0.63	3.977	I	O	|	|	|	3.36
27.333	0.00	0.63	3.972	I	O	|	|	|	3.36
27.417	0.00	0.63	3.968	I	O	|	|	|	3.35
27.500	0.00	0.63	3.964	I	O	|	|	|	3.35
27.583	0.00	0.63	3.959	I	O	|	|	|	3.35
27.667	0.00	0.63	3.955	I	O	|	|	|	3.34
27.750	0.00	0.63	3.951	I	O	|	|	|	3.34
27.833	0.00	0.63	3.946	I	O	|	|	|	3.34
27.917	0.00	0.63	3.942	I	O	|	|	|	3.34
28.000	0.00	0.63	3.938	I	O	|	|	|	3.33
28.083	0.00	0.63	3.933	I	O	|	|	|	3.33
28.167	0.00	0.63	3.929	I	O	|	|	|	3.33
28.250	0.00	0.63	3.925	I	O	|	|	|	3.32
28.333	0.00	0.63	3.920	I	O	|	|	|	3.32
28.417	0.00	0.63	3.916	I	O	|	|	|	3.32
28.500	0.00	0.63	3.912	I	O	|	|	|	3.31
28.583	0.00	0.63	3.907	I	O	|	|	|	3.31
28.667	0.00	0.63	3.903	I	O	|	|	|	3.31
28.750	0.00	0.63	3.899	I	O	|	|	|	3.31
28.833	0.00	0.63	3.894	I	O	|	|	|	3.30
28.917	0.00	0.63	3.890	I	O	|	|	|	3.30
29.000	0.00	0.63	3.886	I	O	|	|	|	3.30
29.083	0.00	0.63	3.881	I	O	|	|	|	3.29
29.167	0.00	0.63	3.877	I	O	|	|	|	3.29
29.250	0.00	0.63	3.873	I	O	|	|	|	3.29
29.333	0.00	0.63	3.868	I	O	|	|	|	3.28
29.417	0.00	0.63	3.864	I	O	|	|	|	3.28
29.500	0.00	0.63	3.860	I	O	|	|	|	3.28
29.583	0.00	0.63	3.855	I	O	|	|	|	3.28
29.667	0.00	0.63	3.851	I	O	|	|	|	3.27
29.750	0.00	0.63	3.847	I	O	|	|	|	3.27
29.833	0.00	0.62	3.842	I	O	|	|	|	3.27
29.917	0.00	0.62	3.838	I	O	|	|	|	3.26
30.000	0.00	0.62	3.834	I	O	|	|	|	3.26
30.083	0.00	0.62	3.830	I	O	|	|	|	3.26
30.167	0.00	0.62	3.825	I	O	|	|	|	3.26
30.250	0.00	0.62	3.821	I	O	|	|	|	3.25
30.333	0.00	0.62	3.817	I	O	|	|	|	3.25
30.417	0.00	0.62	3.812	I	O	|	|	|	3.25
30.500	0.00	0.62	3.808	I	O	|	|	|	3.24

30.583	0.00	0.62	3.804	I	O	|	|	|	3.24
30.667	0.00	0.62	3.799	I	O	|	|	|	3.24
30.750	0.00	0.62	3.795	I	O	|	|	|	3.23
30.833	0.00	0.62	3.791	I	O	|	|	|	3.23
30.917	0.00	0.62	3.787	I	O	|	|	|	3.23
31.000	0.00	0.62	3.782	I	O	|	|	|	3.23
31.083	0.00	0.62	3.778	I	O	|	|	|	3.22
31.167	0.00	0.62	3.774	I	O	|	|	|	3.22
31.250	0.00	0.62	3.770	I	O	|	|	|	3.22
31.333	0.00	0.62	3.765	I	O	|	|	|	3.21
31.417	0.00	0.62	3.761	I	O	|	|	|	3.21
31.500	0.00	0.62	3.757	I	O	|	|	|	3.21
31.583	0.00	0.62	3.753	I	O	|	|	|	3.21
31.667	0.00	0.62	3.748	I	O	|	|	|	3.20
31.750	0.00	0.62	3.744	I	O	|	|	|	3.20
31.833	0.00	0.62	3.740	I	O	|	|	|	3.20
31.917	0.00	0.62	3.735	I	O	|	|	|	3.19
32.000	0.00	0.62	3.731	I	O	|	|	|	3.19
32.083	0.00	0.62	3.727	I	O	|	|	|	3.19
32.167	0.00	0.62	3.723	I	O	|	|	|	3.19
32.250	0.00	0.62	3.718	I	O	|	|	|	3.18
32.333	0.00	0.62	3.714	I	O	|	|	|	3.18
32.417	0.00	0.62	3.710	I	O	|	|	|	3.18
32.500	0.00	0.62	3.706	I	O	|	|	|	3.17
32.583	0.00	0.62	3.702	I	O	|	|	|	3.17
32.667	0.00	0.61	3.697	I	O	|	|	|	3.17
32.750	0.00	0.61	3.693	I	O	|	|	|	3.16
32.833	0.00	0.61	3.689	I	O	|	|	|	3.16
32.917	0.00	0.61	3.685	I	O	|	|	|	3.16
33.000	0.00	0.61	3.680	I	O	|	|	|	3.16
33.083	0.00	0.61	3.676	I	O	|	|	|	3.15
33.167	0.00	0.61	3.672	I	O	|	|	|	3.15
33.250	0.00	0.61	3.668	I	O	|	|	|	3.15
33.333	0.00	0.61	3.663	I	O	|	|	|	3.14
33.417	0.00	0.61	3.659	I	O	|	|	|	3.14
33.500	0.00	0.61	3.655	I	O	|	|	|	3.14
33.583	0.00	0.61	3.651	I	O	|	|	|	3.14
33.667	0.00	0.61	3.647	I	O	|	|	|	3.13
33.750	0.00	0.61	3.642	I	O	|	|	|	3.13
33.833	0.00	0.61	3.638	I	O	|	|	|	3.13
33.917	0.00	0.61	3.634	I	O	|	|	|	3.12
34.000	0.00	0.61	3.630	I	O	|	|	|	3.12
34.083	0.00	0.61	3.626	I	O	|	|	|	3.12
34.167	0.00	0.61	3.621	I	O	|	|	|	3.12
34.250	0.00	0.61	3.617	I	O	|	|	|	3.11
34.333	0.00	0.61	3.613	I	O	|	|	|	3.11
34.417	0.00	0.61	3.609	I	O	|	|	|	3.11
34.500	0.00	0.61	3.605	I	O	|	|	|	3.10
34.583	0.00	0.61	3.600	I	O	|	|	|	3.10
34.667	0.00	0.61	3.596	I	O	|	|	|	3.10
34.750	0.00	0.61	3.592	I	O	|	|	|	3.10
34.833	0.00	0.61	3.588	I	O	|	|	|	3.09
34.917	0.00	0.61	3.584	I	O	|	|	|	3.09
35.000	0.00	0.61	3.580	I	O	|	|	|	3.09
35.083	0.00	0.61	3.575	I	O	|	|	|	3.08
35.167	0.00	0.61	3.571	I	O	|	|	|	3.08
35.250	0.00	0.61	3.567	I	O	|	|	|	3.08
35.333	0.00	0.61	3.563	I	O	|	|	|	3.08
35.417	0.00	0.61	3.559	I	O	|	|	|	3.07
35.500	0.00	0.60	3.555	I	O	|	|	|	3.07
35.583	0.00	0.60	3.550	I	O	|	|	|	3.07
35.667	0.00	0.60	3.546	I	O	|	|	|	3.06
35.750	0.00	0.60	3.542	I	O	|	|	|	3.06
35.833	0.00	0.60	3.538	I	O	|	|	|	3.06
35.917	0.00	0.60	3.534	I	O	|	|	|	3.06
36.000	0.00	0.60	3.530	I	O	|	|	|	3.05
36.083	0.00	0.60	3.525	I	O	|	|	|	3.05
36.167	0.00	0.60	3.521	I	O	|	|	|	3.05
36.250	0.00	0.60	3.517	I	O	|	|	|	3.04
36.333	0.00	0.60	3.513	I	O	|	|	|	3.04
36.417	0.00	0.60	3.509	I	O	|	|	|	3.04
36.500	0.00	0.60	3.505	I	O	|	|	|	3.04
36.583	0.00	0.60	3.501	I	O	|	|	|	3.03
36.667	0.00	0.60	3.496	I	O	|	|	|	3.03
36.750	0.00	0.60	3.492	I	O	|	|	|	3.03

36.833	0.00	0.60	3.488	I O	|	|	|	3.02
36.917	0.00	0.60	3.484	I O	|	|	|	3.02
37.000	0.00	0.60	3.480	I O	|	|	|	3.02
37.083	0.00	0.60	3.476	I O	|	|	|	3.02
37.167	0.00	0.60	3.472	I O	|	|	|	3.01
37.250	0.00	0.60	3.467	I O	|	|	|	3.01
37.333	0.00	0.60	3.463	I O	|	|	|	3.01
37.417	0.00	0.60	3.459	I O	|	|	|	3.00
37.500	0.00	0.60	3.455	I O	|	|	|	3.00
37.583	0.00	0.60	3.451	I O	|	|	|	3.00
37.667	0.00	0.60	3.447	I O	|	|	|	3.00
37.750	0.00	0.60	3.443	I O	|	|	|	2.99
37.833	0.00	0.60	3.439	I O	|	|	|	2.99
37.917	0.00	0.60	3.435	I O	|	|	|	2.99
38.000	0.00	0.60	3.430	I O	|	|	|	2.98
38.083	0.00	0.60	3.426	I O	|	|	|	2.98
38.167	0.00	0.60	3.422	I O	|	|	|	2.98
38.250	0.00	0.60	3.418	I O	|	|	|	2.98
38.333	0.00	0.59	3.414	I O	|	|	|	2.97
38.417	0.00	0.59	3.410	I O	|	|	|	2.97
38.500	0.00	0.59	3.406	I O	|	|	|	2.97
38.583	0.00	0.59	3.402	I O	|	|	|	2.96
38.667	0.00	0.59	3.398	I O	|	|	|	2.96
38.750	0.00	0.59	3.394	I O	|	|	|	2.96
38.833	0.00	0.59	3.389	I O	|	|	|	2.96
38.917	0.00	0.59	3.385	I O	|	|	|	2.95
39.000	0.00	0.59	3.381	I O	|	|	|	2.95
39.083	0.00	0.59	3.377	I O	|	|	|	2.95
39.167	0.00	0.59	3.373	I O	|	|	|	2.94
39.250	0.00	0.59	3.369	I O	|	|	|	2.94
39.333	0.00	0.59	3.365	I O	|	|	|	2.94
39.417	0.00	0.59	3.361	I O	|	|	|	2.93
39.500	0.00	0.59	3.357	I O	|	|	|	2.93
39.583	0.00	0.59	3.353	I O	|	|	|	2.93
39.667	0.00	0.59	3.349	I O	|	|	|	2.93
39.750	0.00	0.59	3.345	I O	|	|	|	2.92
39.833	0.00	0.59	3.341	I O	|	|	|	2.92
39.917	0.00	0.59	3.337	I O	|	|	|	2.92
40.000	0.00	0.59	3.332	I O	|	|	|	2.91
40.083	0.00	0.59	3.328	I O	|	|	|	2.91
40.167	0.00	0.59	3.324	I O	|	|	|	2.91
40.250	0.00	0.59	3.320	I O	|	|	|	2.91
40.333	0.00	0.59	3.316	I O	|	|	|	2.90
40.417	0.00	0.59	3.312	I O	|	|	|	2.90
40.500	0.00	0.59	3.308	I O	|	|	|	2.90
40.583	0.00	0.59	3.304	I O	|	|	|	2.89
40.667	0.00	0.59	3.300	I O	|	|	|	2.89
40.750	0.00	0.59	3.296	I O	|	|	|	2.89
40.833	0.00	0.59	3.292	I O	|	|	|	2.89
40.917	0.00	0.59	3.288	I O	|	|	|	2.88
41.000	0.00	0.58	3.284	I O	|	|	|	2.88
41.083	0.00	0.58	3.280	I O	|	|	|	2.88
41.167	0.00	0.58	3.276	I O	|	|	|	2.87
41.250	0.00	0.58	3.272	I O	|	|	|	2.87
41.333	0.00	0.58	3.268	I O	|	|	|	2.87
41.417	0.00	0.58	3.264	I O	|	|	|	2.87
41.500	0.00	0.58	3.260	I O	|	|	|	2.86
41.583	0.00	0.58	3.256	I O	|	|	|	2.86
41.667	0.00	0.58	3.252	I O	|	|	|	2.86
41.750	0.00	0.58	3.248	I O	|	|	|	2.86
41.833	0.00	0.58	3.244	I O	|	|	|	2.85
41.917	0.00	0.58	3.240	I O	|	|	|	2.85
42.000	0.00	0.58	3.236	I O	|	|	|	2.85
42.083	0.00	0.58	3.232	I O	|	|	|	2.84
42.167	0.00	0.58	3.228	I O	|	|	|	2.84
42.250	0.00	0.58	3.224	I O	|	|	|	2.84
42.333	0.00	0.58	3.220	I O	|	|	|	2.84
42.417	0.00	0.58	3.216	I O	|	|	|	2.83
42.500	0.00	0.58	3.212	I O	|	|	|	2.83
42.583	0.00	0.58	3.208	I O	|	|	|	2.83
42.667	0.00	0.58	3.204	I O	|	|	|	2.82
42.750	0.00	0.58	3.200	I O	|	|	|	2.82
42.833	0.00	0.58	3.196	I O	|	|	|	2.82
42.917	0.00	0.58	3.192	I O	|	|	|	2.82
43.000	0.00	0.58	3.188	I O	|	|	|	2.81

43.083	0.00	0.58	3.184	I O	|	|	|	2.81
43.167	0.00	0.58	3.180	I O	|	|	|	2.81
43.250	0.00	0.58	3.176	I O	|	|	|	2.80
43.333	0.00	0.58	3.172	I O	|	|	|	2.80
43.417	0.00	0.58	3.168	I O	|	|	|	2.80
43.500	0.00	0.58	3.164	I O	|	|	|	2.80
43.583	0.00	0.58	3.160	I O	|	|	|	2.79
43.667	0.00	0.57	3.156	I O	|	|	|	2.79
43.750	0.00	0.57	3.152	I O	|	|	|	2.79
43.833	0.00	0.57	3.148	I O	|	|	|	2.78
43.917	0.00	0.57	3.144	I O	|	|	|	2.78
44.000	0.00	0.57	3.140	I O	|	|	|	2.78
44.083	0.00	0.57	3.136	I O	|	|	|	2.78
44.167	0.00	0.57	3.132	I O	|	|	|	2.77
44.250	0.00	0.57	3.129	I O	|	|	|	2.77
44.333	0.00	0.57	3.125	I O	|	|	|	2.77
44.417	0.00	0.57	3.121	I O	|	|	|	2.77
44.500	0.00	0.57	3.117	I O	|	|	|	2.76
44.583	0.00	0.57	3.113	I O	|	|	|	2.76
44.667	0.00	0.57	3.109	I O	|	|	|	2.76
44.750	0.00	0.57	3.105	I O	|	|	|	2.75
44.833	0.00	0.57	3.101	I O	|	|	|	2.75
44.917	0.00	0.57	3.097	I O	|	|	|	2.75
45.000	0.00	0.57	3.093	I O	|	|	|	2.75
45.083	0.00	0.57	3.089	I O	|	|	|	2.74
45.167	0.00	0.57	3.085	I O	|	|	|	2.74
45.250	0.00	0.57	3.081	I O	|	|	|	2.74
45.333	0.00	0.57	3.077	I O	|	|	|	2.73
45.417	0.00	0.57	3.073	I O	|	|	|	2.73
45.500	0.00	0.57	3.070	I O	|	|	|	2.73
45.583	0.00	0.57	3.066	I O	|	|	|	2.73
45.667	0.00	0.57	3.062	I O	|	|	|	2.72
45.750	0.00	0.57	3.058	I O	|	|	|	2.72
45.833	0.00	0.57	3.054	I O	|	|	|	2.72
45.917	0.00	0.57	3.050	I O	|	|	|	2.72
46.000	0.00	0.57	3.046	I O	|	|	|	2.71
46.083	0.00	0.57	3.042	I O	|	|	|	2.71
46.167	0.00	0.57	3.038	I O	|	|	|	2.71
46.250	0.00	0.57	3.034	I O	|	|	|	2.70
46.333	0.00	0.57	3.031	I O	|	|	|	2.70
46.417	0.00	0.56	3.027	I O	|	|	|	2.70
46.500	0.00	0.56	3.023	I O	|	|	|	2.70
46.583	0.00	0.56	3.019	I O	|	|	|	2.69
46.667	0.00	0.56	3.015	I O	|	|	|	2.69
46.750	0.00	0.56	3.011	I O	|	|	|	2.69
46.833	0.00	0.56	3.007	I O	|	|	|	2.69
46.917	0.00	0.56	3.003	I O	|	|	|	2.68
47.000	0.00	0.56	2.999	I O	|	|	|	2.68
47.083	0.00	0.56	2.996	I O	|	|	|	2.68
47.167	0.00	0.56	2.992	I O	|	|	|	2.67
47.250	0.00	0.56	2.988	I O	|	|	|	2.67
47.333	0.00	0.56	2.984	I O	|	|	|	2.67
47.417	0.00	0.56	2.980	I O	|	|	|	2.67
47.500	0.00	0.56	2.976	I O	|	|	|	2.66
47.583	0.00	0.56	2.972	I O	|	|	|	2.66
47.667	0.00	0.56	2.969	I O	|	|	|	2.66
47.750	0.00	0.56	2.965	I O	|	|	|	2.66
47.833	0.00	0.56	2.961	I O	|	|	|	2.65
47.917	0.00	0.56	2.957	I O	|	|	|	2.65
48.000	0.00	0.56	2.953	I O	|	|	|	2.65
48.083	0.00	0.56	2.949	I O	|	|	|	2.64
48.167	0.00	0.56	2.945	I O	|	|	|	2.64
48.250	0.00	0.56	2.942	I O	|	|	|	2.64
48.333	0.00	0.56	2.938	I O	|	|	|	2.64
48.417	0.00	0.56	2.934	I O	|	|	|	2.63
48.500	0.00	0.56	2.930	I O	|	|	|	2.63
48.583	0.00	0.56	2.926	I O	|	|	|	2.63
48.667	0.00	0.56	2.922	I O	|	|	|	2.63
48.750	0.00	0.56	2.919	I O	|	|	|	2.62
48.833	0.00	0.56	2.915	I O	|	|	|	2.62
48.917	0.00	0.56	2.911	I O	|	|	|	2.62
49.000	0.00	0.56	2.907	I O	|	|	|	2.61
49.083	0.00	0.56	2.903	I O	|	|	|	2.61
49.167	0.00	0.55	2.899	I O	|	|	|	2.61
49.250	0.00	0.55	2.896	I O	|	|	|	2.61

49.333	0.00	0.55	2.892	I O	|	|	|	2.60
49.417	0.00	0.55	2.888	I O	|	|	|	2.60
49.500	0.00	0.55	2.884	I O	|	|	|	2.60
49.583	0.00	0.55	2.880	I O	|	|	|	2.60
49.667	0.00	0.55	2.877	I O	|	|	|	2.59
49.750	0.00	0.55	2.873	I O	|	|	|	2.59
49.833	0.00	0.55	2.869	I O	|	|	|	2.59
49.917	0.00	0.55	2.865	I O	|	|	|	2.58
50.000	0.00	0.55	2.861	I O	|	|	|	2.58
50.083	0.00	0.55	2.857	I O	|	|	|	2.58
50.167	0.00	0.55	2.854	I O	|	|	|	2.58
50.250	0.00	0.55	2.850	I O	|	|	|	2.57
50.333	0.00	0.55	2.846	I O	|	|	|	2.57
50.417	0.00	0.55	2.842	I O	|	|	|	2.57
50.500	0.00	0.55	2.839	I O	|	|	|	2.57
50.583	0.00	0.55	2.835	I O	|	|	|	2.56
50.667	0.00	0.55	2.831	I O	|	|	|	2.56
50.750	0.00	0.55	2.827	I O	|	|	|	2.56
50.833	0.00	0.55	2.823	I O	|	|	|	2.56
50.917	0.00	0.55	2.820	I O	|	|	|	2.55
51.000	0.00	0.55	2.816	I O	|	|	|	2.55
51.083	0.00	0.55	2.812	I O	|	|	|	2.55
51.167	0.00	0.55	2.808	I O	|	|	|	2.54
51.250	0.00	0.55	2.804	I O	|	|	|	2.54
51.333	0.00	0.55	2.801	I O	|	|	|	2.54
51.417	0.00	0.55	2.797	I O	|	|	|	2.54
51.500	0.00	0.55	2.793	I O	|	|	|	2.53
51.583	0.00	0.55	2.789	I O	|	|	|	2.53
51.667	0.00	0.55	2.786	I O	|	|	|	2.53
51.750	0.00	0.55	2.782	I O	|	|	|	2.53
51.833	0.00	0.55	2.778	I O	|	|	|	2.52
51.917	0.00	0.55	2.774	I O	|	|	|	2.52
52.000	0.00	0.54	2.771	I O	|	|	|	2.52
52.083	0.00	0.54	2.767	I O	|	|	|	2.52
52.167	0.00	0.54	2.763	I O	|	|	|	2.51
52.250	0.00	0.54	2.759	I O	|	|	|	2.51
52.333	0.00	0.54	2.756	I O	|	|	|	2.51
52.417	0.00	0.54	2.752	I O	|	|	|	2.50
52.500	0.00	0.54	2.748	I O	|	|	|	2.50
52.583	0.00	0.54	2.744	I O	|	|	|	2.50
52.667	0.00	0.54	2.741	I O	|	|	|	2.50
52.750	0.00	0.54	2.737	I O	|	|	|	2.49
52.833	0.00	0.54	2.733	I O	|	|	|	2.49
52.917	0.00	0.54	2.729	I O	|	|	|	2.49
53.000	0.00	0.54	2.726	I O	|	|	|	2.49
53.083	0.00	0.54	2.722	I O	|	|	|	2.48
53.167	0.00	0.54	2.718	I O	|	|	|	2.48
53.250	0.00	0.54	2.715	I O	|	|	|	2.48
53.333	0.00	0.54	2.711	I O	|	|	|	2.47
53.417	0.00	0.54	2.707	I O	|	|	|	2.47
53.500	0.00	0.54	2.703	I O	|	|	|	2.47
53.583	0.00	0.54	2.700	I O	|	|	|	2.47
53.667	0.00	0.54	2.696	I O	|	|	|	2.46
53.750	0.00	0.54	2.692	I O	|	|	|	2.46
53.833	0.00	0.54	2.689	I O	|	|	|	2.46
53.917	0.00	0.54	2.685	I O	|	|	|	2.46
54.000	0.00	0.54	2.681	I O	|	|	|	2.45
54.083	0.00	0.54	2.677	I O	|	|	|	2.45
54.167	0.00	0.54	2.674	I O	|	|	|	2.45
54.250	0.00	0.54	2.670	I O	|	|	|	2.44
54.333	0.00	0.54	2.666	I O	|	|	|	2.44
54.417	0.00	0.54	2.663	I O	|	|	|	2.44
54.500	0.00	0.54	2.659	I O	|	|	|	2.44
54.583	0.00	0.53	2.655	I O	|	|	|	2.43
54.667	0.00	0.53	2.652	I O	|	|	|	2.43
54.750	0.00	0.53	2.648	I O	|	|	|	2.43
54.833	0.00	0.53	2.644	I O	|	|	|	2.43
54.917	0.00	0.53	2.641	I O	|	|	|	2.42
55.000	0.00	0.53	2.637	I O	|	|	|	2.42
55.083	0.00	0.53	2.633	I O	|	|	|	2.42
55.167	0.00	0.53	2.630	I O	|	|	|	2.42
55.250	0.00	0.53	2.626	I O	|	|	|	2.41
55.333	0.00	0.53	2.622	I O	|	|	|	2.41
55.417	0.00	0.53	2.619	I O	|	|	|	2.41
55.500	0.00	0.53	2.615	I O	|	|	|	2.40

55.583	0.00	0.53	2.611	I O	|	|	|	2.40
55.667	0.00	0.53	2.608	I O	|	|	|	2.40
55.750	0.00	0.53	2.604	I O	|	|	|	2.40
55.833	0.00	0.53	2.600	I O	|	|	|	2.39
55.917	0.00	0.53	2.597	I O	|	|	|	2.39
56.000	0.00	0.53	2.593	I O	|	|	|	2.39
56.083	0.00	0.53	2.589	I O	|	|	|	2.39
56.167	0.00	0.53	2.586	I O	|	|	|	2.38
56.250	0.00	0.53	2.582	I O	|	|	|	2.38
56.333	0.00	0.53	2.578	I O	|	|	|	2.38
56.417	0.00	0.53	2.575	I O	|	|	|	2.37
56.500	0.00	0.53	2.571	I O	|	|	|	2.37
56.583	0.00	0.53	2.568	I O	|	|	|	2.37
56.667	0.00	0.53	2.564	I O	|	|	|	2.37
56.750	0.00	0.53	2.560	I O	|	|	|	2.36
56.833	0.00	0.53	2.557	I O	|	|	|	2.36
56.917	0.00	0.53	2.553	I O	|	|	|	2.36
57.000	0.00	0.53	2.549	I O	|	|	|	2.36
57.083	0.00	0.53	2.546	I O	|	|	|	2.35
57.167	0.00	0.52	2.542	I O	|	|	|	2.35
57.250	0.00	0.52	2.539	I O	|	|	|	2.35
57.333	0.00	0.52	2.535	I O	|	|	|	2.35
57.417	0.00	0.52	2.531	I O	|	|	|	2.34
57.500	0.00	0.52	2.528	I O	|	|	|	2.34
57.583	0.00	0.52	2.524	I O	|	|	|	2.34
57.667	0.00	0.52	2.521	I O	|	|	|	2.33
57.750	0.00	0.52	2.517	I O	|	|	|	2.33
57.833	0.00	0.52	2.513	I O	|	|	|	2.33
57.917	0.00	0.52	2.510	I O	|	|	|	2.33
58.000	0.00	0.52	2.506	I O	|	|	|	2.32
58.083	0.00	0.52	2.503	I O	|	|	|	2.32
58.167	0.00	0.52	2.499	I O	|	|	|	2.32
58.250	0.00	0.52	2.495	I O	|	|	|	2.32
58.333	0.00	0.52	2.492	I O	|	|	|	2.31
58.417	0.00	0.52	2.488	I O	|	|	|	2.31
58.500	0.00	0.52	2.485	I O	|	|	|	2.31
58.583	0.00	0.52	2.481	I O	|	|	|	2.31
58.667	0.00	0.52	2.477	I O	|	|	|	2.30
58.750	0.00	0.52	2.474	I O	|	|	|	2.30
58.833	0.00	0.52	2.470	I O	|	|	|	2.30
58.917	0.00	0.52	2.467	I O	|	|	|	2.30
59.000	0.00	0.52	2.463	I O	|	|	|	2.29
59.083	0.00	0.52	2.460	I O	|	|	|	2.29
59.167	0.00	0.52	2.456	I O	|	|	|	2.29
59.250	0.00	0.52	2.453	I O	|	|	|	2.28
59.333	0.00	0.52	2.449	I O	|	|	|	2.28
59.417	0.00	0.52	2.445	I O	|	|	|	2.28
59.500	0.00	0.52	2.442	I O	|	|	|	2.28
59.583	0.00	0.52	2.438	I O	|	|	|	2.27
59.667	0.00	0.52	2.435	I O	|	|	|	2.27
59.750	0.00	0.51	2.431	I O	|	|	|	2.27
59.833	0.00	0.51	2.428	I O	|	|	|	2.27
59.917	0.00	0.51	2.424	I O	|	|	|	2.26
60.000	0.00	0.51	2.421	I O	|	|	|	2.26
60.083	0.00	0.51	2.417	I O	|	|	|	2.26
60.167	0.00	0.51	2.414	IO	|	|	|	2.26
60.250	0.00	0.51	2.410	IO	|	|	|	2.25
60.333	0.00	0.51	2.406	IO	|	|	|	2.25
60.417	0.00	0.51	2.403	IO	|	|	|	2.25
60.500	0.00	0.51	2.399	IO	|	|	|	2.25
60.583	0.00	0.51	2.396	IO	|	|	|	2.24
60.667	0.00	0.51	2.392	IO	|	|	|	2.24
60.750	0.00	0.51	2.389	IO	|	|	|	2.24
60.833	0.00	0.51	2.385	IO	|	|	|	2.24
60.917	0.00	0.51	2.382	IO	|	|	|	2.23
61.000	0.00	0.51	2.378	IO	|	|	|	2.23
61.083	0.00	0.51	2.375	IO	|	|	|	2.23
61.167	0.00	0.51	2.371	IO	|	|	|	2.23
61.250	0.00	0.51	2.368	IO	|	|	|	2.22
61.333	0.00	0.51	2.364	IO	|	|	|	2.22
61.417	0.00	0.51	2.361	IO	|	|	|	2.22
61.500	0.00	0.51	2.357	IO	|	|	|	2.21
61.583	0.00	0.51	2.354	IO	|	|	|	2.21
61.667	0.00	0.51	2.350	IO	|	|	|	2.21
61.750	0.00	0.51	2.347	IO	|	|	|	2.21

61.833	0.00	0.51	2.343	IO					2.20
61.917	0.00	0.51	2.340	IO					2.20
62.000	0.00	0.51	2.336	IO					2.20
62.083	0.00	0.51	2.333	IO					2.20
62.167	0.00	0.51	2.329	IO					2.19
62.250	0.00	0.51	2.326	IO					2.19
62.333	0.00	0.51	2.322	IO					2.19
62.417	0.00	0.50	2.319	IO					2.19
62.500	0.00	0.50	2.315	IO					2.18
62.583	0.00	0.50	2.312	IO					2.18
62.667	0.00	0.50	2.308	IO					2.18
62.750	0.00	0.50	2.305	IO					2.18
62.833	0.00	0.50	2.302	IO					2.17
62.917	0.00	0.50	2.298	IO					2.17
63.000	0.00	0.50	2.295	IO					2.17
63.083	0.00	0.50	2.291	IO					2.17
63.167	0.00	0.50	2.288	IO					2.16
63.250	0.00	0.50	2.284	IO					2.16
63.333	0.00	0.50	2.281	IO					2.16
63.417	0.00	0.50	2.277	IO					2.16
63.500	0.00	0.50	2.274	IO					2.15
63.583	0.00	0.50	2.270	IO					2.15
63.667	0.00	0.50	2.267	IO					2.15
63.750	0.00	0.50	2.264	IO					2.15
63.833	0.00	0.50	2.260	IO					2.14
63.917	0.00	0.50	2.257	IO					2.14
64.000	0.00	0.50	2.253	IO					2.14
64.083	0.00	0.50	2.250	IO					2.14
64.167	0.00	0.50	2.246	IO					2.13
64.250	0.00	0.50	2.243	IO					2.13
64.333	0.00	0.50	2.239	IO					2.13
64.417	0.00	0.50	2.236	IO					2.13
64.500	0.00	0.50	2.233	IO					2.12
64.583	0.00	0.50	2.229	IO					2.12
64.667	0.00	0.50	2.226	IO					2.12
64.750	0.00	0.50	2.222	IO					2.12
64.833	0.00	0.50	2.219	IO					2.11
64.917	0.00	0.50	2.216	IO					2.11
65.000	0.00	0.50	2.212	IO					2.11
65.083	0.00	0.49	2.209	IO					2.11
65.167	0.00	0.49	2.205	IO					2.10
65.250	0.00	0.49	2.202	IO					2.10
65.333	0.00	0.49	2.198	IO					2.10
65.417	0.00	0.49	2.195	IO					2.10
65.500	0.00	0.49	2.192	IO					2.09
65.583	0.00	0.49	2.188	IO					2.09
65.667	0.00	0.49	2.185	IO					2.09
65.750	0.00	0.49	2.182	IO					2.09
65.833	0.00	0.49	2.178	IO					2.08
65.917	0.00	0.49	2.175	IO					2.08
66.000	0.00	0.49	2.171	IO					2.08
66.083	0.00	0.49	2.168	IO					2.08
66.167	0.00	0.49	2.165	IO					2.07
66.250	0.00	0.49	2.161	IO					2.07
66.333	0.00	0.49	2.158	IO					2.07
66.417	0.00	0.49	2.154	IO					2.07
66.500	0.00	0.49	2.151	IO					2.06
66.583	0.00	0.49	2.148	IO					2.06
66.667	0.00	0.49	2.144	IO					2.06
66.750	0.00	0.49	2.141	IO					2.06
66.833	0.00	0.49	2.138	IO					2.05
66.917	0.00	0.49	2.134	IO					2.05
67.000	0.00	0.49	2.131	IO					2.05
67.083	0.00	0.49	2.128	IO					2.05
67.167	0.00	0.49	2.124	IO					2.04
67.250	0.00	0.49	2.121	IO					2.04
67.333	0.00	0.49	2.117	IO					2.04
67.417	0.00	0.49	2.114	IO					2.04
67.500	0.00	0.49	2.111	IO					2.03
67.583	0.00	0.49	2.107	IO					2.03
67.667	0.00	0.49	2.104	IO					2.03
67.750	0.00	0.49	2.101	IO					2.03
67.833	0.00	0.48	2.097	IO					2.02
67.917	0.00	0.48	2.094	IO					2.02
68.000	0.00	0.48	2.091	IO					2.02

68.083	0.00	0.48	2.087	IO					2.02
68.167	0.00	0.48	2.084	IO					2.01
68.250	0.00	0.48	2.081	IO					2.01
68.333	0.00	0.48	2.077	IO					2.01
68.417	0.00	0.48	2.074	IO					2.01
68.500	0.00	0.48	2.071	IO					2.00
68.583	0.00	0.48	2.067	IO					2.00
68.667	0.00	0.48	2.064	IO					2.00
68.750	0.00	0.48	2.061	IO					2.00
68.833	0.00	0.48	2.057	IO					1.99
68.917	0.00	0.48	2.054	IO					1.99
69.000	0.00	0.48	2.051	IO					1.99
69.083	0.00	0.48	2.048	IO					1.99
69.167	0.00	0.48	2.044	IO					1.98
69.250	0.00	0.48	2.041	IO					1.98
69.333	0.00	0.48	2.038	IO					1.98
69.417	0.00	0.48	2.034	IO					1.98
69.500	0.00	0.48	2.031	IO					1.97
69.583	0.00	0.48	2.028	IO					1.97
69.667	0.00	0.48	2.024	IO					1.97
69.750	0.00	0.48	2.021	IO					1.97
69.833	0.00	0.48	2.018	IO					1.96
69.917	0.00	0.48	2.015	IO					1.96
70.000	0.00	0.48	2.011	IO					1.96
70.083	0.00	0.48	2.008	IO					1.96
70.167	0.00	0.48	2.005	IO					1.95
70.250	0.00	0.48	2.001	IO					1.95
70.333	0.00	0.47	1.998	IO					1.95
70.417	0.00	0.47	1.995	IO					1.95
70.500	0.00	0.47	1.992	IO					1.94
70.583	0.00	0.47	1.988	IO					1.94
70.667	0.00	0.47	1.985	IO					1.94
70.750	0.00	0.47	1.982	IO					1.94
70.833	0.00	0.47	1.979	IO					1.93
70.917	0.00	0.47	1.975	IO					1.93
71.000	0.00	0.47	1.972	IO					1.93
71.083	0.00	0.47	1.969	IO					1.92
71.167	0.00	0.47	1.966	IO					1.92
71.250	0.00	0.47	1.962	IO					1.92
71.333	0.00	0.47	1.959	IO					1.92
71.417	0.00	0.47	1.956	IO					1.91
71.500	0.00	0.47	1.953	IO					1.91
71.583	0.00	0.47	1.949	IO					1.91
71.667	0.00	0.47	1.946	IO					1.91
71.750	0.00	0.47	1.943	IO					1.90
71.833	0.00	0.47	1.940	IO					1.90
71.917	0.00	0.47	1.937	IO					1.90
72.000	0.00	0.47	1.933	IO					1.90
72.083	0.00	0.47	1.930	IO					1.89
72.167	0.00	0.47	1.927	IO					1.89
72.250	0.00	0.47	1.924	IO					1.89
72.333	0.00	0.47	1.920	IO					1.89
72.417	0.00	0.47	1.917	IO					1.88
72.500	0.00	0.47	1.914	IO					1.88
72.583	0.00	0.47	1.911	IO					1.88
72.667	0.00	0.46	1.908	IO					1.88
72.750	0.00	0.46	1.904	IO					1.87
72.833	0.00	0.46	1.901	IO					1.87
72.917	0.00	0.46	1.898	IO					1.87
73.000	0.00	0.46	1.895	IO					1.87
73.083	0.00	0.46	1.892	IO					1.86
73.167	0.00	0.46	1.888	IO					1.86
73.250	0.00	0.46	1.885	IO					1.86
73.333	0.00	0.46	1.882	IO					1.86
73.417	0.00	0.46	1.879	IO					1.85
73.500	0.00	0.46	1.876	IO					1.85
73.583	0.00	0.46	1.873	IO					1.85
73.667	0.00	0.46	1.869	IO					1.85
73.750	0.00	0.46	1.866	IO					1.84
73.833	0.00	0.46	1.863	IO					1.84
73.917	0.00	0.46	1.860	IO					1.84
74.000	0.00	0.46	1.857	IO					1.84
74.083	0.00	0.46	1.854	IO					1.83
74.167	0.00	0.46	1.850	IO					1.83
74.250	0.00	0.46	1.847	IO					1.83

74.333	0.00	0.46	1.844	IO				1.83
74.417	0.00	0.46	1.841	IO				1.82
74.500	0.00	0.46	1.838	IO				1.82
74.583	0.00	0.46	1.835	IO				1.82
74.667	0.00	0.46	1.831	IO				1.82
74.750	0.00	0.46	1.828	IO				1.82
74.833	0.00	0.46	1.825	IO				1.81
74.917	0.00	0.46	1.822	IO				1.81
75.000	0.00	0.46	1.819	IO				1.81
75.083	0.00	0.45	1.816	IO				1.81
75.167	0.00	0.45	1.813	IO				1.80
75.250	0.00	0.45	1.810	IO				1.80
75.333	0.00	0.45	1.806	IO				1.80
75.417	0.00	0.45	1.803	IO				1.80
75.500	0.00	0.45	1.800	IO				1.79
75.583	0.00	0.45	1.797	IO				1.79
75.667	0.00	0.45	1.794	IO				1.79
75.750	0.00	0.45	1.791	IO				1.79
75.833	0.00	0.45	1.788	IO				1.78
75.917	0.00	0.45	1.785	IO				1.78
76.000	0.00	0.45	1.781	IO				1.78
76.083	0.00	0.45	1.778	IO				1.78
76.167	0.00	0.45	1.775	IO				1.77
76.250	0.00	0.45	1.772	IO				1.77
76.333	0.00	0.45	1.769	IO				1.77
76.417	0.00	0.45	1.766	IO				1.77
76.500	0.00	0.45	1.763	IO				1.76
76.583	0.00	0.45	1.760	IO				1.76
76.667	0.00	0.45	1.757	IO				1.76
76.750	0.00	0.45	1.754	IO				1.76
76.833	0.00	0.45	1.751	IO				1.75
76.917	0.00	0.45	1.747	IO				1.75
77.000	0.00	0.45	1.744	IO				1.75
77.083	0.00	0.45	1.741	IO				1.75
77.167	0.00	0.45	1.738	IO				1.74
77.250	0.00	0.45	1.735	IO				1.74
77.333	0.00	0.45	1.732	IO				1.74
77.417	0.00	0.45	1.729	IO				1.74
77.500	0.00	0.44	1.726	IO				1.74
77.583	0.00	0.44	1.723	IO				1.73
77.667	0.00	0.44	1.720	IO				1.73
77.750	0.00	0.44	1.717	IO				1.73
77.833	0.00	0.44	1.714	IO				1.73
77.917	0.00	0.44	1.711	IO				1.72
78.000	0.00	0.44	1.708	IO				1.72
78.083	0.00	0.44	1.705	IO				1.72
78.167	0.00	0.44	1.702	IO				1.72
78.250	0.00	0.44	1.698	IO				1.71
78.333	0.00	0.44	1.695	IO				1.71
78.417	0.00	0.44	1.692	IO				1.71
78.500	0.00	0.44	1.689	IO				1.71
78.583	0.00	0.44	1.686	IO				1.70
78.667	0.00	0.44	1.683	IO				1.70
78.750	0.00	0.44	1.680	IO				1.70
78.833	0.00	0.44	1.677	IO				1.70
78.917	0.00	0.44	1.674	IO				1.69
79.000	0.00	0.44	1.671	IO				1.69
79.083	0.00	0.44	1.668	IO				1.69
79.167	0.00	0.44	1.665	IO				1.69
79.250	0.00	0.44	1.662	IO				1.69
79.333	0.00	0.44	1.659	IO				1.68
79.417	0.00	0.44	1.656	IO				1.68
79.500	0.00	0.44	1.653	IO				1.68
79.583	0.00	0.44	1.650	IO				1.68
79.667	0.00	0.44	1.647	IO				1.67
79.750	0.00	0.44	1.644	IO				1.67
79.833	0.00	0.44	1.641	IO				1.67
79.917	0.00	0.44	1.638	IO				1.67
80.000	0.00	0.43	1.635	IO				1.66
80.083	0.00	0.43	1.632	IO				1.66
80.167	0.00	0.43	1.629	IO				1.66
80.250	0.00	0.43	1.626	IO				1.66
80.333	0.00	0.43	1.623	IO				1.65
80.417	0.00	0.43	1.620	IO				1.65
80.500	0.00	0.43	1.617	IO				1.65

80.583	0.00	0.43	1.614	IO					1.65
80.667	0.00	0.43	1.611	IO					1.65
80.750	0.00	0.43	1.608	IO					1.64
80.833	0.00	0.43	1.605	IO					1.64
80.917	0.00	0.43	1.602	IO					1.64
81.000	0.00	0.43	1.599	IO					1.64
81.083	0.00	0.43	1.596	IO					1.63
81.167	0.00	0.43	1.593	IO					1.63
81.250	0.00	0.43	1.590	IO					1.63
81.333	0.00	0.43	1.587	IO					1.63
81.417	0.00	0.43	1.584	IO					1.62
81.500	0.00	0.43	1.582	IO					1.62
81.583	0.00	0.43	1.579	IO					1.62
81.667	0.00	0.43	1.576	IO					1.62
81.750	0.00	0.43	1.573	IO					1.62
81.833	0.00	0.43	1.570	IO					1.61
81.917	0.00	0.43	1.567	IO					1.61
82.000	0.00	0.43	1.564	IO					1.61
82.083	0.00	0.43	1.561	IO					1.61
82.167	0.00	0.43	1.558	IO					1.60
82.250	0.00	0.43	1.555	IO					1.60
82.333	0.00	0.43	1.552	IO					1.60
82.417	0.00	0.43	1.549	IO					1.60
82.500	0.00	0.43	1.546	IO					1.59
82.583	0.00	0.42	1.543	IO					1.59
82.667	0.00	0.42	1.540	IO					1.59
82.750	0.00	0.42	1.537	IO					1.59
82.833	0.00	0.42	1.535	IO					1.59
82.917	0.00	0.42	1.532	IO					1.58
83.000	0.00	0.42	1.529	IO					1.58
83.083	0.00	0.42	1.526	IO					1.58
83.167	0.00	0.42	1.523	IO					1.58
83.250	0.00	0.42	1.520	IO					1.57
83.333	0.00	0.42	1.517	IO					1.57
83.417	0.00	0.42	1.514	IO					1.57
83.500	0.00	0.42	1.511	IO					1.57
83.583	0.00	0.42	1.508	IO					1.57
83.667	0.00	0.42	1.505	IO					1.56
83.750	0.00	0.42	1.503	IO					1.56
83.833	0.00	0.42	1.500	IO					1.56
83.917	0.00	0.42	1.497	IO					1.56
84.000	0.00	0.42	1.494	IO					1.55
84.083	0.00	0.42	1.491	IO					1.55
84.167	0.00	0.42	1.488	IO					1.55
84.250	0.00	0.42	1.485	IO					1.55
84.333	0.00	0.42	1.482	IO					1.54
84.417	0.00	0.42	1.479	IO					1.54
84.500	0.00	0.42	1.477	IO					1.54
84.583	0.00	0.42	1.474	IO					1.54
84.667	0.00	0.42	1.471	IO					1.54
84.750	0.00	0.42	1.468	IO					1.53
84.833	0.00	0.42	1.465	IO					1.53
84.917	0.00	0.42	1.462	IO					1.53
85.000	0.00	0.42	1.459	IO					1.53
85.083	0.00	0.42	1.456	IO					1.52
85.167	0.00	0.42	1.454	IO					1.52
85.250	0.00	0.41	1.451	IO					1.52
85.333	0.00	0.41	1.448	IO					1.52
85.417	0.00	0.41	1.445	IO					1.52
85.500	0.00	0.41	1.442	IO					1.51
85.583	0.00	0.41	1.439	IO					1.51
85.667	0.00	0.41	1.436	IO					1.51
85.750	0.00	0.41	1.434	IO					1.51
85.833	0.00	0.41	1.431	IO					1.50
85.917	0.00	0.41	1.428	IO					1.50
86.000	0.00	0.41	1.425	IO					1.50
86.083	0.00	0.41	1.422	IO					1.50
86.167	0.00	0.41	1.419	IO					1.50
86.250	0.00	0.41	1.417	IO					1.49
86.333	0.00	0.41	1.414	IO					1.49
86.417	0.00	0.41	1.411	IO					1.49
86.500	0.00	0.41	1.408	IO					1.49
86.583	0.00	0.41	1.405	IO					1.48
86.667	0.00	0.41	1.403	IO					1.48
86.750	0.00	0.41	1.400	IO					1.48

86.833	0.00	0.41	1.397	IO	|	|	|	1.48
86.917	0.00	0.41	1.394	IO	|	|	|	1.47
87.000	0.00	0.41	1.391	IO	|	|	|	1.47
87.083	0.00	0.41	1.388	IO	|	|	|	1.47
87.167	0.00	0.41	1.386	IO	|	|	|	1.47
87.250	0.00	0.41	1.383	IO	|	|	|	1.46
87.333	0.00	0.41	1.380	IO	|	|	|	1.46
87.417	0.00	0.41	1.377	IO	|	|	|	1.46
87.500	0.00	0.40	1.374	IO	|	|	|	1.46
87.583	0.00	0.40	1.372	IO	|	|	|	1.45
87.667	0.00	0.40	1.369	IO	|	|	|	1.45
87.750	0.00	0.40	1.366	IO	|	|	|	1.45
87.833	0.00	0.40	1.363	IO	|	|	|	1.45
87.917	0.00	0.40	1.361	IO	|	|	|	1.44
88.000	0.00	0.40	1.358	IO	|	|	|	1.44
88.083	0.00	0.40	1.355	IO	|	|	|	1.44
88.167	0.00	0.40	1.352	IO	|	|	|	1.44
88.250	0.00	0.40	1.350	IO	|	|	|	1.44
88.333	0.00	0.40	1.347	IO	|	|	|	1.43
88.417	0.00	0.40	1.344	IO	|	|	|	1.43
88.500	0.00	0.40	1.341	IO	|	|	|	1.43
88.583	0.00	0.40	1.339	IO	|	|	|	1.43
88.667	0.00	0.40	1.336	IO	|	|	|	1.42
88.750	0.00	0.40	1.333	IO	|	|	|	1.42
88.833	0.00	0.40	1.330	IO	|	|	|	1.42
88.917	0.00	0.40	1.328	IO	|	|	|	1.42
89.000	0.00	0.40	1.325	IO	|	|	|	1.41
89.083	0.00	0.40	1.322	IO	|	|	|	1.41
89.167	0.00	0.40	1.319	IO	|	|	|	1.41
89.250	0.00	0.40	1.317	IO	|	|	|	1.41
89.333	0.00	0.40	1.314	IO	|	|	|	1.40
89.417	0.00	0.40	1.311	IO	|	|	|	1.40
89.500	0.00	0.40	1.308	IO	|	|	|	1.40
89.583	0.00	0.39	1.306	IO	|	|	|	1.40
89.667	0.00	0.39	1.303	IO	|	|	|	1.40
89.750	0.00	0.39	1.300	IO	|	|	|	1.39
89.833	0.00	0.39	1.298	IO	|	|	|	1.39
89.917	0.00	0.39	1.295	IO	|	|	|	1.39
90.000	0.00	0.39	1.292	IO	|	|	|	1.39
90.083	0.00	0.39	1.289	IO	|	|	|	1.38
90.167	0.00	0.39	1.287	IO	|	|	|	1.38
90.250	0.00	0.39	1.284	IO	|	|	|	1.38
90.333	0.00	0.39	1.281	IO	|	|	|	1.38
90.417	0.00	0.39	1.279	IO	|	|	|	1.37
90.500	0.00	0.39	1.276	IO	|	|	|	1.37
90.583	0.00	0.39	1.273	IO	|	|	|	1.37
90.667	0.00	0.39	1.271	IO	|	|	|	1.37
90.750	0.00	0.39	1.268	IO	|	|	|	1.37
90.833	0.00	0.39	1.265	IO	|	|	|	1.36
90.917	0.00	0.39	1.263	IO	|	|	|	1.36
91.000	0.00	0.39	1.260	IO	|	|	|	1.36
91.083	0.00	0.39	1.257	IO	|	|	|	1.36
91.167	0.00	0.39	1.255	IO	|	|	|	1.35
91.250	0.00	0.39	1.252	IO	|	|	|	1.35
91.333	0.00	0.39	1.249	IO	|	|	|	1.35
91.417	0.00	0.39	1.247	IO	|	|	|	1.35
91.500	0.00	0.39	1.244	IO	|	|	|	1.34
91.583	0.00	0.39	1.241	IO	|	|	|	1.34
91.667	0.00	0.38	1.239	IO	|	|	|	1.34
91.750	0.00	0.38	1.236	IO	|	|	|	1.34
91.833	0.00	0.38	1.233	IO	|	|	|	1.34
91.917	0.00	0.38	1.231	IO	|	|	|	1.33
92.000	0.00	0.38	1.228	IO	|	|	|	1.33
92.083	0.00	0.38	1.225	IO	|	|	|	1.33
92.167	0.00	0.38	1.223	IO	|	|	|	1.33
92.250	0.00	0.38	1.220	IO	|	|	|	1.32
92.333	0.00	0.38	1.217	IO	|	|	|	1.32
92.417	0.00	0.38	1.215	IO	|	|	|	1.32
92.500	0.00	0.38	1.212	IO	|	|	|	1.32
92.583	0.00	0.38	1.210	IO	|	|	|	1.32
92.667	0.00	0.38	1.207	IO	|	|	|	1.31
92.750	0.00	0.38	1.204	IO	|	|	|	1.31
92.833	0.00	0.38	1.202	IO	|	|	|	1.31
92.917	0.00	0.38	1.199	IO	|	|	|	1.31
93.000	0.00	0.38	1.197	IO	|	|	|	1.30

93.083	0.00	0.38	1.194	IO				1.30
93.167	0.00	0.38	1.191	IO				1.30
93.250	0.00	0.38	1.189	IO				1.30
93.333	0.00	0.38	1.186	IO				1.30
93.417	0.00	0.38	1.184	IO				1.29
93.500	0.00	0.38	1.181	IO				1.29
93.583	0.00	0.38	1.178	IO				1.29
93.667	0.00	0.38	1.176	IO				1.29
93.750	0.00	0.38	1.173	IO				1.28
93.833	0.00	0.37	1.171	IO				1.28
93.917	0.00	0.37	1.168	IO				1.28
94.000	0.00	0.37	1.165	IO				1.28
94.083	0.00	0.37	1.163	IO				1.28
94.167	0.00	0.37	1.160	IO				1.27
94.250	0.00	0.37	1.158	IO				1.27
94.333	0.00	0.37	1.155	IO				1.27
94.417	0.00	0.37	1.153	IO				1.27
94.500	0.00	0.37	1.150	IO				1.26
94.583	0.00	0.37	1.147	IO				1.26
94.667	0.00	0.37	1.145	IO				1.26
94.750	0.00	0.37	1.142	IO				1.26
94.833	0.00	0.37	1.140	IO				1.26
94.917	0.00	0.37	1.137	IO				1.25
95.000	0.00	0.37	1.135	IO				1.25
95.083	0.00	0.37	1.132	IO				1.25
95.167	0.00	0.37	1.130	IO				1.25
95.250	0.00	0.37	1.127	IO				1.24
95.333	0.00	0.37	1.124	IO				1.24
95.417	0.00	0.37	1.122	IO				1.24
95.500	0.00	0.37	1.119	IO				1.24
95.583	0.00	0.37	1.117	IO				1.24
95.667	0.00	0.37	1.114	IO				1.23
95.750	0.00	0.37	1.112	IO				1.23
95.833	0.00	0.37	1.109	IO				1.23
95.917	0.00	0.37	1.107	IO				1.23
96.000	0.00	0.37	1.104	IO				1.23
96.083	0.00	0.36	1.102	IO				1.22
96.167	0.00	0.36	1.099	IO				1.22
96.250	0.00	0.36	1.097	IO				1.22
96.333	0.00	0.36	1.094	IO				1.22
96.417	0.00	0.36	1.092	IO				1.21
96.500	0.00	0.36	1.089	IO				1.21
96.583	0.00	0.36	1.087	IO				1.21
96.667	0.00	0.36	1.084	IO				1.21
96.750	0.00	0.36	1.082	IO				1.21
96.833	0.00	0.36	1.079	IO				1.20
96.917	0.00	0.36	1.077	IO				1.20
97.000	0.00	0.36	1.074	IO				1.20
97.083	0.00	0.36	1.072	IO				1.20
97.167	0.00	0.36	1.069	IO				1.20
97.250	0.00	0.36	1.067	IO				1.19
97.333	0.00	0.36	1.064	IO				1.19
97.417	0.00	0.36	1.062	IO				1.19
97.500	0.00	0.36	1.059	IO				1.19
97.583	0.00	0.36	1.057	IO				1.18
97.667	0.00	0.36	1.054	IO				1.18
97.750	0.00	0.36	1.052	IO				1.18
97.833	0.00	0.36	1.050	IO				1.18
97.917	0.00	0.36	1.047	IO				1.18
98.000	0.00	0.36	1.045	IO				1.17
98.083	0.00	0.36	1.042	IO				1.17
98.167	0.00	0.36	1.040	IO				1.17
98.250	0.00	0.36	1.037	IO				1.17
98.333	0.00	0.36	1.035	IO				1.17
98.417	0.00	0.35	1.032	IO				1.16
98.500	0.00	0.35	1.030	IO				1.16
98.583	0.00	0.35	1.027	IO				1.16
98.667	0.00	0.35	1.025	IO				1.16
98.750	0.00	0.35	1.023	IO				1.16
98.833	0.00	0.35	1.020	IO				1.15
98.917	0.00	0.35	1.018	IO				1.15
99.000	0.00	0.35	1.015	IO				1.15
99.083	0.00	0.35	1.013	IO				1.15
99.167	0.00	0.35	1.010	IO				1.15
99.250	0.00	0.35	1.008	IO				1.14

99.333	0.00	0.35	1.006	IO					1.14
99.417	0.00	0.35	1.003	IO					1.14
99.500	0.00	0.35	1.001	IO					1.14
99.583	0.00	0.35	0.998	IO					1.13
99.667	0.00	0.35	0.996	IO					1.13
99.750	0.00	0.35	0.994	IO					1.13
99.833	0.00	0.35	0.991	IO					1.13
99.917	0.00	0.35	0.989	IO					1.13
100.000	0.00	0.35	0.986	IO					1.12
100.083	0.00	0.35	0.984	IO					1.12
100.167	0.00	0.35	0.982	IO					1.12
100.250	0.00	0.35	0.979	IO					1.12
100.333	0.00	0.35	0.977	IO					1.12
100.417	0.00	0.35	0.974	IO					1.11
100.500	0.00	0.35	0.972	IO					1.11
100.583	0.00	0.35	0.970	IO					1.11
100.667	0.00	0.35	0.967	IO					1.11
100.750	0.00	0.35	0.965	IO					1.11
100.833	0.00	0.34	0.963	IO					1.10
100.917	0.00	0.34	0.960	IO					1.10
101.000	0.00	0.34	0.958	IO					1.10
101.083	0.00	0.34	0.955	IO					1.10
101.167	0.00	0.34	0.953	IO					1.10
101.250	0.00	0.34	0.951	IO					1.09
101.333	0.00	0.34	0.948	IO					1.09
101.417	0.00	0.34	0.946	IO					1.09
101.500	0.00	0.34	0.944	IO					1.09
101.583	0.00	0.34	0.941	IO					1.09
101.667	0.00	0.34	0.939	IO					1.08
101.750	0.00	0.34	0.937	IO					1.08
101.833	0.00	0.34	0.934	IO					1.08
101.917	0.00	0.34	0.932	IO					1.08
102.000	0.00	0.34	0.930	IO					1.08
102.083	0.00	0.34	0.927	IO					1.07
102.167	0.00	0.34	0.925	IO					1.07
102.250	0.00	0.34	0.923	IO					1.07
102.333	0.00	0.34	0.920	IO					1.07
102.417	0.00	0.34	0.918	IO					1.07
102.500	0.00	0.34	0.916	IO					1.06
102.583	0.00	0.34	0.913	IO					1.06
102.667	0.00	0.34	0.911	IO					1.06
102.750	0.00	0.34	0.909	IO					1.06
102.833	0.00	0.34	0.906	IO					1.06
102.917	0.00	0.34	0.904	IO					1.05
103.000	0.00	0.34	0.902	IO					1.05
103.083	0.00	0.34	0.899	IO					1.05
103.167	0.00	0.34	0.897	IO					1.05
103.250	0.00	0.33	0.895	IO					1.05
103.333	0.00	0.33	0.892	IO					1.04
103.417	0.00	0.33	0.890	IO					1.04
103.500	0.00	0.33	0.888	IO					1.04
103.583	0.00	0.33	0.885	IO					1.04
103.667	0.00	0.33	0.883	IO					1.04
103.750	0.00	0.33	0.881	IO					1.03
103.833	0.00	0.33	0.879	IO					1.03
103.917	0.00	0.33	0.876	IO					1.03
104.000	0.00	0.33	0.874	IO					1.03
104.083	0.00	0.33	0.872	IO					1.03
104.167	0.00	0.33	0.869	IO					1.02
104.250	0.00	0.33	0.867	IO					1.02
104.333	0.00	0.33	0.865	IO					1.02
104.417	0.00	0.33	0.863	IO					1.02
104.500	0.00	0.33	0.860	IO					1.02
104.583	0.00	0.33	0.858	IO					1.01
104.667	0.00	0.33	0.856	IO					1.01
104.750	0.00	0.33	0.854	IO					1.01
104.833	0.00	0.33	0.851	IO					1.01
104.917	0.00	0.33	0.849	IO					1.01
105.000	0.00	0.33	0.847	IO					1.00
105.083	0.00	0.33	0.844	IO					1.00
105.167	0.00	0.33	0.842	IO					1.00
105.250	0.00	0.33	0.840	IO					1.00
105.333	0.00	0.33	0.838	IO					1.00
105.417	0.00	0.33	0.835	IO					0.99
105.500	0.00	0.33	0.833	IO					0.99

105.583	0.00	0.32	0.831	IO					0.99
105.667	0.00	0.32	0.829	IO					0.99
105.750	0.00	0.32	0.827	IO					0.99
105.833	0.00	0.32	0.824	IO					0.98
105.917	0.00	0.32	0.822	IO					0.98
106.000	0.00	0.32	0.820	IO					0.98
106.083	0.00	0.32	0.818	IO					0.98
106.167	0.00	0.32	0.815	IO					0.97
106.250	0.00	0.32	0.813	IO					0.97
106.333	0.00	0.32	0.811	IO					0.97
106.417	0.00	0.32	0.809	IO					0.97
106.500	0.00	0.32	0.807	IO					0.96
106.583	0.00	0.32	0.804	IO					0.96
106.667	0.00	0.32	0.802	IO					0.96
106.750	0.00	0.32	0.800	IO					0.96
106.833	0.00	0.32	0.798	IO					0.96
106.917	0.00	0.32	0.796	IO					0.95
107.000	0.00	0.32	0.794	IO					0.95
107.083	0.00	0.32	0.791	IO					0.95
107.167	0.00	0.31	0.789	IO					0.95
107.250	0.00	0.31	0.787	IO					0.94
107.333	0.00	0.31	0.785	IO					0.94
107.417	0.00	0.31	0.783	IO					0.94
107.500	0.00	0.31	0.781	IO					0.94
107.583	0.00	0.31	0.778	IO					0.94
107.667	0.00	0.31	0.776	IO					0.93
107.750	0.00	0.31	0.774	IO					0.93
107.833	0.00	0.31	0.772	IO					0.93
107.917	0.00	0.31	0.770	IO					0.93
108.000	0.00	0.31	0.768	IO					0.92
108.083	0.00	0.31	0.766	IO					0.92
108.167	0.00	0.31	0.763	IO					0.92
108.250	0.00	0.31	0.761	IO					0.92
108.333	0.00	0.31	0.759	IO					0.92
108.417	0.00	0.31	0.757	IO					0.91
108.500	0.00	0.31	0.755	IO					0.91
108.583	0.00	0.31	0.753	IO					0.91
108.667	0.00	0.31	0.751	IO					0.91
108.750	0.00	0.30	0.749	IO					0.90
108.833	0.00	0.30	0.747	IO					0.90
108.917	0.00	0.30	0.744	IO					0.90
109.000	0.00	0.30	0.742	IO					0.90
109.083	0.00	0.30	0.740	IO					0.90
109.167	0.00	0.30	0.738	IO					0.89
109.250	0.00	0.30	0.736	IO					0.89
109.333	0.00	0.30	0.734	IO					0.89
109.417	0.00	0.30	0.732	IO					0.89
109.500	0.00	0.30	0.730	IO					0.89
109.583	0.00	0.30	0.728	IO					0.88
109.667	0.00	0.30	0.726	IO					0.88
109.750	0.00	0.30	0.724	IO					0.88
109.833	0.00	0.30	0.722	IO					0.88
109.917	0.00	0.30	0.720	IO					0.87
110.000	0.00	0.30	0.718	IO					0.87
110.083	0.00	0.30	0.716	IO					0.87
110.167	0.00	0.30	0.713	IO					0.87
110.250	0.00	0.30	0.711	IO					0.87
110.333	0.00	0.30	0.709	IO					0.86
110.417	0.00	0.30	0.707	IO					0.86
110.500	0.00	0.29	0.705	IO					0.86
110.583	0.00	0.29	0.703	IO					0.86
110.667	0.00	0.29	0.701	IO					0.86
110.750	0.00	0.29	0.699	IO					0.85
110.833	0.00	0.29	0.697	IO					0.85
110.917	0.00	0.29	0.695	IO					0.85
111.000	0.00	0.29	0.693	IO					0.85
111.083	0.00	0.29	0.691	IO					0.85
111.167	0.00	0.29	0.689	IO					0.84
111.250	0.00	0.29	0.687	IO					0.84
111.333	0.00	0.29	0.685	IO					0.84
111.417	0.00	0.29	0.683	IO					0.84
111.500	0.00	0.29	0.681	IO					0.84
111.583	0.00	0.29	0.679	IO					0.83
111.667	0.00	0.29	0.677	IO					0.83
111.750	0.00	0.29	0.675	IO					0.83

111.833	0.00	0.29	0.673	IO				0.83
111.917	0.00	0.29	0.671	IO				0.83
112.000	0.00	0.29	0.669	IO				0.82
112.083	0.00	0.29	0.667	IO				0.82
112.167	0.00	0.29	0.665	IO				0.82
112.250	0.00	0.28	0.663	IO				0.82
112.333	0.00	0.28	0.661	IO				0.81
112.417	0.00	0.28	0.660	IO				0.81
112.500	0.00	0.28	0.658	IO				0.81
112.583	0.00	0.28	0.656	IO				0.81
112.667	0.00	0.28	0.654	IO				0.81
112.750	0.00	0.28	0.652	IO				0.80
112.833	0.00	0.28	0.650	IO				0.80
112.917	0.00	0.28	0.648	IO				0.80
113.000	0.00	0.28	0.646	IO				0.80
113.083	0.00	0.28	0.644	IO				0.80
113.167	0.00	0.28	0.642	IO				0.79
113.250	0.00	0.28	0.640	IO				0.79
113.333	0.00	0.28	0.638	IO				0.79
113.417	0.00	0.28	0.636	IO				0.79
113.500	0.00	0.28	0.634	IO				0.79
113.583	0.00	0.28	0.633	IO				0.79
113.667	0.00	0.28	0.631	IO				0.78
113.750	0.00	0.28	0.629	IO				0.78
113.833	0.00	0.28	0.627	IO				0.78
113.917	0.00	0.28	0.625	IO				0.78
114.000	0.00	0.27	0.623	IO				0.78
114.083	0.00	0.27	0.621	IO				0.77
114.167	0.00	0.27	0.619	IO				0.77
114.250	0.00	0.27	0.617	IO				0.77
114.333	0.00	0.27	0.615	IO				0.77
114.417	0.00	0.27	0.614	IO				0.77
114.500	0.00	0.27	0.612	IO				0.76
114.583	0.00	0.27	0.610	IO				0.76
114.667	0.00	0.27	0.608	IO				0.76
114.750	0.00	0.27	0.606	IO				0.76
114.833	0.00	0.27	0.604	IO				0.76
114.917	0.00	0.27	0.602	IO				0.75
115.000	0.00	0.27	0.601	IO				0.75
115.083	0.00	0.27	0.599	IO				0.75
115.167	0.00	0.27	0.597	IO				0.75
115.250	0.00	0.27	0.595	IO				0.75
115.333	0.00	0.27	0.593	IO				0.74
115.417	0.00	0.27	0.591	IO				0.74
115.500	0.00	0.27	0.589	IO				0.74
115.583	0.00	0.27	0.588	IO				0.74
115.667	0.00	0.27	0.586	IO				0.74
115.750	0.00	0.27	0.584	IO				0.73
115.833	0.00	0.27	0.582	IO				0.73
115.917	0.00	0.26	0.580	IO				0.73
116.000	0.00	0.26	0.578	IO				0.73
116.083	0.00	0.26	0.577	IO				0.73
116.167	0.00	0.26	0.575	IO				0.73
116.250	0.00	0.26	0.573	IO				0.72
116.333	0.00	0.26	0.571	IO				0.72
116.417	0.00	0.26	0.569	IO				0.72
116.500	0.00	0.26	0.568	IO				0.72
116.583	0.00	0.26	0.566	IO				0.72
116.667	0.00	0.26	0.564	IO				0.71
116.750	0.00	0.26	0.562	IO				0.71
116.833	0.00	0.26	0.560	IO				0.71
116.917	0.00	0.26	0.559	IO				0.71
117.000	0.00	0.26	0.557	IO				0.71
117.083	0.00	0.26	0.555	IO				0.71
117.167	0.00	0.26	0.553	IO				0.70
117.250	0.00	0.26	0.552	IO				0.70
117.333	0.00	0.26	0.550	IO				0.70
117.417	0.00	0.26	0.548	IO				0.70
117.500	0.00	0.26	0.546	O				0.70
117.583	0.00	0.26	0.544	O				0.69
117.667	0.00	0.26	0.543	O				0.69
117.750	0.00	0.26	0.541	O				0.69
117.833	0.00	0.25	0.539	O				0.69
117.917	0.00	0.25	0.537	O				0.69
118.000	0.00	0.25	0.536	O				0.69

118.083	0.00	0.25	0.534	o	|	|	|	|	0.68
118.167	0.00	0.25	0.532	o	|	|	|	|	0.68
118.250	0.00	0.25	0.530	o	|	|	|	|	0.68
118.333	0.00	0.25	0.529	o	|	|	|	|	0.68
118.417	0.00	0.25	0.527	o	|	|	|	|	0.68
118.500	0.00	0.25	0.525	o	|	|	|	|	0.67
118.583	0.00	0.25	0.523	o	|	|	|	|	0.67
118.667	0.00	0.25	0.522	o	|	|	|	|	0.67
118.750	0.00	0.25	0.520	o	|	|	|	|	0.67
118.833	0.00	0.25	0.518	o	|	|	|	|	0.67
118.917	0.00	0.25	0.517	o	|	|	|	|	0.67
119.000	0.00	0.25	0.515	o	|	|	|	|	0.66
119.083	0.00	0.25	0.513	o	|	|	|	|	0.66
119.167	0.00	0.25	0.511	o	|	|	|	|	0.66
119.250	0.00	0.25	0.510	o	|	|	|	|	0.66
119.333	0.00	0.25	0.508	o	|	|	|	|	0.66
119.417	0.00	0.25	0.506	o	|	|	|	|	0.65
119.500	0.00	0.25	0.505	o	|	|	|	|	0.65
119.583	0.00	0.25	0.503	o	|	|	|	|	0.65
119.667	0.00	0.25	0.501	o	|	|	|	|	0.65
119.750	0.00	0.25	0.500	o	|	|	|	|	0.65
119.833	0.00	0.24	0.498	o	|	|	|	|	0.65
119.917	0.00	0.24	0.496	o	|	|	|	|	0.64
120.000	0.00	0.24	0.494	o	|	|	|	|	0.64
120.083	0.00	0.24	0.493	o	|	|	|	|	0.64
120.167	0.00	0.24	0.491	o	|	|	|	|	0.64
120.250	0.00	0.24	0.489	o	|	|	|	|	0.64
120.333	0.00	0.24	0.488	o	|	|	|	|	0.64
120.417	0.00	0.24	0.486	o	|	|	|	|	0.63
120.500	0.00	0.24	0.484	o	|	|	|	|	0.63
120.583	0.00	0.24	0.483	o	|	|	|	|	0.63
120.667	0.00	0.24	0.481	o	|	|	|	|	0.63
120.750	0.00	0.24	0.479	o	|	|	|	|	0.63
120.833	0.00	0.24	0.478	o	|	|	|	|	0.63
120.917	0.00	0.24	0.476	o	|	|	|	|	0.62
121.000	0.00	0.24	0.475	o	|	|	|	|	0.62
121.083	0.00	0.24	0.473	o	|	|	|	|	0.62
121.167	0.00	0.24	0.471	o	|	|	|	|	0.62
121.250	0.00	0.24	0.470	o	|	|	|	|	0.62
121.333	0.00	0.24	0.468	o	|	|	|	|	0.62
121.417	0.00	0.24	0.466	o	|	|	|	|	0.61
121.500	0.00	0.24	0.465	o	|	|	|	|	0.61
121.583	0.00	0.24	0.463	o	|	|	|	|	0.61
121.667	0.00	0.24	0.461	o	|	|	|	|	0.61
121.750	0.00	0.24	0.460	o	|	|	|	|	0.61
121.833	0.00	0.24	0.458	o	|	|	|	|	0.61
121.917	0.00	0.24	0.457	o	|	|	|	|	0.60
122.000	0.00	0.23	0.455	o	|	|	|	|	0.60
122.083	0.00	0.23	0.453	o	|	|	|	|	0.60
122.167	0.00	0.23	0.452	o	|	|	|	|	0.60
122.250	0.00	0.23	0.450	o	|	|	|	|	0.60
122.333	0.00	0.23	0.448	o	|	|	|	|	0.60
122.417	0.00	0.23	0.447	o	|	|	|	|	0.59
122.500	0.00	0.23	0.445	o	|	|	|	|	0.59
122.583	0.00	0.23	0.444	o	|	|	|	|	0.59
122.667	0.00	0.23	0.442	o	|	|	|	|	0.59
122.750	0.00	0.23	0.440	o	|	|	|	|	0.59
122.833	0.00	0.23	0.439	o	|	|	|	|	0.59
122.917	0.00	0.23	0.437	o	|	|	|	|	0.58
123.000	0.00	0.23	0.436	o	|	|	|	|	0.58
123.083	0.00	0.23	0.434	o	|	|	|	|	0.58
123.167	0.00	0.23	0.433	o	|	|	|	|	0.58
123.250	0.00	0.23	0.431	o	|	|	|	|	0.58
123.333	0.00	0.23	0.429	o	|	|	|	|	0.58
123.417	0.00	0.23	0.428	o	|	|	|	|	0.57
123.500	0.00	0.23	0.426	o	|	|	|	|	0.57
123.583	0.00	0.23	0.425	o	|	|	|	|	0.57
123.667	0.00	0.23	0.423	o	|	|	|	|	0.57
123.750	0.00	0.23	0.422	o	|	|	|	|	0.57
123.833	0.00	0.23	0.420	o	|	|	|	|	0.57
123.917	0.00	0.23	0.418	o	|	|	|	|	0.56
124.000	0.00	0.23	0.417	o	|	|	|	|	0.56
124.083	0.00	0.23	0.415	o	|	|	|	|	0.56
124.167	0.00	0.22	0.414	o	|	|	|	|	0.56
124.250	0.00	0.22	0.412	o	|	|	|	|	0.56

124.333	0.00	0.22	0.411	o	|	|	|	0.56
124.417	0.00	0.22	0.409	o	|	|	|	0.55
124.500	0.00	0.22	0.408	o	|	|	|	0.55
124.583	0.00	0.22	0.406	o	|	|	|	0.55
124.667	0.00	0.22	0.405	o	|	|	|	0.55
124.750	0.00	0.22	0.403	o	|	|	|	0.55
124.833	0.00	0.22	0.401	o	|	|	|	0.55
124.917	0.00	0.22	0.400	o	|	|	|	0.55
125.000	0.00	0.22	0.398	o	|	|	|	0.54
125.083	0.00	0.22	0.397	o	|	|	|	0.54
125.167	0.00	0.22	0.395	o	|	|	|	0.54
125.250	0.00	0.22	0.394	o	|	|	|	0.54
125.333	0.00	0.22	0.392	o	|	|	|	0.54
125.417	0.00	0.22	0.391	o	|	|	|	0.54
125.500	0.00	0.22	0.389	o	|	|	|	0.53
125.583	0.00	0.22	0.388	o	|	|	|	0.53
125.667	0.00	0.22	0.386	o	|	|	|	0.53
125.750	0.00	0.22	0.385	o	|	|	|	0.53
125.833	0.00	0.22	0.383	o	|	|	|	0.53
125.917	0.00	0.22	0.382	o	|	|	|	0.53
126.000	0.00	0.22	0.380	o	|	|	|	0.53
126.083	0.00	0.22	0.379	o	|	|	|	0.52
126.167	0.00	0.22	0.377	o	|	|	|	0.52
126.250	0.00	0.22	0.376	o	|	|	|	0.52
126.333	0.00	0.22	0.374	o	|	|	|	0.52
126.417	0.00	0.22	0.373	o	|	|	|	0.52
126.500	0.00	0.21	0.371	o	|	|	|	0.52
126.583	0.00	0.21	0.370	o	|	|	|	0.51
126.667	0.00	0.21	0.368	o	|	|	|	0.51
126.750	0.00	0.21	0.367	o	|	|	|	0.51
126.833	0.00	0.21	0.366	o	|	|	|	0.51
126.917	0.00	0.21	0.364	o	|	|	|	0.51
127.000	0.00	0.21	0.363	o	|	|	|	0.51
127.083	0.00	0.21	0.361	o	|	|	|	0.51
127.167	0.00	0.21	0.360	o	|	|	|	0.50
127.250	0.00	0.21	0.358	o	|	|	|	0.50
127.333	0.00	0.21	0.357	o	|	|	|	0.50
127.417	0.00	0.21	0.355	o	|	|	|	0.50
127.500	0.00	0.21	0.354	o	|	|	|	0.50
127.583	0.00	0.21	0.352	o	|	|	|	0.49
127.667	0.00	0.21	0.351	o	|	|	|	0.49
127.750	0.00	0.21	0.350	o	|	|	|	0.49
127.833	0.00	0.20	0.348	o	|	|	|	0.49
127.917	0.00	0.20	0.347	o	|	|	|	0.49
128.000	0.00	0.20	0.345	o	|	|	|	0.49
128.083	0.00	0.20	0.344	o	|	|	|	0.48
128.167	0.00	0.20	0.343	o	|	|	|	0.48
128.250	0.00	0.20	0.341	o	|	|	|	0.48
128.333	0.00	0.20	0.340	o	|	|	|	0.48
128.417	0.00	0.20	0.338	o	|	|	|	0.48
128.500	0.00	0.20	0.337	o	|	|	|	0.47
128.583	0.00	0.19	0.336	o	|	|	|	0.47
128.667	0.00	0.19	0.334	o	|	|	|	0.47
128.750	0.00	0.19	0.333	o	|	|	|	0.47
128.833	0.00	0.19	0.332	o	|	|	|	0.47
128.917	0.00	0.19	0.331	o	|	|	|	0.46
129.000	0.00	0.19	0.329	o	|	|	|	0.46
129.083	0.00	0.19	0.328	o	|	|	|	0.46
129.167	0.00	0.19	0.327	o	|	|	|	0.46
129.250	0.00	0.19	0.325	o	|	|	|	0.46
129.333	0.00	0.18	0.324	o	|	|	|	0.46
129.417	0.00	0.18	0.323	o	|	|	|	0.45
129.500	0.00	0.18	0.322	o	|	|	|	0.45
129.583	0.00	0.18	0.320	o	|	|	|	0.45
129.667	0.00	0.18	0.319	o	|	|	|	0.45
129.750	0.00	0.18	0.318	o	|	|	|	0.45
129.833	0.00	0.18	0.317	o	|	|	|	0.44
129.917	0.00	0.18	0.315	o	|	|	|	0.44
130.000	0.00	0.18	0.314	o	|	|	|	0.44
130.083	0.00	0.18	0.313	o	|	|	|	0.44
130.167	0.00	0.17	0.312	o	|	|	|	0.44
130.250	0.00	0.17	0.311	o	|	|	|	0.44
130.333	0.00	0.17	0.309	o	|	|	|	0.43
130.417	0.00	0.17	0.308	o	|	|	|	0.43
130.500	0.00	0.17	0.307	o	|	|	|	0.43

130.583	0.00	0.17	0.306	o	|	|	|	|	0.43
130.667	0.00	0.17	0.305	o	|	|	|	|	0.43
130.750	0.00	0.17	0.304	o	|	|	|	|	0.43
130.833	0.00	0.17	0.302	o	|	|	|	|	0.42
130.917	0.00	0.17	0.301	o	|	|	|	|	0.42
131.000	0.00	0.16	0.300	o	|	|	|	|	0.42
131.083	0.00	0.16	0.299	o	|	|	|	|	0.42
131.167	0.00	0.16	0.298	o	|	|	|	|	0.42
131.250	0.00	0.16	0.297	o	|	|	|	|	0.42
131.333	0.00	0.16	0.296	o	|	|	|	|	0.42
131.417	0.00	0.16	0.295	o	|	|	|	|	0.41
131.500	0.00	0.16	0.293	o	|	|	|	|	0.41
131.583	0.00	0.16	0.292	o	|	|	|	|	0.41
131.667	0.00	0.16	0.291	o	|	|	|	|	0.41
131.750	0.00	0.16	0.290	o	|	|	|	|	0.41
131.833	0.00	0.16	0.289	o	|	|	|	|	0.41
131.917	0.00	0.15	0.288	o	|	|	|	|	0.40
132.000	0.00	0.15	0.287	o	|	|	|	|	0.40
132.083	0.00	0.15	0.286	o	|	|	|	|	0.40
132.167	0.00	0.15	0.285	o	|	|	|	|	0.40
132.250	0.00	0.15	0.284	o	|	|	|	|	0.40
132.333	0.00	0.15	0.283	o	|	|	|	|	0.40
132.417	0.00	0.15	0.282	o	|	|	|	|	0.40
132.500	0.00	0.15	0.281	o	|	|	|	|	0.39
132.583	0.00	0.15	0.280	o	|	|	|	|	0.39
132.667	0.00	0.15	0.279	o	|	|	|	|	0.39
132.750	0.00	0.15	0.278	o	|	|	|	|	0.39
132.833	0.00	0.14	0.277	o	|	|	|	|	0.39
132.917	0.00	0.14	0.276	o	|	|	|	|	0.39
133.000	0.00	0.14	0.275	o	|	|	|	|	0.39
133.083	0.00	0.14	0.274	o	|	|	|	|	0.38
133.167	0.00	0.14	0.273	o	|	|	|	|	0.38
133.250	0.00	0.14	0.272	o	|	|	|	|	0.38
133.333	0.00	0.14	0.271	o	|	|	|	|	0.38
133.417	0.00	0.14	0.270	o	|	|	|	|	0.38
133.500	0.00	0.14	0.269	o	|	|	|	|	0.38
133.583	0.00	0.14	0.268	o	|	|	|	|	0.38
133.667	0.00	0.14	0.267	o	|	|	|	|	0.37
133.750	0.00	0.14	0.266	o	|	|	|	|	0.37
133.833	0.00	0.14	0.265	o	|	|	|	|	0.37
133.917	0.00	0.13	0.264	o	|	|	|	|	0.37
134.000	0.00	0.13	0.263	o	|	|	|	|	0.37
134.083	0.00	0.13	0.262	o	|	|	|	|	0.37
134.167	0.00	0.13	0.261	o	|	|	|	|	0.37
134.250	0.00	0.13	0.261	o	|	|	|	|	0.37
134.333	0.00	0.13	0.260	o	|	|	|	|	0.36
134.417	0.00	0.13	0.259	o	|	|	|	|	0.36
134.500	0.00	0.13	0.258	o	|	|	|	|	0.36
134.583	0.00	0.13	0.257	o	|	|	|	|	0.36
134.667	0.00	0.13	0.256	o	|	|	|	|	0.36
134.750	0.00	0.13	0.255	o	|	|	|	|	0.36
134.833	0.00	0.13	0.254	o	|	|	|	|	0.36
134.917	0.00	0.13	0.253	o	|	|	|	|	0.36
135.000	0.00	0.12	0.253	o	|	|	|	|	0.35
135.083	0.00	0.12	0.252	o	|	|	|	|	0.35
135.167	0.00	0.12	0.251	o	|	|	|	|	0.35
135.250	0.00	0.12	0.250	o	|	|	|	|	0.35
135.333	0.00	0.12	0.249	o	|	|	|	|	0.35
135.417	0.00	0.12	0.248	o	|	|	|	|	0.35
135.500	0.00	0.12	0.248	o	|	|	|	|	0.35
135.583	0.00	0.12	0.247	o	|	|	|	|	0.35
135.667	0.00	0.12	0.246	o	|	|	|	|	0.35
135.750	0.00	0.12	0.245	o	|	|	|	|	0.34
135.833	0.00	0.12	0.244	o	|	|	|	|	0.34
135.917	0.00	0.12	0.243	o	|	|	|	|	0.34
136.000	0.00	0.12	0.243	o	|	|	|	|	0.34
136.083	0.00	0.12	0.242	o	|	|	|	|	0.34
136.167	0.00	0.12	0.241	o	|	|	|	|	0.34
136.250	0.00	0.11	0.240	o	|	|	|	|	0.34
136.333	0.00	0.11	0.239	o	|	|	|	|	0.34
136.417	0.00	0.11	0.239	o	|	|	|	|	0.34
136.500	0.00	0.11	0.238	o	|	|	|	|	0.33
136.583	0.00	0.11	0.237	o	|	|	|	|	0.33
136.667	0.00	0.11	0.236	o	|	|	|	|	0.33
136.750	0.00	0.11	0.236	o	|	|	|	|	0.33

136.833	0.00	0.11	0.235	o	|	|	|	|	0.33
136.917	0.00	0.11	0.234	o	|	|	|	|	0.33
137.000	0.00	0.11	0.233	o	|	|	|	|	0.33
137.083	0.00	0.11	0.233	o	|	|	|	|	0.33
137.167	0.00	0.11	0.232	o	|	|	|	|	0.33
137.250	0.00	0.11	0.231	o	|	|	|	|	0.32
137.333	0.00	0.11	0.230	o	|	|	|	|	0.32
137.417	0.00	0.11	0.230	o	|	|	|	|	0.32
137.500	0.00	0.11	0.229	o	|	|	|	|	0.32
137.583	0.00	0.10	0.228	o	|	|	|	|	0.32
137.667	0.00	0.10	0.227	o	|	|	|	|	0.32
137.750	0.00	0.10	0.227	o	|	|	|	|	0.32
137.833	0.00	0.10	0.226	o	|	|	|	|	0.32
137.917	0.00	0.10	0.225	o	|	|	|	|	0.32
138.000	0.00	0.10	0.225	o	|	|	|	|	0.32
138.083	0.00	0.10	0.224	o	|	|	|	|	0.31
138.167	0.00	0.10	0.223	o	|	|	|	|	0.31
138.250	0.00	0.10	0.223	o	|	|	|	|	0.31
138.333	0.00	0.10	0.222	o	|	|	|	|	0.31
138.417	0.00	0.10	0.221	o	|	|	|	|	0.31
138.500	0.00	0.10	0.220	o	|	|	|	|	0.31
138.583	0.00	0.10	0.220	o	|	|	|	|	0.31
138.667	0.00	0.10	0.219	o	|	|	|	|	0.31
138.750	0.00	0.10	0.218	o	|	|	|	|	0.31
138.833	0.00	0.10	0.218	o	|	|	|	|	0.31
138.917	0.00	0.10	0.217	o	|	|	|	|	0.30
139.000	0.00	0.09	0.217	o	|	|	|	|	0.30
139.083	0.00	0.09	0.216	o	|	|	|	|	0.30
139.167	0.00	0.09	0.215	o	|	|	|	|	0.30
139.250	0.00	0.09	0.215	o	|	|	|	|	0.30
139.333	0.00	0.09	0.214	o	|	|	|	|	0.30
139.417	0.00	0.09	0.213	o	|	|	|	|	0.30
139.500	0.00	0.09	0.213	o	|	|	|	|	0.30
139.583	0.00	0.09	0.212	o	|	|	|	|	0.30
139.667	0.00	0.09	0.211	o	|	|	|	|	0.30
139.750	0.00	0.09	0.211	o	|	|	|	|	0.30
139.833	0.00	0.09	0.210	o	|	|	|	|	0.30
139.917	0.00	0.09	0.210	o	|	|	|	|	0.29
140.000	0.00	0.09	0.209	o	|	|	|	|	0.29
140.083	0.00	0.09	0.208	o	|	|	|	|	0.29
140.167	0.00	0.09	0.208	o	|	|	|	|	0.29
140.250	0.00	0.09	0.207	o	|	|	|	|	0.29
140.333	0.00	0.09	0.207	o	|	|	|	|	0.29
140.417	0.00	0.09	0.206	o	|	|	|	|	0.29
140.500	0.00	0.09	0.205	o	|	|	|	|	0.29
140.583	0.00	0.08	0.205	o	|	|	|	|	0.29
140.667	0.00	0.08	0.204	o	|	|	|	|	0.29
140.750	0.00	0.08	0.204	o	|	|	|	|	0.29
140.833	0.00	0.08	0.203	o	|	|	|	|	0.29
140.917	0.00	0.08	0.202	o	|	|	|	|	0.28
141.000	0.00	0.08	0.202	o	|	|	|	|	0.28
141.083	0.00	0.08	0.201	o	|	|	|	|	0.28
141.167	0.00	0.08	0.201	o	|	|	|	|	0.28
141.250	0.00	0.08	0.200	o	|	|	|	|	0.28
141.333	0.00	0.08	0.200	o	|	|	|	|	0.28
141.417	0.00	0.08	0.199	o	|	|	|	|	0.28
141.500	0.00	0.08	0.199	o	|	|	|	|	0.28
141.583	0.00	0.08	0.198	o	|	|	|	|	0.28
141.667	0.00	0.08	0.197	o	|	|	|	|	0.28
141.750	0.00	0.08	0.197	o	|	|	|	|	0.28
141.833	0.00	0.08	0.196	o	|	|	|	|	0.28
141.917	0.00	0.08	0.196	o	|	|	|	|	0.27
142.000	0.00	0.08	0.195	o	|	|	|	|	0.27
142.083	0.00	0.08	0.195	o	|	|	|	|	0.27
142.167	0.00	0.08	0.194	o	|	|	|	|	0.27
142.250	0.00	0.08	0.194	o	|	|	|	|	0.27
142.333	0.00	0.08	0.193	o	|	|	|	|	0.27
142.417	0.00	0.07	0.193	o	|	|	|	|	0.27
142.500	0.00	0.07	0.192	o	|	|	|	|	0.27
142.583	0.00	0.07	0.192	o	|	|	|	|	0.27
142.667	0.00	0.07	0.191	o	|	|	|	|	0.27
142.750	0.00	0.07	0.191	o	|	|	|	|	0.27
142.833	0.00	0.07	0.190	o	|	|	|	|	0.27
142.917	0.00	0.07	0.190	o	|	|	|	|	0.27
143.000	0.00	0.07	0.189	o	|	|	|	|	0.27

143.083	0.00	0.07	0.189	o	|	|	|	|	0.26
143.167	0.00	0.07	0.188	o	|	|	|	|	0.26
143.250	0.00	0.07	0.188	o	|	|	|	|	0.26
143.333	0.00	0.07	0.187	o	|	|	|	|	0.26
143.417	0.00	0.07	0.187	o	|	|	|	|	0.26
143.500	0.00	0.07	0.186	o	|	|	|	|	0.26
143.583	0.00	0.07	0.186	o	|	|	|	|	0.26
143.667	0.00	0.07	0.185	o	|	|	|	|	0.26
143.750	0.00	0.07	0.185	o	|	|	|	|	0.26
143.833	0.00	0.07	0.184	o	|	|	|	|	0.26
143.917	0.00	0.07	0.184	o	|	|	|	|	0.26
144.000	0.00	0.07	0.183	o	|	|	|	|	0.26
144.083	0.00	0.07	0.183	o	|	|	|	|	0.26
144.167	0.00	0.07	0.182	o	|	|	|	|	0.26
144.250	0.00	0.07	0.182	o	|	|	|	|	0.26
144.333	0.00	0.07	0.182	o	|	|	|	|	0.25
144.417	0.00	0.07	0.181	o	|	|	|	|	0.25
144.500	0.00	0.06	0.181	o	|	|	|	|	0.25
144.583	0.00	0.06	0.180	o	|	|	|	|	0.25
144.667	0.00	0.06	0.180	o	|	|	|	|	0.25
144.750	0.00	0.06	0.179	o	|	|	|	|	0.25
144.833	0.00	0.06	0.179	o	|	|	|	|	0.25
144.917	0.00	0.06	0.178	o	|	|	|	|	0.25
145.000	0.00	0.06	0.178	o	|	|	|	|	0.25
145.083	0.00	0.06	0.178	o	|	|	|	|	0.25
145.167	0.00	0.06	0.177	o	|	|	|	|	0.25
145.250	0.00	0.06	0.177	o	|	|	|	|	0.25
145.333	0.00	0.06	0.176	o	|	|	|	|	0.25
145.417	0.00	0.06	0.176	o	|	|	|	|	0.25
145.500	0.00	0.06	0.175	o	|	|	|	|	0.25
145.583	0.00	0.06	0.175	o	|	|	|	|	0.25
145.667	0.00	0.06	0.175	o	|	|	|	|	0.25
145.750	0.00	0.06	0.174	o	|	|	|	|	0.24
145.833	0.00	0.06	0.174	o	|	|	|	|	0.24
145.917	0.00	0.06	0.173	o	|	|	|	|	0.24
146.000	0.00	0.06	0.173	o	|	|	|	|	0.24
146.083	0.00	0.06	0.173	o	|	|	|	|	0.24
146.167	0.00	0.06	0.172	o	|	|	|	|	0.24
146.250	0.00	0.06	0.172	o	|	|	|	|	0.24
146.333	0.00	0.06	0.171	o	|	|	|	|	0.24
146.417	0.00	0.06	0.171	o	|	|	|	|	0.24
146.500	0.00	0.06	0.171	o	|	|	|	|	0.24
146.583	0.00	0.06	0.170	o	|	|	|	|	0.24
146.667	0.00	0.06	0.170	o	|	|	|	|	0.24
146.750	0.00	0.06	0.169	o	|	|	|	|	0.24
146.833	0.00	0.06	0.169	o	|	|	|	|	0.24
146.917	0.00	0.05	0.169	o	|	|	|	|	0.24
147.000	0.00	0.05	0.168	o	|	|	|	|	0.24
147.083	0.00	0.05	0.168	o	|	|	|	|	0.24
147.167	0.00	0.05	0.168	o	|	|	|	|	0.24
147.250	0.00	0.05	0.167	o	|	|	|	|	0.23
147.333	0.00	0.05	0.167	o	|	|	|	|	0.23
147.417	0.00	0.05	0.166	o	|	|	|	|	0.23
147.500	0.00	0.05	0.166	o	|	|	|	|	0.23
147.583	0.00	0.05	0.166	o	|	|	|	|	0.23
147.667	0.00	0.05	0.165	o	|	|	|	|	0.23
147.750	0.00	0.05	0.165	o	|	|	|	|	0.23
147.833	0.00	0.05	0.165	o	|	|	|	|	0.23
147.917	0.00	0.05	0.164	o	|	|	|	|	0.23
148.000	0.00	0.05	0.164	o	|	|	|	|	0.23
148.083	0.00	0.05	0.164	o	|	|	|	|	0.23
148.167	0.00	0.05	0.163	o	|	|	|	|	0.23
148.250	0.00	0.05	0.163	o	|	|	|	|	0.23
148.333	0.00	0.05	0.163	o	|	|	|	|	0.23
148.417	0.00	0.05	0.162	o	|	|	|	|	0.23
148.500	0.00	0.05	0.162	o	|	|	|	|	0.23
148.583	0.00	0.05	0.162	o	|	|	|	|	0.23
148.667	0.00	0.05	0.161	o	|	|	|	|	0.23
148.750	0.00	0.05	0.161	o	|	|	|	|	0.23
148.833	0.00	0.05	0.161	o	|	|	|	|	0.23
148.917	0.00	0.05	0.160	o	|	|	|	|	0.23
149.000	0.00	0.05	0.160	o	|	|	|	|	0.22
149.083	0.00	0.05	0.160	o	|	|	|	|	0.22
149.167	0.00	0.05	0.159	o	|	|	|	|	0.22
149.250	0.00	0.05	0.159	o	|	|	|	|	0.22

149.333	0.00	0.05	0.159	o	|	|	|	|	0.22
149.417	0.00	0.05	0.158	o	|	|	|	|	0.22
149.500	0.00	0.05	0.158	o	|	|	|	|	0.22
149.583	0.00	0.05	0.158	o	|	|	|	|	0.22
149.667	0.00	0.05	0.157	o	|	|	|	|	0.22
149.750	0.00	0.05	0.157	o	|	|	|	|	0.22
149.833	0.00	0.04	0.157	o	|	|	|	|	0.22
149.917	0.00	0.04	0.156	o	|	|	|	|	0.22
150.000	0.00	0.04	0.156	o	|	|	|	|	0.22
150.083	0.00	0.04	0.156	o	|	|	|	|	0.22
150.167	0.00	0.04	0.155	o	|	|	|	|	0.22
150.250	0.00	0.04	0.155	o	|	|	|	|	0.22
150.333	0.00	0.04	0.155	o	|	|	|	|	0.22
150.417	0.00	0.04	0.155	o	|	|	|	|	0.22
150.500	0.00	0.04	0.154	o	|	|	|	|	0.22
150.583	0.00	0.04	0.154	o	|	|	|	|	0.22
150.667	0.00	0.04	0.154	o	|	|	|	|	0.22
150.750	0.00	0.04	0.153	o	|	|	|	|	0.22
150.833	0.00	0.04	0.153	o	|	|	|	|	0.22
150.917	0.00	0.04	0.153	o	|	|	|	|	0.21
151.000	0.00	0.04	0.153	o	|	|	|	|	0.21
151.083	0.00	0.04	0.152	o	|	|	|	|	0.21
151.167	0.00	0.04	0.152	o	|	|	|	|	0.21
151.250	0.00	0.04	0.152	o	|	|	|	|	0.21
151.333	0.00	0.04	0.151	o	|	|	|	|	0.21
151.417	0.00	0.04	0.151	o	|	|	|	|	0.21
151.500	0.00	0.04	0.151	o	|	|	|	|	0.21
151.583	0.00	0.04	0.151	o	|	|	|	|	0.21
151.667	0.00	0.04	0.150	o	|	|	|	|	0.21
151.750	0.00	0.04	0.150	o	|	|	|	|	0.21
151.833	0.00	0.04	0.150	o	|	|	|	|	0.21
151.917	0.00	0.04	0.150	o	|	|	|	|	0.21
152.000	0.00	0.04	0.149	o	|	|	|	|	0.21
152.083	0.00	0.04	0.149	o	|	|	|	|	0.21
152.167	0.00	0.04	0.149	o	|	|	|	|	0.21
152.250	0.00	0.04	0.148	o	|	|	|	|	0.21
152.333	0.00	0.04	0.148	o	|	|	|	|	0.21
152.417	0.00	0.04	0.148	o	|	|	|	|	0.21
152.500	0.00	0.04	0.148	o	|	|	|	|	0.21
152.583	0.00	0.04	0.147	o	|	|	|	|	0.21
152.667	0.00	0.04	0.147	o	|	|	|	|	0.21
152.750	0.00	0.04	0.147	o	|	|	|	|	0.21
152.833	0.00	0.04	0.147	o	|	|	|	|	0.21
152.917	0.00	0.04	0.146	o	|	|	|	|	0.21
153.000	0.00	0.04	0.146	o	|	|	|	|	0.21
153.083	0.00	0.04	0.146	o	|	|	|	|	0.20
153.167	0.00	0.04	0.146	o	|	|	|	|	0.20
153.250	0.00	0.04	0.145	o	|	|	|	|	0.20
153.333	0.00	0.04	0.145	o	|	|	|	|	0.20
153.417	0.00	0.04	0.145	o	|	|	|	|	0.20
153.500	0.00	0.03	0.145	o	|	|	|	|	0.20
153.583	0.00	0.03	0.144	o	|	|	|	|	0.20
153.667	0.00	0.03	0.144	o	|	|	|	|	0.20
153.750	0.00	0.03	0.144	o	|	|	|	|	0.20
153.833	0.00	0.03	0.144	o	|	|	|	|	0.20
153.917	0.00	0.03	0.144	o	|	|	|	|	0.20
154.000	0.00	0.03	0.143	o	|	|	|	|	0.20
154.083	0.00	0.03	0.143	o	|	|	|	|	0.20
154.167	0.00	0.03	0.143	o	|	|	|	|	0.20
154.250	0.00	0.03	0.143	o	|	|	|	|	0.20
154.333	0.00	0.03	0.142	o	|	|	|	|	0.20
154.417	0.00	0.03	0.142	o	|	|	|	|	0.20
154.500	0.00	0.03	0.142	o	|	|	|	|	0.20
154.583	0.00	0.03	0.142	o	|	|	|	|	0.20
154.667	0.00	0.03	0.141	o	|	|	|	|	0.20
154.750	0.00	0.03	0.141	o	|	|	|	|	0.20
154.833	0.00	0.03	0.141	o	|	|	|	|	0.20
154.917	0.00	0.03	0.141	o	|	|	|	|	0.20
155.000	0.00	0.03	0.141	o	|	|	|	|	0.20
155.083	0.00	0.03	0.140	o	|	|	|	|	0.20
155.167	0.00	0.03	0.140	o	|	|	|	|	0.20
155.250	0.00	0.03	0.140	o	|	|	|	|	0.20
155.333	0.00	0.03	0.140	o	|	|	|	|	0.20
155.417	0.00	0.03	0.140	o	|	|	|	|	0.20
155.500	0.00	0.03	0.139	o	|	|	|	|	0.20

155.583	0.00	0.03	0.139	o	|	|	|	|	0.20
155.667	0.00	0.03	0.139	o	|	|	|	|	0.20
155.750	0.00	0.03	0.139	o	|	|	|	|	0.19
155.833	0.00	0.03	0.138	o	|	|	|	|	0.19
155.917	0.00	0.03	0.138	o	|	|	|	|	0.19
156.000	0.00	0.03	0.138	o	|	|	|	|	0.19
156.083	0.00	0.03	0.138	o	|	|	|	|	0.19
156.167	0.00	0.03	0.138	o	|	|	|	|	0.19
156.250	0.00	0.03	0.137	o	|	|	|	|	0.19
156.333	0.00	0.03	0.137	o	|	|	|	|	0.19
156.417	0.00	0.03	0.137	o	|	|	|	|	0.19
156.500	0.00	0.03	0.137	o	|	|	|	|	0.19
156.583	0.00	0.03	0.137	o	|	|	|	|	0.19
156.667	0.00	0.03	0.136	o	|	|	|	|	0.19
156.750	0.00	0.03	0.136	o	|	|	|	|	0.19
156.833	0.00	0.03	0.136	o	|	|	|	|	0.19
156.917	0.00	0.03	0.136	o	|	|	|	|	0.19
157.000	0.00	0.03	0.136	o	|	|	|	|	0.19
157.083	0.00	0.03	0.136	o	|	|	|	|	0.19
157.167	0.00	0.03	0.135	o	|	|	|	|	0.19
157.250	0.00	0.03	0.135	o	|	|	|	|	0.19
157.333	0.00	0.03	0.135	o	|	|	|	|	0.19
157.417	0.00	0.03	0.135	o	|	|	|	|	0.19
157.500	0.00	0.03	0.135	o	|	|	|	|	0.19
157.583	0.00	0.03	0.134	o	|	|	|	|	0.19
157.667	0.00	0.03	0.134	o	|	|	|	|	0.19
157.750	0.00	0.03	0.134	o	|	|	|	|	0.19
157.833	0.00	0.03	0.134	o	|	|	|	|	0.19
157.917	0.00	0.03	0.134	o	|	|	|	|	0.19
158.000	0.00	0.03	0.134	o	|	|	|	|	0.19
158.083	0.00	0.03	0.133	o	|	|	|	|	0.19
158.167	0.00	0.03	0.133	o	|	|	|	|	0.19
158.250	0.00	0.03	0.133	o	|	|	|	|	0.19
158.333	0.00	0.03	0.133	o	|	|	|	|	0.19
158.417	0.00	0.02	0.133	o	|	|	|	|	0.19
158.500	0.00	0.02	0.132	o	|	|	|	|	0.19
158.583	0.00	0.02	0.132	o	|	|	|	|	0.19
158.667	0.00	0.02	0.132	o	|	|	|	|	0.19
158.750	0.00	0.02	0.132	o	|	|	|	|	0.19
158.833	0.00	0.02	0.132	o	|	|	|	|	0.19
158.917	0.00	0.02	0.132	o	|	|	|	|	0.18
159.000	0.00	0.02	0.131	o	|	|	|	|	0.18
159.083	0.00	0.02	0.131	o	|	|	|	|	0.18
159.167	0.00	0.02	0.131	o	|	|	|	|	0.18
159.250	0.00	0.02	0.131	o	|	|	|	|	0.18
159.333	0.00	0.02	0.131	o	|	|	|	|	0.18
159.417	0.00	0.02	0.131	o	|	|	|	|	0.18
159.500	0.00	0.02	0.131	o	|	|	|	|	0.18
159.583	0.00	0.02	0.130	o	|	|	|	|	0.18
159.667	0.00	0.02	0.130	o	|	|	|	|	0.18
159.750	0.00	0.02	0.130	o	|	|	|	|	0.18
159.833	0.00	0.02	0.130	o	|	|	|	|	0.18
159.917	0.00	0.02	0.130	o	|	|	|	|	0.18
160.000	0.00	0.02	0.130	o	|	|	|	|	0.18
160.083	0.00	0.02	0.129	o	|	|	|	|	0.18
160.167	0.00	0.02	0.129	o	|	|	|	|	0.18
160.250	0.00	0.02	0.129	o	|	|	|	|	0.18
160.333	0.00	0.02	0.129	o	|	|	|	|	0.18
160.417	0.00	0.02	0.129	o	|	|	|	|	0.18
160.500	0.00	0.02	0.129	o	|	|	|	|	0.18
160.583	0.00	0.02	0.129	o	|	|	|	|	0.18
160.667	0.00	0.02	0.128	o	|	|	|	|	0.18
160.750	0.00	0.02	0.128	o	|	|	|	|	0.18
160.833	0.00	0.02	0.128	o	|	|	|	|	0.18
160.917	0.00	0.02	0.128	o	|	|	|	|	0.18
161.000	0.00	0.02	0.128	o	|	|	|	|	0.18
161.083	0.00	0.02	0.128	o	|	|	|	|	0.18
161.167	0.00	0.02	0.128	o	|	|	|	|	0.18
161.250	0.00	0.02	0.127	o	|	|	|	|	0.18
161.333	0.00	0.02	0.127	o	|	|	|	|	0.18
161.417	0.00	0.02	0.127	o	|	|	|	|	0.18
161.500	0.00	0.02	0.127	o	|	|	|	|	0.18
161.583	0.00	0.02	0.127	o	|	|	|	|	0.18
161.667	0.00	0.02	0.127	o	|	|	|	|	0.18
161.750	0.00	0.02	0.127	o	|	|	|	|	0.18

161.833	0.00	0.02	0.126	o	|	|	|	|	0.18
161.917	0.00	0.02	0.126	o	|	|	|	|	0.18
162.000	0.00	0.02	0.126	o	|	|	|	|	0.18
162.083	0.00	0.02	0.126	o	|	|	|	|	0.18
162.167	0.00	0.02	0.126	o	|	|	|	|	0.18
162.250	0.00	0.02	0.126	o	|	|	|	|	0.18
162.333	0.00	0.02	0.126	o	|	|	|	|	0.18
162.417	0.00	0.02	0.125	o	|	|	|	|	0.18
162.500	0.00	0.02	0.125	o	|	|	|	|	0.18
162.583	0.00	0.02	0.125	o	|	|	|	|	0.18
162.667	0.00	0.02	0.125	o	|	|	|	|	0.18
162.750	0.00	0.02	0.125	o	|	|	|	|	0.18
162.833	0.00	0.02	0.125	o	|	|	|	|	0.18
162.917	0.00	0.02	0.125	o	|	|	|	|	0.18
163.000	0.00	0.02	0.125	o	|	|	|	|	0.17
163.083	0.00	0.02	0.124	o	|	|	|	|	0.17
163.167	0.00	0.02	0.124	o	|	|	|	|	0.17
163.250	0.00	0.02	0.124	o	|	|	|	|	0.17
163.333	0.00	0.02	0.124	o	|	|	|	|	0.17
163.417	0.00	0.02	0.124	o	|	|	|	|	0.17
163.500	0.00	0.02	0.124	o	|	|	|	|	0.17
163.583	0.00	0.02	0.124	o	|	|	|	|	0.17
163.667	0.00	0.02	0.124	o	|	|	|	|	0.17
163.750	0.00	0.02	0.123	o	|	|	|	|	0.17
163.833	0.00	0.02	0.123	o	|	|	|	|	0.17
163.917	0.00	0.02	0.123	o	|	|	|	|	0.17
164.000	0.00	0.02	0.123	o	|	|	|	|	0.17
164.083	0.00	0.02	0.123	o	|	|	|	|	0.17
164.167	0.00	0.02	0.123	o	|	|	|	|	0.17
164.250	0.00	0.02	0.123	o	|	|	|	|	0.17
164.333	0.00	0.02	0.123	o	|	|	|	|	0.17
164.417	0.00	0.02	0.123	o	|	|	|	|	0.17
164.500	0.00	0.02	0.122	o	|	|	|	|	0.17
164.583	0.00	0.02	0.122	o	|	|	|	|	0.17
164.667	0.00	0.02	0.122	o	|	|	|	|	0.17
164.750	0.00	0.02	0.122	o	|	|	|	|	0.17
164.833	0.00	0.02	0.122	o	|	|	|	|	0.17
164.917	0.00	0.02	0.122	o	|	|	|	|	0.17
165.000	0.00	0.02	0.122	o	|	|	|	|	0.17
165.083	0.00	0.02	0.122	o	|	|	|	|	0.17
165.167	0.00	0.02	0.122	o	|	|	|	|	0.17
165.250	0.00	0.02	0.121	o	|	|	|	|	0.17
165.333	0.00	0.02	0.121	o	|	|	|	|	0.17
165.417	0.00	0.02	0.121	o	|	|	|	|	0.17
165.500	0.00	0.02	0.121	o	|	|	|	|	0.17
165.583	0.00	0.02	0.121	o	|	|	|	|	0.17
165.667	0.00	0.02	0.121	o	|	|	|	|	0.17
165.750	0.00	0.02	0.121	o	|	|	|	|	0.17
165.833	0.00	0.01	0.121	o	|	|	|	|	0.17
165.917	0.00	0.01	0.121	o	|	|	|	|	0.17
166.000	0.00	0.01	0.121	o	|	|	|	|	0.17
166.083	0.00	0.01	0.120	o	|	|	|	|	0.17
166.167	0.00	0.01	0.120	o	|	|	|	|	0.17
166.250	0.00	0.01	0.120	o	|	|	|	|	0.17
166.333	0.00	0.01	0.120	o	|	|	|	|	0.17
166.417	0.00	0.01	0.120	o	|	|	|	|	0.17
166.500	0.00	0.01	0.120	o	|	|	|	|	0.17
166.583	0.00	0.01	0.120	o	|	|	|	|	0.17
166.667	0.00	0.01	0.120	o	|	|	|	|	0.17
166.750	0.00	0.01	0.120	o	|	|	|	|	0.17
166.833	0.00	0.01	0.120	o	|	|	|	|	0.17
166.917	0.00	0.01	0.119	o	|	|	|	|	0.17
167.000	0.00	0.01	0.119	o	|	|	|	|	0.17
167.083	0.00	0.01	0.119	o	|	|	|	|	0.17
167.167	0.00	0.01	0.119	o	|	|	|	|	0.17
167.250	0.00	0.01	0.119	o	|	|	|	|	0.17
167.333	0.00	0.01	0.119	o	|	|	|	|	0.17
167.417	0.00	0.01	0.119	o	|	|	|	|	0.17
167.500	0.00	0.01	0.119	o	|	|	|	|	0.17
167.583	0.00	0.01	0.119	o	|	|	|	|	0.17
167.667	0.00	0.01	0.119	o	|	|	|	|	0.17
167.750	0.00	0.01	0.118	o	|	|	|	|	0.17
167.833	0.00	0.01	0.118	o	|	|	|	|	0.17
167.917	0.00	0.01	0.118	o	|	|	|	|	0.17
168.000	0.00	0.01	0.118	o	|	|	|	|	0.17

168.083	0.00	0.01	0.118	o	|	|	|	|	0.17
168.167	0.00	0.01	0.118	o	|	|	|	|	0.17
168.250	0.00	0.01	0.118	o	|	|	|	|	0.17
168.333	0.00	0.01	0.118	o	|	|	|	|	0.17
168.417	0.00	0.01	0.118	o	|	|	|	|	0.17
168.500	0.00	0.01	0.118	o	|	|	|	|	0.17
168.583	0.00	0.01	0.118	o	|	|	|	|	0.17
168.667	0.00	0.01	0.118	o	|	|	|	|	0.17
168.750	0.00	0.01	0.117	o	|	|	|	|	0.16
168.833	0.00	0.01	0.117	o	|	|	|	|	0.16
168.917	0.00	0.01	0.117	o	|	|	|	|	0.16
169.000	0.00	0.01	0.117	o	|	|	|	|	0.16
169.083	0.00	0.01	0.117	o	|	|	|	|	0.16
169.167	0.00	0.01	0.117	o	|	|	|	|	0.16
169.250	0.00	0.01	0.117	o	|	|	|	|	0.16
169.333	0.00	0.01	0.117	o	|	|	|	|	0.16
169.417	0.00	0.01	0.117	o	|	|	|	|	0.16
169.500	0.00	0.01	0.117	o	|	|	|	|	0.16
169.583	0.00	0.01	0.117	o	|	|	|	|	0.16
169.667	0.00	0.01	0.117	o	|	|	|	|	0.16
169.750	0.00	0.01	0.116	o	|	|	|	|	0.16
169.833	0.00	0.01	0.116	o	|	|	|	|	0.16
169.917	0.00	0.01	0.116	o	|	|	|	|	0.16
170.000	0.00	0.01	0.116	o	|	|	|	|	0.16
170.083	0.00	0.01	0.116	o	|	|	|	|	0.16
170.167	0.00	0.01	0.116	o	|	|	|	|	0.16
170.250	0.00	0.01	0.116	o	|	|	|	|	0.16
170.333	0.00	0.01	0.116	o	|	|	|	|	0.16
170.417	0.00	0.01	0.116	o	|	|	|	|	0.16
170.500	0.00	0.01	0.116	o	|	|	|	|	0.16
170.583	0.00	0.01	0.116	o	|	|	|	|	0.16
170.667	0.00	0.01	0.116	o	|	|	|	|	0.16
170.750	0.00	0.01	0.116	o	|	|	|	|	0.16
170.833	0.00	0.01	0.115	o	|	|	|	|	0.16
170.917	0.00	0.01	0.115	o	|	|	|	|	0.16
171.000	0.00	0.01	0.115	o	|	|	|	|	0.16
171.083	0.00	0.01	0.115	o	|	|	|	|	0.16
171.167	0.00	0.01	0.115	o	|	|	|	|	0.16
171.250	0.00	0.01	0.115	o	|	|	|	|	0.16
171.333	0.00	0.01	0.115	o	|	|	|	|	0.16
171.417	0.00	0.01	0.115	o	|	|	|	|	0.16
171.500	0.00	0.01	0.115	o	|	|	|	|	0.16
171.583	0.00	0.01	0.115	o	|	|	|	|	0.16
171.667	0.00	0.01	0.115	o	|	|	|	|	0.16
171.750	0.00	0.01	0.115	o	|	|	|	|	0.16
171.833	0.00	0.01	0.115	o	|	|	|	|	0.16
171.917	0.00	0.01	0.115	o	|	|	|	|	0.16
172.000	0.00	0.01	0.115	o	|	|	|	|	0.16
172.083	0.00	0.01	0.114	o	|	|	|	|	0.16
172.167	0.00	0.01	0.114	o	|	|	|	|	0.16
172.250	0.00	0.01	0.114	o	|	|	|	|	0.16
172.333	0.00	0.01	0.114	o	|	|	|	|	0.16
172.417	0.00	0.01	0.114	o	|	|	|	|	0.16
172.500	0.00	0.01	0.114	o	|	|	|	|	0.16
172.583	0.00	0.01	0.114	o	|	|	|	|	0.16
172.667	0.00	0.01	0.114	o	|	|	|	|	0.16
172.750	0.00	0.01	0.114	o	|	|	|	|	0.16
172.833	0.00	0.01	0.114	o	|	|	|	|	0.16
172.917	0.00	0.01	0.114	o	|	|	|	|	0.16
173.000	0.00	0.01	0.114	o	|	|	|	|	0.16
173.083	0.00	0.01	0.114	o	|	|	|	|	0.16
173.167	0.00	0.01	0.114	o	|	|	|	|	0.16
173.250	0.00	0.01	0.114	o	|	|	|	|	0.16
173.333	0.00	0.01	0.113	o	|	|	|	|	0.16
173.417	0.00	0.01	0.113	o	|	|	|	|	0.16
173.500	0.00	0.01	0.113	o	|	|	|	|	0.16
173.583	0.00	0.01	0.113	o	|	|	|	|	0.16
173.667	0.00	0.01	0.113	o	|	|	|	|	0.16
173.750	0.00	0.01	0.113	o	|	|	|	|	0.16
173.833	0.00	0.01	0.113	o	|	|	|	|	0.16
173.917	0.00	0.01	0.113	o	|	|	|	|	0.16
174.000	0.00	0.01	0.113	o	|	|	|	|	0.16
174.083	0.00	0.01	0.113	o	|	|	|	|	0.16
174.167	0.00	0.01	0.113	o	|	|	|	|	0.16
174.250	0.00	0.01	0.113	o	|	|	|	|	0.16

174.333	0.00	0.01	0.113	o	|	|	|	|	0.16
174.417	0.00	0.01	0.113	o	|	|	|	|	0.16
174.500	0.00	0.01	0.113	o	|	|	|	|	0.16
174.583	0.00	0.01	0.113	o	|	|	|	|	0.16
174.667	0.00	0.01	0.113	o	|	|	|	|	0.16
174.750	0.00	0.01	0.112	o	|	|	|	|	0.16
174.833	0.00	0.01	0.112	o	|	|	|	|	0.16
174.917	0.00	0.01	0.112	o	|	|	|	|	0.16
175.000	0.00	0.01	0.112	o	|	|	|	|	0.16
175.083	0.00	0.01	0.112	o	|	|	|	|	0.16
175.167	0.00	0.01	0.112	o	|	|	|	|	0.16
175.250	0.00	0.01	0.112	o	|	|	|	|	0.16
175.333	0.00	0.01	0.112	o	|	|	|	|	0.16
175.417	0.00	0.01	0.112	o	|	|	|	|	0.16
175.500	0.00	0.01	0.112	o	|	|	|	|	0.16
175.583	0.00	0.01	0.112	o	|	|	|	|	0.16
175.667	0.00	0.01	0.112	o	|	|	|	|	0.16
175.750	0.00	0.01	0.112	o	|	|	|	|	0.16
175.833	0.00	0.01	0.112	o	|	|	|	|	0.16
175.917	0.00	0.01	0.112	o	|	|	|	|	0.16
176.000	0.00	0.01	0.112	o	|	|	|	|	0.16
176.083	0.00	0.01	0.112	o	|	|	|	|	0.16
176.167	0.00	0.01	0.112	o	|	|	|	|	0.16
176.250	0.00	0.01	0.112	o	|	|	|	|	0.16
176.333	0.00	0.01	0.111	o	|	|	|	|	0.16
176.417	0.00	0.01	0.111	o	|	|	|	|	0.16
176.500	0.00	0.01	0.111	o	|	|	|	|	0.16
176.583	0.00	0.01	0.111	o	|	|	|	|	0.16
176.667	0.00	0.01	0.111	o	|	|	|	|	0.16
176.750	0.00	0.01	0.111	o	|	|	|	|	0.16
176.833	0.00	0.01	0.111	o	|	|	|	|	0.16
176.917	0.00	0.01	0.111	o	|	|	|	|	0.16
177.000	0.00	0.01	0.111	o	|	|	|	|	0.16
177.083	0.00	0.01	0.111	o	|	|	|	|	0.16
177.167	0.00	0.01	0.111	o	|	|	|	|	0.16
177.250	0.00	0.01	0.111	o	|	|	|	|	0.16
177.333	0.00	0.01	0.111	o	|	|	|	|	0.16
177.417	0.00	0.01	0.111	o	|	|	|	|	0.16
177.500	0.00	0.01	0.111	o	|	|	|	|	0.16
177.583	0.00	0.01	0.111	o	|	|	|	|	0.16
177.667	0.00	0.01	0.111	o	|	|	|	|	0.16
177.750	0.00	0.01	0.111	o	|	|	|	|	0.16
177.833	0.00	0.01	0.111	o	|	|	|	|	0.16
177.917	0.00	0.01	0.111	o	|	|	|	|	0.16
178.000	0.00	0.01	0.111	o	|	|	|	|	0.16
178.083	0.00	0.01	0.111	o	|	|	|	|	0.16
178.167	0.00	0.01	0.110	o	|	|	|	|	0.16
178.250	0.00	0.01	0.110	o	|	|	|	|	0.16
178.333	0.00	0.01	0.110	o	|	|	|	|	0.15
178.417	0.00	0.01	0.110	o	|	|	|	|	0.15
178.500	0.00	0.01	0.110	o	|	|	|	|	0.15
178.583	0.00	0.01	0.110	o	|	|	|	|	0.15
178.667	0.00	0.01	0.110	o	|	|	|	|	0.15
178.750	0.00	0.01	0.110	o	|	|	|	|	0.15
178.833	0.00	0.01	0.110	o	|	|	|	|	0.15
178.917	0.00	0.01	0.110	o	|	|	|	|	0.15
179.000	0.00	0.01	0.110	o	|	|	|	|	0.15
179.083	0.00	0.01	0.110	o	|	|	|	|	0.15
179.167	0.00	0.01	0.110	o	|	|	|	|	0.15
179.250	0.00	0.01	0.110	o	|	|	|	|	0.15
179.333	0.00	0.01	0.110	o	|	|	|	|	0.15
179.417	0.00	0.01	0.110	o	|	|	|	|	0.15
179.500	0.00	0.01	0.110	o	|	|	|	|	0.15
179.583	0.00	0.01	0.110	o	|	|	|	|	0.15
179.667	0.00	0.01	0.110	o	|	|	|	|	0.15
179.750	0.00	0.01	0.110	o	|	|	|	|	0.15
179.833	0.00	0.01	0.110	o	|	|	|	|	0.15
179.917	0.00	0.01	0.110	o	|	|	|	|	0.15
180.000	0.00	0.01	0.110	o	|	|	|	|	0.15
180.083	0.00	0.01	0.110	o	|	|	|	|	0.15
180.167	0.00	0.01	0.109	o	|	|	|	|	0.15
180.250	0.00	0.01	0.109	o	|	|	|	|	0.15
180.333	0.00	0.01	0.109	o	|	|	|	|	0.15
180.417	0.00	0.01	0.109	o	|	|	|	|	0.15
180.500	0.00	0.01	0.109	o	|	|	|	|	0.15

180.583	0.00	0.01	0.109	o	|	|	|	|	0.15
180.667	0.00	0.01	0.109	o	|	|	|	|	0.15
180.750	0.00	0.01	0.109	o	|	|	|	|	0.15
180.833	0.00	0.01	0.109	o	|	|	|	|	0.15
180.917	0.00	0.01	0.109	o	|	|	|	|	0.15
181.000	0.00	0.01	0.109	o	|	|	|	|	0.15
181.083	0.00	0.01	0.109	o	|	|	|	|	0.15
181.167	0.00	0.01	0.109	o	|	|	|	|	0.15
181.250	0.00	0.01	0.109	o	|	|	|	|	0.15
181.333	0.00	0.01	0.109	o	|	|	|	|	0.15
181.417	0.00	0.01	0.109	o	|	|	|	|	0.15
181.500	0.00	0.01	0.109	o	|	|	|	|	0.15
181.583	0.00	0.01	0.109	o	|	|	|	|	0.15
181.667	0.00	0.01	0.109	o	|	|	|	|	0.15
181.750	0.00	0.00	0.109	o	|	|	|	|	0.15
181.833	0.00	0.00	0.109	o	|	|	|	|	0.15
181.917	0.00	0.00	0.109	o	|	|	|	|	0.15
182.000	0.00	0.00	0.109	o	|	|	|	|	0.15
182.083	0.00	0.00	0.109	o	|	|	|	|	0.15
182.167	0.00	0.00	0.109	o	|	|	|	|	0.15
182.250	0.00	0.00	0.109	o	|	|	|	|	0.15
182.333	0.00	0.00	0.109	o	|	|	|	|	0.15
182.417	0.00	0.00	0.109	o	|	|	|	|	0.15
182.500	0.00	0.00	0.108	o	|	|	|	|	0.15
182.583	0.00	0.00	0.108	o	|	|	|	|	0.15
182.667	0.00	0.00	0.108	o	|	|	|	|	0.15
182.750	0.00	0.00	0.108	o	|	|	|	|	0.15
182.833	0.00	0.00	0.108	o	|	|	|	|	0.15
182.917	0.00	0.00	0.108	o	|	|	|	|	0.15
183.000	0.00	0.00	0.108	o	|	|	|	|	0.15
183.083	0.00	0.00	0.108	o	|	|	|	|	0.15
183.167	0.00	0.00	0.108	o	|	|	|	|	0.15
183.250	0.00	0.00	0.108	o	|	|	|	|	0.15
183.333	0.00	0.00	0.108	o	|	|	|	|	0.15
183.417	0.00	0.00	0.108	o	|	|	|	|	0.15
183.500	0.00	0.00	0.108	o	|	|	|	|	0.15
183.583	0.00	0.00	0.108	o	|	|	|	|	0.15
183.667	0.00	0.00	0.108	o	|	|	|	|	0.15
183.750	0.00	0.00	0.108	o	|	|	|	|	0.15
183.833	0.00	0.00	0.108	o	|	|	|	|	0.15
183.917	0.00	0.00	0.108	o	|	|	|	|	0.15
184.000	0.00	0.00	0.108	o	|	|	|	|	0.15
184.083	0.00	0.00	0.108	o	|	|	|	|	0.15
184.167	0.00	0.00	0.108	o	|	|	|	|	0.15
184.250	0.00	0.00	0.108	o	|	|	|	|	0.15
184.333	0.00	0.00	0.108	o	|	|	|	|	0.15
184.417	0.00	0.00	0.108	o	|	|	|	|	0.15
184.500	0.00	0.00	0.108	o	|	|	|	|	0.15
184.583	0.00	0.00	0.108	o	|	|	|	|	0.15
184.667	0.00	0.00	0.108	o	|	|	|	|	0.15
184.750	0.00	0.00	0.108	o	|	|	|	|	0.15
184.833	0.00	0.00	0.108	o	|	|	|	|	0.15
184.917	0.00	0.00	0.108	o	|	|	|	|	0.15
185.000	0.00	0.00	0.108	o	|	|	|	|	0.15
185.083	0.00	0.00	0.108	o	|	|	|	|	0.15
185.167	0.00	0.00	0.108	o	|	|	|	|	0.15
185.250	0.00	0.00	0.108	o	|	|	|	|	0.15
185.333	0.00	0.00	0.107	o	|	|	|	|	0.15
185.417	0.00	0.00	0.107	o	|	|	|	|	0.15
185.500	0.00	0.00	0.107	o	|	|	|	|	0.15
185.583	0.00	0.00	0.107	o	|	|	|	|	0.15
185.667	0.00	0.00	0.107	o	|	|	|	|	0.15
185.750	0.00	0.00	0.107	o	|	|	|	|	0.15
185.833	0.00	0.00	0.107	o	|	|	|	|	0.15
185.917	0.00	0.00	0.107	o	|	|	|	|	0.15
186.000	0.00	0.00	0.107	o	|	|	|	|	0.15
186.083	0.00	0.00	0.107	o	|	|	|	|	0.15
186.167	0.00	0.00	0.107	o	|	|	|	|	0.15
186.250	0.00	0.00	0.107	o	|	|	|	|	0.15
186.333	0.00	0.00	0.107	o	|	|	|	|	0.15
186.417	0.00	0.00	0.107	o	|	|	|	|	0.15
186.500	0.00	0.00	0.107	o	|	|	|	|	0.15
186.583	0.00	0.00	0.107	o	|	|	|	|	0.15
186.667	0.00	0.00	0.107	o	|	|	|	|	0.15
186.750	0.00	0.00	0.107	o	|	|	|	|	0.15

186.833	0.00	0.00	0.107	o	|	|	|	|	0.15
186.917	0.00	0.00	0.107	o	|	|	|	|	0.15
187.000	0.00	0.00	0.107	o	|	|	|	|	0.15
187.083	0.00	0.00	0.107	o	|	|	|	|	0.15
187.167	0.00	0.00	0.107	o	|	|	|	|	0.15
187.250	0.00	0.00	0.107	o	|	|	|	|	0.15
187.333	0.00	0.00	0.107	o	|	|	|	|	0.15
187.417	0.00	0.00	0.107	o	|	|	|	|	0.15
187.500	0.00	0.00	0.107	o	|	|	|	|	0.15
187.583	0.00	0.00	0.107	o	|	|	|	|	0.15
187.667	0.00	0.00	0.107	o	|	|	|	|	0.15
187.750	0.00	0.00	0.107	o	|	|	|	|	0.15
187.833	0.00	0.00	0.107	o	|	|	|	|	0.15
187.917	0.00	0.00	0.107	o	|	|	|	|	0.15
188.000	0.00	0.00	0.107	o	|	|	|	|	0.15
188.083	0.00	0.00	0.107	o	|	|	|	|	0.15
188.167	0.00	0.00	0.107	o	|	|	|	|	0.15
188.250	0.00	0.00	0.107	o	|	|	|	|	0.15
188.333	0.00	0.00	0.107	o	|	|	|	|	0.15
188.417	0.00	0.00	0.107	o	|	|	|	|	0.15
188.500	0.00	0.00	0.107	o	|	|	|	|	0.15
188.583	0.00	0.00	0.107	o	|	|	|	|	0.15
188.667	0.00	0.00	0.107	o	|	|	|	|	0.15
188.750	0.00	0.00	0.106	o	|	|	|	|	0.15
188.833	0.00	0.00	0.106	o	|	|	|	|	0.15
188.917	0.00	0.00	0.106	o	|	|	|	|	0.15
189.000	0.00	0.00	0.106	o	|	|	|	|	0.15
189.083	0.00	0.00	0.106	o	|	|	|	|	0.15
189.167	0.00	0.00	0.106	o	|	|	|	|	0.15
189.250	0.00	0.00	0.106	o	|	|	|	|	0.15
189.333	0.00	0.00	0.106	o	|	|	|	|	0.15
189.417	0.00	0.00	0.106	o	|	|	|	|	0.15
189.500	0.00	0.00	0.106	o	|	|	|	|	0.15
189.583	0.00	0.00	0.106	o	|	|	|	|	0.15
189.667	0.00	0.00	0.106	o	|	|	|	|	0.15
189.750	0.00	0.00	0.106	o	|	|	|	|	0.15
189.833	0.00	0.00	0.106	o	|	|	|	|	0.15
189.917	0.00	0.00	0.106	o	|	|	|	|	0.15
190.000	0.00	0.00	0.106	o	|	|	|	|	0.15
190.083	0.00	0.00	0.106	o	|	|	|	|	0.15
190.167	0.00	0.00	0.106	o	|	|	|	|	0.15
190.250	0.00	0.00	0.106	o	|	|	|	|	0.15
190.333	0.00	0.00	0.106	o	|	|	|	|	0.15
190.417	0.00	0.00	0.106	o	|	|	|	|	0.15
190.500	0.00	0.00	0.106	o	|	|	|	|	0.15
190.583	0.00	0.00	0.106	o	|	|	|	|	0.15
190.667	0.00	0.00	0.106	o	|	|	|	|	0.15
190.750	0.00	0.00	0.106	o	|	|	|	|	0.15
190.833	0.00	0.00	0.106	o	|	|	|	|	0.15
190.917	0.00	0.00	0.106	o	|	|	|	|	0.15
191.000	0.00	0.00	0.106	o	|	|	|	|	0.15
191.083	0.00	0.00	0.106	o	|	|	|	|	0.15
191.167	0.00	0.00	0.106	o	|	|	|	|	0.15
191.250	0.00	0.00	0.106	o	|	|	|	|	0.15
191.333	0.00	0.00	0.106	o	|	|	|	|	0.15
191.417	0.00	0.00	0.106	o	|	|	|	|	0.15
191.500	0.00	0.00	0.106	o	|	|	|	|	0.15
191.583	0.00	0.00	0.106	o	|	|	|	|	0.15
191.667	0.00	0.00	0.106	o	|	|	|	|	0.15
191.750	0.00	0.00	0.106	o	|	|	|	|	0.15
191.833	0.00	0.00	0.106	o	|	|	|	|	0.15
191.917	0.00	0.00	0.106	o	|	|	|	|	0.15
192.000	0.00	0.00	0.106	o	|	|	|	|	0.15
192.083	0.00	0.00	0.106	o	|	|	|	|	0.15
192.167	0.00	0.00	0.106	o	|	|	|	|	0.15
192.250	0.00	0.00	0.106	o	|	|	|	|	0.15
192.333	0.00	0.00	0.106	o	|	|	|	|	0.15
192.417	0.00	0.00	0.106	o	|	|	|	|	0.15
192.500	0.00	0.00	0.106	o	|	|	|	|	0.15
192.583	0.00	0.00	0.106	o	|	|	|	|	0.15
192.667	0.00	0.00	0.106	o	|	|	|	|	0.15
192.750	0.00	0.00	0.106	o	|	|	|	|	0.15
192.833	0.00	0.00	0.106	o	|	|	|	|	0.15
192.917	0.00	0.00	0.106	o	|	|	|	|	0.15
193.000	0.00	0.00	0.106	o	|	|	|	|	0.15

193.083	0.00	0.00	0.106	o	|	|	|	|	0.15
193.167	0.00	0.00	0.106	o	|	|	|	|	0.15
193.250	0.00	0.00	0.106	o	|	|	|	|	0.15
193.333	0.00	0.00	0.105	o	|	|	|	|	0.15
193.417	0.00	0.00	0.105	o	|	|	|	|	0.15
193.500	0.00	0.00	0.105	o	|	|	|	|	0.15
193.583	0.00	0.00	0.105	o	|	|	|	|	0.15
193.667	0.00	0.00	0.105	o	|	|	|	|	0.15
193.750	0.00	0.00	0.105	o	|	|	|	|	0.15
193.833	0.00	0.00	0.105	o	|	|	|	|	0.15
193.917	0.00	0.00	0.105	o	|	|	|	|	0.15
194.000	0.00	0.00	0.105	o	|	|	|	|	0.15
194.083	0.00	0.00	0.105	o	|	|	|	|	0.15
194.167	0.00	0.00	0.105	o	|	|	|	|	0.15
194.250	0.00	0.00	0.105	o	|	|	|	|	0.15
194.333	0.00	0.00	0.105	o	|	|	|	|	0.15
194.417	0.00	0.00	0.105	o	|	|	|	|	0.15
194.500	0.00	0.00	0.105	o	|	|	|	|	0.15
194.583	0.00	0.00	0.105	o	|	|	|	|	0.15
194.667	0.00	0.00	0.105	o	|	|	|	|	0.15
194.750	0.00	0.00	0.105	o	|	|	|	|	0.15
194.833	0.00	0.00	0.105	o	|	|	|	|	0.15
194.917	0.00	0.00	0.105	o	|	|	|	|	0.15
195.000	0.00	0.00	0.105	o	|	|	|	|	0.15
195.083	0.00	0.00	0.105	o	|	|	|	|	0.15
195.167	0.00	0.00	0.105	o	|	|	|	|	0.15
195.250	0.00	0.00	0.105	o	|	|	|	|	0.15
195.333	0.00	0.00	0.105	o	|	|	|	|	0.15
195.417	0.00	0.00	0.105	o	|	|	|	|	0.15
195.500	0.00	0.00	0.105	o	|	|	|	|	0.15
195.583	0.00	0.00	0.105	o	|	|	|	|	0.15
195.667	0.00	0.00	0.105	o	|	|	|	|	0.15
195.750	0.00	0.00	0.105	o	|	|	|	|	0.15
195.833	0.00	0.00	0.105	o	|	|	|	|	0.15
195.917	0.00	0.00	0.105	o	|	|	|	|	0.15
196.000	0.00	0.00	0.105	o	|	|	|	|	0.15
196.083	0.00	0.00	0.105	o	|	|	|	|	0.15
196.167	0.00	0.00	0.105	o	|	|	|	|	0.15
196.250	0.00	0.00	0.105	o	|	|	|	|	0.15
196.333	0.00	0.00	0.105	o	|	|	|	|	0.15
196.417	0.00	0.00	0.105	o	|	|	|	|	0.15
196.500	0.00	0.00	0.105	o	|	|	|	|	0.15
196.583	0.00	0.00	0.105	o	|	|	|	|	0.15
196.667	0.00	0.00	0.105	o	|	|	|	|	0.15
196.750	0.00	0.00	0.105	o	|	|	|	|	0.15
196.833	0.00	0.00	0.105	o	|	|	|	|	0.15
196.917	0.00	0.00	0.105	o	|	|	|	|	0.15
197.000	0.00	0.00	0.105	o	|	|	|	|	0.15
197.083	0.00	0.00	0.105	o	|	|	|	|	0.15
197.167	0.00	0.00	0.105	o	|	|	|	|	0.15
197.250	0.00	0.00	0.105	o	|	|	|	|	0.15
197.333	0.00	0.00	0.105	o	|	|	|	|	0.15
197.417	0.00	0.00	0.105	o	|	|	|	|	0.15
197.500	0.00	0.00	0.105	o	|	|	|	|	0.15
197.583	0.00	0.00	0.105	o	|	|	|	|	0.15
197.667	0.00	0.00	0.105	o	|	|	|	|	0.15
197.750	0.00	0.00	0.105	o	|	|	|	|	0.15
197.833	0.00	0.00	0.105	o	|	|	|	|	0.15
197.917	0.00	0.00	0.105	o	|	|	|	|	0.15
198.000	0.00	0.00	0.105	o	|	|	|	|	0.15
198.083	0.00	0.00	0.105	o	|	|	|	|	0.15
198.167	0.00	0.00	0.105	o	|	|	|	|	0.15
198.250	0.00	0.00	0.105	o	|	|	|	|	0.15
198.333	0.00	0.00	0.105	o	|	|	|	|	0.15
198.417	0.00	0.00	0.105	o	|	|	|	|	0.15
198.500	0.00	0.00	0.105	o	|	|	|	|	0.15
198.583	0.00	0.00	0.105	o	|	|	|	|	0.15
198.667	0.00	0.00	0.105	o	|	|	|	|	0.15
198.750	0.00	0.00	0.105	o	|	|	|	|	0.15
198.833	0.00	0.00	0.105	o	|	|	|	|	0.15
198.917	0.00	0.00	0.105	o	|	|	|	|	0.15
199.000	0.00	0.00	0.105	o	|	|	|	|	0.15
199.083	0.00	0.00	0.105	o	|	|	|	|	0.15
199.167	0.00	0.00	0.105	o	|	|	|	|	0.15
199.250	0.00	0.00	0.105	o	|	|	|	|	0.15

199.333	0.00	0.00	0.105	o	|	|	|	|	0.15
199.417	0.00	0.00	0.105	o	|	|	|	|	0.15
199.500	0.00	0.00	0.105	o	|	|	|	|	0.15
199.583	0.00	0.00	0.105	o	|	|	|	|	0.15
199.667	0.00	0.00	0.105	o	|	|	|	|	0.15
199.750	0.00	0.00	0.105	o	|	|	|	|	0.15
199.833	0.00	0.00	0.105	o	|	|	|	|	0.15
199.917	0.00	0.00	0.105	o	|	|	|	|	0.15
200.000	0.00	0.00	0.105	o	|	|	|	|	0.15
200.083	0.00	0.00	0.104	o	|	|	|	|	0.15
200.167	0.00	0.00	0.104	o	|	|	|	|	0.15
200.250	0.00	0.00	0.104	o	|	|	|	|	0.15
200.333	0.00	0.00	0.104	o	|	|	|	|	0.15
200.417	0.00	0.00	0.104	o	|	|	|	|	0.15
200.500	0.00	0.00	0.104	o	|	|	|	|	0.15
200.583	0.00	0.00	0.104	o	|	|	|	|	0.15
200.667	0.00	0.00	0.104	o	|	|	|	|	0.15
200.750	0.00	0.00	0.104	o	|	|	|	|	0.15
200.833	0.00	0.00	0.104	o	|	|	|	|	0.15
200.917	0.00	0.00	0.104	o	|	|	|	|	0.15
201.000	0.00	0.00	0.104	o	|	|	|	|	0.15
201.083	0.00	0.00	0.104	o	|	|	|	|	0.15
201.167	0.00	0.00	0.104	o	|	|	|	|	0.15
201.250	0.00	0.00	0.104	o	|	|	|	|	0.15
201.333	0.00	0.00	0.104	o	|	|	|	|	0.15
201.417	0.00	0.00	0.104	o	|	|	|	|	0.15
201.500	0.00	0.00	0.104	o	|	|	|	|	0.15
201.583	0.00	0.00	0.104	o	|	|	|	|	0.15
201.667	0.00	0.00	0.104	o	|	|	|	|	0.15
201.750	0.00	0.00	0.104	o	|	|	|	|	0.15
201.833	0.00	0.00	0.104	o	|	|	|	|	0.15
201.917	0.00	0.00	0.104	o	|	|	|	|	0.15
202.000	0.00	0.00	0.104	o	|	|	|	|	0.15
202.083	0.00	0.00	0.104	o	|	|	|	|	0.15
202.167	0.00	0.00	0.104	o	|	|	|	|	0.15
202.250	0.00	0.00	0.104	o	|	|	|	|	0.15
202.333	0.00	0.00	0.104	o	|	|	|	|	0.15
202.417	0.00	0.00	0.104	o	|	|	|	|	0.15
202.500	0.00	0.00	0.104	o	|	|	|	|	0.15
202.583	0.00	0.00	0.104	o	|	|	|	|	0.15
202.667	0.00	0.00	0.104	o	|	|	|	|	0.15
202.750	0.00	0.00	0.104	o	|	|	|	|	0.15
202.833	0.00	0.00	0.104	o	|	|	|	|	0.15
202.917	0.00	0.00	0.104	o	|	|	|	|	0.15
203.000	0.00	0.00	0.104	o	|	|	|	|	0.15
203.083	0.00	0.00	0.104	o	|	|	|	|	0.15
203.167	0.00	0.00	0.104	o	|	|	|	|	0.15
203.250	0.00	0.00	0.104	o	|	|	|	|	0.15
203.333	0.00	0.00	0.104	o	|	|	|	|	0.15
203.417	0.00	0.00	0.104	o	|	|	|	|	0.15
203.500	0.00	0.00	0.104	o	|	|	|	|	0.15
203.583	0.00	0.00	0.104	o	|	|	|	|	0.15
203.667	0.00	0.00	0.104	o	|	|	|	|	0.15
203.750	0.00	0.00	0.104	o	|	|	|	|	0.15
203.833	0.00	0.00	0.104	o	|	|	|	|	0.15
203.917	0.00	0.00	0.104	o	|	|	|	|	0.15
204.000	0.00	0.00	0.104	o	|	|	|	|	0.15
204.083	0.00	0.00	0.104	o	|	|	|	|	0.15
204.167	0.00	0.00	0.104	o	|	|	|	|	0.15
204.250	0.00	0.00	0.104	o	|	|	|	|	0.15
204.333	0.00	0.00	0.104	o	|	|	|	|	0.15
204.417	0.00	0.00	0.104	o	|	|	|	|	0.15
204.500	0.00	0.00	0.104	o	|	|	|	|	0.15
204.583	0.00	0.00	0.104	o	|	|	|	|	0.15
204.667	0.00	0.00	0.104	o	|	|	|	|	0.15
204.750	0.00	0.00	0.104	o	|	|	|	|	0.15
204.833	0.00	0.00	0.104	o	|	|	|	|	0.15
204.917	0.00	0.00	0.104	o	|	|	|	|	0.15
205.000	0.00	0.00	0.104	o	|	|	|	|	0.15
205.083	0.00	0.00	0.104	o	|	|	|	|	0.15
205.167	0.00	0.00	0.104	o	|	|	|	|	0.15

Remaining water in basin = 0.10 (Ac.Ft)

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**************************HYDROGRAPH DATA**************************
               Number of intervals =  2462
               Time interval =    5.0 (Min.)
               Maximum/Peak flow rate =        0.647 (CFS)
               Total volume =       4.895 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
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BASIN ROUTING
5-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 02/17/22

EXETER BSS BUILDING 3
2-YR 24-HR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH5YR245.rte
**********HYDROGRAPH DATA**********
Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 11.295 (CFS)
Total volume = 6.873 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
2.000	2.065	0.482	2.063	2.067
2.500	2.745	0.543	2.743	2.747
3.000	3.453	0.598	3.451	3.455
3.490	4.167	0.647	4.165	4.169
3.500	4.182	0.720	4.180	4.184
4.000	4.923	1.210	4.919	4.927
4.500	5.670	1.464	5.665	5.675
5.000	6.418	1.667	6.412	6.424
5.500	7.159	1.843	7.153	7.165
6.000	7.887	2.000	7.880	7.894
6.500	8.595	2.145	8.588	8.602
7.000	9.275	2.279	9.267	9.283
7.500	9.916	2.406	9.908	9.924
8.000	10.499	2.525	10.490	10.508
8.500	10.984	2.639	10.975	10.993

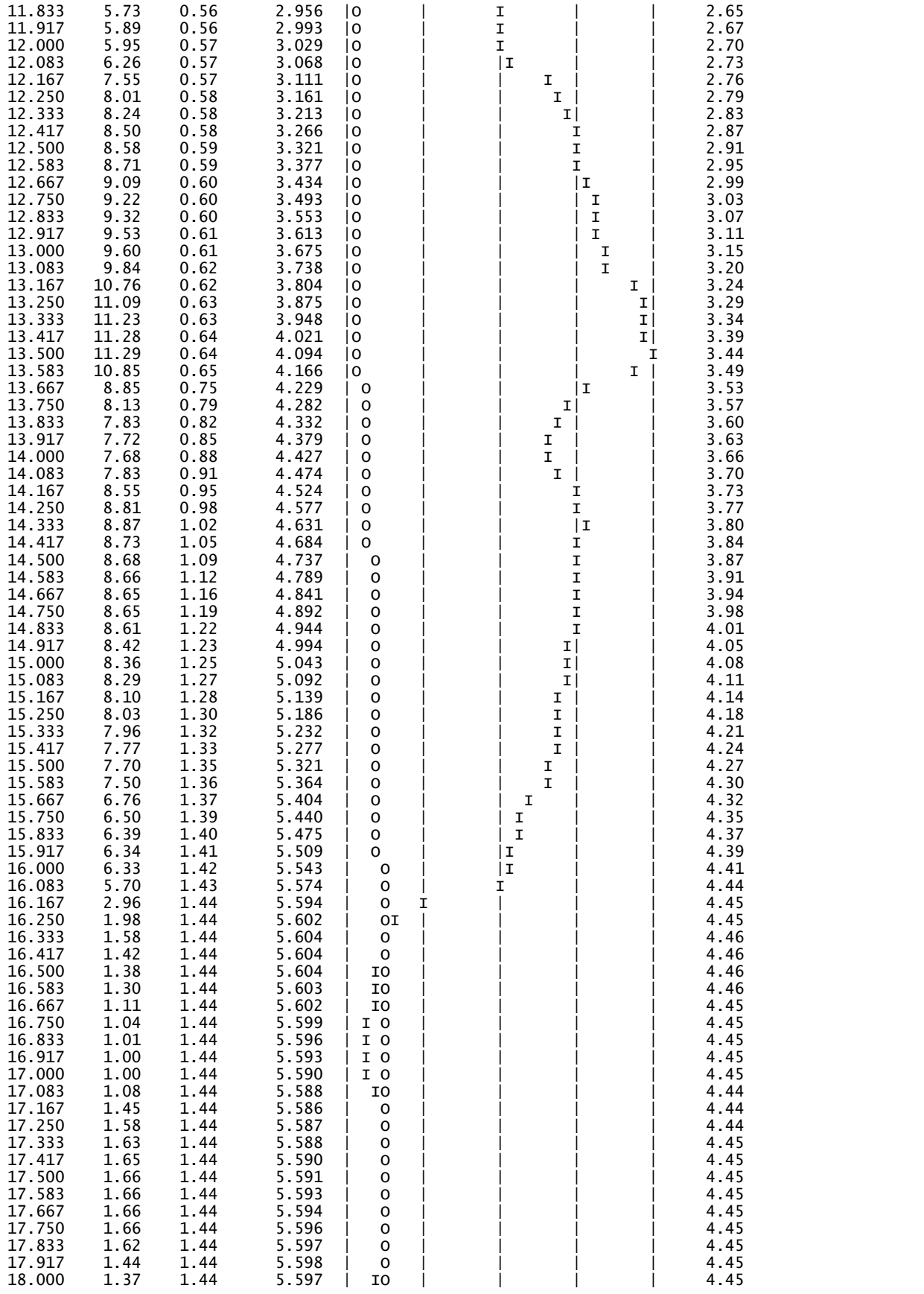
9.000 11.340 2.749 11.331 11.349

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 2.8 5.65 8.47 11.29	Depth (Ft.)
0.083	0.08	0.00	0.000	O | | | |	0.00
0.167	0.45	0.00	0.002	OI | | | |	0.00
0.250	0.58	0.00	0.006	OI | | | |	0.01
0.333	0.67	0.00	0.010	OI | | | |	0.01
0.417	0.88	0.00	0.015	O I | | | |	0.02
0.500	0.95	0.00	0.022	O I | | | |	0.03
0.583	0.98	0.00	0.028	O I | | | |	0.04
0.667	0.99	0.00	0.035	O I | | | |	0.05
0.750	0.99	0.00	0.042	O I | | | |	0.06
0.833	1.04	0.00	0.049	O I | | | |	0.07
0.917	1.22	0.00	0.057	O I | | | |	0.08
1.000	1.29	0.00	0.065	O I | | | |	0.09
1.083	1.27	0.00	0.074	O I | | | |	0.10
1.167	1.10	0.00	0.082	O I | | | |	0.12
1.250	1.04	0.00	0.090	O I | | | |	0.13
1.333	1.01	0.00	0.097	O I | | | |	0.14
1.417	1.00	0.00	0.104	O I | | | |	0.15
1.500	1.00	0.01	0.110	O I | | | |	0.16
1.583	1.00	0.01	0.117	O I | | | |	0.16
1.667	1.00	0.02	0.124	O I | | | |	0.17
1.750	1.00	0.02	0.131	O I | | | |	0.18
1.833	1.04	0.03	0.138	O I | | | |	0.19
1.917	1.22	0.04	0.145	O I | | | |	0.20
2.000	1.29	0.04	0.154	O I | | | |	0.22
2.083	1.31	0.05	0.162	O I | | | |	0.23
2.167	1.32	0.06	0.171	O I | | | |	0.24
2.250	1.33	0.06	0.180	O I | | | |	0.25
2.333	1.33	0.07	0.188	O I | | | |	0.26
2.417	1.33	0.08	0.197	O I | | | |	0.28
2.500	1.33	0.09	0.206	O I | | | |	0.29
2.583	1.37	0.09	0.214	O I | | | |	0.30
2.667	1.55	0.10	0.224	O I | | | |	0.31
2.750	1.62	0.11	0.234	O I | | | |	0.33
2.833	1.65	0.12	0.244	O I | | | |	0.34
2.917	1.66	0.13	0.255	O I | | | |	0.36
3.000	1.66	0.14	0.265	O I | | | |	0.37
3.083	1.66	0.14	0.276	O I | | | |	0.39
3.167	1.66	0.15	0.286	O I | | | |	0.40
3.250	1.66	0.16	0.297	O I | | | |	0.42
3.333	1.66	0.17	0.307	O I | | | |	0.43
3.417	1.66	0.18	0.317	O I | | | |	0.45
3.500	1.66	0.19	0.327	O I | | | |	0.46
3.583	1.66	0.20	0.338	O I | | | |	0.47
3.667	1.66	0.20	0.348	O I | | | |	0.49
3.750	1.66	0.21	0.358	O I | | | |	0.50
3.833	1.70	0.21	0.368	O I | | | |	0.51
3.917	1.89	0.22	0.379	O I | | | |	0.52
4.000	1.95	0.22	0.390	O I | | | |	0.54
4.083	1.98	0.22	0.402	O I | | | |	0.55
4.167	1.99	0.23	0.415	O I | | | |	0.56
4.250	1.99	0.23	0.427	O I | | | |	0.57
4.333	2.04	0.23	0.439	O I | | | |	0.59
4.417	2.22	0.23	0.452	O I | | | |	0.60
4.500	2.28	0.24	0.466	O I | | | |	0.61
4.583	2.31	0.24	0.480	O I | | | |	0.63
4.667	2.32	0.24	0.494	O I | | | |	0.64
4.750	2.33	0.25	0.509	O I | | | |	0.66
4.833	2.37	0.25	0.523	O I | | | |	0.67
4.917	2.55	0.25	0.538	O I | | | |	0.69
5.000	2.62	0.26	0.554	O I | | | |	0.70
5.083	2.56	0.26	0.570	O I | | | |	0.72
5.167	2.21	0.27	0.585	O I | | | |	0.74
5.250	2.08	0.27	0.598	O I | | | |	0.75
5.333	2.07	0.27	0.610	O I | | | |	0.76
5.417	2.23	0.27	0.623	O I | | | |	0.78
5.500	2.29	0.28	0.637	O I | | | |	0.79

5.583	2.36	0.28	0.651	o	I	|	|	|	0.80
5.667	2.55	0.29	0.666	o	I	|	|	|	0.82
5.750	2.61	0.29	0.682	o	I	|	|	|	0.84
5.833	2.64	0.29	0.698	o	I	|	|	|	0.85
5.917	2.65	0.30	0.714	o	I	|	|	|	0.87
6.000	2.66	0.30	0.730	o	I	|	|	|	0.89
6.083	2.70	0.30	0.747	o	I	|	|	|	0.90
6.167	2.88	0.31	0.764	o	I	|	|	|	0.92
6.250	2.95	0.31	0.782	o	I	|	|	|	0.94
6.333	2.98	0.32	0.800	o	I	|	|	|	0.96
6.417	2.99	0.32	0.818	o	I	|	|	|	0.98
6.500	2.99	0.33	0.837	o	I	|	|	|	1.00
6.583	3.03	0.33	0.855	o	I	|	|	|	1.01
6.667	3.22	0.33	0.875	o	I	|	|	|	1.03
6.750	3.28	0.33	0.895	o	I	|	|	|	1.04
6.833	3.31	0.34	0.915	o	I	|	|	|	1.06
6.917	3.32	0.34	0.936	o	I	|	|	|	1.08
7.000	3.32	0.34	0.956	o	I	|	|	|	1.09
7.083	3.33	0.34	0.977	o	I	|	|	|	1.11
7.167	3.33	0.35	0.997	o	I	|	|	|	1.13
7.250	3.33	0.35	1.018	o	I	|	|	|	1.14
7.333	3.37	0.35	1.038	o	I	|	|	|	1.16
7.417	3.55	0.35	1.060	o	I	|	|	|	1.18
7.500	3.62	0.36	1.082	o	I	|	|	|	1.20
7.583	3.68	0.36	1.105	o	I	|	|	|	1.22
7.667	3.88	0.36	1.128	o	I	|	|	|	1.23
7.750	3.95	0.37	1.152	o	I	|	|	|	1.25
7.833	4.02	0.37	1.177	o	I	|	|	|	1.27
7.917	4.21	0.37	1.203	o	I	|	|	|	1.30
8.000	4.28	0.38	1.230	o	I	|	|	|	1.32
8.083	4.39	0.38	1.257	o	I	|	|	|	1.34
8.167	4.77	0.38	1.286	o	I	|	|	|	1.36
8.250	4.90	0.39	1.317	o	I	|	|	|	1.39
8.333	4.96	0.39	1.348	o	I	|	|	|	1.41
8.417	4.98	0.40	1.379	o	I	|	|	|	1.44
8.500	4.98	0.40	1.411	o	I	|	|	|	1.47
8.583	5.03	0.40	1.443	o	I	|	|	|	1.49
8.667	5.21	0.41	1.475	o	I	|	|	|	1.52
8.750	5.28	0.41	1.508	o	I	|	|	|	1.55
8.833	5.35	0.42	1.542	o	I	|	|	|	1.57
8.917	5.54	0.42	1.577	o	I	|	|	|	1.60
9.000	5.61	0.42	1.612	o	I	|	|	|	1.63
9.083	5.72	0.43	1.648	o	I	|	|	|	1.66
9.167	6.10	0.43	1.686	o	I	|	|	|	1.69
9.250	6.23	0.44	1.725	o	I	|	|	|	1.72
9.333	6.33	0.44	1.766	o	I	|	|	|	1.76
9.417	6.53	0.45	1.807	o	I	|	|	|	1.79
9.500	6.60	0.45	1.849	o	I	|	|	|	1.82
9.583	6.68	0.46	1.892	o	I	|	|	|	1.86
9.667	6.87	0.47	1.935	o	I	|	|	|	1.89
9.750	6.94	0.47	1.979	o	I	|	|	|	1.93
9.833	7.01	0.48	2.024	o	I	|	|	|	1.97
9.917	7.20	0.48	2.070	o	I	|	|	|	2.00
10.000	7.27	0.49	2.116	o	I	|	|	|	2.04
10.083	7.01	0.49	2.162	o	I	|	|	|	2.07
10.167	5.75	0.49	2.203	o	I	|	|	|	2.10
10.250	5.29	0.50	2.237	o	I	|	|	|	2.13
10.333	5.10	0.50	2.270	o	I	|	|	|	2.15
10.417	5.03	0.50	2.301	o	I	|	|	|	2.17
10.500	5.01	0.51	2.332	o	I	|	|	|	2.20
10.583	5.20	0.51	2.364	o	I	|	|	|	2.22
10.667	6.11	0.51	2.399	o	I	|	|	|	2.25
10.750	6.44	0.52	2.439	o	I	|	|	|	2.27
10.833	6.57	0.52	2.480	o	I	|	|	|	2.31
10.917	6.62	0.52	2.522	o	I	|	|	|	2.34
11.000	6.64	0.53	2.564	o	I	|	|	|	2.37
11.083	6.61	0.53	2.606	o	I	|	|	|	2.40
11.167	6.43	0.53	2.647	o	I	|	|	|	2.43
11.250	6.36	0.54	2.688	o	I	|	|	|	2.46
11.333	6.34	0.54	2.728	o	I	|	|	|	2.49
11.417	6.33	0.54	2.767	o	I	|	|	|	2.52
11.500	6.32	0.55	2.807	o	I	|	|	|	2.54
11.583	6.24	0.55	2.847	o	I	|	|	|	2.57
11.667	5.87	0.55	2.885	o	I	|	|	|	2.60
11.750	5.74	0.56	2.921	o	I	|	|	|	2.62



18.083	1.35	1.44	5.597	IO				4.45
18.167	1.34	1.44	5.596	IO				4.45
18.250	1.33	1.44	5.596	IO				4.45
18.333	1.33	1.44	5.595	IO				4.45
18.417	1.33	1.44	5.594	IO				4.45
18.500	1.33	1.44	5.593	IO				4.45
18.583	1.29	1.44	5.592	IO				4.45
18.667	1.11	1.44	5.591	IO				4.45
18.750	1.04	1.44	5.588	I O				4.45
18.833	0.97	1.44	5.585	I O				4.44
18.917	0.78	1.43	5.581	I O				4.44
19.000	0.71	1.43	5.577	I O				4.44
19.083	0.72	1.43	5.572	I O				4.43
19.167	0.90	1.43	5.568	I O				4.43
19.250	0.96	1.43	5.564	I O				4.43
19.333	1.02	1.43	5.561	I O				4.43
19.417	1.22	1.43	5.559	IO				4.43
19.500	1.28	1.43	5.558	IO				4.42
19.583	1.27	1.43	5.557	IO				4.42
19.667	1.10	1.42	5.555	IO				4.42
19.750	1.04	1.42	5.553	I O				4.42
19.833	0.97	1.42	5.550	I O				4.42
19.917	0.78	1.42	5.546	I O				4.42
20.000	0.71	1.42	5.541	I O				4.41
20.083	0.72	1.42	5.537	I O				4.41
20.167	0.90	1.42	5.532	I O				4.41
20.250	0.96	1.42	5.529	I O				4.41
20.333	0.98	1.42	5.526	I O				4.40
20.417	0.99	1.41	5.523	I O				4.40
20.500	0.99	1.41	5.520	I O				4.40
20.583	1.00	1.41	5.517	I O				4.40
20.667	1.00	1.41	5.514	IO				4.40
20.750	1.00	1.41	5.511	IO				4.39
20.833	0.96	1.41	5.509	IO				4.39
20.917	0.77	1.41	5.505	IO				4.39
21.000	0.71	1.41	5.500	IO				4.39
21.083	0.72	1.40	5.495	IO				4.38
21.167	0.90	1.40	5.491	IO				4.38
21.250	0.96	1.40	5.488	IO				4.38
21.333	0.94	1.40	5.485	IO				4.38
21.417	0.77	1.40	5.481	IO				4.37
21.500	0.71	1.40	5.477	I O				4.37
21.583	0.72	1.40	5.472	IO				4.37
21.667	0.90	1.40	5.468	IO				4.36
21.750	0.96	1.39	5.465	IO				4.36
21.833	0.94	1.39	5.462	IO				4.36
21.917	0.77	1.39	5.458	IO				4.36
22.000	0.71	1.39	5.453	I O				4.36
22.083	0.72	1.39	5.449	IO				4.35
22.167	0.90	1.39	5.445	IO				4.35
22.250	0.96	1.39	5.442	IO				4.35
22.333	0.94	1.39	5.439	IO				4.35
22.417	0.77	1.38	5.435	IO				4.34
22.500	0.71	1.38	5.430	I O				4.34
22.583	0.68	1.38	5.426	I O				4.34
22.667	0.67	1.38	5.421	I O				4.33
22.750	0.67	1.38	5.416	I O				4.33
22.833	0.67	1.38	5.411	I O				4.33
22.917	0.67	1.37	5.406	I O				4.32
23.000	0.67	1.37	5.401	I O				4.32
23.083	0.67	1.37	5.396	I O				4.32
23.167	0.67	1.37	5.392	I O				4.31
23.250	0.67	1.37	5.387	I O				4.31
23.333	0.67	1.37	5.382	I O				4.31
23.417	0.67	1.36	5.377	I O				4.30
23.500	0.67	1.36	5.372	I O				4.30
23.583	0.67	1.36	5.368	I O				4.30
23.667	0.67	1.36	5.363	I O				4.29
23.750	0.67	1.36	5.358	I O				4.29
23.833	0.67	1.36	5.353	I O				4.29
23.917	0.67	1.35	5.348	I O				4.28
24.000	0.67	1.35	5.344	I O				4.28
24.083	0.58	1.35	5.339	I O				4.28
24.167	0.22	1.35	5.332	I O				4.27
24.250	0.09	1.35	5.324	I O				4.27

24.333	0.03	1.34	5.315	I	o	|	|	|	|	4.26
24.417	0.01	1.34	5.306	I	o	|	|	|	|	4.26
24.500	0.01	1.34	5.297	I	o	|	|	|	|	4.25
24.583	0.00	1.33	5.288	I	o	|	|	|	|	4.24
24.667	0.00	1.33	5.278	I	o	|	|	|	|	4.24
24.750	0.00	1.33	5.269	I	o	|	|	|	|	4.23
24.833	0.00	1.32	5.260	I	o	|	|	|	|	4.23
24.917	0.00	1.32	5.251	I	o	|	|	|	|	4.22
25.000	0.00	1.32	5.242	I	o	|	|	|	|	4.21
25.083	0.00	1.32	5.233	I	o	|	|	|	|	4.21
25.167	0.00	1.31	5.224	I	o	|	|	|	|	4.20
25.250	0.00	1.31	5.215	I	o	|	|	|	|	4.20
25.333	0.00	1.31	5.206	I	o	|	|	|	|	4.19
25.417	0.00	1.30	5.197	I	o	|	|	|	|	4.18
25.500	0.00	1.30	5.188	I	o	|	|	|	|	4.18
25.583	0.00	1.30	5.179	I	o	|	|	|	|	4.17
25.667	0.00	1.29	5.170	I	o	|	|	|	|	4.17
25.750	0.00	1.29	5.161	I	o	|	|	|	|	4.16
25.833	0.00	1.29	5.152	I	o	|	|	|	|	4.15
25.917	0.00	1.28	5.143	I	o	|	|	|	|	4.15
26.000	0.00	1.28	5.135	I	o	|	|	|	|	4.14
26.083	0.00	1.28	5.126	I	o	|	|	|	|	4.14
26.167	0.00	1.28	5.117	I	o	|	|	|	|	4.13
26.250	0.00	1.27	5.108	I	o	|	|	|	|	4.12
26.333	0.00	1.27	5.099	I	o	|	|	|	|	4.12
26.417	0.00	1.27	5.091	I	o	|	|	|	|	4.11
26.500	0.00	1.26	5.082	I	o	|	|	|	|	4.11
26.583	0.00	1.26	5.073	I	o	|	|	|	|	4.10
26.667	0.00	1.26	5.065	I	o	|	|	|	|	4.09
26.750	0.00	1.26	5.056	I	o	|	|	|	|	4.09
26.833	0.00	1.25	5.047	I	o	|	|	|	|	4.08
26.917	0.00	1.25	5.039	I	o	|	|	|	|	4.08
27.000	0.00	1.25	5.030	I	o	|	|	|	|	4.07
27.083	0.00	1.24	5.021	I	o	|	|	|	|	4.07
27.167	0.00	1.24	5.013	I	o	|	|	|	|	4.06
27.250	0.00	1.24	5.004	I	o	|	|	|	|	4.05
27.333	0.00	1.23	4.996	I	o	|	|	|	|	4.05
27.417	0.00	1.23	4.987	I	o	|	|	|	|	4.04
27.500	0.00	1.23	4.979	I	o	|	|	|	|	4.04
27.583	0.00	1.23	4.970	I	o	|	|	|	|	4.03
27.667	0.00	1.22	4.962	I	o	|	|	|	|	4.03
27.750	0.00	1.22	4.954	I	o	|	|	|	|	4.02
27.833	0.00	1.22	4.945	I	o	|	|	|	|	4.01
27.917	0.00	1.21	4.937	I	o	|	|	|	|	4.01
28.000	0.00	1.21	4.928	I	o	|	|	|	|	4.00
28.083	0.00	1.21	4.920	I	o	|	|	|	|	4.00
28.167	0.00	1.20	4.912	I	o	|	|	|	|	3.99
28.250	0.00	1.20	4.904	I	o	|	|	|	|	3.99
28.333	0.00	1.19	4.895	I	o	|	|	|	|	3.98
28.417	0.00	1.19	4.887	I	o	|	|	|	|	3.98
28.500	0.00	1.18	4.879	I	o	|	|	|	|	3.97
28.583	0.00	1.18	4.871	I	o	|	|	|	|	3.96
28.667	0.00	1.17	4.863	I	o	|	|	|	|	3.96
28.750	0.00	1.16	4.855	I	o	|	|	|	|	3.95
28.833	0.00	1.16	4.847	I	o	|	|	|	|	3.95
28.917	0.00	1.15	4.839	I	o	|	|	|	|	3.94
29.000	0.00	1.15	4.831	I	o	|	|	|	|	3.94
29.083	0.00	1.14	4.823	I	o	|	|	|	|	3.93
29.167	0.00	1.14	4.815	I	o	|	|	|	|	3.93
29.250	0.00	1.13	4.807	I	o	|	|	|	|	3.92
29.333	0.00	1.13	4.800	I	o	|	|	|	|	3.92
29.417	0.00	1.12	4.792	I	o	|	|	|	|	3.91
29.500	0.00	1.12	4.784	I	o	|	|	|	|	3.91
29.583	0.00	1.11	4.776	I	o	|	|	|	|	3.90
29.667	0.00	1.11	4.769	I	o	|	|	|	|	3.90
29.750	0.00	1.10	4.761	I	o	|	|	|	|	3.89
29.833	0.00	1.10	4.754	I	o	|	|	|	|	3.89
29.917	0.00	1.09	4.746	I	o	|	|	|	|	3.88
30.000	0.00	1.09	4.738	I	o	|	|	|	|	3.88
30.083	0.00	1.08	4.731	I	o	|	|	|	|	3.87
30.167	0.00	1.08	4.724	I	o	|	|	|	|	3.87
30.250	0.00	1.07	4.716	I	o	|	|	|	|	3.86
30.333	0.00	1.07	4.709	I	o	|	|	|	|	3.86
30.417	0.00	1.06	4.701	I	o	|	|	|	|	3.85
30.500	0.00	1.06	4.694	I	o	|	|	|	|	3.85

30.583	0.00	1.05	4.687	I	O	|	|	|	3.84
30.667	0.00	1.05	4.680	I	O	|	|	|	3.84
30.750	0.00	1.04	4.672	I	O	|	|	|	3.83
30.833	0.00	1.04	4.665	I	O	|	|	|	3.83
30.917	0.00	1.03	4.658	I	O	|	|	|	3.82
31.000	0.00	1.03	4.651	I	O	|	|	|	3.82
31.083	0.00	1.03	4.644	I	O	|	|	|	3.81
31.167	0.00	1.02	4.637	I	O	|	|	|	3.81
31.250	0.00	1.02	4.630	I	O	|	|	|	3.80
31.333	0.00	1.01	4.623	I	O	|	|	|	3.80
31.417	0.00	1.01	4.616	I	O	|	|	|	3.79
31.500	0.00	1.00	4.609	I	O	|	|	|	3.79
31.583	0.00	1.00	4.602	I	O	|	|	|	3.78
31.667	0.00	0.99	4.595	I	O	|	|	|	3.78
31.750	0.00	0.99	4.588	I	O	|	|	|	3.77
31.833	0.00	0.98	4.582	I	O	|	|	|	3.77
31.917	0.00	0.98	4.575	I	O	|	|	|	3.77
32.000	0.00	0.98	4.568	I	O	|	|	|	3.76
32.083	0.00	0.97	4.561	I	O	|	|	|	3.76
32.167	0.00	0.97	4.555	I	O	|	|	|	3.75
32.250	0.00	0.96	4.548	I	O	|	|	|	3.75
32.333	0.00	0.96	4.541	I	O	|	|	|	3.74
32.417	0.00	0.95	4.535	I	O	|	|	|	3.74
32.500	0.00	0.95	4.528	I	O	|	|	|	3.73
32.583	0.00	0.94	4.522	I	O	|	|	|	3.73
32.667	0.00	0.94	4.515	I	O	|	|	|	3.72
32.750	0.00	0.94	4.509	I	O	|	|	|	3.72
32.833	0.00	0.93	4.502	I	O	|	|	|	3.72
32.917	0.00	0.93	4.496	I	O	|	|	|	3.71
33.000	0.00	0.92	4.490	I	O	|	|	|	3.71
33.083	0.00	0.92	4.483	I	O	|	|	|	3.70
33.167	0.00	0.92	4.477	I	O	|	|	|	3.70
33.250	0.00	0.91	4.471	I	O	|	|	|	3.69
33.333	0.00	0.91	4.464	I	O	|	|	|	3.69
33.417	0.00	0.90	4.458	I	O	|	|	|	3.69
33.500	0.00	0.90	4.452	I	O	|	|	|	3.68
33.583	0.00	0.89	4.446	I	O	|	|	|	3.68
33.667	0.00	0.89	4.440	I	O	|	|	|	3.67
33.750	0.00	0.89	4.434	I	O	|	|	|	3.67
33.833	0.00	0.88	4.428	I	O	|	|	|	3.67
33.917	0.00	0.88	4.421	I	O	|	|	|	3.66
34.000	0.00	0.87	4.415	I	O	|	|	|	3.66
34.083	0.00	0.87	4.409	I	O	|	|	|	3.65
34.167	0.00	0.87	4.403	I	O	|	|	|	3.65
34.250	0.00	0.86	4.397	I	O	|	|	|	3.65
34.333	0.00	0.86	4.392	I	O	|	|	|	3.64
34.417	0.00	0.85	4.386	I	O	|	|	|	3.64
34.500	0.00	0.85	4.380	I	O	|	|	|	3.63
34.583	0.00	0.85	4.374	I	O	|	|	|	3.63
34.667	0.00	0.84	4.368	I	O	|	|	|	3.63
34.750	0.00	0.84	4.362	I	O	|	|	|	3.62
34.833	0.00	0.84	4.357	I	O	|	|	|	3.62
34.917	0.00	0.83	4.351	I	O	|	|	|	3.61
35.000	0.00	0.83	4.345	I	O	|	|	|	3.61
35.083	0.00	0.82	4.339	I	O	|	|	|	3.61
35.167	0.00	0.82	4.334	I	O	|	|	|	3.60
35.250	0.00	0.82	4.328	I	O	|	|	|	3.60
35.333	0.00	0.81	4.322	I	O	|	|	|	3.59
35.417	0.00	0.81	4.317	I	O	|	|	|	3.59
35.500	0.00	0.81	4.311	I	O	|	|	|	3.59
35.583	0.00	0.80	4.306	I	O	|	|	|	3.58
35.667	0.00	0.80	4.300	I	O	|	|	|	3.58
35.750	0.00	0.79	4.295	I	O	|	|	|	3.58
35.833	0.00	0.79	4.289	I	O	|	|	|	3.57
35.917	0.00	0.79	4.284	I	O	|	|	|	3.57
36.000	0.00	0.78	4.279	I	O	|	|	|	3.57
36.083	0.00	0.78	4.273	I	O	|	|	|	3.56
36.167	0.00	0.78	4.268	I	O	|	|	|	3.56
36.250	0.00	0.77	4.262	I	O	|	|	|	3.55
36.333	0.00	0.77	4.257	I	O	|	|	|	3.55
36.417	0.00	0.77	4.252	I	O	|	|	|	3.55
36.500	0.00	0.76	4.247	I	O	|	|	|	3.54
36.583	0.00	0.76	4.241	I	O	|	|	|	3.54
36.667	0.00	0.76	4.236	I	O	|	|	|	3.54
36.750	0.00	0.75	4.231	I	O	|	|	|	3.53

36.833	0.00	0.75	4.226	I O	|	|	|	|	3.53
36.917	0.00	0.75	4.221	I O	|	|	|	|	3.53
37.000	0.00	0.74	4.215	I O	|	|	|	|	3.52
37.083	0.00	0.74	4.210	I O	|	|	|	|	3.52
37.167	0.00	0.74	4.205	I O	|	|	|	|	3.52
37.250	0.00	0.73	4.200	I O	|	|	|	|	3.51
37.333	0.00	0.73	4.195	I O	|	|	|	|	3.51
37.417	0.00	0.73	4.190	I O	|	|	|	|	3.51
37.500	0.00	0.72	4.185	I O	|	|	|	|	3.50
37.583	0.00	0.71	4.180	I O	|	|	|	|	3.50
37.667	0.00	0.69	4.175	IO	|	|	|	|	3.50
37.750	0.00	0.67	4.171	IO	|	|	|	|	3.49
37.833	0.00	0.65	4.166	IO	|	|	|	|	3.49
37.917	0.00	0.65	4.162	IO	|	|	|	|	3.49
38.000	0.00	0.65	4.157	IO	|	|	|	|	3.48
38.083	0.00	0.65	4.153	IO	|	|	|	|	3.48
38.167	0.00	0.65	4.148	IO	|	|	|	|	3.48
38.250	0.00	0.65	4.144	IO	|	|	|	|	3.47
38.333	0.00	0.65	4.140	IO	|	|	|	|	3.47
38.417	0.00	0.64	4.135	IO	|	|	|	|	3.47
38.500	0.00	0.64	4.131	IO	|	|	|	|	3.47
38.583	0.00	0.64	4.126	IO	|	|	|	|	3.46
38.667	0.00	0.64	4.122	IO	|	|	|	|	3.46
38.750	0.00	0.64	4.117	IO	|	|	|	|	3.46
38.833	0.00	0.64	4.113	IO	|	|	|	|	3.45
38.917	0.00	0.64	4.109	IO	|	|	|	|	3.45
39.000	0.00	0.64	4.104	IO	|	|	|	|	3.45
39.083	0.00	0.64	4.100	IO	|	|	|	|	3.44
39.167	0.00	0.64	4.095	IO	|	|	|	|	3.44
39.250	0.00	0.64	4.091	IO	|	|	|	|	3.44
39.333	0.00	0.64	4.086	IO	|	|	|	|	3.43
39.417	0.00	0.64	4.082	IO	|	|	|	|	3.43
39.500	0.00	0.64	4.078	IO	|	|	|	|	3.43
39.583	0.00	0.64	4.073	IO	|	|	|	|	3.43
39.667	0.00	0.64	4.069	IO	|	|	|	|	3.42
39.750	0.00	0.64	4.064	IO	|	|	|	|	3.42
39.833	0.00	0.64	4.060	IO	|	|	|	|	3.42
39.917	0.00	0.64	4.056	IO	|	|	|	|	3.41
40.000	0.00	0.64	4.051	IO	|	|	|	|	3.41
40.083	0.00	0.64	4.047	IO	|	|	|	|	3.41
40.167	0.00	0.64	4.042	IO	|	|	|	|	3.40
40.250	0.00	0.64	4.038	IO	|	|	|	|	3.40
40.333	0.00	0.64	4.034	IO	|	|	|	|	3.40
40.417	0.00	0.64	4.029	IO	|	|	|	|	3.40
40.500	0.00	0.64	4.025	IO	|	|	|	|	3.39
40.583	0.00	0.64	4.020	IO	|	|	|	|	3.39
40.667	0.00	0.64	4.016	IO	|	|	|	|	3.39
40.750	0.00	0.64	4.012	IO	|	|	|	|	3.38
40.833	0.00	0.64	4.007	IO	|	|	|	|	3.38
40.917	0.00	0.64	4.003	IO	|	|	|	|	3.38
41.000	0.00	0.64	3.998	IO	|	|	|	|	3.37
41.083	0.00	0.64	3.994	IO	|	|	|	|	3.37
41.167	0.00	0.63	3.990	IO	|	|	|	|	3.37
41.250	0.00	0.63	3.985	IO	|	|	|	|	3.37
41.333	0.00	0.63	3.981	IO	|	|	|	|	3.36
41.417	0.00	0.63	3.977	IO	|	|	|	|	3.36
41.500	0.00	0.63	3.972	IO	|	|	|	|	3.36
41.583	0.00	0.63	3.968	IO	|	|	|	|	3.35
41.667	0.00	0.63	3.964	IO	|	|	|	|	3.35
41.750	0.00	0.63	3.959	IO	|	|	|	|	3.35
41.833	0.00	0.63	3.955	IO	|	|	|	|	3.34
41.917	0.00	0.63	3.950	IO	|	|	|	|	3.34
42.000	0.00	0.63	3.946	IO	|	|	|	|	3.34
42.083	0.00	0.63	3.942	IO	|	|	|	|	3.34
42.167	0.00	0.63	3.937	IO	|	|	|	|	3.33
42.250	0.00	0.63	3.933	IO	|	|	|	|	3.33
42.333	0.00	0.63	3.929	IO	|	|	|	|	3.33
42.417	0.00	0.63	3.924	IO	|	|	|	|	3.32
42.500	0.00	0.63	3.920	IO	|	|	|	|	3.32
42.583	0.00	0.63	3.916	IO	|	|	|	|	3.32
42.667	0.00	0.63	3.911	IO	|	|	|	|	3.31
42.750	0.00	0.63	3.907	IO	|	|	|	|	3.31
42.833	0.00	0.63	3.903	IO	|	|	|	|	3.31
42.917	0.00	0.63	3.898	IO	|	|	|	|	3.31
43.000	0.00	0.63	3.894	IO	|	|	|	|	3.30

43.083	0.00	0.63	3.890	IO					3.30
43.167	0.00	0.63	3.885	IO					3.30
43.250	0.00	0.63	3.881	IO					3.29
43.333	0.00	0.63	3.877	IO					3.29
43.417	0.00	0.63	3.872	IO					3.29
43.500	0.00	0.63	3.868	IO					3.28
43.583	0.00	0.63	3.864	IO					3.28
43.667	0.00	0.63	3.859	IO					3.28
43.750	0.00	0.63	3.855	IO					3.28
43.833	0.00	0.63	3.851	IO					3.27
43.917	0.00	0.63	3.847	IO					3.27
44.000	0.00	0.62	3.842	IO					3.27
44.083	0.00	0.62	3.838	IO					3.26
44.167	0.00	0.62	3.834	IO					3.26
44.250	0.00	0.62	3.829	IO					3.26
44.333	0.00	0.62	3.825	IO					3.26
44.417	0.00	0.62	3.821	IO					3.25
44.500	0.00	0.62	3.816	IO					3.25
44.583	0.00	0.62	3.812	IO					3.25
44.667	0.00	0.62	3.808	IO					3.24
44.750	0.00	0.62	3.804	IO					3.24
44.833	0.00	0.62	3.799	IO					3.24
44.917	0.00	0.62	3.795	IO					3.23
45.000	0.00	0.62	3.791	IO					3.23
45.083	0.00	0.62	3.786	IO					3.23
45.167	0.00	0.62	3.782	IO					3.23
45.250	0.00	0.62	3.778	IO					3.22
45.333	0.00	0.62	3.774	IO					3.22
45.417	0.00	0.62	3.769	IO					3.22
45.500	0.00	0.62	3.765	IO					3.21
45.583	0.00	0.62	3.761	IO					3.21
45.667	0.00	0.62	3.757	IO					3.21
45.750	0.00	0.62	3.752	IO					3.21
45.833	0.00	0.62	3.748	IO					3.20
45.917	0.00	0.62	3.744	IO					3.20
46.000	0.00	0.62	3.740	IO					3.20
46.083	0.00	0.62	3.735	IO					3.19
46.167	0.00	0.62	3.731	IO					3.19
46.250	0.00	0.62	3.727	IO					3.19
46.333	0.00	0.62	3.723	IO					3.19
46.417	0.00	0.62	3.718	IO					3.18
46.500	0.00	0.62	3.714	IO					3.18
46.583	0.00	0.62	3.710	IO					3.18
46.667	0.00	0.62	3.706	IO					3.17
46.750	0.00	0.62	3.701	IO					3.17
46.833	0.00	0.61	3.697	IO					3.17
46.917	0.00	0.61	3.693	IO					3.16
47.000	0.00	0.61	3.689	IO					3.16
47.083	0.00	0.61	3.684	IO					3.16
47.167	0.00	0.61	3.680	IO					3.16
47.250	0.00	0.61	3.676	IO					3.15
47.333	0.00	0.61	3.672	IO					3.15
47.417	0.00	0.61	3.668	IO					3.15
47.500	0.00	0.61	3.663	IO					3.14
47.583	0.00	0.61	3.659	IO					3.14
47.667	0.00	0.61	3.655	IO					3.14
47.750	0.00	0.61	3.651	IO					3.14
47.833	0.00	0.61	3.646	IO					3.13
47.917	0.00	0.61	3.642	IO					3.13
48.000	0.00	0.61	3.638	IO					3.13
48.083	0.00	0.61	3.634	IO					3.12
48.167	0.00	0.61	3.630	IO					3.12
48.250	0.00	0.61	3.625	IO					3.12
48.333	0.00	0.61	3.621	IO					3.12
48.417	0.00	0.61	3.617	IO					3.11
48.500	0.00	0.61	3.613	IO					3.11
48.583	0.00	0.61	3.609	IO					3.11
48.667	0.00	0.61	3.604	IO					3.10
48.750	0.00	0.61	3.600	IO					3.10
48.833	0.00	0.61	3.596	IO					3.10
48.917	0.00	0.61	3.592	IO					3.10
49.000	0.00	0.61	3.588	IO					3.09
49.083	0.00	0.61	3.584	IO					3.09
49.167	0.00	0.61	3.579	IO					3.09
49.250	0.00	0.61	3.575	IO					3.08

49.333	0.00	0.61	3.571	IO					3.08
49.417	0.00	0.61	3.567	IO					3.08
49.500	0.00	0.61	3.563	IO					3.08
49.583	0.00	0.61	3.559	IO					3.07
49.667	0.00	0.60	3.554	IO					3.07
49.750	0.00	0.60	3.550	IO					3.07
49.833	0.00	0.60	3.546	IO					3.06
49.917	0.00	0.60	3.542	IO					3.06
50.000	0.00	0.60	3.538	IO					3.06
50.083	0.00	0.60	3.534	IO					3.06
50.167	0.00	0.60	3.529	IO					3.05
50.250	0.00	0.60	3.525	IO					3.05
50.333	0.00	0.60	3.521	IO					3.05
50.417	0.00	0.60	3.517	IO					3.04
50.500	0.00	0.60	3.513	IO					3.04
50.583	0.00	0.60	3.509	IO					3.04
50.667	0.00	0.60	3.504	IO					3.04
50.750	0.00	0.60	3.500	IO					3.03
50.833	0.00	0.60	3.496	IO					3.03
50.917	0.00	0.60	3.492	IO					3.03
51.000	0.00	0.60	3.488	IO					3.02
51.083	0.00	0.60	3.484	IO					3.02
51.167	0.00	0.60	3.480	IO					3.02
51.250	0.00	0.60	3.476	IO					3.02
51.333	0.00	0.60	3.471	IO					3.01
51.417	0.00	0.60	3.467	IO					3.01
51.500	0.00	0.60	3.463	IO					3.01
51.583	0.00	0.60	3.459	IO					3.00
51.667	0.00	0.60	3.455	IO					3.00
51.750	0.00	0.60	3.451	IO					3.00
51.833	0.00	0.60	3.447	IO					3.00
51.917	0.00	0.60	3.443	IO					2.99
52.000	0.00	0.60	3.438	IO					2.99
52.083	0.00	0.60	3.434	IO					2.99
52.167	0.00	0.60	3.430	IO					2.98
52.250	0.00	0.60	3.426	IO					2.98
52.333	0.00	0.60	3.422	IO					2.98
52.417	0.00	0.60	3.418	IO					2.98
52.500	0.00	0.59	3.414	IO					2.97
52.583	0.00	0.59	3.410	IO					2.97
52.667	0.00	0.59	3.406	IO					2.97
52.750	0.00	0.59	3.402	IO					2.96
52.833	0.00	0.59	3.397	IO					2.96
52.917	0.00	0.59	3.393	IO					2.96
53.000	0.00	0.59	3.389	IO					2.96
53.083	0.00	0.59	3.385	IO					2.95
53.167	0.00	0.59	3.381	IO					2.95
53.250	0.00	0.59	3.377	IO					2.95
53.333	0.00	0.59	3.373	IO					2.94
53.417	0.00	0.59	3.369	IO					2.94
53.500	0.00	0.59	3.365	IO					2.94
53.583	0.00	0.59	3.361	IO					2.93
53.667	0.00	0.59	3.357	IO					2.93
53.750	0.00	0.59	3.353	IO					2.93
53.833	0.00	0.59	3.349	IO					2.93
53.917	0.00	0.59	3.344	IO					2.92
54.000	0.00	0.59	3.340	IO					2.92
54.083	0.00	0.59	3.336	IO					2.92
54.167	0.00	0.59	3.332	IO					2.91
54.250	0.00	0.59	3.328	IO					2.91
54.333	0.00	0.59	3.324	IO					2.91
54.417	0.00	0.59	3.320	IO					2.91
54.500	0.00	0.59	3.316	IO					2.90
54.583	0.00	0.59	3.312	IO					2.90
54.667	0.00	0.59	3.308	IO					2.90
54.750	0.00	0.59	3.304	IO					2.89
54.833	0.00	0.59	3.300	IO					2.89
54.917	0.00	0.59	3.296	IO					2.89
55.000	0.00	0.59	3.292	IO					2.89
55.083	0.00	0.59	3.288	IO					2.88
55.167	0.00	0.58	3.284	IO					2.88
55.250	0.00	0.58	3.280	IO					2.88
55.333	0.00	0.58	3.276	IO					2.87
55.417	0.00	0.58	3.272	IO					2.87
55.500	0.00	0.58	3.268	IO					2.87

55.583	0.00	0.58	3.264	IO				2.87
55.667	0.00	0.58	3.260	IO				2.86
55.750	0.00	0.58	3.256	IO				2.86
55.833	0.00	0.58	3.252	IO				2.86
55.917	0.00	0.58	3.248	IO				2.85
56.000	0.00	0.58	3.244	IO				2.85
56.083	0.00	0.58	3.240	IO				2.85
56.167	0.00	0.58	3.236	IO				2.85
56.250	0.00	0.58	3.232	IO				2.84
56.333	0.00	0.58	3.228	IO				2.84
56.417	0.00	0.58	3.224	IO				2.84
56.500	0.00	0.58	3.220	IO				2.84
56.583	0.00	0.58	3.216	IO				2.83
56.667	0.00	0.58	3.212	IO				2.83
56.750	0.00	0.58	3.208	IO				2.83
56.833	0.00	0.58	3.204	IO				2.82
56.917	0.00	0.58	3.200	IO				2.82
57.000	0.00	0.58	3.196	IO				2.82
57.083	0.00	0.58	3.192	IO				2.82
57.167	0.00	0.58	3.188	IO				2.81
57.250	0.00	0.58	3.184	IO				2.81
57.333	0.00	0.58	3.180	IO				2.81
57.417	0.00	0.58	3.176	IO				2.80
57.500	0.00	0.58	3.172	IO				2.80
57.583	0.00	0.58	3.168	IO				2.80
57.667	0.00	0.58	3.164	IO				2.80
57.750	0.00	0.58	3.160	IO				2.79
57.833	0.00	0.57	3.156	IO				2.79
57.917	0.00	0.57	3.152	IO				2.79
58.000	0.00	0.57	3.148	IO				2.78
58.083	0.00	0.57	3.144	IO				2.78
58.167	0.00	0.57	3.140	IO				2.78
58.250	0.00	0.57	3.136	IO				2.78
58.333	0.00	0.57	3.132	IO				2.77
58.417	0.00	0.57	3.128	IO				2.77
58.500	0.00	0.57	3.124	IO				2.77
58.583	0.00	0.57	3.120	IO				2.77
58.667	0.00	0.57	3.117	IO				2.76
58.750	0.00	0.57	3.113	IO				2.76
58.833	0.00	0.57	3.109	IO				2.76
58.917	0.00	0.57	3.105	IO				2.75
59.000	0.00	0.57	3.101	IO				2.75
59.083	0.00	0.57	3.097	IO				2.75
59.167	0.00	0.57	3.093	IO				2.75
59.250	0.00	0.57	3.089	IO				2.74
59.333	0.00	0.57	3.085	IO				2.74
59.417	0.00	0.57	3.081	IO				2.74
59.500	0.00	0.57	3.077	IO				2.73
59.583	0.00	0.57	3.073	IO				2.73
59.667	0.00	0.57	3.069	IO				2.73
59.750	0.00	0.57	3.066	IO				2.73
59.833	0.00	0.57	3.062	IO				2.72
59.917	0.00	0.57	3.058	IO				2.72
60.000	0.00	0.57	3.054	IO				2.72
60.083	0.00	0.57	3.050	IO				2.72
60.167	0.00	0.57	3.046	IO				2.71
60.250	0.00	0.57	3.042	IO				2.71
60.333	0.00	0.57	3.038	IO				2.71
60.417	0.00	0.57	3.034	IO				2.70
60.500	0.00	0.57	3.030	IO				2.70
60.583	0.00	0.56	3.027	IO				2.70
60.667	0.00	0.56	3.023	IO				2.70
60.750	0.00	0.56	3.019	IO				2.69
60.833	0.00	0.56	3.015	IO				2.69
60.917	0.00	0.56	3.011	IO				2.69
61.000	0.00	0.56	3.007	IO				2.69
61.083	0.00	0.56	3.003	IO				2.68
61.167	0.00	0.56	2.999	IO				2.68
61.250	0.00	0.56	2.995	IO				2.68
61.333	0.00	0.56	2.992	IO				2.67
61.417	0.00	0.56	2.988	IO				2.67
61.500	0.00	0.56	2.984	IO				2.67
61.583	0.00	0.56	2.980	IO				2.67
61.667	0.00	0.56	2.976	IO				2.66
61.750	0.00	0.56	2.972	IO				2.66

61.833	0.00	0.56	2.968	IO					2.66
61.917	0.00	0.56	2.965	IO					2.66
62.000	0.00	0.56	2.961	IO					2.65
62.083	0.00	0.56	2.957	IO					2.65
62.167	0.00	0.56	2.953	IO					2.65
62.250	0.00	0.56	2.949	IO					2.64
62.333	0.00	0.56	2.945	IO					2.64
62.417	0.00	0.56	2.941	IO					2.64
62.500	0.00	0.56	2.938	IO					2.64
62.583	0.00	0.56	2.934	IO					2.63
62.667	0.00	0.56	2.930	IO					2.63
62.750	0.00	0.56	2.926	IO					2.63
62.833	0.00	0.56	2.922	IO					2.63
62.917	0.00	0.56	2.918	IO					2.62
63.000	0.00	0.56	2.915	IO					2.62
63.083	0.00	0.56	2.911	IO					2.62
63.167	0.00	0.56	2.907	IO					2.61
63.250	0.00	0.56	2.903	IO					2.61
63.333	0.00	0.55	2.899	IO					2.61
63.417	0.00	0.55	2.895	IO					2.61
63.500	0.00	0.55	2.892	IO					2.60
63.583	0.00	0.55	2.888	IO					2.60
63.667	0.00	0.55	2.884	IO					2.60
63.750	0.00	0.55	2.880	IO					2.60
63.833	0.00	0.55	2.876	IO					2.59
63.917	0.00	0.55	2.873	IO					2.59
64.000	0.00	0.55	2.869	IO					2.59
64.083	0.00	0.55	2.865	IO					2.58
64.167	0.00	0.55	2.861	IO					2.58
64.250	0.00	0.55	2.857	IO					2.58
64.333	0.00	0.55	2.854	IO					2.58
64.417	0.00	0.55	2.850	IO					2.57
64.500	0.00	0.55	2.846	IO					2.57
64.583	0.00	0.55	2.842	IO					2.57
64.667	0.00	0.55	2.838	IO					2.57
64.750	0.00	0.55	2.835	IO					2.56
64.833	0.00	0.55	2.831	IO					2.56
64.917	0.00	0.55	2.827	IO					2.56
65.000	0.00	0.55	2.823	IO					2.56
65.083	0.00	0.55	2.819	IO					2.55
65.167	0.00	0.55	2.816	IO					2.55
65.250	0.00	0.55	2.812	IO					2.55
65.333	0.00	0.55	2.808	IO					2.54
65.417	0.00	0.55	2.804	IO					2.54
65.500	0.00	0.55	2.801	IO					2.54
65.583	0.00	0.55	2.797	IO					2.54
65.667	0.00	0.55	2.793	IO					2.53
65.750	0.00	0.55	2.789	IO					2.53
65.833	0.00	0.55	2.786	IO					2.53
65.917	0.00	0.55	2.782	IO					2.53
66.000	0.00	0.55	2.778	IO					2.52
66.083	0.00	0.55	2.774	IO					2.52
66.167	0.00	0.54	2.770	IO					2.52
66.250	0.00	0.54	2.767	IO					2.52
66.333	0.00	0.54	2.763	IO					2.51
66.417	0.00	0.54	2.759	IO					2.51
66.500	0.00	0.54	2.755	IO					2.51
66.583	0.00	0.54	2.752	IO					2.50
66.667	0.00	0.54	2.748	IO					2.50
66.750	0.00	0.54	2.744	IO					2.50
66.833	0.00	0.54	2.741	IO					2.50
66.917	0.00	0.54	2.737	IO					2.49
67.000	0.00	0.54	2.733	IO					2.49
67.083	0.00	0.54	2.729	IO					2.49
67.167	0.00	0.54	2.726	IO					2.49
67.250	0.00	0.54	2.722	IO					2.48
67.333	0.00	0.54	2.718	IO					2.48
67.417	0.00	0.54	2.714	IO					2.48
67.500	0.00	0.54	2.711	IO					2.47
67.583	0.00	0.54	2.707	IO					2.47
67.667	0.00	0.54	2.703	IO					2.47
67.750	0.00	0.54	2.700	IO					2.47
67.833	0.00	0.54	2.696	IO					2.46
67.917	0.00	0.54	2.692	IO					2.46
68.000	0.00	0.54	2.688	IO					2.46

68.083	0.00	0.54	2.685	IO					2.46
68.167	0.00	0.54	2.681	IO					2.45
68.250	0.00	0.54	2.677	IO					2.45
68.333	0.00	0.54	2.674	IO					2.45
68.417	0.00	0.54	2.670	IO					2.44
68.500	0.00	0.54	2.666	IO					2.44
68.583	0.00	0.54	2.663	IO					2.44
68.667	0.00	0.54	2.659	IO					2.44
68.750	0.00	0.53	2.655	IO					2.43
68.833	0.00	0.53	2.651	IO					2.43
68.917	0.00	0.53	2.648	IO					2.43
69.000	0.00	0.53	2.644	IO					2.43
69.083	0.00	0.53	2.640	IO					2.42
69.167	0.00	0.53	2.637	IO					2.42
69.250	0.00	0.53	2.633	IO					2.42
69.333	0.00	0.53	2.629	IO					2.42
69.417	0.00	0.53	2.626	IO					2.41
69.500	0.00	0.53	2.622	IO					2.41
69.583	0.00	0.53	2.618	IO					2.41
69.667	0.00	0.53	2.615	IO					2.40
69.750	0.00	0.53	2.611	IO					2.40
69.833	0.00	0.53	2.607	IO					2.40
69.917	0.00	0.53	2.604	IO					2.40
70.000	0.00	0.53	2.600	IO					2.39
70.083	0.00	0.53	2.597	IO					2.39
70.167	0.00	0.53	2.593	IO					2.39
70.250	0.00	0.53	2.589	IO					2.39
70.333	0.00	0.53	2.586	IO					2.38
70.417	0.00	0.53	2.582	IO					2.38
70.500	0.00	0.53	2.578	IO					2.38
70.583	0.00	0.53	2.575	IO					2.37
70.667	0.00	0.53	2.571	IO					2.37
70.750	0.00	0.53	2.567	IO					2.37
70.833	0.00	0.53	2.564	IO					2.37
70.917	0.00	0.53	2.560	IO					2.36
71.000	0.00	0.53	2.557	IO					2.36
71.083	0.00	0.53	2.553	IO					2.36
71.167	0.00	0.53	2.549	IO					2.36
71.250	0.00	0.53	2.546	IO					2.35
71.333	0.00	0.52	2.542	IO					2.35
71.417	0.00	0.52	2.538	IO					2.35
71.500	0.00	0.52	2.535	IO					2.35
71.583	0.00	0.52	2.531	IO					2.34
71.667	0.00	0.52	2.528	IO					2.34
71.750	0.00	0.52	2.524	IO					2.34
71.833	0.00	0.52	2.520	IO					2.33
71.917	0.00	0.52	2.517	IO					2.33
72.000	0.00	0.52	2.513	IO					2.33
72.083	0.00	0.52	2.510	IO					2.33
72.167	0.00	0.52	2.506	IO					2.32
72.250	0.00	0.52	2.502	IO					2.32
72.333	0.00	0.52	2.499	IO					2.32
72.417	0.00	0.52	2.495	IO					2.32
72.500	0.00	0.52	2.492	IO					2.31
72.583	0.00	0.52	2.488	IO					2.31
72.667	0.00	0.52	2.485	IO					2.31
72.750	0.00	0.52	2.481	IO					2.31
72.833	0.00	0.52	2.477	IO					2.30
72.917	0.00	0.52	2.474	IO					2.30
73.000	0.00	0.52	2.470	IO					2.30
73.083	0.00	0.52	2.467	IO					2.30
73.167	0.00	0.52	2.463	IO					2.29
73.250	0.00	0.52	2.460	IO					2.29
73.333	0.00	0.52	2.456	IO					2.29
73.417	0.00	0.52	2.452	IO					2.28
73.500	0.00	0.52	2.449	IO					2.28
73.583	0.00	0.52	2.445	IO					2.28
73.667	0.00	0.52	2.442	IO					2.28
73.750	0.00	0.52	2.438	IO					2.27
73.833	0.00	0.52	2.435	IO					2.27
73.917	0.00	0.51	2.431	IO					2.27
74.000	0.00	0.51	2.428	IO					2.27
74.083	0.00	0.51	2.424	IO					2.26
74.167	0.00	0.51	2.420	IO					2.26
74.250	0.00	0.51	2.417	IO					2.26

74.333	0.00	0.51	2.413	IO					2.26
74.417	0.00	0.51	2.410	IO					2.25
74.500	0.00	0.51	2.406	IO					2.25
74.583	0.00	0.51	2.403	IO					2.25
74.667	0.00	0.51	2.399	IO					2.25
74.750	0.00	0.51	2.396	IO					2.24
74.833	0.00	0.51	2.392	IO					2.24
74.917	0.00	0.51	2.389	IO					2.24
75.000	0.00	0.51	2.385	IO					2.24
75.083	0.00	0.51	2.382	IO					2.23
75.167	0.00	0.51	2.378	IO					2.23
75.250	0.00	0.51	2.375	IO					2.23
75.333	0.00	0.51	2.371	IO					2.23
75.417	0.00	0.51	2.368	IO					2.22
75.500	0.00	0.51	2.364	IO					2.22
75.583	0.00	0.51	2.361	IO					2.22
75.667	0.00	0.51	2.357	IO					2.21
75.750	0.00	0.51	2.354	IO					2.21
75.833	0.00	0.51	2.350	IO					2.21
75.917	0.00	0.51	2.347	IO					2.21
76.000	0.00	0.51	2.343	IO					2.20
76.083	0.00	0.51	2.340	IO					2.20
76.167	0.00	0.51	2.336	IO					2.20
76.250	0.00	0.51	2.333	IO					2.20
76.333	0.00	0.51	2.329	IO					2.19
76.417	0.00	0.51	2.326	IO					2.19
76.500	0.00	0.51	2.322	IO					2.19
76.583	0.00	0.50	2.319	IO					2.19
76.667	0.00	0.50	2.315	IO					2.18
76.750	0.00	0.50	2.312	IO					2.18
76.833	0.00	0.50	2.308	IO					2.18
76.917	0.00	0.50	2.305	IO					2.18
77.000	0.00	0.50	2.301	IO					2.17
77.083	0.00	0.50	2.298	IO					2.17
77.167	0.00	0.50	2.294	IO					2.17
77.250	0.00	0.50	2.291	IO					2.17
77.333	0.00	0.50	2.288	IO					2.16
77.417	0.00	0.50	2.284	IO					2.16
77.500	0.00	0.50	2.281	IO					2.16
77.583	0.00	0.50	2.277	IO					2.16
77.667	0.00	0.50	2.274	IO					2.15
77.750	0.00	0.50	2.270	IO					2.15
77.833	0.00	0.50	2.267	IO					2.15
77.917	0.00	0.50	2.263	IO					2.15
78.000	0.00	0.50	2.260	IO					2.14
78.083	0.00	0.50	2.257	IO					2.14
78.167	0.00	0.50	2.253	IO					2.14
78.250	0.00	0.50	2.250	IO					2.14
78.333	0.00	0.50	2.246	IO					2.13
78.417	0.00	0.50	2.243	IO					2.13
78.500	0.00	0.50	2.239	IO					2.13
78.583	0.00	0.50	2.236	IO					2.13
78.667	0.00	0.50	2.232	IO					2.12
78.750	0.00	0.50	2.229	IO					2.12
78.833	0.00	0.50	2.226	IO					2.12
78.917	0.00	0.50	2.222	IO					2.12
79.000	0.00	0.50	2.219	IO					2.11
79.083	0.00	0.50	2.215	IO					2.11
79.167	0.00	0.50	2.212	IO					2.11
79.250	0.00	0.49	2.209	IO					2.11
79.333	0.00	0.49	2.205	IO					2.10
79.417	0.00	0.49	2.202	IO					2.10
79.500	0.00	0.49	2.198	IO					2.10
79.583	0.00	0.49	2.195	IO					2.10
79.667	0.00	0.49	2.192	IO					2.09
79.750	0.00	0.49	2.188	IO					2.09
79.833	0.00	0.49	2.185	IO					2.09
79.917	0.00	0.49	2.181	IO					2.09
80.000	0.00	0.49	2.178	IO					2.08
80.083	0.00	0.49	2.175	IO					2.08
80.167	0.00	0.49	2.171	IO					2.08
80.250	0.00	0.49	2.168	IO					2.08
80.333	0.00	0.49	2.164	IO					2.07
80.417	0.00	0.49	2.161	IO					2.07
80.500	0.00	0.49	2.158	IO					2.07

80.583	0.00	0.49	2.154	IO					2.07
80.667	0.00	0.49	2.151	IO					2.06
80.750	0.00	0.49	2.148	IO					2.06
80.833	0.00	0.49	2.144	IO					2.06
80.917	0.00	0.49	2.141	IO					2.06
81.000	0.00	0.49	2.137	IO					2.05
81.083	0.00	0.49	2.134	IO					2.05
81.167	0.00	0.49	2.131	IO					2.05
81.250	0.00	0.49	2.127	IO					2.05
81.333	0.00	0.49	2.124	IO					2.04
81.417	0.00	0.49	2.121	IO					2.04
81.500	0.00	0.49	2.117	IO					2.04
81.583	0.00	0.49	2.114	IO					2.04
81.667	0.00	0.49	2.111	IO					2.03
81.750	0.00	0.49	2.107	IO					2.03
81.833	0.00	0.49	2.104	IO					2.03
81.917	0.00	0.49	2.101	IO					2.03
82.000	0.00	0.48	2.097	IO					2.02
82.083	0.00	0.48	2.094	IO					2.02
82.167	0.00	0.48	2.091	IO					2.02
82.250	0.00	0.48	2.087	IO					2.02
82.333	0.00	0.48	2.084	IO					2.01
82.417	0.00	0.48	2.081	IO					2.01
82.500	0.00	0.48	2.077	IO					2.01
82.583	0.00	0.48	2.074	IO					2.01
82.667	0.00	0.48	2.071	IO					2.00
82.750	0.00	0.48	2.067	IO					2.00
82.833	0.00	0.48	2.064	IO					2.00
82.917	0.00	0.48	2.061	IO					2.00
83.000	0.00	0.48	2.057	IO					1.99
83.083	0.00	0.48	2.054	IO					1.99
83.167	0.00	0.48	2.051	IO					1.99
83.250	0.00	0.48	2.047	IO					1.99
83.333	0.00	0.48	2.044	IO					1.98
83.417	0.00	0.48	2.041	IO					1.98
83.500	0.00	0.48	2.037	IO					1.98
83.583	0.00	0.48	2.034	IO					1.97
83.667	0.00	0.48	2.031	IO					1.97
83.750	0.00	0.48	2.028	IO					1.97
83.833	0.00	0.48	2.024	IO					1.97
83.917	0.00	0.48	2.021	IO					1.96
84.000	0.00	0.48	2.018	IO					1.96
84.083	0.00	0.48	2.014	IO					1.96
84.167	0.00	0.48	2.011	IO					1.96
84.250	0.00	0.47	2.008	IO					1.95
84.333	0.00	0.47	2.005	IO					1.95
84.417	0.00	0.47	2.001	IO					1.95
84.500	0.00	0.47	1.998	IO					1.95
84.583	0.00	0.47	1.995	IO					1.94
84.667	0.00	0.47	1.992	IO					1.94
84.750	0.00	0.47	1.988	IO					1.94
84.833	0.00	0.47	1.985	IO					1.93
84.917	0.00	0.47	1.982	IO					1.93
85.000	0.00	0.47	1.979	IO					1.93
85.083	0.00	0.47	1.975	IO					1.93
85.167	0.00	0.47	1.972	IO					1.92
85.250	0.00	0.47	1.969	IO					1.92
85.333	0.00	0.47	1.966	IO					1.92
85.417	0.00	0.47	1.962	IO					1.92
85.500	0.00	0.47	1.959	IO					1.91
85.583	0.00	0.47	1.956	IO					1.91
85.667	0.00	0.47	1.953	IO					1.91
85.750	0.00	0.47	1.950	IO					1.91
85.833	0.00	0.47	1.946	IO					1.90
85.917	0.00	0.47	1.943	IO					1.90
86.000	0.00	0.47	1.940	IO					1.90
86.083	0.00	0.47	1.937	IO					1.90
86.167	0.00	0.47	1.933	IO					1.89
86.250	0.00	0.46	1.930	IO					1.89
86.333	0.00	0.46	1.927	IO					1.89
86.417	0.00	0.46	1.924	IO					1.88
86.500	0.00	0.46	1.921	IO					1.88
86.583	0.00	0.46	1.918	IO					1.88
86.667	0.00	0.46	1.914	IO					1.88
86.750	0.00	0.46	1.911	IO					1.87

86.833	0.00	0.46	1.908	IO				1.87
86.917	0.00	0.46	1.905	IO				1.87
87.000	0.00	0.46	1.902	IO				1.87
87.083	0.00	0.46	1.898	IO				1.86
87.167	0.00	0.46	1.895	IO				1.86
87.250	0.00	0.46	1.892	IO				1.86
87.333	0.00	0.46	1.889	IO				1.86
87.417	0.00	0.46	1.886	IO				1.85
87.500	0.00	0.46	1.883	IO				1.85
87.583	0.00	0.46	1.879	IO				1.85
87.667	0.00	0.46	1.876	IO				1.85
87.750	0.00	0.46	1.873	IO				1.84
87.833	0.00	0.46	1.870	IO				1.84
87.917	0.00	0.46	1.867	IO				1.84
88.000	0.00	0.46	1.864	IO				1.84
88.083	0.00	0.46	1.861	IO				1.83
88.167	0.00	0.46	1.857	IO				1.83
88.250	0.00	0.46	1.854	IO				1.83
88.333	0.00	0.45	1.851	IO				1.83
88.417	0.00	0.45	1.848	IO				1.82
88.500	0.00	0.45	1.845	IO				1.82
88.583	0.00	0.45	1.842	IO				1.82
88.667	0.00	0.45	1.839	IO				1.82
88.750	0.00	0.45	1.835	IO				1.81
88.833	0.00	0.45	1.832	IO				1.81
88.917	0.00	0.45	1.829	IO				1.81
89.000	0.00	0.45	1.826	IO				1.80
89.083	0.00	0.45	1.823	IO				1.80
89.167	0.00	0.45	1.820	IO				1.80
89.250	0.00	0.45	1.817	IO				1.80
89.333	0.00	0.45	1.814	IO				1.79
89.417	0.00	0.45	1.811	IO				1.79
89.500	0.00	0.45	1.808	IO				1.79
89.583	0.00	0.45	1.804	IO				1.79
89.667	0.00	0.45	1.801	IO				1.78
89.750	0.00	0.45	1.798	IO				1.78
89.833	0.00	0.45	1.795	IO				1.78
89.917	0.00	0.45	1.792	IO				1.78
90.000	0.00	0.45	1.789	IO				1.77
90.083	0.00	0.45	1.786	IO				1.77
90.167	0.00	0.45	1.783	IO				1.77
90.250	0.00	0.45	1.780	IO				1.77
90.333	0.00	0.45	1.777	IO				1.76
90.417	0.00	0.45	1.774	IO				1.76
90.500	0.00	0.44	1.771	IO				1.76
90.583	0.00	0.44	1.768	IO				1.76
90.667	0.00	0.44	1.764	IO				1.75
90.750	0.00	0.44	1.761	IO				1.75
90.833	0.00	0.44	1.758	IO				1.75
90.917	0.00	0.44	1.755	IO				1.75
91.000	0.00	0.44	1.752	IO				1.74
91.083	0.00	0.44	1.749	IO				1.74
91.167	0.00	0.44	1.746	IO				1.74
91.250	0.00	0.44	1.743	IO				1.74
91.333	0.00	0.44	1.740	IO				1.73
91.417	0.00	0.44	1.737	IO				1.73
91.500	0.00	0.44	1.734	IO				1.73
91.583	0.00	0.44	1.731	IO				1.73
91.667	0.00	0.44	1.728	IO				1.72
91.750	0.00	0.44	1.725	IO				1.72
91.833	0.00	0.44	1.722	IO				1.72
91.917	0.00	0.44	1.719	IO				1.72
92.000	0.00	0.44	1.716	IO				1.71
92.083	0.00	0.44	1.713	IO				1.71
92.167	0.00	0.44	1.710	IO				1.71
92.250	0.00	0.44	1.707	IO				1.71
92.333	0.00	0.44	1.704	IO				1.70
92.417	0.00	0.44	1.701	IO				1.70
92.500	0.00	0.44	1.698	IO				1.70
92.583	0.00	0.44	1.695	IO				1.70
92.667	0.00	0.43	1.692	IO				1.70
92.750	0.00	0.43	1.689	IO				1.69
92.833	0.00	0.43	1.686	IO				1.69
92.917	0.00	0.43	1.683	IO				1.69
93.000	0.00	0.43	1.680	IO				1.69

93.083	0.00	0.43	1.677	IO					1.68
93.167	0.00	0.43	1.674	IO					1.68
93.250	0.00	0.43	1.671	IO					1.68
93.333	0.00	0.43	1.668	IO					1.68
93.417	0.00	0.43	1.665	IO					1.67
93.500	0.00	0.43	1.662	IO					1.67
93.583	0.00	0.43	1.659	IO					1.67
93.667	0.00	0.43	1.656	IO					1.67
93.750	0.00	0.43	1.653	IO					1.66
93.833	0.00	0.43	1.650	IO					1.66
93.917	0.00	0.43	1.647	IO					1.66
94.000	0.00	0.43	1.644	IO					1.66
94.083	0.00	0.43	1.641	IO					1.65
94.167	0.00	0.43	1.638	IO					1.65
94.250	0.00	0.43	1.635	IO					1.65
94.333	0.00	0.43	1.632	IO					1.65
94.417	0.00	0.43	1.630	IO					1.64
94.500	0.00	0.43	1.627	IO					1.64
94.583	0.00	0.43	1.624	IO					1.64
94.667	0.00	0.43	1.621	IO					1.64
94.750	0.00	0.43	1.618	IO					1.63
94.833	0.00	0.42	1.615	IO					1.63
94.917	0.00	0.42	1.612	IO					1.63
95.000	0.00	0.42	1.609	IO					1.63
95.083	0.00	0.42	1.606	IO					1.63
95.167	0.00	0.42	1.603	IO					1.62
95.250	0.00	0.42	1.600	IO					1.62
95.333	0.00	0.42	1.597	IO					1.62
95.417	0.00	0.42	1.594	IO					1.62
95.500	0.00	0.42	1.592	IO					1.61
95.583	0.00	0.42	1.589	IO					1.61
95.667	0.00	0.42	1.586	IO					1.61
95.750	0.00	0.42	1.583	IO					1.61
95.833	0.00	0.42	1.580	IO					1.60
95.917	0.00	0.42	1.577	IO					1.60
96.000	0.00	0.42	1.574	IO					1.60
96.083	0.00	0.42	1.571	IO					1.60
96.167	0.00	0.42	1.568	IO					1.59
96.250	0.00	0.42	1.565	IO					1.59
96.333	0.00	0.42	1.563	IO					1.59
96.417	0.00	0.42	1.560	IO					1.59
96.500	0.00	0.42	1.557	IO					1.58
96.583	0.00	0.42	1.554	IO					1.58
96.667	0.00	0.42	1.551	IO					1.58
96.750	0.00	0.42	1.548	IO					1.58
96.833	0.00	0.42	1.545	IO					1.58
96.917	0.00	0.42	1.542	IO					1.57
97.000	0.00	0.42	1.540	IO					1.57
97.083	0.00	0.42	1.537	IO					1.57
97.167	0.00	0.41	1.534	IO					1.57
97.250	0.00	0.41	1.531	IO					1.56
97.333	0.00	0.41	1.528	IO					1.56
97.417	0.00	0.41	1.525	IO					1.56
97.500	0.00	0.41	1.522	IO					1.56
97.583	0.00	0.41	1.520	IO					1.55
97.667	0.00	0.41	1.517	IO					1.55
97.750	0.00	0.41	1.514	IO					1.55
97.833	0.00	0.41	1.511	IO					1.55
97.917	0.00	0.41	1.508	IO					1.55
98.000	0.00	0.41	1.505	IO					1.54
98.083	0.00	0.41	1.503	IO					1.54
98.167	0.00	0.41	1.500	IO					1.54
98.250	0.00	0.41	1.497	IO					1.54
98.333	0.00	0.41	1.494	IO					1.53
98.417	0.00	0.41	1.491	IO					1.53
98.500	0.00	0.41	1.489	IO					1.53
98.583	0.00	0.41	1.486	IO					1.53
98.667	0.00	0.41	1.483	IO					1.52
98.750	0.00	0.41	1.480	IO					1.52
98.833	0.00	0.41	1.477	IO					1.52
98.917	0.00	0.41	1.474	IO					1.52
99.000	0.00	0.41	1.472	IO					1.52
99.083	0.00	0.41	1.469	IO					1.51
99.167	0.00	0.41	1.466	IO					1.51
99.250	0.00	0.41	1.463	IO					1.51

99.333	0.00	0.41	1.460	IO				1.51
99.417	0.00	0.41	1.458	IO				1.50
99.500	0.00	0.40	1.455	IO				1.50
99.583	0.00	0.40	1.452	IO				1.50
99.667	0.00	0.40	1.449	IO				1.50
99.750	0.00	0.40	1.447	IO				1.49
99.833	0.00	0.40	1.444	IO				1.49
99.917	0.00	0.40	1.441	IO				1.49
100.000	0.00	0.40	1.438	IO				1.49
100.083	0.00	0.40	1.435	IO				1.49
100.167	0.00	0.40	1.433	IO				1.48
100.250	0.00	0.40	1.430	IO				1.48
100.333	0.00	0.40	1.427	IO				1.48
100.417	0.00	0.40	1.424	IO				1.48
100.500	0.00	0.40	1.422	IO				1.47
100.583	0.00	0.40	1.419	IO				1.47
100.667	0.00	0.40	1.416	IO				1.47
100.750	0.00	0.40	1.413	IO				1.47
100.833	0.00	0.40	1.411	IO				1.47
100.917	0.00	0.40	1.408	IO				1.46
101.000	0.00	0.40	1.405	IO				1.46
101.083	0.00	0.40	1.402	IO				1.46
101.167	0.00	0.40	1.400	IO				1.46
101.250	0.00	0.40	1.397	IO				1.45
101.333	0.00	0.40	1.394	IO				1.45
101.417	0.00	0.40	1.391	IO				1.45
101.500	0.00	0.40	1.389	IO				1.45
101.583	0.00	0.40	1.386	IO				1.45
101.667	0.00	0.40	1.383	IO				1.44
101.750	0.00	0.40	1.381	IO				1.44
101.833	0.00	0.39	1.378	IO				1.44
101.917	0.00	0.39	1.375	IO				1.44
102.000	0.00	0.39	1.372	IO				1.43
102.083	0.00	0.39	1.370	IO				1.43
102.167	0.00	0.39	1.367	IO				1.43
102.250	0.00	0.39	1.364	IO				1.43
102.333	0.00	0.39	1.362	IO				1.43
102.417	0.00	0.39	1.359	IO				1.42
102.500	0.00	0.39	1.356	IO				1.42
102.583	0.00	0.39	1.353	IO				1.42
102.667	0.00	0.39	1.351	IO				1.42
102.750	0.00	0.39	1.348	IO				1.41
102.833	0.00	0.39	1.345	IO				1.41
102.917	0.00	0.39	1.343	IO				1.41
103.000	0.00	0.39	1.340	IO				1.41
103.083	0.00	0.39	1.337	IO				1.41
103.167	0.00	0.39	1.335	IO				1.40
103.250	0.00	0.39	1.332	IO				1.40
103.333	0.00	0.39	1.329	IO				1.40
103.417	0.00	0.39	1.327	IO				1.40
103.500	0.00	0.39	1.324	IO				1.39
103.583	0.00	0.39	1.321	IO				1.39
103.667	0.00	0.39	1.319	IO				1.39
103.750	0.00	0.39	1.316	IO				1.39
103.833	0.00	0.39	1.313	IO				1.39
103.917	0.00	0.39	1.311	IO				1.38
104.000	0.00	0.39	1.308	IO				1.38
104.083	0.00	0.39	1.305	IO				1.38
104.167	0.00	0.39	1.303	IO				1.38
104.250	0.00	0.39	1.300	IO				1.37
104.333	0.00	0.38	1.297	IO				1.37
104.417	0.00	0.38	1.295	IO				1.37
104.500	0.00	0.38	1.292	IO				1.37
104.583	0.00	0.38	1.289	IO				1.37
104.667	0.00	0.38	1.287	IO				1.36
104.750	0.00	0.38	1.284	IO				1.36
104.833	0.00	0.38	1.281	IO				1.36
104.917	0.00	0.38	1.279	IO				1.36
105.000	0.00	0.38	1.276	IO				1.36
105.083	0.00	0.38	1.273	IO				1.35
105.167	0.00	0.38	1.271	IO				1.35
105.250	0.00	0.38	1.268	IO				1.35
105.333	0.00	0.38	1.266	IO				1.35
105.417	0.00	0.38	1.263	IO				1.34
105.500	0.00	0.38	1.260	IO				1.34

105.583	0.00	0.38	1.258	IO	|	|	|	|	1.34
105.667	0.00	0.38	1.255	IO	|	|	|	|	1.34
105.750	0.00	0.38	1.253	IO	|	|	|	|	1.34
105.833	0.00	0.38	1.250	IO	|	|	|	|	1.33
105.917	0.00	0.38	1.247	IO	|	|	|	|	1.33
106.000	0.00	0.38	1.245	IO	|	|	|	|	1.33
106.083	0.00	0.38	1.242	IO	|	|	|	|	1.33
106.167	0.00	0.38	1.239	IO	|	|	|	|	1.33
106.250	0.00	0.38	1.237	IO	|	|	|	|	1.32
106.333	0.00	0.38	1.234	IO	|	|	|	|	1.32
106.417	0.00	0.38	1.232	IO	|	|	|	|	1.32
106.500	0.00	0.38	1.229	IO	|	|	|	|	1.32
106.583	0.00	0.38	1.227	IO	|	|	|	|	1.31
106.667	0.00	0.38	1.224	IO	|	|	|	|	1.31
106.750	0.00	0.38	1.221	IO	|	|	|	|	1.31
106.833	0.00	0.37	1.219	IO	|	|	|	|	1.31
106.917	0.00	0.37	1.216	IO	|	|	|	|	1.31
107.000	0.00	0.37	1.214	IO	|	|	|	|	1.30
107.083	0.00	0.37	1.211	IO	|	|	|	|	1.30
107.167	0.00	0.37	1.208	IO	|	|	|	|	1.30
107.250	0.00	0.37	1.206	IO	|	|	|	|	1.30
107.333	0.00	0.37	1.203	IO	|	|	|	|	1.30
107.417	0.00	0.37	1.201	IO	|	|	|	|	1.29
107.500	0.00	0.37	1.198	IO	|	|	|	|	1.29
107.583	0.00	0.37	1.196	IO	|	|	|	|	1.29
107.667	0.00	0.37	1.193	IO	|	|	|	|	1.29
107.750	0.00	0.37	1.191	IO	|	|	|	|	1.29
107.833	0.00	0.37	1.188	IO	|	|	|	|	1.28
107.917	0.00	0.37	1.185	IO	|	|	|	|	1.28
108.000	0.00	0.37	1.183	IO	|	|	|	|	1.28
108.083	0.00	0.37	1.180	IO	|	|	|	|	1.28
108.167	0.00	0.37	1.178	IO	|	|	|	|	1.28
108.250	0.00	0.37	1.175	IO	|	|	|	|	1.27
108.333	0.00	0.37	1.173	IO	|	|	|	|	1.27
108.417	0.00	0.37	1.170	IO	|	|	|	|	1.27
108.500	0.00	0.37	1.168	IO	|	|	|	|	1.27
108.583	0.00	0.37	1.165	IO	|	|	|	|	1.26
108.667	0.00	0.37	1.163	IO	|	|	|	|	1.26
108.750	0.00	0.37	1.160	IO	|	|	|	|	1.26
108.833	0.00	0.37	1.157	IO	|	|	|	|	1.26
108.917	0.00	0.37	1.155	IO	|	|	|	|	1.26
109.000	0.00	0.37	1.152	IO	|	|	|	|	1.25
109.083	0.00	0.37	1.150	IO	|	|	|	|	1.25
109.167	0.00	0.37	1.147	IO	|	|	|	|	1.25
109.250	0.00	0.37	1.145	IO	|	|	|	|	1.25
109.333	0.00	0.37	1.142	IO	|	|	|	|	1.25
109.417	0.00	0.36	1.140	IO	|	|	|	|	1.24
109.500	0.00	0.36	1.137	IO	|	|	|	|	1.24
109.583	0.00	0.36	1.135	IO	|	|	|	|	1.24
109.667	0.00	0.36	1.132	IO	|	|	|	|	1.24
109.750	0.00	0.36	1.130	IO	|	|	|	|	1.24
109.833	0.00	0.36	1.127	IO	|	|	|	|	1.23
109.917	0.00	0.36	1.125	IO	|	|	|	|	1.23
110.000	0.00	0.36	1.122	IO	|	|	|	|	1.23
110.083	0.00	0.36	1.120	IO	|	|	|	|	1.23
110.167	0.00	0.36	1.117	IO	|	|	|	|	1.23
110.250	0.00	0.36	1.115	IO	|	|	|	|	1.22
110.333	0.00	0.36	1.112	IO	|	|	|	|	1.22
110.417	0.00	0.36	1.110	IO	|	|	|	|	1.22
110.500	0.00	0.36	1.107	IO	|	|	|	|	1.22
110.583	0.00	0.36	1.105	IO	|	|	|	|	1.22
110.667	0.00	0.36	1.102	IO	|	|	|	|	1.21
110.750	0.00	0.36	1.100	IO	|	|	|	|	1.21
110.833	0.00	0.36	1.097	IO	|	|	|	|	1.21
110.917	0.00	0.36	1.095	IO	|	|	|	|	1.21
111.000	0.00	0.36	1.092	IO	|	|	|	|	1.21
111.083	0.00	0.36	1.090	IO	|	|	|	|	1.20
111.167	0.00	0.36	1.088	IO	|	|	|	|	1.20
111.250	0.00	0.36	1.085	IO	|	|	|	|	1.20
111.333	0.00	0.36	1.083	IO	|	|	|	|	1.20
111.417	0.00	0.36	1.080	IO	|	|	|	|	1.20
111.500	0.00	0.36	1.078	IO	|	|	|	|	1.19
111.583	0.00	0.36	1.075	IO	|	|	|	|	1.19
111.667	0.00	0.36	1.073	IO	|	|	|	|	1.19
111.750	0.00	0.36	1.070	IO	|	|	|	|	1.19

111.833	0.00	0.36	1.068	IO				1.19
111.917	0.00	0.36	1.065	IO				1.18
112.000	0.00	0.36	1.063	IO				1.18
112.083	0.00	0.35	1.061	IO				1.18
112.167	0.00	0.35	1.058	IO				1.18
112.250	0.00	0.35	1.056	IO				1.18
112.333	0.00	0.35	1.053	IO				1.17
112.417	0.00	0.35	1.051	IO				1.17
112.500	0.00	0.35	1.048	IO				1.17
112.583	0.00	0.35	1.046	O				1.17
112.667	0.00	0.35	1.043	O				1.17
112.750	0.00	0.35	1.041	O				1.16
112.833	0.00	0.35	1.039	O				1.16
112.917	0.00	0.35	1.036	O				1.16
113.000	0.00	0.35	1.034	O				1.16
113.083	0.00	0.35	1.031	O				1.16
113.167	0.00	0.35	1.029	O				1.15
113.250	0.00	0.35	1.027	O				1.15
113.333	0.00	0.35	1.024	O				1.15
113.417	0.00	0.35	1.022	O				1.15
113.500	0.00	0.35	1.019	O				1.15
113.583	0.00	0.35	1.017	O				1.14
113.667	0.00	0.35	1.014	O				1.14
113.750	0.00	0.35	1.012	O				1.14
113.833	0.00	0.35	1.010	O				1.14
113.917	0.00	0.35	1.007	O				1.14
114.000	0.00	0.35	1.005	O				1.13
114.083	0.00	0.35	1.002	O				1.13
114.167	0.00	0.35	1.000	O				1.13
114.250	0.00	0.35	0.998	O				1.13
114.333	0.00	0.35	0.995	O				1.13
114.417	0.00	0.35	0.993	O				1.12
114.500	0.00	0.35	0.991	O				1.12
114.583	0.00	0.35	0.988	O				1.12
114.667	0.00	0.35	0.986	O				1.12
114.750	0.00	0.35	0.983	O				1.12
114.833	0.00	0.34	0.981	O				1.11
114.917	0.00	0.34	0.979	O				1.11
115.000	0.00	0.34	0.976	O				1.11
115.083	0.00	0.34	0.974	O				1.11
115.167	0.00	0.34	0.972	O				1.11
115.250	0.00	0.34	0.969	O				1.10
115.333	0.00	0.34	0.967	O				1.10
115.417	0.00	0.34	0.964	O				1.10
115.500	0.00	0.34	0.962	O				1.10
115.583	0.00	0.34	0.960	O				1.10
115.667	0.00	0.34	0.957	O				1.10
115.750	0.00	0.34	0.955	O				1.09
115.833	0.00	0.34	0.953	O				1.09
115.917	0.00	0.34	0.950	O				1.09
116.000	0.00	0.34	0.948	O				1.09
116.083	0.00	0.34	0.946	O				1.09
116.167	0.00	0.34	0.943	O				1.08
116.250	0.00	0.34	0.941	O				1.08
116.333	0.00	0.34	0.939	O				1.08
116.417	0.00	0.34	0.936	O				1.08
116.500	0.00	0.34	0.934	O				1.08
116.583	0.00	0.34	0.932	O				1.07
116.667	0.00	0.34	0.929	O				1.07
116.750	0.00	0.34	0.927	O				1.07
116.833	0.00	0.34	0.925	O				1.07
116.917	0.00	0.34	0.922	O				1.07
117.000	0.00	0.34	0.920	O				1.06
117.083	0.00	0.34	0.918	O				1.06
117.167	0.00	0.34	0.915	O				1.06
117.250	0.00	0.34	0.913	O				1.06
117.333	0.00	0.34	0.911	O				1.06
117.417	0.00	0.34	0.908	O				1.06
117.500	0.00	0.34	0.906	O				1.05
117.583	0.00	0.33	0.904	O				1.05
117.667	0.00	0.33	0.901	O				1.05
117.750	0.00	0.33	0.899	O				1.05
117.833	0.00	0.33	0.897	O				1.05
117.917	0.00	0.33	0.895	O				1.04
118.000	0.00	0.33	0.892	O				1.04

118.083	0.00	0.33	0.890	o	|	|	|	|	1.04
118.167	0.00	0.33	0.888	o	|	|	|	|	1.04
118.250	0.00	0.33	0.885	o	|	|	|	|	1.04
118.333	0.00	0.33	0.883	o	|	|	|	|	1.03
118.417	0.00	0.33	0.881	o	|	|	|	|	1.03
118.500	0.00	0.33	0.879	o	|	|	|	|	1.03
118.583	0.00	0.33	0.876	o	|	|	|	|	1.03
118.667	0.00	0.33	0.874	o	|	|	|	|	1.03
118.750	0.00	0.33	0.872	o	|	|	|	|	1.03
118.833	0.00	0.33	0.869	o	|	|	|	|	1.02
118.917	0.00	0.33	0.867	o	|	|	|	|	1.02
119.000	0.00	0.33	0.865	o	|	|	|	|	1.02
119.083	0.00	0.33	0.863	o	|	|	|	|	1.02
119.167	0.00	0.33	0.860	o	|	|	|	|	1.02
119.250	0.00	0.33	0.858	o	|	|	|	|	1.01
119.333	0.00	0.33	0.856	o	|	|	|	|	1.01
119.417	0.00	0.33	0.854	o	|	|	|	|	1.01
119.500	0.00	0.33	0.851	o	|	|	|	|	1.01
119.583	0.00	0.33	0.849	o	|	|	|	|	1.01
119.667	0.00	0.33	0.847	o	|	|	|	|	1.00
119.750	0.00	0.33	0.844	o	|	|	|	|	1.00
119.833	0.00	0.33	0.842	o	|	|	|	|	1.00
119.917	0.00	0.33	0.840	o	|	|	|	|	1.00
120.000	0.00	0.33	0.838	o	|	|	|	|	1.00
120.083	0.00	0.33	0.835	o	|	|	|	|	0.99
120.167	0.00	0.33	0.833	o	|	|	|	|	0.99
120.250	0.00	0.32	0.831	o	|	|	|	|	0.99
120.333	0.00	0.32	0.829	o	|	|	|	|	0.99
120.417	0.00	0.32	0.827	o	|	|	|	|	0.99
120.500	0.00	0.32	0.824	o	|	|	|	|	0.98
120.583	0.00	0.32	0.822	o	|	|	|	|	0.98
120.667	0.00	0.32	0.820	o	|	|	|	|	0.98
120.750	0.00	0.32	0.818	o	|	|	|	|	0.98
120.833	0.00	0.32	0.815	o	|	|	|	|	0.97
120.917	0.00	0.32	0.813	o	|	|	|	|	0.97
121.000	0.00	0.32	0.811	o	|	|	|	|	0.97
121.083	0.00	0.32	0.809	o	|	|	|	|	0.97
121.167	0.00	0.32	0.807	o	|	|	|	|	0.96
121.250	0.00	0.32	0.804	o	|	|	|	|	0.96
121.333	0.00	0.32	0.802	o	|	|	|	|	0.96
121.417	0.00	0.32	0.800	o	|	|	|	|	0.96
121.500	0.00	0.32	0.798	o	|	|	|	|	0.96
121.583	0.00	0.32	0.796	o	|	|	|	|	0.95
121.667	0.00	0.32	0.794	o	|	|	|	|	0.95
121.750	0.00	0.32	0.791	o	|	|	|	|	0.95
121.833	0.00	0.31	0.789	o	|	|	|	|	0.95
121.917	0.00	0.31	0.787	o	|	|	|	|	0.94
122.000	0.00	0.31	0.785	o	|	|	|	|	0.94
122.083	0.00	0.31	0.783	o	|	|	|	|	0.94
122.167	0.00	0.31	0.781	o	|	|	|	|	0.94
122.250	0.00	0.31	0.778	o	|	|	|	|	0.94
122.333	0.00	0.31	0.776	o	|	|	|	|	0.93
122.417	0.00	0.31	0.774	o	|	|	|	|	0.93
122.500	0.00	0.31	0.772	o	|	|	|	|	0.93
122.583	0.00	0.31	0.770	o	|	|	|	|	0.93
122.667	0.00	0.31	0.768	o	|	|	|	|	0.92
122.750	0.00	0.31	0.766	o	|	|	|	|	0.92
122.833	0.00	0.31	0.763	o	|	|	|	|	0.92
122.917	0.00	0.31	0.761	o	|	|	|	|	0.92
123.000	0.00	0.31	0.759	o	|	|	|	|	0.92
123.083	0.00	0.31	0.757	o	|	|	|	|	0.91
123.167	0.00	0.31	0.755	o	|	|	|	|	0.91
123.250	0.00	0.31	0.753	o	|	|	|	|	0.91
123.333	0.00	0.31	0.751	o	|	|	|	|	0.91
123.417	0.00	0.30	0.749	o	|	|	|	|	0.90
123.500	0.00	0.30	0.747	o	|	|	|	|	0.90
123.583	0.00	0.30	0.744	o	|	|	|	|	0.90
123.667	0.00	0.30	0.742	o	|	|	|	|	0.90
123.750	0.00	0.30	0.740	o	|	|	|	|	0.90
123.833	0.00	0.30	0.738	o	|	|	|	|	0.89
123.917	0.00	0.30	0.736	o	|	|	|	|	0.89
124.000	0.00	0.30	0.734	o	|	|	|	|	0.89
124.083	0.00	0.30	0.732	o	|	|	|	|	0.89
124.167	0.00	0.30	0.730	o	|	|	|	|	0.89
124.250	0.00	0.30	0.728	o	|	|	|	|	0.88

124.333	0.00	0.30	0.726	o	|	|	|	|	0.88
124.417	0.00	0.30	0.724	o	|	|	|	|	0.88
124.500	0.00	0.30	0.722	o	|	|	|	|	0.88
124.583	0.00	0.30	0.720	o	|	|	|	|	0.87
124.667	0.00	0.30	0.718	o	|	|	|	|	0.87
124.750	0.00	0.30	0.716	o	|	|	|	|	0.87
124.833	0.00	0.30	0.713	o	|	|	|	|	0.87
124.917	0.00	0.30	0.711	o	|	|	|	|	0.87
125.000	0.00	0.30	0.709	o	|	|	|	|	0.86
125.083	0.00	0.30	0.707	o	|	|	|	|	0.86
125.167	0.00	0.29	0.705	o	|	|	|	|	0.86
125.250	0.00	0.29	0.703	o	|	|	|	|	0.86
125.333	0.00	0.29	0.701	o	|	|	|	|	0.86
125.417	0.00	0.29	0.699	o	|	|	|	|	0.85
125.500	0.00	0.29	0.697	o	|	|	|	|	0.85
125.583	0.00	0.29	0.695	o	|	|	|	|	0.85
125.667	0.00	0.29	0.693	o	|	|	|	|	0.85
125.750	0.00	0.29	0.691	o	|	|	|	|	0.85
125.833	0.00	0.29	0.689	o	|	|	|	|	0.84
125.917	0.00	0.29	0.687	o	|	|	|	|	0.84
126.000	0.00	0.29	0.685	o	|	|	|	|	0.84
126.083	0.00	0.29	0.683	o	|	|	|	|	0.84
126.167	0.00	0.29	0.681	o	|	|	|	|	0.84
126.250	0.00	0.29	0.679	o	|	|	|	|	0.83
126.333	0.00	0.29	0.677	o	|	|	|	|	0.83
126.417	0.00	0.29	0.675	o	|	|	|	|	0.83
126.500	0.00	0.29	0.673	o	|	|	|	|	0.83
126.583	0.00	0.29	0.671	o	|	|	|	|	0.83
126.667	0.00	0.29	0.669	o	|	|	|	|	0.82
126.750	0.00	0.29	0.667	o	|	|	|	|	0.82
126.833	0.00	0.29	0.665	o	|	|	|	|	0.82
126.917	0.00	0.28	0.663	o	|	|	|	|	0.82
127.000	0.00	0.28	0.661	o	|	|	|	|	0.81
127.083	0.00	0.28	0.660	o	|	|	|	|	0.81
127.167	0.00	0.28	0.658	o	|	|	|	|	0.81
127.250	0.00	0.28	0.656	o	|	|	|	|	0.81
127.333	0.00	0.28	0.654	o	|	|	|	|	0.81
127.417	0.00	0.28	0.652	o	|	|	|	|	0.80
127.500	0.00	0.28	0.650	o	|	|	|	|	0.80
127.583	0.00	0.28	0.648	o	|	|	|	|	0.80
127.667	0.00	0.28	0.646	o	|	|	|	|	0.80
127.750	0.00	0.28	0.644	o	|	|	|	|	0.80
127.833	0.00	0.28	0.642	o	|	|	|	|	0.79
127.917	0.00	0.28	0.640	o	|	|	|	|	0.79
128.000	0.00	0.28	0.638	o	|	|	|	|	0.79
128.083	0.00	0.28	0.636	o	|	|	|	|	0.79
128.167	0.00	0.28	0.634	o	|	|	|	|	0.79
128.250	0.00	0.28	0.633	o	|	|	|	|	0.79
128.333	0.00	0.28	0.631	o	|	|	|	|	0.78
128.417	0.00	0.28	0.629	o	|	|	|	|	0.78
128.500	0.00	0.28	0.627	o	|	|	|	|	0.78
128.583	0.00	0.28	0.625	o	|	|	|	|	0.78
128.667	0.00	0.27	0.623	o	|	|	|	|	0.78
128.750	0.00	0.27	0.621	o	|	|	|	|	0.77
128.833	0.00	0.27	0.619	o	|	|	|	|	0.77
128.917	0.00	0.27	0.617	o	|	|	|	|	0.77
129.000	0.00	0.27	0.615	o	|	|	|	|	0.77
129.083	0.00	0.27	0.614	o	|	|	|	|	0.77
129.167	0.00	0.27	0.612	o	|	|	|	|	0.76
129.250	0.00	0.27	0.610	o	|	|	|	|	0.76
129.333	0.00	0.27	0.608	o	|	|	|	|	0.76
129.417	0.00	0.27	0.606	o	|	|	|	|	0.76
129.500	0.00	0.27	0.604	o	|	|	|	|	0.76
129.583	0.00	0.27	0.602	o	|	|	|	|	0.75
129.667	0.00	0.27	0.601	o	|	|	|	|	0.75
129.750	0.00	0.27	0.599	o	|	|	|	|	0.75
129.833	0.00	0.27	0.597	o	|	|	|	|	0.75
129.917	0.00	0.27	0.595	o	|	|	|	|	0.75
130.000	0.00	0.27	0.593	o	|	|	|	|	0.74
130.083	0.00	0.27	0.591	o	|	|	|	|	0.74
130.167	0.00	0.27	0.589	o	|	|	|	|	0.74
130.250	0.00	0.27	0.588	o	|	|	|	|	0.74
130.333	0.00	0.27	0.586	o	|	|	|	|	0.74
130.417	0.00	0.27	0.584	o	|	|	|	|	0.73
130.500	0.00	0.27	0.582	o	|	|	|	|	0.73

130.583	0.00	0.26	0.580	o	|	|	|	|	0.73
130.667	0.00	0.26	0.578	o	|	|	|	|	0.73
130.750	0.00	0.26	0.577	o	|	|	|	|	0.73
130.833	0.00	0.26	0.575	o	|	|	|	|	0.73
130.917	0.00	0.26	0.573	o	|	|	|	|	0.72
131.000	0.00	0.26	0.571	o	|	|	|	|	0.72
131.083	0.00	0.26	0.569	o	|	|	|	|	0.72
131.167	0.00	0.26	0.568	o	|	|	|	|	0.72
131.250	0.00	0.26	0.566	o	|	|	|	|	0.72
131.333	0.00	0.26	0.564	o	|	|	|	|	0.71
131.417	0.00	0.26	0.562	o	|	|	|	|	0.71
131.500	0.00	0.26	0.560	o	|	|	|	|	0.71
131.583	0.00	0.26	0.559	o	|	|	|	|	0.71
131.667	0.00	0.26	0.557	o	|	|	|	|	0.71
131.750	0.00	0.26	0.555	o	|	|	|	|	0.71
131.833	0.00	0.26	0.553	o	|	|	|	|	0.70
131.917	0.00	0.26	0.551	o	|	|	|	|	0.70
132.000	0.00	0.26	0.550	o	|	|	|	|	0.70
132.083	0.00	0.26	0.548	o	|	|	|	|	0.70
132.167	0.00	0.26	0.546	o	|	|	|	|	0.70
132.250	0.00	0.26	0.544	o	|	|	|	|	0.69
132.333	0.00	0.26	0.543	o	|	|	|	|	0.69
132.417	0.00	0.26	0.541	o	|	|	|	|	0.69
132.500	0.00	0.25	0.539	o	|	|	|	|	0.69
132.583	0.00	0.25	0.537	o	|	|	|	|	0.69
132.667	0.00	0.25	0.536	o	|	|	|	|	0.69
132.750	0.00	0.25	0.534	o	|	|	|	|	0.68
132.833	0.00	0.25	0.532	o	|	|	|	|	0.68
132.917	0.00	0.25	0.530	o	|	|	|	|	0.68
133.000	0.00	0.25	0.529	o	|	|	|	|	0.68
133.083	0.00	0.25	0.527	o	|	|	|	|	0.68
133.167	0.00	0.25	0.525	o	|	|	|	|	0.67
133.250	0.00	0.25	0.523	o	|	|	|	|	0.67
133.333	0.00	0.25	0.522	o	|	|	|	|	0.67
133.417	0.00	0.25	0.520	o	|	|	|	|	0.67
133.500	0.00	0.25	0.518	o	|	|	|	|	0.67
133.583	0.00	0.25	0.517	o	|	|	|	|	0.67
133.667	0.00	0.25	0.515	o	|	|	|	|	0.66
133.750	0.00	0.25	0.513	o	|	|	|	|	0.66
133.833	0.00	0.25	0.511	o	|	|	|	|	0.66
133.917	0.00	0.25	0.510	o	|	|	|	|	0.66
134.000	0.00	0.25	0.508	o	|	|	|	|	0.66
134.083	0.00	0.25	0.506	o	|	|	|	|	0.65
134.167	0.00	0.25	0.505	o	|	|	|	|	0.65
134.250	0.00	0.25	0.503	o	|	|	|	|	0.65
134.333	0.00	0.25	0.501	o	|	|	|	|	0.65
134.417	0.00	0.25	0.500	o	|	|	|	|	0.65
134.500	0.00	0.24	0.498	o	|	|	|	|	0.65
134.583	0.00	0.24	0.496	o	|	|	|	|	0.64
134.667	0.00	0.24	0.494	o	|	|	|	|	0.64
134.750	0.00	0.24	0.493	o	|	|	|	|	0.64
134.833	0.00	0.24	0.491	o	|	|	|	|	0.64
134.917	0.00	0.24	0.489	o	|	|	|	|	0.64
135.000	0.00	0.24	0.488	o	|	|	|	|	0.64
135.083	0.00	0.24	0.486	o	|	|	|	|	0.63
135.167	0.00	0.24	0.484	o	|	|	|	|	0.63
135.250	0.00	0.24	0.483	o	|	|	|	|	0.63
135.333	0.00	0.24	0.481	o	|	|	|	|	0.63
135.417	0.00	0.24	0.479	o	|	|	|	|	0.63
135.500	0.00	0.24	0.478	o	|	|	|	|	0.63
135.583	0.00	0.24	0.476	o	|	|	|	|	0.62
135.667	0.00	0.24	0.475	o	|	|	|	|	0.62
135.750	0.00	0.24	0.473	o	|	|	|	|	0.62
135.833	0.00	0.24	0.471	o	|	|	|	|	0.62
135.917	0.00	0.24	0.470	o	|	|	|	|	0.62
136.000	0.00	0.24	0.468	o	|	|	|	|	0.62
136.083	0.00	0.24	0.466	o	|	|	|	|	0.61
136.167	0.00	0.24	0.465	o	|	|	|	|	0.61
136.250	0.00	0.24	0.463	o	|	|	|	|	0.61
136.333	0.00	0.24	0.461	o	|	|	|	|	0.61
136.417	0.00	0.24	0.460	o	|	|	|	|	0.61
136.500	0.00	0.24	0.458	o	|	|	|	|	0.61
136.583	0.00	0.24	0.457	o	|	|	|	|	0.60
136.667	0.00	0.23	0.455	o	|	|	|	|	0.60
136.750	0.00	0.23	0.453	o	|	|	|	|	0.60

136.833	0.00	0.23	0.452	o	|	|	|	|	0.60
136.917	0.00	0.23	0.450	o	|	|	|	|	0.60
137.000	0.00	0.23	0.448	o	|	|	|	|	0.60
137.083	0.00	0.23	0.447	o	|	|	|	|	0.59
137.167	0.00	0.23	0.445	o	|	|	|	|	0.59
137.250	0.00	0.23	0.444	o	|	|	|	|	0.59
137.333	0.00	0.23	0.442	o	|	|	|	|	0.59
137.417	0.00	0.23	0.440	o	|	|	|	|	0.59
137.500	0.00	0.23	0.439	o	|	|	|	|	0.59
137.583	0.00	0.23	0.437	o	|	|	|	|	0.58
137.667	0.00	0.23	0.436	o	|	|	|	|	0.58
137.750	0.00	0.23	0.434	o	|	|	|	|	0.58
137.833	0.00	0.23	0.433	o	|	|	|	|	0.58
137.917	0.00	0.23	0.431	o	|	|	|	|	0.58
138.000	0.00	0.23	0.429	o	|	|	|	|	0.58
138.083	0.00	0.23	0.428	o	|	|	|	|	0.57
138.167	0.00	0.23	0.426	o	|	|	|	|	0.57
138.250	0.00	0.23	0.425	o	|	|	|	|	0.57
138.333	0.00	0.23	0.423	o	|	|	|	|	0.57
138.417	0.00	0.23	0.422	o	|	|	|	|	0.57
138.500	0.00	0.23	0.420	o	|	|	|	|	0.57
138.583	0.00	0.23	0.418	o	|	|	|	|	0.56
138.667	0.00	0.23	0.417	o	|	|	|	|	0.56
138.750	0.00	0.23	0.415	o	|	|	|	|	0.56
138.833	0.00	0.22	0.414	o	|	|	|	|	0.56
138.917	0.00	0.22	0.412	o	|	|	|	|	0.56
139.000	0.00	0.22	0.411	o	|	|	|	|	0.56
139.083	0.00	0.22	0.409	o	|	|	|	|	0.55
139.167	0.00	0.22	0.408	o	|	|	|	|	0.55
139.250	0.00	0.22	0.406	o	|	|	|	|	0.55
139.333	0.00	0.22	0.405	o	|	|	|	|	0.55
139.417	0.00	0.22	0.403	o	|	|	|	|	0.55
139.500	0.00	0.22	0.401	o	|	|	|	|	0.55
139.583	0.00	0.22	0.400	o	|	|	|	|	0.55
139.667	0.00	0.22	0.398	o	|	|	|	|	0.54
139.750	0.00	0.22	0.397	o	|	|	|	|	0.54
139.833	0.00	0.22	0.395	o	|	|	|	|	0.54
139.917	0.00	0.22	0.394	o	|	|	|	|	0.54
140.000	0.00	0.22	0.392	o	|	|	|	|	0.54
140.083	0.00	0.22	0.391	o	|	|	|	|	0.54
140.167	0.00	0.22	0.389	o	|	|	|	|	0.53
140.250	0.00	0.22	0.388	o	|	|	|	|	0.53
140.333	0.00	0.22	0.386	o	|	|	|	|	0.53
140.417	0.00	0.22	0.385	o	|	|	|	|	0.53
140.500	0.00	0.22	0.383	o	|	|	|	|	0.53
140.583	0.00	0.22	0.382	o	|	|	|	|	0.53
140.667	0.00	0.22	0.380	o	|	|	|	|	0.53
140.750	0.00	0.22	0.379	o	|	|	|	|	0.52
140.833	0.00	0.22	0.377	o	|	|	|	|	0.52
140.917	0.00	0.22	0.376	o	|	|	|	|	0.52
141.000	0.00	0.22	0.374	o	|	|	|	|	0.52
141.083	0.00	0.22	0.373	o	|	|	|	|	0.52
141.167	0.00	0.21	0.371	o	|	|	|	|	0.52
141.250	0.00	0.21	0.370	o	|	|	|	|	0.51
141.333	0.00	0.21	0.368	o	|	|	|	|	0.51
141.417	0.00	0.21	0.367	o	|	|	|	|	0.51
141.500	0.00	0.21	0.366	o	|	|	|	|	0.51
141.583	0.00	0.21	0.364	o	|	|	|	|	0.51
141.667	0.00	0.21	0.363	o	|	|	|	|	0.51
141.750	0.00	0.21	0.361	o	|	|	|	|	0.51
141.833	0.00	0.21	0.360	o	|	|	|	|	0.50
141.917	0.00	0.21	0.358	o	|	|	|	|	0.50
142.000	0.00	0.21	0.357	o	|	|	|	|	0.50
142.083	0.00	0.21	0.355	o	|	|	|	|	0.50
142.167	0.00	0.21	0.354	o	|	|	|	|	0.50
142.250	0.00	0.21	0.352	o	|	|	|	|	0.49
142.333	0.00	0.21	0.351	o	|	|	|	|	0.49
142.417	0.00	0.21	0.350	o	|	|	|	|	0.49
142.500	0.00	0.20	0.348	o	|	|	|	|	0.49
142.583	0.00	0.20	0.347	o	|	|	|	|	0.49
142.667	0.00	0.20	0.345	o	|	|	|	|	0.49
142.750	0.00	0.20	0.344	o	|	|	|	|	0.48
142.833	0.00	0.20	0.343	o	|	|	|	|	0.48
142.917	0.00	0.20	0.341	o	|	|	|	|	0.48
143.000	0.00	0.20	0.340	o	|	|	|	|	0.48

143.083	0.00	0.20	0.338	o	|	|	|	|	0.48
143.167	0.00	0.20	0.337	o	|	|	|	|	0.47
143.250	0.00	0.19	0.336	o	|	|	|	|	0.47
143.333	0.00	0.19	0.334	o	|	|	|	|	0.47
143.417	0.00	0.19	0.333	o	|	|	|	|	0.47
143.500	0.00	0.19	0.332	o	|	|	|	|	0.47
143.583	0.00	0.19	0.331	o	|	|	|	|	0.46
143.667	0.00	0.19	0.329	o	|	|	|	|	0.46
143.750	0.00	0.19	0.328	o	|	|	|	|	0.46
143.833	0.00	0.19	0.327	o	|	|	|	|	0.46
143.917	0.00	0.19	0.325	o	|	|	|	|	0.46
144.000	0.00	0.18	0.324	o	|	|	|	|	0.46
144.083	0.00	0.18	0.323	o	|	|	|	|	0.45
144.167	0.00	0.18	0.322	o	|	|	|	|	0.45
144.250	0.00	0.18	0.320	o	|	|	|	|	0.45
144.333	0.00	0.18	0.319	o	|	|	|	|	0.45
144.417	0.00	0.18	0.318	o	|	|	|	|	0.45
144.500	0.00	0.18	0.317	o	|	|	|	|	0.44
144.583	0.00	0.18	0.315	o	|	|	|	|	0.44
144.667	0.00	0.18	0.314	o	|	|	|	|	0.44
144.750	0.00	0.18	0.313	o	|	|	|	|	0.44
144.833	0.00	0.17	0.312	o	|	|	|	|	0.44
144.917	0.00	0.17	0.311	o	|	|	|	|	0.44
145.000	0.00	0.17	0.309	o	|	|	|	|	0.43
145.083	0.00	0.17	0.308	o	|	|	|	|	0.43
145.167	0.00	0.17	0.307	o	|	|	|	|	0.43
145.250	0.00	0.17	0.306	o	|	|	|	|	0.43
145.333	0.00	0.17	0.305	o	|	|	|	|	0.43
145.417	0.00	0.17	0.304	o	|	|	|	|	0.43
145.500	0.00	0.17	0.302	o	|	|	|	|	0.42
145.583	0.00	0.17	0.301	o	|	|	|	|	0.42
145.667	0.00	0.16	0.300	o	|	|	|	|	0.42
145.750	0.00	0.16	0.299	o	|	|	|	|	0.42
145.833	0.00	0.16	0.298	o	|	|	|	|	0.42
145.917	0.00	0.16	0.297	o	|	|	|	|	0.42
146.000	0.00	0.16	0.296	o	|	|	|	|	0.42
146.083	0.00	0.16	0.294	o	|	|	|	|	0.41
146.167	0.00	0.16	0.293	o	|	|	|	|	0.41
146.250	0.00	0.16	0.292	o	|	|	|	|	0.41
146.333	0.00	0.16	0.291	o	|	|	|	|	0.41
146.417	0.00	0.16	0.290	o	|	|	|	|	0.41
146.500	0.00	0.16	0.289	o	|	|	|	|	0.41
146.583	0.00	0.15	0.288	o	|	|	|	|	0.40
146.667	0.00	0.15	0.287	o	|	|	|	|	0.40
146.750	0.00	0.15	0.286	o	|	|	|	|	0.40
146.833	0.00	0.15	0.285	o	|	|	|	|	0.40
146.917	0.00	0.15	0.284	o	|	|	|	|	0.40
147.000	0.00	0.15	0.283	o	|	|	|	|	0.40
147.083	0.00	0.15	0.282	o	|	|	|	|	0.40
147.167	0.00	0.15	0.281	o	|	|	|	|	0.39
147.250	0.00	0.15	0.280	o	|	|	|	|	0.39
147.333	0.00	0.15	0.279	o	|	|	|	|	0.39
147.417	0.00	0.15	0.278	o	|	|	|	|	0.39
147.500	0.00	0.14	0.277	o	|	|	|	|	0.39
147.583	0.00	0.14	0.276	o	|	|	|	|	0.39
147.667	0.00	0.14	0.275	o	|	|	|	|	0.39
147.750	0.00	0.14	0.274	o	|	|	|	|	0.38
147.833	0.00	0.14	0.273	o	|	|	|	|	0.38
147.917	0.00	0.14	0.272	o	|	|	|	|	0.38
148.000	0.00	0.14	0.271	o	|	|	|	|	0.38
148.083	0.00	0.14	0.270	o	|	|	|	|	0.38
148.167	0.00	0.14	0.269	o	|	|	|	|	0.38
148.250	0.00	0.14	0.268	o	|	|	|	|	0.38
148.333	0.00	0.14	0.267	o	|	|	|	|	0.37
148.417	0.00	0.14	0.266	o	|	|	|	|	0.37
148.500	0.00	0.14	0.265	o	|	|	|	|	0.37
148.583	0.00	0.13	0.264	o	|	|	|	|	0.37
148.667	0.00	0.13	0.263	o	|	|	|	|	0.37
148.750	0.00	0.13	0.262	o	|	|	|	|	0.37
148.833	0.00	0.13	0.261	o	|	|	|	|	0.37
148.917	0.00	0.13	0.261	o	|	|	|	|	0.37
149.000	0.00	0.13	0.260	o	|	|	|	|	0.36
149.083	0.00	0.13	0.259	o	|	|	|	|	0.36
149.167	0.00	0.13	0.258	o	|	|	|	|	0.36
149.250	0.00	0.13	0.257	o	|	|	|	|	0.36

149.333	0.00	0.13	0.256	o	|	|	|	|	0.36
149.417	0.00	0.13	0.255	o	|	|	|	|	0.36
149.500	0.00	0.13	0.254	o	|	|	|	|	0.36
149.583	0.00	0.13	0.253	o	|	|	|	|	0.36
149.667	0.00	0.12	0.253	o	|	|	|	|	0.35
149.750	0.00	0.12	0.252	o	|	|	|	|	0.35
149.833	0.00	0.12	0.251	o	|	|	|	|	0.35
149.917	0.00	0.12	0.250	o	|	|	|	|	0.35
150.000	0.00	0.12	0.249	o	|	|	|	|	0.35
150.083	0.00	0.12	0.248	o	|	|	|	|	0.35
150.167	0.00	0.12	0.248	o	|	|	|	|	0.35
150.250	0.00	0.12	0.247	o	|	|	|	|	0.35
150.333	0.00	0.12	0.246	o	|	|	|	|	0.35
150.417	0.00	0.12	0.245	o	|	|	|	|	0.34
150.500	0.00	0.12	0.244	o	|	|	|	|	0.34
150.583	0.00	0.12	0.243	o	|	|	|	|	0.34
150.667	0.00	0.12	0.243	o	|	|	|	|	0.34
150.750	0.00	0.12	0.242	o	|	|	|	|	0.34
150.833	0.00	0.12	0.241	o	|	|	|	|	0.34
150.917	0.00	0.11	0.240	o	|	|	|	|	0.34
151.000	0.00	0.11	0.239	o	|	|	|	|	0.34
151.083	0.00	0.11	0.239	o	|	|	|	|	0.34
151.167	0.00	0.11	0.238	o	|	|	|	|	0.33
151.250	0.00	0.11	0.237	o	|	|	|	|	0.33
151.333	0.00	0.11	0.236	o	|	|	|	|	0.33
151.417	0.00	0.11	0.236	o	|	|	|	|	0.33
151.500	0.00	0.11	0.235	o	|	|	|	|	0.33
151.583	0.00	0.11	0.234	o	|	|	|	|	0.33
151.667	0.00	0.11	0.233	o	|	|	|	|	0.33
151.750	0.00	0.11	0.233	o	|	|	|	|	0.33
151.833	0.00	0.11	0.232	o	|	|	|	|	0.33
151.917	0.00	0.11	0.231	o	|	|	|	|	0.32
152.000	0.00	0.11	0.230	o	|	|	|	|	0.32
152.083	0.00	0.11	0.230	o	|	|	|	|	0.32
152.167	0.00	0.11	0.229	o	|	|	|	|	0.32
152.250	0.00	0.10	0.228	o	|	|	|	|	0.32
152.333	0.00	0.10	0.227	o	|	|	|	|	0.32
152.417	0.00	0.10	0.227	o	|	|	|	|	0.32
152.500	0.00	0.10	0.226	o	|	|	|	|	0.32
152.583	0.00	0.10	0.225	o	|	|	|	|	0.32
152.667	0.00	0.10	0.225	o	|	|	|	|	0.32
152.750	0.00	0.10	0.224	o	|	|	|	|	0.31
152.833	0.00	0.10	0.223	o	|	|	|	|	0.31
152.917	0.00	0.10	0.223	o	|	|	|	|	0.31
153.000	0.00	0.10	0.222	o	|	|	|	|	0.31
153.083	0.00	0.10	0.221	o	|	|	|	|	0.31
153.167	0.00	0.10	0.220	o	|	|	|	|	0.31
153.250	0.00	0.10	0.220	o	|	|	|	|	0.31
153.333	0.00	0.10	0.219	o	|	|	|	|	0.31
153.417	0.00	0.10	0.218	o	|	|	|	|	0.31
153.500	0.00	0.10	0.218	o	|	|	|	|	0.31
153.583	0.00	0.10	0.217	o	|	|	|	|	0.30
153.667	0.00	0.09	0.217	o	|	|	|	|	0.30
153.750	0.00	0.09	0.216	o	|	|	|	|	0.30
153.833	0.00	0.09	0.215	o	|	|	|	|	0.30
153.917	0.00	0.09	0.215	o	|	|	|	|	0.30
154.000	0.00	0.09	0.214	o	|	|	|	|	0.30
154.083	0.00	0.09	0.213	o	|	|	|	|	0.30
154.167	0.00	0.09	0.213	o	|	|	|	|	0.30
154.250	0.00	0.09	0.212	o	|	|	|	|	0.30
154.333	0.00	0.09	0.211	o	|	|	|	|	0.30
154.417	0.00	0.09	0.211	o	|	|	|	|	0.30
154.500	0.00	0.09	0.210	o	|	|	|	|	0.30
154.583	0.00	0.09	0.210	o	|	|	|	|	0.29
154.667	0.00	0.09	0.209	o	|	|	|	|	0.29
154.750	0.00	0.09	0.208	o	|	|	|	|	0.29
154.833	0.00	0.09	0.208	o	|	|	|	|	0.29
154.917	0.00	0.09	0.207	o	|	|	|	|	0.29
155.000	0.00	0.09	0.207	o	|	|	|	|	0.29
155.083	0.00	0.09	0.206	o	|	|	|	|	0.29
155.167	0.00	0.09	0.205	o	|	|	|	|	0.29
155.250	0.00	0.08	0.205	o	|	|	|	|	0.29
155.333	0.00	0.08	0.204	o	|	|	|	|	0.29
155.417	0.00	0.08	0.204	o	|	|	|	|	0.29
155.500	0.00	0.08	0.203	o	|	|	|	|	0.29

155.583	0.00	0.08	0.202	o	|	|	|	|	0.28
155.667	0.00	0.08	0.202	o	|	|	|	|	0.28
155.750	0.00	0.08	0.201	o	|	|	|	|	0.28
155.833	0.00	0.08	0.201	o	|	|	|	|	0.28
155.917	0.00	0.08	0.200	o	|	|	|	|	0.28
156.000	0.00	0.08	0.200	o	|	|	|	|	0.28
156.083	0.00	0.08	0.199	o	|	|	|	|	0.28
156.167	0.00	0.08	0.199	o	|	|	|	|	0.28
156.250	0.00	0.08	0.198	o	|	|	|	|	0.28
156.333	0.00	0.08	0.197	o	|	|	|	|	0.28
156.417	0.00	0.08	0.197	o	|	|	|	|	0.28
156.500	0.00	0.08	0.196	o	|	|	|	|	0.28
156.583	0.00	0.08	0.196	o	|	|	|	|	0.27
156.667	0.00	0.08	0.195	o	|	|	|	|	0.27
156.750	0.00	0.08	0.195	o	|	|	|	|	0.27
156.833	0.00	0.08	0.194	o	|	|	|	|	0.27
156.917	0.00	0.08	0.194	o	|	|	|	|	0.27
157.000	0.00	0.08	0.193	o	|	|	|	|	0.27
157.083	0.00	0.07	0.193	o	|	|	|	|	0.27
157.167	0.00	0.07	0.192	o	|	|	|	|	0.27
157.250	0.00	0.07	0.192	o	|	|	|	|	0.27
157.333	0.00	0.07	0.191	o	|	|	|	|	0.27
157.417	0.00	0.07	0.191	o	|	|	|	|	0.27
157.500	0.00	0.07	0.190	o	|	|	|	|	0.27
157.583	0.00	0.07	0.190	o	|	|	|	|	0.27
157.667	0.00	0.07	0.189	o	|	|	|	|	0.27
157.750	0.00	0.07	0.189	o	|	|	|	|	0.26
157.833	0.00	0.07	0.188	o	|	|	|	|	0.26
157.917	0.00	0.07	0.188	o	|	|	|	|	0.26
158.000	0.00	0.07	0.187	o	|	|	|	|	0.26
158.083	0.00	0.07	0.187	o	|	|	|	|	0.26
158.167	0.00	0.07	0.186	o	|	|	|	|	0.26
158.250	0.00	0.07	0.186	o	|	|	|	|	0.26
158.333	0.00	0.07	0.185	o	|	|	|	|	0.26
158.417	0.00	0.07	0.185	o	|	|	|	|	0.26
158.500	0.00	0.07	0.184	o	|	|	|	|	0.26
158.583	0.00	0.07	0.184	o	|	|	|	|	0.26
158.667	0.00	0.07	0.183	o	|	|	|	|	0.26
158.750	0.00	0.07	0.183	o	|	|	|	|	0.26
158.833	0.00	0.07	0.182	o	|	|	|	|	0.26
158.917	0.00	0.07	0.182	o	|	|	|	|	0.26
159.000	0.00	0.07	0.182	o	|	|	|	|	0.25
159.083	0.00	0.07	0.181	o	|	|	|	|	0.25
159.167	0.00	0.06	0.181	o	|	|	|	|	0.25
159.250	0.00	0.06	0.180	o	|	|	|	|	0.25
159.333	0.00	0.06	0.180	o	|	|	|	|	0.25
159.417	0.00	0.06	0.179	o	|	|	|	|	0.25
159.500	0.00	0.06	0.179	o	|	|	|	|	0.25
159.583	0.00	0.06	0.178	o	|	|	|	|	0.25
159.667	0.00	0.06	0.178	o	|	|	|	|	0.25
159.750	0.00	0.06	0.178	o	|	|	|	|	0.25
159.833	0.00	0.06	0.177	o	|	|	|	|	0.25
159.917	0.00	0.06	0.177	o	|	|	|	|	0.25
160.000	0.00	0.06	0.176	o	|	|	|	|	0.25
160.083	0.00	0.06	0.176	o	|	|	|	|	0.25
160.167	0.00	0.06	0.175	o	|	|	|	|	0.25
160.250	0.00	0.06	0.175	o	|	|	|	|	0.25
160.333	0.00	0.06	0.175	o	|	|	|	|	0.25
160.417	0.00	0.06	0.174	o	|	|	|	|	0.24
160.500	0.00	0.06	0.174	o	|	|	|	|	0.24
160.583	0.00	0.06	0.173	o	|	|	|	|	0.24
160.667	0.00	0.06	0.173	o	|	|	|	|	0.24
160.750	0.00	0.06	0.173	o	|	|	|	|	0.24
160.833	0.00	0.06	0.172	o	|	|	|	|	0.24
160.917	0.00	0.06	0.172	o	|	|	|	|	0.24
161.000	0.00	0.06	0.171	o	|	|	|	|	0.24
161.083	0.00	0.06	0.171	o	|	|	|	|	0.24
161.167	0.00	0.06	0.171	o	|	|	|	|	0.24
161.250	0.00	0.06	0.170	o	|	|	|	|	0.24
161.333	0.00	0.06	0.170	o	|	|	|	|	0.24
161.417	0.00	0.06	0.169	o	|	|	|	|	0.24
161.500	0.00	0.06	0.169	o	|	|	|	|	0.24
161.583	0.00	0.05	0.169	o	|	|	|	|	0.24
161.667	0.00	0.05	0.168	o	|	|	|	|	0.24
161.750	0.00	0.05	0.168	o	|	|	|	|	0.24

161.833	0.00	0.05	0.168	o	|	|	|	|	0.24
161.917	0.00	0.05	0.167	o	|	|	|	|	0.23
162.000	0.00	0.05	0.167	o	|	|	|	|	0.23
162.083	0.00	0.05	0.166	o	|	|	|	|	0.23
162.167	0.00	0.05	0.166	o	|	|	|	|	0.23
162.250	0.00	0.05	0.166	o	|	|	|	|	0.23
162.333	0.00	0.05	0.165	o	|	|	|	|	0.23
162.417	0.00	0.05	0.165	o	|	|	|	|	0.23
162.500	0.00	0.05	0.165	o	|	|	|	|	0.23
162.583	0.00	0.05	0.164	o	|	|	|	|	0.23
162.667	0.00	0.05	0.164	o	|	|	|	|	0.23
162.750	0.00	0.05	0.164	o	|	|	|	|	0.23
162.833	0.00	0.05	0.163	o	|	|	|	|	0.23
162.917	0.00	0.05	0.163	o	|	|	|	|	0.23
163.000	0.00	0.05	0.163	o	|	|	|	|	0.23
163.083	0.00	0.05	0.162	o	|	|	|	|	0.23
163.167	0.00	0.05	0.162	o	|	|	|	|	0.23
163.250	0.00	0.05	0.162	o	|	|	|	|	0.23
163.333	0.00	0.05	0.161	o	|	|	|	|	0.23
163.417	0.00	0.05	0.161	o	|	|	|	|	0.23
163.500	0.00	0.05	0.161	o	|	|	|	|	0.23
163.583	0.00	0.05	0.160	o	|	|	|	|	0.22
163.667	0.00	0.05	0.160	o	|	|	|	|	0.22
163.750	0.00	0.05	0.160	o	|	|	|	|	0.22
163.833	0.00	0.05	0.159	o	|	|	|	|	0.22
163.917	0.00	0.05	0.159	o	|	|	|	|	0.22
164.000	0.00	0.05	0.159	o	|	|	|	|	0.22
164.083	0.00	0.05	0.158	o	|	|	|	|	0.22
164.167	0.00	0.05	0.158	o	|	|	|	|	0.22
164.250	0.00	0.05	0.158	o	|	|	|	|	0.22
164.333	0.00	0.05	0.157	o	|	|	|	|	0.22
164.417	0.00	0.05	0.157	o	|	|	|	|	0.22
164.500	0.00	0.04	0.157	o	|	|	|	|	0.22
164.583	0.00	0.04	0.156	o	|	|	|	|	0.22
164.667	0.00	0.04	0.156	o	|	|	|	|	0.22
164.750	0.00	0.04	0.156	o	|	|	|	|	0.22
164.833	0.00	0.04	0.155	o	|	|	|	|	0.22
164.917	0.00	0.04	0.155	o	|	|	|	|	0.22
165.000	0.00	0.04	0.155	o	|	|	|	|	0.22
165.083	0.00	0.04	0.155	o	|	|	|	|	0.22
165.167	0.00	0.04	0.154	o	|	|	|	|	0.22
165.250	0.00	0.04	0.154	o	|	|	|	|	0.22
165.333	0.00	0.04	0.154	o	|	|	|	|	0.22
165.417	0.00	0.04	0.153	o	|	|	|	|	0.22
165.500	0.00	0.04	0.153	o	|	|	|	|	0.22
165.583	0.00	0.04	0.153	o	|	|	|	|	0.21
165.667	0.00	0.04	0.153	o	|	|	|	|	0.21
165.750	0.00	0.04	0.152	o	|	|	|	|	0.21
165.833	0.00	0.04	0.152	o	|	|	|	|	0.21
165.917	0.00	0.04	0.152	o	|	|	|	|	0.21
166.000	0.00	0.04	0.151	o	|	|	|	|	0.21
166.083	0.00	0.04	0.151	o	|	|	|	|	0.21
166.167	0.00	0.04	0.151	o	|	|	|	|	0.21
166.250	0.00	0.04	0.151	o	|	|	|	|	0.21
166.333	0.00	0.04	0.150	o	|	|	|	|	0.21
166.417	0.00	0.04	0.150	o	|	|	|	|	0.21
166.500	0.00	0.04	0.150	o	|	|	|	|	0.21
166.583	0.00	0.04	0.150	o	|	|	|	|	0.21
166.667	0.00	0.04	0.149	o	|	|	|	|	0.21
166.750	0.00	0.04	0.149	o	|	|	|	|	0.21
166.833	0.00	0.04	0.149	o	|	|	|	|	0.21
166.917	0.00	0.04	0.148	o	|	|	|	|	0.21
167.000	0.00	0.04	0.148	o	|	|	|	|	0.21
167.083	0.00	0.04	0.148	o	|	|	|	|	0.21
167.167	0.00	0.04	0.148	o	|	|	|	|	0.21
167.250	0.00	0.04	0.147	o	|	|	|	|	0.21
167.333	0.00	0.04	0.147	o	|	|	|	|	0.21
167.417	0.00	0.04	0.147	o	|	|	|	|	0.21
167.500	0.00	0.04	0.147	o	|	|	|	|	0.21
167.583	0.00	0.04	0.146	o	|	|	|	|	0.21
167.667	0.00	0.04	0.146	o	|	|	|	|	0.21
167.750	0.00	0.04	0.146	o	|	|	|	|	0.20
167.833	0.00	0.04	0.146	o	|	|	|	|	0.20
167.917	0.00	0.04	0.145	o	|	|	|	|	0.20
168.000	0.00	0.04	0.145	o	|	|	|	|	0.20

168.083	0.00	0.04	0.145	o	|	|	|	|	0.20
168.167	0.00	0.03	0.145	o	|	|	|	|	0.20
168.250	0.00	0.03	0.144	o	|	|	|	|	0.20
168.333	0.00	0.03	0.144	o	|	|	|	|	0.20
168.417	0.00	0.03	0.144	o	|	|	|	|	0.20
168.500	0.00	0.03	0.144	o	|	|	|	|	0.20
168.583	0.00	0.03	0.144	o	|	|	|	|	0.20
168.667	0.00	0.03	0.143	o	|	|	|	|	0.20
168.750	0.00	0.03	0.143	o	|	|	|	|	0.20
168.833	0.00	0.03	0.143	o	|	|	|	|	0.20
168.917	0.00	0.03	0.143	o	|	|	|	|	0.20
169.000	0.00	0.03	0.142	o	|	|	|	|	0.20
169.083	0.00	0.03	0.142	o	|	|	|	|	0.20
169.167	0.00	0.03	0.142	o	|	|	|	|	0.20
169.250	0.00	0.03	0.142	o	|	|	|	|	0.20
169.333	0.00	0.03	0.141	o	|	|	|	|	0.20
169.417	0.00	0.03	0.141	o	|	|	|	|	0.20
169.500	0.00	0.03	0.141	o	|	|	|	|	0.20
169.583	0.00	0.03	0.141	o	|	|	|	|	0.20
169.667	0.00	0.03	0.141	o	|	|	|	|	0.20
169.750	0.00	0.03	0.140	o	|	|	|	|	0.20
169.833	0.00	0.03	0.140	o	|	|	|	|	0.20
169.917	0.00	0.03	0.140	o	|	|	|	|	0.20
170.000	0.00	0.03	0.140	o	|	|	|	|	0.20
170.083	0.00	0.03	0.140	o	|	|	|	|	0.20
170.167	0.00	0.03	0.139	o	|	|	|	|	0.20
170.250	0.00	0.03	0.139	o	|	|	|	|	0.20
170.333	0.00	0.03	0.139	o	|	|	|	|	0.20
170.417	0.00	0.03	0.139	o	|	|	|	|	0.19
170.500	0.00	0.03	0.138	o	|	|	|	|	0.19
170.583	0.00	0.03	0.138	o	|	|	|	|	0.19
170.667	0.00	0.03	0.138	o	|	|	|	|	0.19
170.750	0.00	0.03	0.138	o	|	|	|	|	0.19
170.833	0.00	0.03	0.138	o	|	|	|	|	0.19
170.917	0.00	0.03	0.137	o	|	|	|	|	0.19
171.000	0.00	0.03	0.137	o	|	|	|	|	0.19
171.083	0.00	0.03	0.137	o	|	|	|	|	0.19
171.167	0.00	0.03	0.137	o	|	|	|	|	0.19
171.250	0.00	0.03	0.137	o	|	|	|	|	0.19
171.333	0.00	0.03	0.136	o	|	|	|	|	0.19
171.417	0.00	0.03	0.136	o	|	|	|	|	0.19
171.500	0.00	0.03	0.136	o	|	|	|	|	0.19
171.583	0.00	0.03	0.136	o	|	|	|	|	0.19
171.667	0.00	0.03	0.136	o	|	|	|	|	0.19
171.750	0.00	0.03	0.136	o	|	|	|	|	0.19
171.833	0.00	0.03	0.135	o	|	|	|	|	0.19
171.917	0.00	0.03	0.135	o	|	|	|	|	0.19
172.000	0.00	0.03	0.135	o	|	|	|	|	0.19
172.083	0.00	0.03	0.135	o	|	|	|	|	0.19
172.167	0.00	0.03	0.135	o	|	|	|	|	0.19
172.250	0.00	0.03	0.134	o	|	|	|	|	0.19
172.333	0.00	0.03	0.134	o	|	|	|	|	0.19
172.417	0.00	0.03	0.134	o	|	|	|	|	0.19
172.500	0.00	0.03	0.134	o	|	|	|	|	0.19
172.583	0.00	0.03	0.134	o	|	|	|	|	0.19
172.667	0.00	0.03	0.134	o	|	|	|	|	0.19
172.750	0.00	0.03	0.133	o	|	|	|	|	0.19
172.833	0.00	0.03	0.133	o	|	|	|	|	0.19
172.917	0.00	0.03	0.133	o	|	|	|	|	0.19
173.000	0.00	0.03	0.133	o	|	|	|	|	0.19
173.083	0.00	0.02	0.133	o	|	|	|	|	0.19
173.167	0.00	0.02	0.132	o	|	|	|	|	0.19
173.250	0.00	0.02	0.132	o	|	|	|	|	0.19
173.333	0.00	0.02	0.132	o	|	|	|	|	0.19
173.417	0.00	0.02	0.132	o	|	|	|	|	0.19
173.500	0.00	0.02	0.132	o	|	|	|	|	0.19
173.583	0.00	0.02	0.132	o	|	|	|	|	0.18
173.667	0.00	0.02	0.131	o	|	|	|	|	0.18
173.750	0.00	0.02	0.131	o	|	|	|	|	0.18
173.833	0.00	0.02	0.131	o	|	|	|	|	0.18
173.917	0.00	0.02	0.131	o	|	|	|	|	0.18
174.000	0.00	0.02	0.131	o	|	|	|	|	0.18
174.083	0.00	0.02	0.131	o	|	|	|	|	0.18
174.167	0.00	0.02	0.131	o	|	|	|	|	0.18
174.250	0.00	0.02	0.130	o	|	|	|	|	0.18

174.333	0.00	0.02	0.130	o					0.18
174.417	0.00	0.02	0.130	o					0.18
174.500	0.00	0.02	0.130	o					0.18
174.583	0.00	0.02	0.130	o					0.18
174.667	0.00	0.02	0.130	o					0.18
174.750	0.00	0.02	0.129	o					0.18
174.833	0.00	0.02	0.129	o					0.18
174.917	0.00	0.02	0.129	o					0.18
175.000	0.00	0.02	0.129	o					0.18
175.083	0.00	0.02	0.129	o					0.18
175.167	0.00	0.02	0.129	o					0.18
175.250	0.00	0.02	0.129	o					0.18
175.333	0.00	0.02	0.128	o					0.18
175.417	0.00	0.02	0.128	o					0.18
175.500	0.00	0.02	0.128	o					0.18
175.583	0.00	0.02	0.128	o					0.18
175.667	0.00	0.02	0.128	o					0.18
175.750	0.00	0.02	0.128	o					0.18
175.833	0.00	0.02	0.128	o					0.18
175.917	0.00	0.02	0.127	o					0.18
176.000	0.00	0.02	0.127	o					0.18
176.083	0.00	0.02	0.127	o					0.18
176.167	0.00	0.02	0.127	o					0.18
176.250	0.00	0.02	0.127	o					0.18
176.333	0.00	0.02	0.127	o					0.18
176.417	0.00	0.02	0.127	o					0.18
176.500	0.00	0.02	0.126	o					0.18
176.583	0.00	0.02	0.126	o					0.18
176.667	0.00	0.02	0.126	o					0.18
176.750	0.00	0.02	0.126	o					0.18
176.833	0.00	0.02	0.126	o					0.18
176.917	0.00	0.02	0.126	o					0.18
177.000	0.00	0.02	0.126	o					0.18
177.083	0.00	0.02	0.125	o					0.18
177.167	0.00	0.02	0.125	o					0.18
177.250	0.00	0.02	0.125	o					0.18
177.333	0.00	0.02	0.125	o					0.18
177.417	0.00	0.02	0.125	o					0.18
177.500	0.00	0.02	0.125	o					0.18
177.583	0.00	0.02	0.125	o					0.18
177.667	0.00	0.02	0.125	o					0.17
177.750	0.00	0.02	0.124	o					0.17
177.833	0.00	0.02	0.124	o					0.17
177.917	0.00	0.02	0.124	o					0.17
178.000	0.00	0.02	0.124	o					0.17
178.083	0.00	0.02	0.124	o					0.17
178.167	0.00	0.02	0.124	o					0.17
178.250	0.00	0.02	0.124	o					0.17
178.333	0.00	0.02	0.124	o					0.17
178.417	0.00	0.02	0.123	o					0.17
178.500	0.00	0.02	0.123	o					0.17
178.583	0.00	0.02	0.123	o					0.17
178.667	0.00	0.02	0.123	o					0.17
178.750	0.00	0.02	0.123	o					0.17
178.833	0.00	0.02	0.123	o					0.17
178.917	0.00	0.02	0.123	o					0.17
179.000	0.00	0.02	0.123	o					0.17
179.083	0.00	0.02	0.123	o					0.17
179.167	0.00	0.02	0.122	o					0.17
179.250	0.00	0.02	0.122	o					0.17
179.333	0.00	0.02	0.122	o					0.17
179.417	0.00	0.02	0.122	o					0.17
179.500	0.00	0.02	0.122	o					0.17
179.583	0.00	0.02	0.122	o					0.17
179.667	0.00	0.02	0.122	o					0.17
179.750	0.00	0.02	0.122	o					0.17
179.833	0.00	0.02	0.122	o					0.17
179.917	0.00	0.02	0.121	o					0.17
180.000	0.00	0.02	0.121	o					0.17
180.083	0.00	0.02	0.121	o					0.17
180.167	0.00	0.02	0.121	o					0.17
180.250	0.00	0.02	0.121	o					0.17
180.333	0.00	0.02	0.121	o					0.17
180.417	0.00	0.02	0.121	o					0.17
180.500	0.00	0.01	0.121	o					0.17

180.583	0.00	0.01	0.121	o	|	|	|	|	0.17
180.667	0.00	0.01	0.121	o	|	|	|	|	0.17
180.750	0.00	0.01	0.120	o	|	|	|	|	0.17
180.833	0.00	0.01	0.120	o	|	|	|	|	0.17
180.917	0.00	0.01	0.120	o	|	|	|	|	0.17
181.000	0.00	0.01	0.120	o	|	|	|	|	0.17
181.083	0.00	0.01	0.120	o	|	|	|	|	0.17
181.167	0.00	0.01	0.120	o	|	|	|	|	0.17
181.250	0.00	0.01	0.120	o	|	|	|	|	0.17
181.333	0.00	0.01	0.120	o	|	|	|	|	0.17
181.417	0.00	0.01	0.120	o	|	|	|	|	0.17
181.500	0.00	0.01	0.120	o	|	|	|	|	0.17
181.583	0.00	0.01	0.119	o	|	|	|	|	0.17
181.667	0.00	0.01	0.119	o	|	|	|	|	0.17
181.750	0.00	0.01	0.119	o	|	|	|	|	0.17
181.833	0.00	0.01	0.119	o	|	|	|	|	0.17
181.917	0.00	0.01	0.119	o	|	|	|	|	0.17
182.000	0.00	0.01	0.119	o	|	|	|	|	0.17
182.083	0.00	0.01	0.119	o	|	|	|	|	0.17
182.167	0.00	0.01	0.119	o	|	|	|	|	0.17
182.250	0.00	0.01	0.119	o	|	|	|	|	0.17
182.333	0.00	0.01	0.119	o	|	|	|	|	0.17
182.417	0.00	0.01	0.118	o	|	|	|	|	0.17
182.500	0.00	0.01	0.118	o	|	|	|	|	0.17
182.583	0.00	0.01	0.118	o	|	|	|	|	0.17
182.667	0.00	0.01	0.118	o	|	|	|	|	0.17
182.750	0.00	0.01	0.118	o	|	|	|	|	0.17
182.833	0.00	0.01	0.118	o	|	|	|	|	0.17
182.917	0.00	0.01	0.118	o	|	|	|	|	0.17
183.000	0.00	0.01	0.118	o	|	|	|	|	0.17
183.083	0.00	0.01	0.118	o	|	|	|	|	0.17
183.167	0.00	0.01	0.118	o	|	|	|	|	0.17
183.250	0.00	0.01	0.118	o	|	|	|	|	0.17
183.333	0.00	0.01	0.118	o	|	|	|	|	0.17
183.417	0.00	0.01	0.117	o	|	|	|	|	0.16
183.500	0.00	0.01	0.117	o	|	|	|	|	0.16
183.583	0.00	0.01	0.117	o	|	|	|	|	0.16
183.667	0.00	0.01	0.117	o	|	|	|	|	0.16
183.750	0.00	0.01	0.117	o	|	|	|	|	0.16
183.833	0.00	0.01	0.117	o	|	|	|	|	0.16
183.917	0.00	0.01	0.117	o	|	|	|	|	0.16
184.000	0.00	0.01	0.117	o	|	|	|	|	0.16
184.083	0.00	0.01	0.117	o	|	|	|	|	0.16
184.167	0.00	0.01	0.117	o	|	|	|	|	0.16
184.250	0.00	0.01	0.117	o	|	|	|	|	0.16
184.333	0.00	0.01	0.117	o	|	|	|	|	0.16
184.417	0.00	0.01	0.116	o	|	|	|	|	0.16
184.500	0.00	0.01	0.116	o	|	|	|	|	0.16
184.583	0.00	0.01	0.116	o	|	|	|	|	0.16
184.667	0.00	0.01	0.116	o	|	|	|	|	0.16
184.750	0.00	0.01	0.116	o	|	|	|	|	0.16
184.833	0.00	0.01	0.116	o	|	|	|	|	0.16
184.917	0.00	0.01	0.116	o	|	|	|	|	0.16
185.000	0.00	0.01	0.116	o	|	|	|	|	0.16
185.083	0.00	0.01	0.116	o	|	|	|	|	0.16
185.167	0.00	0.01	0.116	o	|	|	|	|	0.16
185.250	0.00	0.01	0.116	o	|	|	|	|	0.16
185.333	0.00	0.01	0.116	o	|	|	|	|	0.16
185.417	0.00	0.01	0.116	o	|	|	|	|	0.16
185.500	0.00	0.01	0.115	o	|	|	|	|	0.16
185.583	0.00	0.01	0.115	o	|	|	|	|	0.16
185.667	0.00	0.01	0.115	o	|	|	|	|	0.16
185.750	0.00	0.01	0.115	o	|	|	|	|	0.16
185.833	0.00	0.01	0.115	o	|	|	|	|	0.16
185.917	0.00	0.01	0.115	o	|	|	|	|	0.16
186.000	0.00	0.01	0.115	o	|	|	|	|	0.16
186.083	0.00	0.01	0.115	o	|	|	|	|	0.16
186.167	0.00	0.01	0.115	o	|	|	|	|	0.16
186.250	0.00	0.01	0.115	o	|	|	|	|	0.16
186.333	0.00	0.01	0.115	o	|	|	|	|	0.16
186.417	0.00	0.01	0.115	o	|	|	|	|	0.16
186.500	0.00	0.01	0.115	o	|	|	|	|	0.16
186.583	0.00	0.01	0.115	o	|	|	|	|	0.16
186.667	0.00	0.01	0.115	o	|	|	|	|	0.16
186.750	0.00	0.01	0.114	o	|	|	|	|	0.16

186.833	0.00	0.01	0.114	o	|	|	|	|	0.16
186.917	0.00	0.01	0.114	o	|	|	|	|	0.16
187.000	0.00	0.01	0.114	o	|	|	|	|	0.16
187.083	0.00	0.01	0.114	o	|	|	|	|	0.16
187.167	0.00	0.01	0.114	o	|	|	|	|	0.16
187.250	0.00	0.01	0.114	o	|	|	|	|	0.16
187.333	0.00	0.01	0.114	o	|	|	|	|	0.16
187.417	0.00	0.01	0.114	o	|	|	|	|	0.16
187.500	0.00	0.01	0.114	o	|	|	|	|	0.16
187.583	0.00	0.01	0.114	o	|	|	|	|	0.16
187.667	0.00	0.01	0.114	o	|	|	|	|	0.16
187.750	0.00	0.01	0.114	o	|	|	|	|	0.16
187.833	0.00	0.01	0.114	o	|	|	|	|	0.16
187.917	0.00	0.01	0.114	o	|	|	|	|	0.16
188.000	0.00	0.01	0.113	o	|	|	|	|	0.16
188.083	0.00	0.01	0.113	o	|	|	|	|	0.16
188.167	0.00	0.01	0.113	o	|	|	|	|	0.16
188.250	0.00	0.01	0.113	o	|	|	|	|	0.16
188.333	0.00	0.01	0.113	o	|	|	|	|	0.16
188.417	0.00	0.01	0.113	o	|	|	|	|	0.16
188.500	0.00	0.01	0.113	o	|	|	|	|	0.16
188.583	0.00	0.01	0.113	o	|	|	|	|	0.16
188.667	0.00	0.01	0.113	o	|	|	|	|	0.16
188.750	0.00	0.01	0.113	o	|	|	|	|	0.16
188.833	0.00	0.01	0.113	o	|	|	|	|	0.16
188.917	0.00	0.01	0.113	o	|	|	|	|	0.16
189.000	0.00	0.01	0.113	o	|	|	|	|	0.16
189.083	0.00	0.01	0.113	o	|	|	|	|	0.16
189.167	0.00	0.01	0.113	o	|	|	|	|	0.16
189.250	0.00	0.01	0.113	o	|	|	|	|	0.16
189.333	0.00	0.01	0.113	o	|	|	|	|	0.16
189.417	0.00	0.01	0.112	o	|	|	|	|	0.16
189.500	0.00	0.01	0.112	o	|	|	|	|	0.16
189.583	0.00	0.01	0.112	o	|	|	|	|	0.16
189.667	0.00	0.01	0.112	o	|	|	|	|	0.16
189.750	0.00	0.01	0.112	o	|	|	|	|	0.16
189.833	0.00	0.01	0.112	o	|	|	|	|	0.16
189.917	0.00	0.01	0.112	o	|	|	|	|	0.16
190.000	0.00	0.01	0.112	o	|	|	|	|	0.16
190.083	0.00	0.01	0.112	o	|	|	|	|	0.16
190.167	0.00	0.01	0.112	o	|	|	|	|	0.16
190.250	0.00	0.01	0.112	o	|	|	|	|	0.16
190.333	0.00	0.01	0.112	o	|	|	|	|	0.16
190.417	0.00	0.01	0.112	o	|	|	|	|	0.16
190.500	0.00	0.01	0.112	o	|	|	|	|	0.16
190.583	0.00	0.01	0.112	o	|	|	|	|	0.16
190.667	0.00	0.01	0.112	o	|	|	|	|	0.16
190.750	0.00	0.01	0.112	o	|	|	|	|	0.16
190.833	0.00	0.01	0.112	o	|	|	|	|	0.16
190.917	0.00	0.01	0.112	o	|	|	|	|	0.16
191.000	0.00	0.01	0.111	o	|	|	|	|	0.16
191.083	0.00	0.01	0.111	o	|	|	|	|	0.16
191.167	0.00	0.01	0.111	o	|	|	|	|	0.16
191.250	0.00	0.01	0.111	o	|	|	|	|	0.16
191.333	0.00	0.01	0.111	o	|	|	|	|	0.16
191.417	0.00	0.01	0.111	o	|	|	|	|	0.16
191.500	0.00	0.01	0.111	o	|	|	|	|	0.16
191.583	0.00	0.01	0.111	o	|	|	|	|	0.16
191.667	0.00	0.01	0.111	o	|	|	|	|	0.16
191.750	0.00	0.01	0.111	o	|	|	|	|	0.16
191.833	0.00	0.01	0.111	o	|	|	|	|	0.16
191.917	0.00	0.01	0.111	o	|	|	|	|	0.16
192.000	0.00	0.01	0.111	o	|	|	|	|	0.16
192.083	0.00	0.01	0.111	o	|	|	|	|	0.16
192.167	0.00	0.01	0.111	o	|	|	|	|	0.16
192.250	0.00	0.01	0.111	o	|	|	|	|	0.16
192.333	0.00	0.01	0.111	o	|	|	|	|	0.16
192.417	0.00	0.01	0.111	o	|	|	|	|	0.16
192.500	0.00	0.01	0.111	o	|	|	|	|	0.16
192.583	0.00	0.01	0.111	o	|	|	|	|	0.16
192.667	0.00	0.01	0.111	o	|	|	|	|	0.16
192.750	0.00	0.01	0.111	o	|	|	|	|	0.16
192.833	0.00	0.01	0.110	o	|	|	|	|	0.16
192.917	0.00	0.01	0.110	o	|	|	|	|	0.16
193.000	0.00	0.01	0.110	o	|	|	|	|	0.15

193.083	0.00	0.01	0.110	o	|	|	|	|	0.15
193.167	0.00	0.01	0.110	o	|	|	|	|	0.15
193.250	0.00	0.01	0.110	o	|	|	|	|	0.15
193.333	0.00	0.01	0.110	o	|	|	|	|	0.15
193.417	0.00	0.01	0.110	o	|	|	|	|	0.15
193.500	0.00	0.01	0.110	o	|	|	|	|	0.15
193.583	0.00	0.01	0.110	o	|	|	|	|	0.15
193.667	0.00	0.01	0.110	o	|	|	|	|	0.15
193.750	0.00	0.01	0.110	o	|	|	|	|	0.15
193.833	0.00	0.01	0.110	o	|	|	|	|	0.15
193.917	0.00	0.01	0.110	o	|	|	|	|	0.15
194.000	0.00	0.01	0.110	o	|	|	|	|	0.15
194.083	0.00	0.01	0.110	o	|	|	|	|	0.15
194.167	0.00	0.01	0.110	o	|	|	|	|	0.15
194.250	0.00	0.01	0.110	o	|	|	|	|	0.15
194.333	0.00	0.01	0.110	o	|	|	|	|	0.15
194.417	0.00	0.01	0.110	o	|	|	|	|	0.15
194.500	0.00	0.01	0.110	o	|	|	|	|	0.15
194.583	0.00	0.01	0.110	o	|	|	|	|	0.15
194.667	0.00	0.01	0.110	o	|	|	|	|	0.15
194.750	0.00	0.01	0.110	o	|	|	|	|	0.15
194.833	0.00	0.01	0.109	o	|	|	|	|	0.15
194.917	0.00	0.01	0.109	o	|	|	|	|	0.15
195.000	0.00	0.01	0.109	o	|	|	|	|	0.15
195.083	0.00	0.01	0.109	o	|	|	|	|	0.15
195.167	0.00	0.01	0.109	o	|	|	|	|	0.15
195.250	0.00	0.01	0.109	o	|	|	|	|	0.15
195.333	0.00	0.01	0.109	o	|	|	|	|	0.15
195.417	0.00	0.01	0.109	o	|	|	|	|	0.15
195.500	0.00	0.01	0.109	o	|	|	|	|	0.15
195.583	0.00	0.01	0.109	o	|	|	|	|	0.15
195.667	0.00	0.01	0.109	o	|	|	|	|	0.15
195.750	0.00	0.01	0.109	o	|	|	|	|	0.15
195.833	0.00	0.01	0.109	o	|	|	|	|	0.15
195.917	0.00	0.01	0.109	o	|	|	|	|	0.15
196.000	0.00	0.01	0.109	o	|	|	|	|	0.15
196.083	0.00	0.01	0.109	o	|	|	|	|	0.15
196.167	0.00	0.01	0.109	o	|	|	|	|	0.15
196.250	0.00	0.01	0.109	o	|	|	|	|	0.15
196.333	0.00	0.01	0.109	o	|	|	|	|	0.15
196.417	0.00	0.00	0.109	o	|	|	|	|	0.15
196.500	0.00	0.00	0.109	o	|	|	|	|	0.15
196.583	0.00	0.00	0.109	o	|	|	|	|	0.15
196.667	0.00	0.00	0.109	o	|	|	|	|	0.15
196.750	0.00	0.00	0.109	o	|	|	|	|	0.15
196.833	0.00	0.00	0.109	o	|	|	|	|	0.15
196.917	0.00	0.00	0.109	o	|	|	|	|	0.15
197.000	0.00	0.00	0.109	o	|	|	|	|	0.15
197.083	0.00	0.00	0.109	o	|	|	|	|	0.15
197.167	0.00	0.00	0.108	o	|	|	|	|	0.15
197.250	0.00	0.00	0.108	o	|	|	|	|	0.15
197.333	0.00	0.00	0.108	o	|	|	|	|	0.15
197.417	0.00	0.00	0.108	o	|	|	|	|	0.15
197.500	0.00	0.00	0.108	o	|	|	|	|	0.15
197.583	0.00	0.00	0.108	o	|	|	|	|	0.15
197.667	0.00	0.00	0.108	o	|	|	|	|	0.15
197.750	0.00	0.00	0.108	o	|	|	|	|	0.15
197.833	0.00	0.00	0.108	o	|	|	|	|	0.15
197.917	0.00	0.00	0.108	o	|	|	|	|	0.15
198.000	0.00	0.00	0.108	o	|	|	|	|	0.15
198.083	0.00	0.00	0.108	o	|	|	|	|	0.15
198.167	0.00	0.00	0.108	o	|	|	|	|	0.15
198.250	0.00	0.00	0.108	o	|	|	|	|	0.15
198.333	0.00	0.00	0.108	o	|	|	|	|	0.15
198.417	0.00	0.00	0.108	o	|	|	|	|	0.15
198.500	0.00	0.00	0.108	o	|	|	|	|	0.15
198.583	0.00	0.00	0.108	o	|	|	|	|	0.15
198.667	0.00	0.00	0.108	o	|	|	|	|	0.15
198.750	0.00	0.00	0.108	o	|	|	|	|	0.15
198.833	0.00	0.00	0.108	o	|	|	|	|	0.15
198.917	0.00	0.00	0.108	o	|	|	|	|	0.15
199.000	0.00	0.00	0.108	o	|	|	|	|	0.15
199.083	0.00	0.00	0.108	o	|	|	|	|	0.15
199.167	0.00	0.00	0.108	o	|	|	|	|	0.15
199.250	0.00	0.00	0.108	o	|	|	|	|	0.15

199.333	0.00	0.00	0.108	o	|	|	|	|	0.15
199.417	0.00	0.00	0.108	o	|	|	|	|	0.15
199.500	0.00	0.00	0.108	o	|	|	|	|	0.15
199.583	0.00	0.00	0.108	o	|	|	|	|	0.15
199.667	0.00	0.00	0.108	o	|	|	|	|	0.15
199.750	0.00	0.00	0.108	o	|	|	|	|	0.15
199.833	0.00	0.00	0.108	o	|	|	|	|	0.15
199.917	0.00	0.00	0.108	o	|	|	|	|	0.15
200.000	0.00	0.00	0.107	o	|	|	|	|	0.15
200.083	0.00	0.00	0.107	o	|	|	|	|	0.15
200.167	0.00	0.00	0.107	o	|	|	|	|	0.15
200.250	0.00	0.00	0.107	o	|	|	|	|	0.15
200.333	0.00	0.00	0.107	o	|	|	|	|	0.15
200.417	0.00	0.00	0.107	o	|	|	|	|	0.15
200.500	0.00	0.00	0.107	o	|	|	|	|	0.15
200.583	0.00	0.00	0.107	o	|	|	|	|	0.15
200.667	0.00	0.00	0.107	o	|	|	|	|	0.15
200.750	0.00	0.00	0.107	o	|	|	|	|	0.15
200.833	0.00	0.00	0.107	o	|	|	|	|	0.15
200.917	0.00	0.00	0.107	o	|	|	|	|	0.15
201.000	0.00	0.00	0.107	o	|	|	|	|	0.15
201.083	0.00	0.00	0.107	o	|	|	|	|	0.15
201.167	0.00	0.00	0.107	o	|	|	|	|	0.15
201.250	0.00	0.00	0.107	o	|	|	|	|	0.15
201.333	0.00	0.00	0.107	o	|	|	|	|	0.15
201.417	0.00	0.00	0.107	o	|	|	|	|	0.15
201.500	0.00	0.00	0.107	o	|	|	|	|	0.15
201.583	0.00	0.00	0.107	o	|	|	|	|	0.15
201.667	0.00	0.00	0.107	o	|	|	|	|	0.15
201.750	0.00	0.00	0.107	o	|	|	|	|	0.15
201.833	0.00	0.00	0.107	o	|	|	|	|	0.15
201.917	0.00	0.00	0.107	o	|	|	|	|	0.15
202.000	0.00	0.00	0.107	o	|	|	|	|	0.15
202.083	0.00	0.00	0.107	o	|	|	|	|	0.15
202.167	0.00	0.00	0.107	o	|	|	|	|	0.15
202.250	0.00	0.00	0.107	o	|	|	|	|	0.15
202.333	0.00	0.00	0.107	o	|	|	|	|	0.15
202.417	0.00	0.00	0.107	o	|	|	|	|	0.15
202.500	0.00	0.00	0.107	o	|	|	|	|	0.15
202.583	0.00	0.00	0.107	o	|	|	|	|	0.15
202.667	0.00	0.00	0.107	o	|	|	|	|	0.15
202.750	0.00	0.00	0.107	o	|	|	|	|	0.15
202.833	0.00	0.00	0.107	o	|	|	|	|	0.15
202.917	0.00	0.00	0.107	o	|	|	|	|	0.15
203.000	0.00	0.00	0.107	o	|	|	|	|	0.15
203.083	0.00	0.00	0.107	o	|	|	|	|	0.15
203.167	0.00	0.00	0.107	o	|	|	|	|	0.15
203.250	0.00	0.00	0.107	o	|	|	|	|	0.15
203.333	0.00	0.00	0.107	o	|	|	|	|	0.15
203.417	0.00	0.00	0.106	o	|	|	|	|	0.15
203.500	0.00	0.00	0.106	o	|	|	|	|	0.15
203.583	0.00	0.00	0.106	o	|	|	|	|	0.15
203.667	0.00	0.00	0.106	o	|	|	|	|	0.15
203.750	0.00	0.00	0.106	o	|	|	|	|	0.15
203.833	0.00	0.00	0.106	o	|	|	|	|	0.15
203.917	0.00	0.00	0.106	o	|	|	|	|	0.15
204.000	0.00	0.00	0.106	o	|	|	|	|	0.15
204.083	0.00	0.00	0.106	o	|	|	|	|	0.15
204.167	0.00	0.00	0.106	o	|	|	|	|	0.15
204.250	0.00	0.00	0.106	o	|	|	|	|	0.15
204.333	0.00	0.00	0.106	o	|	|	|	|	0.15
204.417	0.00	0.00	0.106	o	|	|	|	|	0.15
204.500	0.00	0.00	0.106	o	|	|	|	|	0.15
204.583	0.00	0.00	0.106	o	|	|	|	|	0.15
204.667	0.00	0.00	0.106	o	|	|	|	|	0.15
204.750	0.00	0.00	0.106	o	|	|	|	|	0.15
204.833	0.00	0.00	0.106	o	|	|	|	|	0.15
204.917	0.00	0.00	0.106	o	|	|	|	|	0.15
205.000	0.00	0.00	0.106	o	|	|	|	|	0.15
205.083	0.00	0.00	0.106	o	|	|	|	|	0.15
205.167	0.00	0.00	0.106	o	|	|	|	|	0.15
205.250	0.00	0.00	0.106	o	|	|	|	|	0.15
205.333	0.00	0.00	0.106	o	|	|	|	|	0.15
205.417	0.00	0.00	0.106	o	|	|	|	|	0.15
205.500	0.00	0.00	0.106	o	|	|	|	|	0.15

205.583	0.00	0.00	0.106	o	|	|	|	|	0.15
205.667	0.00	0.00	0.106	o	|	|	|	|	0.15
205.750	0.00	0.00	0.106	o	|	|	|	|	0.15
205.833	0.00	0.00	0.106	o	|	|	|	|	0.15
205.917	0.00	0.00	0.106	o	|	|	|	|	0.15
206.000	0.00	0.00	0.106	o	|	|	|	|	0.15
206.083	0.00	0.00	0.106	o	|	|	|	|	0.15
206.167	0.00	0.00	0.106	o	|	|	|	|	0.15
206.250	0.00	0.00	0.106	o	|	|	|	|	0.15
206.333	0.00	0.00	0.106	o	|	|	|	|	0.15
206.417	0.00	0.00	0.106	o	|	|	|	|	0.15
206.500	0.00	0.00	0.106	o	|	|	|	|	0.15
206.583	0.00	0.00	0.106	o	|	|	|	|	0.15
206.667	0.00	0.00	0.106	o	|	|	|	|	0.15
206.750	0.00	0.00	0.106	o	|	|	|	|	0.15
206.833	0.00	0.00	0.106	o	|	|	|	|	0.15
206.917	0.00	0.00	0.106	o	|	|	|	|	0.15
207.000	0.00	0.00	0.106	o	|	|	|	|	0.15
207.083	0.00	0.00	0.106	o	|	|	|	|	0.15
207.167	0.00	0.00	0.106	o	|	|	|	|	0.15
207.250	0.00	0.00	0.106	o	|	|	|	|	0.15
207.333	0.00	0.00	0.106	o	|	|	|	|	0.15
207.417	0.00	0.00	0.106	o	|	|	|	|	0.15
207.500	0.00	0.00	0.106	o	|	|	|	|	0.15
207.583	0.00	0.00	0.106	o	|	|	|	|	0.15
207.667	0.00	0.00	0.106	o	|	|	|	|	0.15
207.750	0.00	0.00	0.106	o	|	|	|	|	0.15
207.833	0.00	0.00	0.106	o	|	|	|	|	0.15
207.917	0.00	0.00	0.106	o	|	|	|	|	0.15
208.000	0.00	0.00	0.105	o	|	|	|	|	0.15
208.083	0.00	0.00	0.105	o	|	|	|	|	0.15
208.167	0.00	0.00	0.105	o	|	|	|	|	0.15
208.250	0.00	0.00	0.105	o	|	|	|	|	0.15
208.333	0.00	0.00	0.105	o	|	|	|	|	0.15
208.417	0.00	0.00	0.105	o	|	|	|	|	0.15
208.500	0.00	0.00	0.105	o	|	|	|	|	0.15
208.583	0.00	0.00	0.105	o	|	|	|	|	0.15
208.667	0.00	0.00	0.105	o	|	|	|	|	0.15
208.750	0.00	0.00	0.105	o	|	|	|	|	0.15
208.833	0.00	0.00	0.105	o	|	|	|	|	0.15
208.917	0.00	0.00	0.105	o	|	|	|	|	0.15
209.000	0.00	0.00	0.105	o	|	|	|	|	0.15
209.083	0.00	0.00	0.105	o	|	|	|	|	0.15
209.167	0.00	0.00	0.105	o	|	|	|	|	0.15
209.250	0.00	0.00	0.105	o	|	|	|	|	0.15
209.333	0.00	0.00	0.105	o	|	|	|	|	0.15
209.417	0.00	0.00	0.105	o	|	|	|	|	0.15
209.500	0.00	0.00	0.105	o	|	|	|	|	0.15
209.583	0.00	0.00	0.105	o	|	|	|	|	0.15
209.667	0.00	0.00	0.105	o	|	|	|	|	0.15
209.750	0.00	0.00	0.105	o	|	|	|	|	0.15
209.833	0.00	0.00	0.105	o	|	|	|	|	0.15
209.917	0.00	0.00	0.105	o	|	|	|	|	0.15
210.000	0.00	0.00	0.105	o	|	|	|	|	0.15
210.083	0.00	0.00	0.105	o	|	|	|	|	0.15
210.167	0.00	0.00	0.105	o	|	|	|	|	0.15
210.250	0.00	0.00	0.105	o	|	|	|	|	0.15
210.333	0.00	0.00	0.105	o	|	|	|	|	0.15
210.417	0.00	0.00	0.105	o	|	|	|	|	0.15
210.500	0.00	0.00	0.105	o	|	|	|	|	0.15
210.583	0.00	0.00	0.105	o	|	|	|	|	0.15
210.667	0.00	0.00	0.105	o	|	|	|	|	0.15
210.750	0.00	0.00	0.105	o	|	|	|	|	0.15
210.833	0.00	0.00	0.105	o	|	|	|	|	0.15
210.917	0.00	0.00	0.105	o	|	|	|	|	0.15
211.000	0.00	0.00	0.105	o	|	|	|	|	0.15
211.083	0.00	0.00	0.105	o	|	|	|	|	0.15
211.167	0.00	0.00	0.105	o	|	|	|	|	0.15
211.250	0.00	0.00	0.105	o	|	|	|	|	0.15
211.333	0.00	0.00	0.105	o	|	|	|	|	0.15
211.417	0.00	0.00	0.105	o	|	|	|	|	0.15
211.500	0.00	0.00	0.105	o	|	|	|	|	0.15
211.583	0.00	0.00	0.105	o	|	|	|	|	0.15
211.667	0.00	0.00	0.105	o	|	|	|	|	0.15
211.750	0.00	0.00	0.105	o	|	|	|	|	0.15

211.833	0.00	0.00	0.105	o	|	|	|	|	0.15
211.917	0.00	0.00	0.105	o	|	|	|	|	0.15
212.000	0.00	0.00	0.105	o	|	|	|	|	0.15
212.083	0.00	0.00	0.105	o	|	|	|	|	0.15
212.167	0.00	0.00	0.105	o	|	|	|	|	0.15
212.250	0.00	0.00	0.105	o	|	|	|	|	0.15
212.333	0.00	0.00	0.105	o	|	|	|	|	0.15
212.417	0.00	0.00	0.105	o	|	|	|	|	0.15
212.500	0.00	0.00	0.105	o	|	|	|	|	0.15
212.583	0.00	0.00	0.105	o	|	|	|	|	0.15
212.667	0.00	0.00	0.105	o	|	|	|	|	0.15
212.750	0.00	0.00	0.105	o	|	|	|	|	0.15
212.833	0.00	0.00	0.105	o	|	|	|	|	0.15
212.917	0.00	0.00	0.105	o	|	|	|	|	0.15
213.000	0.00	0.00	0.105	o	|	|	|	|	0.15
213.083	0.00	0.00	0.105	o	|	|	|	|	0.15
213.167	0.00	0.00	0.105	o	|	|	|	|	0.15
213.250	0.00	0.00	0.105	o	|	|	|	|	0.15
213.333	0.00	0.00	0.105	o	|	|	|	|	0.15
213.417	0.00	0.00	0.105	o	|	|	|	|	0.15
213.500	0.00	0.00	0.105	o	|	|	|	|	0.15
213.583	0.00	0.00	0.105	o	|	|	|	|	0.15
213.667	0.00	0.00	0.105	o	|	|	|	|	0.15
213.750	0.00	0.00	0.105	o	|	|	|	|	0.15
213.833	0.00	0.00	0.105	o	|	|	|	|	0.15
213.917	0.00	0.00	0.105	o	|	|	|	|	0.15
214.000	0.00	0.00	0.105	o	|	|	|	|	0.15
214.083	0.00	0.00	0.105	o	|	|	|	|	0.15
214.167	0.00	0.00	0.105	o	|	|	|	|	0.15
214.250	0.00	0.00	0.105	o	|	|	|	|	0.15
214.333	0.00	0.00	0.105	o	|	|	|	|	0.15
214.417	0.00	0.00	0.105	o	|	|	|	|	0.15
214.500	0.00	0.00	0.105	o	|	|	|	|	0.15
214.583	0.00	0.00	0.105	o	|	|	|	|	0.15
214.667	0.00	0.00	0.105	o	|	|	|	|	0.15
214.750	0.00	0.00	0.104	o	|	|	|	|	0.15
214.833	0.00	0.00	0.104	o	|	|	|	|	0.15
214.917	0.00	0.00	0.104	o	|	|	|	|	0.15
215.000	0.00	0.00	0.104	o	|	|	|	|	0.15
215.083	0.00	0.00	0.104	o	|	|	|	|	0.15
215.167	0.00	0.00	0.104	o	|	|	|	|	0.15
215.250	0.00	0.00	0.104	o	|	|	|	|	0.15
215.333	0.00	0.00	0.104	o	|	|	|	|	0.15
215.417	0.00	0.00	0.104	o	|	|	|	|	0.15
215.500	0.00	0.00	0.104	o	|	|	|	|	0.15
215.583	0.00	0.00	0.104	o	|	|	|	|	0.15
215.667	0.00	0.00	0.104	o	|	|	|	|	0.15
215.750	0.00	0.00	0.104	o	|	|	|	|	0.15
215.833	0.00	0.00	0.104	o	|	|	|	|	0.15
215.917	0.00	0.00	0.104	o	|	|	|	|	0.15
216.000	0.00	0.00	0.104	o	|	|	|	|	0.15
216.083	0.00	0.00	0.104	o	|	|	|	|	0.15
216.167	0.00	0.00	0.104	o	|	|	|	|	0.15
216.250	0.00	0.00	0.104	o	|	|	|	|	0.15
216.333	0.00	0.00	0.104	o	|	|	|	|	0.15
216.417	0.00	0.00	0.104	o	|	|	|	|	0.15
216.500	0.00	0.00	0.104	o	|	|	|	|	0.15
216.583	0.00	0.00	0.104	o	|	|	|	|	0.15
216.667	0.00	0.00	0.104	o	|	|	|	|	0.15
216.750	0.00	0.00	0.104	o	|	|	|	|	0.15
216.833	0.00	0.00	0.104	o	|	|	|	|	0.15
216.917	0.00	0.00	0.104	o	|	|	|	|	0.15
217.000	0.00	0.00	0.104	o	|	|	|	|	0.15
217.083	0.00	0.00	0.104	o	|	|	|	|	0.15
217.167	0.00	0.00	0.104	o	|	|	|	|	0.15
217.250	0.00	0.00	0.104	o	|	|	|	|	0.15
217.333	0.00	0.00	0.104	o	|	|	|	|	0.15
217.417	0.00	0.00	0.104	o	|	|	|	|	0.15
217.500	0.00	0.00	0.104	o	|	|	|	|	0.15
217.583	0.00	0.00	0.104	o	|	|	|	|	0.15
217.667	0.00	0.00	0.104	o	|	|	|	|	0.15
217.750	0.00	0.00	0.104	o	|	|	|	|	0.15
217.833	0.00	0.00	0.104	o	|	|	|	|	0.15
217.917	0.00	0.00	0.104	o	|	|	|	|	0.15
218.000	0.00	0.00	0.104	o	|	|	|	|	0.15

218.083	0.00	0.00	0.104	o	|	|	|	0.15
218.167	0.00	0.00	0.104	o	|	|	|	0.15
218.250	0.00	0.00	0.104	o	|	|	|	0.15
218.333	0.00	0.00	0.104	o	|	|	|	0.15
218.417	0.00	0.00	0.104	o	|	|	|	0.15
218.500	0.00	0.00	0.104	o	|	|	|	0.15
218.583	0.00	0.00	0.104	o	|	|	|	0.15
218.667	0.00	0.00	0.104	o	|	|	|	0.15
218.750	0.00	0.00	0.104	o	|	|	|	0.15
218.833	0.00	0.00	0.104	o	|	|	|	0.15
218.917	0.00	0.00	0.104	o	|	|	|	0.15
219.000	0.00	0.00	0.104	o	|	|	|	0.15
219.083	0.00	0.00	0.104	o	|	|	|	0.15
219.167	0.00	0.00	0.104	o	|	|	|	0.15
219.250	0.00	0.00	0.104	o	|	|	|	0.15
219.333	0.00	0.00	0.104	o	|	|	|	0.15
219.417	0.00	0.00	0.104	o	|	|	|	0.15
219.500	0.00	0.00	0.104	o	|	|	|	0.15
219.583	0.00	0.00	0.104	o	|	|	|	0.15
219.667	0.00	0.00	0.104	o	|	|	|	0.15
219.750	0.00	0.00	0.104	o	|	|	|	0.15
219.833	0.00	0.00	0.104	o	|	|	|	0.15

Remaining water in basin = 0.10 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2638
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 1.442 (CFS)
Total volume = 6.769 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

BASIN ROUTING
10-YEAR, 24-HOUR -HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 02/17/22

EXETER BSS BUILDING 3
2-YR 24-HR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH10YR2410.rte

**********HYDROGRAPH DATA**********

Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 14.444 (CFS)
Total volume = 8.323 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
2.000	2.065	0.482	2.063	2.067
3.000	3.453	0.598	3.451	3.455
3.490	4.167	0.647	4.165	4.169
3.500	4.182	0.720	4.180	4.184
4.000	4.923	1.210	4.919	4.927
4.460	5.610	1.446	5.605	5.615
4.500	5.670	1.483	5.665	5.675
5.000	6.418	2.619	6.409	6.427
5.500	7.159	4.388	7.144	7.174
6.000	7.887	6.587	7.864	7.910
6.500	8.595	9.138	8.564	8.626
7.000	9.275	11.995	9.234	9.316
7.500	9.916	15.127	9.864	9.968
8.000	10.499	18.511	10.435	10.563
8.500	10.984	22.128	10.908	11.060

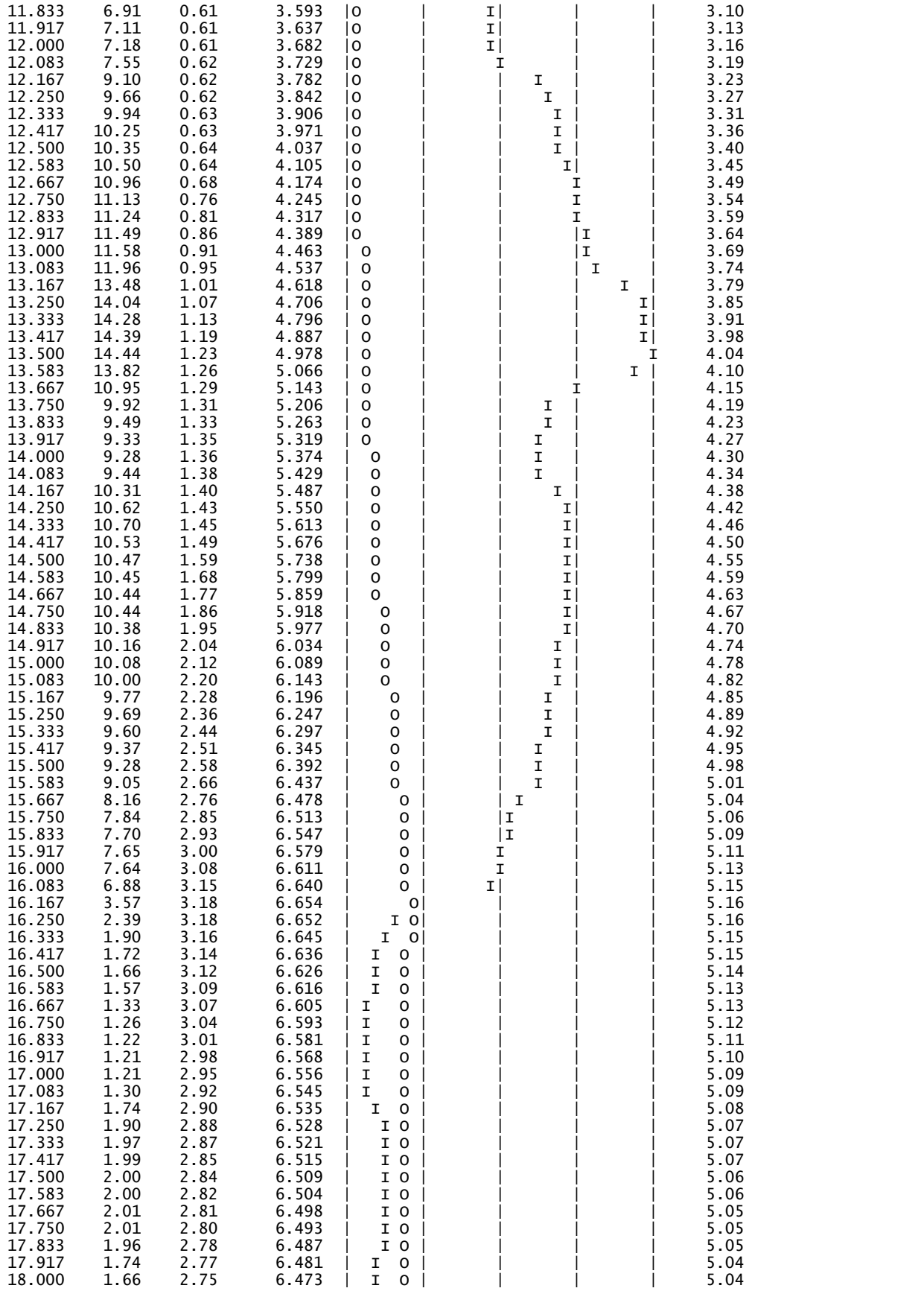
9.000 11.340 25.965 11.251 11.429

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 3.6 7.22 10.83 14.44	Depth (Ft.)
0.083	0.10	0.00	0.000	O | | | |	0.00
0.167	0.54	0.00	0.003	OI | | | |	0.00
0.250	0.70	0.00	0.007	OI | | | |	0.01
0.333	0.81	0.00	0.012	OI | | | |	0.02
0.417	1.06	0.00	0.018	O I | | | |	0.03
0.500	1.14	0.00	0.026	O I | | | |	0.04
0.583	1.18	0.00	0.034	O I | | | |	0.05
0.667	1.20	0.00	0.042	O I | | | |	0.06
0.750	1.20	0.00	0.050	O I | | | |	0.07
0.833	1.25	0.00	0.059	O I | | | |	0.08
0.917	1.47	0.00	0.068	O I | | | |	0.10
1.000	1.55	0.00	0.079	O I | | | |	0.11
1.083	1.53	0.00	0.089	O I | | | |	0.13
1.167	1.33	0.00	0.099	O I | | | |	0.14
1.250	1.25	0.00	0.108	O I | | | |	0.15
1.333	1.22	0.01	0.117	O I | | | |	0.16
1.417	1.21	0.02	0.125	O I | | | |	0.18
1.500	1.21	0.03	0.133	O I | | | |	0.19
1.583	1.20	0.03	0.141	O I | | | |	0.20
1.667	1.20	0.04	0.149	O I | | | |	0.21
1.750	1.20	0.05	0.157	O I | | | |	0.22
1.833	1.25	0.05	0.165	O I | | | |	0.23
1.917	1.47	0.06	0.174	O I | | | |	0.24
2.000	1.55	0.07	0.184	O I | | | |	0.26
2.083	1.58	0.08	0.195	O I | | | |	0.27
2.167	1.60	0.09	0.205	O I | | | |	0.29
2.250	1.60	0.09	0.215	O I | | | |	0.30
2.333	1.60	0.10	0.226	O I | | | |	0.32
2.417	1.60	0.11	0.236	O I | | | |	0.33
2.500	1.60	0.12	0.246	O I | | | |	0.35
2.583	1.65	0.13	0.257	O I | | | |	0.36
2.667	1.87	0.14	0.268	O I | | | |	0.38
2.750	1.95	0.15	0.280	O I | | | |	0.39
2.833	1.99	0.16	0.293	O I | | | |	0.41
2.917	2.00	0.17	0.305	O I | | | |	0.43
3.000	2.00	0.18	0.318	O I | | | |	0.45
3.083	2.01	0.19	0.330	O I | | | |	0.46
3.167	2.01	0.20	0.343	O I | | | |	0.48
3.250	2.01	0.21	0.355	O I | | | |	0.50
3.333	2.01	0.21	0.368	O I | | | |	0.51
3.417	2.01	0.22	0.380	O I | | | |	0.52
3.500	2.01	0.22	0.392	O I | | | |	0.54
3.583	2.01	0.22	0.405	O I | | | |	0.55
3.667	2.01	0.23	0.417	O I | | | |	0.56
3.750	2.01	0.23	0.429	O I | | | |	0.58
3.833	2.06	0.23	0.441	O I | | | |	0.59
3.917	2.28	0.23	0.455	O I | | | |	0.60
4.000	2.35	0.24	0.469	O I | | | |	0.62
4.083	2.39	0.24	0.484	O I | | | |	0.63
4.167	2.40	0.25	0.499	O I | | | |	0.65
4.250	2.40	0.25	0.513	O I | | | |	0.66
4.333	2.46	0.25	0.528	O I | | | |	0.68
4.417	2.68	0.26	0.544	O I | | | |	0.69
4.500	2.76	0.26	0.561	O I | | | |	0.71
4.583	2.79	0.26	0.579	O I | | | |	0.73
4.667	2.80	0.27	0.596	O I | | | |	0.75
4.750	2.81	0.27	0.613	O I | | | |	0.77
4.833	2.86	0.28	0.631	O I | | | |	0.78
4.917	3.08	0.28	0.650	O I | | | |	0.80
5.000	3.16	0.29	0.669	O I | | | |	0.82
5.083	3.09	0.29	0.689	O I | | | |	0.84
5.167	2.66	0.29	0.706	O I | | | |	0.86
5.250	2.51	0.30	0.722	O I | | | |	0.88
5.333	2.50	0.30	0.737	O I | | | |	0.89
5.417	2.69	0.31	0.753	O I | | | |	0.91
5.500	2.76	0.31	0.770	O I | | | |	0.93

5.583	2.84	0.31	0.787	o	I	|	|	|	0.94
5.667	3.07	0.32	0.805	o	I	|	|	|	0.96
5.750	3.15	0.32	0.824	o	I	|	|	|	0.98
5.833	3.19	0.33	0.844	o	I	|	|	|	1.00
5.917	3.20	0.33	0.864	o	I	|	|	|	1.02
6.000	3.21	0.33	0.883	o	I	|	|	|	1.03
6.083	3.26	0.33	0.903	o	I	|	|	|	1.05
6.167	3.48	0.34	0.924	o	I	|	|	|	1.07
6.250	3.56	0.34	0.946	o	I	|	|	|	1.09
6.333	3.59	0.34	0.968	o	I	|	|	|	1.10
6.417	3.60	0.35	0.991	o	I	|	|	|	1.12
6.500	3.61	0.35	1.013	o	I	|	|	|	1.14
6.583	3.66	0.35	1.036	o	I	|	|	|	1.16
6.667	3.88	0.35	1.059	o	I	|	|	|	1.18
6.750	3.96	0.36	1.084	o	I	|	|	|	1.20
6.833	3.99	0.36	1.109	o	I	|	|	|	1.22
6.917	4.00	0.36	1.134	o	I	|	|	|	1.24
7.000	4.01	0.37	1.159	o	I	|	|	|	1.26
7.083	4.01	0.37	1.184	o	I	|	|	|	1.28
7.167	4.01	0.37	1.209	o	I	|	|	|	1.30
7.250	4.01	0.38	1.234	o	I	|	|	|	1.32
7.333	4.06	0.38	1.259	o	|I	|	|	|	1.34
7.417	4.28	0.38	1.286	o	|I	|	|	|	1.36
7.500	4.36	0.39	1.313	o	|I	|	|	|	1.39
7.583	4.44	0.39	1.340	o	|I	|	|	|	1.41
7.667	4.68	0.39	1.369	o	| I	|	|	|	1.43
7.750	4.76	0.40	1.399	o	| I	|	|	|	1.46
7.833	4.84	0.40	1.429	o	| I	|	|	|	1.48
7.917	5.08	0.41	1.460	o	| I	|	|	|	1.51
8.000	5.16	0.41	1.493	o	| I	|	|	|	1.53
8.083	5.30	0.41	1.526	o	| I	|	|	|	1.56
8.167	5.75	0.42	1.561	o	| I	|	|	|	1.59
8.250	5.91	0.42	1.598	o	| I	|	|	|	1.62
8.333	5.98	0.43	1.636	o	| I	|	|	|	1.65
8.417	6.00	0.43	1.675	o	| I	|	|	|	1.68
8.500	6.01	0.44	1.713	o	| I	|	|	|	1.71
8.583	6.07	0.44	1.752	o	| I	|	|	|	1.74
8.667	6.29	0.45	1.791	o	| I	|	|	|	1.78
8.750	6.37	0.45	1.832	|o	| I	|	|	|	1.81
8.833	6.45	0.46	1.873	|o	| I	|	|	|	1.84
8.917	6.68	0.46	1.915	|o	| I	|	|	|	1.88
9.000	6.76	0.47	1.958	|o	| I	|	|	|	1.91
9.083	6.90	0.47	2.002	|o	| I	|	|	|	1.95
9.167	7.35	0.48	2.047	|o	| I	|	|	|	1.99
9.250	7.51	0.48	2.095	|o	| I	|	|	|	2.02
9.333	7.63	0.49	2.144	|o	| I	|	|	|	2.06
9.417	7.88	0.49	2.194	|o	| |I	|	|	|	2.09
9.500	7.96	0.50	2.245	|o	| |I	|	|	|	2.13
9.583	8.05	0.50	2.297	|o	| |I	|	|	|	2.17
9.667	8.29	0.51	2.350	|o	| | I	|	|	|	2.21
9.750	8.37	0.51	2.404	|o	| | I	|	|	|	2.24
9.833	8.45	0.51	2.458	|o	| | I	|	|	|	2.28
9.917	8.69	0.52	2.514	|o	| | I	|	|	|	2.32
10.000	8.77	0.52	2.570	|o	| | I	|	|	|	2.36
10.083	8.46	0.53	2.626	|o	| | I	|	|	|	2.40
10.167	6.93	0.53	2.675	|o	| I|	|	|	|	2.44
10.250	6.38	0.54	2.717	|o	| I |	|	|	|	2.47
10.333	6.16	0.54	2.757	|o	| I |	|	|	|	2.50
10.417	6.07	0.54	2.795	|o	| I |	|	|	|	2.53
10.500	6.04	0.55	2.833	|o	| I |	|	|	|	2.55
10.583	6.28	0.55	2.872	|o	| I |	|	|	|	2.58
10.667	7.37	0.55	2.915	|o	| | I	|	|	|	2.61
10.750	7.76	0.56	2.963	|o	| | |I	|	|	|	2.65
10.833	7.92	0.56	3.013	|o	| | |I	|	|	|	2.68
10.917	7.99	0.57	3.064	|o	| | |I	|	|	|	2.72
11.000	8.01	0.57	3.115	|o	| | |I	|	|	|	2.76
11.083	7.97	0.57	3.167	|o	| | |I	|	|	|	2.79
11.167	7.75	0.58	3.217	|o	| | |I	|	|	|	2.83
11.250	7.68	0.58	3.266	|o	| | |I	|	|	|	2.87
11.333	7.64	0.59	3.315	|o	| | I	|	|	|	2.90
11.417	7.63	0.59	3.363	|o	| | I	|	|	|	2.94
11.500	7.63	0.59	3.412	|o	| | I	|	|	|	2.97
11.583	7.52	0.60	3.460	|o	| | I	|	|	|	3.00
11.667	7.08	0.60	3.506	|o	| | I|	|	|	|	3.04
11.750	6.93	0.60	3.550	|o	| | I|	|	|	|	3.07



18.083	1.62	2.73	6.466	| I O |	|	|	|	5.03
18.167	1.61	2.71	6.458	| I O |	|	|	|	5.03
18.250	1.61	2.70	6.451	| I O |	|	|	|	5.02
18.333	1.61	2.68	6.443	| I O |	|	|	|	5.02
18.417	1.60	2.66	6.436	| I O |	|	|	|	5.01
18.500	1.60	2.64	6.429	| I O |	|	|	|	5.01
18.583	1.55	2.63	6.421	| I O |	|	|	|	5.00
18.667	1.33	2.61	6.413	| I O |	|	|	|	5.00
18.750	1.26	2.60	6.404	| I O |	|	|	|	4.99
18.833	1.17	2.58	6.395	| I O |	|	|	|	4.98
18.917	0.94	2.57	6.384	| I O |	|	|	|	4.98
19.000	0.86	2.55	6.373	|I O |	|	|	|	4.97
19.083	0.87	2.53	6.361	|I O |	|	|	|	4.96
19.167	1.08	2.52	6.351	| I O |	|	|	|	4.95
19.250	1.15	2.50	6.341	| I O |	|	|	|	4.95
19.333	1.23	2.49	6.332	| I O |	|	|	|	4.94
19.417	1.47	2.48	6.324	| I O |	|	|	|	4.94
19.500	1.55	2.47	6.318	| I O |	|	|	|	4.93
19.583	1.53	2.46	6.311	| I O |	|	|	|	4.93
19.667	1.33	2.45	6.304	| I O |	|	|	|	4.92
19.750	1.25	2.43	6.296	| I O |	|	|	|	4.92
19.833	1.17	2.42	6.288	| I O |	|	|	|	4.91
19.917	0.94	2.41	6.279	| I O |	|	|	|	4.91
20.000	0.86	2.39	6.268	|I O |	|	|	|	4.90
20.083	0.87	2.38	6.258	|I O |	|	|	|	4.89
20.167	1.08	2.36	6.248	| I O |	|	|	|	4.89
20.250	1.15	2.35	6.240	| I O |	|	|	|	4.88
20.333	1.18	2.34	6.232	| I O |	|	|	|	4.88
20.417	1.20	2.32	6.224	| I O |	|	|	|	4.87
20.500	1.20	2.31	6.216	| I O |	|	|	|	4.87
20.583	1.20	2.30	6.208	| I O |	|	|	|	4.86
20.667	1.20	2.29	6.201	| I O |	|	|	|	4.85
20.750	1.20	2.28	6.194	| I O |	|	|	|	4.85
20.833	1.15	2.27	6.186	| I O |	|	|	|	4.84
20.917	0.93	2.25	6.178	| I O |	|	|	|	4.84
21.000	0.85	2.24	6.168	|I O |	|	|	|	4.83
21.083	0.87	2.23	6.159	|I O |	|	|	|	4.83
21.167	1.08	2.21	6.150	| I O |	|	|	|	4.82
21.250	1.15	2.20	6.143	| I O |	|	|	|	4.82
21.333	1.13	2.19	6.136	| I O |	|	|	|	4.81
21.417	0.93	2.18	6.128	| I O |	|	|	|	4.81
21.500	0.85	2.16	6.119	|I O |	|	|	|	4.80
21.583	0.87	2.15	6.110	|I O |	|	|	|	4.79
21.667	1.08	2.14	6.102	| I O |	|	|	|	4.79
21.750	1.15	2.13	6.095	| I O |	|	|	|	4.78
21.833	1.13	2.12	6.088	| I O |	|	|	|	4.78
21.917	0.93	2.11	6.081	| I O |	|	|	|	4.77
22.000	0.85	2.09	6.072	|I O |	|	|	|	4.77
22.083	0.87	2.08	6.064	|I O |	|	|	|	4.76
22.167	1.08	2.07	6.056	| I O |	|	|	|	4.76
22.250	1.15	2.06	6.050	| I O |	|	|	|	4.75
22.333	1.13	2.05	6.043	| I O |	|	|	|	4.75
22.417	0.93	2.04	6.037	| I O |	|	|	|	4.74
22.500	0.85	2.03	6.029	|I O |	|	|	|	4.74
22.583	0.82	2.02	6.020	|I O |	|	|	|	4.73
22.667	0.81	2.00	6.012	|I O |	|	|	|	4.73
22.750	0.81	1.99	6.004	|I O |	|	|	|	4.72
22.833	0.80	1.98	5.996	|I O |	|	|	|	4.72
22.917	0.80	1.97	5.988	|I O |	|	|	|	4.71
23.000	0.80	1.95	5.980	|I O |	|	|	|	4.71
23.083	0.80	1.94	5.972	|I O |	|	|	|	4.70
23.167	0.80	1.93	5.964	|I O |	|	|	|	4.70
23.250	0.80	1.92	5.956	|I O |	|	|	|	4.69
23.333	0.80	1.91	5.949	|I O |	|	|	|	4.69
23.417	0.80	1.90	5.941	|I O |	|	|	|	4.68
23.500	0.80	1.88	5.934	|I O |	|	|	|	4.68
23.583	0.80	1.87	5.926	|I O |	|	|	|	4.67
23.667	0.80	1.86	5.919	|I O |	|	|	|	4.67
23.750	0.80	1.85	5.912	|I O |	|	|	|	4.66
23.833	0.80	1.84	5.905	|I O |	|	|	|	4.66
23.917	0.80	1.83	5.898	|I O |	|	|	|	4.65
24.000	0.80	1.82	5.890	|I O |	|	|	|	4.65
24.083	0.70	1.81	5.883	|I O |	|	|	|	4.64
24.167	0.26	1.79	5.874	I O |	|	|	|	4.64
24.250	0.10	1.78	5.863	I O |	|	|	|	4.63

24.333	0.04	1.76	5.851	I o	|	|	|	4.62
24.417	0.01	1.74	5.840	I o	|	|	|	4.61
24.500	0.01	1.72	5.828	I o	|	|	|	4.61
24.583	0.00	1.70	5.816	I o	|	|	|	4.60
24.667	0.00	1.69	5.804	I o	|	|	|	4.59
24.750	0.00	1.67	5.793	I o	|	|	|	4.58
24.833	0.00	1.65	5.781	I o	|	|	|	4.57
24.917	0.00	1.63	5.770	I o	|	|	|	4.57
25.000	0.00	1.62	5.759	I o	|	|	|	4.56
25.083	0.00	1.60	5.748	I o	|	|	|	4.55
25.167	0.00	1.58	5.737	I o	|	|	|	4.54
25.250	0.00	1.57	5.726	I o	|	|	|	4.54
25.333	0.00	1.55	5.715	I o	|	|	|	4.53
25.417	0.00	1.54	5.704	I o	|	|	|	4.52
25.500	0.00	1.52	5.694	I o	|	|	|	4.52
25.583	0.00	1.50	5.684	I o	|	|	|	4.51
25.667	0.00	1.49	5.673	I o	|	|	|	4.50
25.750	0.00	1.48	5.663	I o	|	|	|	4.50
25.833	0.00	1.47	5.653	I o	|	|	|	4.49
25.917	0.00	1.47	5.643	I o	|	|	|	4.48
26.000	0.00	1.46	5.633	I o	|	|	|	4.48
26.083	0.00	1.45	5.623	I o	|	|	|	4.47
26.167	0.00	1.45	5.613	I o	|	|	|	4.46
26.250	0.00	1.44	5.603	I o	|	|	|	4.46
26.333	0.00	1.44	5.593	I o	|	|	|	4.45
26.417	0.00	1.44	5.583	I o	|	|	|	4.44
26.500	0.00	1.43	5.573	I o	|	|	|	4.44
26.583	0.00	1.43	5.563	I o	|	|	|	4.43
26.667	0.00	1.43	5.553	I o	|	|	|	4.42
26.750	0.00	1.42	5.543	I o	|	|	|	4.42
26.833	0.00	1.42	5.534	I o	|	|	|	4.41
26.917	0.00	1.42	5.524	I o	|	|	|	4.40
27.000	0.00	1.41	5.514	I o	|	|	|	4.40
27.083	0.00	1.41	5.504	I o	|	|	|	4.39
27.167	0.00	1.41	5.495	I o	|	|	|	4.38
27.250	0.00	1.40	5.485	I o	|	|	|	4.38
27.333	0.00	1.40	5.475	I o	|	|	|	4.37
27.417	0.00	1.40	5.466	I o	|	|	|	4.36
27.500	0.00	1.39	5.456	I o	|	|	|	4.36
27.583	0.00	1.39	5.447	I o	|	|	|	4.35
27.667	0.00	1.39	5.437	I o	|	|	|	4.34
27.750	0.00	1.38	5.428	I o	|	|	|	4.34
27.833	0.00	1.38	5.418	I o	|	|	|	4.33
27.917	0.00	1.38	5.409	I o	|	|	|	4.33
28.000	0.00	1.37	5.399	I o	|	|	|	4.32
28.083	0.00	1.37	5.390	I o	|	|	|	4.31
28.167	0.00	1.37	5.380	I o	|	|	|	4.31
28.250	0.00	1.36	5.371	I o	|	|	|	4.30
28.333	0.00	1.36	5.361	I o	|	|	|	4.29
28.417	0.00	1.36	5.352	I o	|	|	|	4.29
28.500	0.00	1.35	5.343	I o	|	|	|	4.28
28.583	0.00	1.35	5.333	I o	|	|	|	4.27
28.667	0.00	1.35	5.324	I o	|	|	|	4.27
28.750	0.00	1.34	5.315	I o	|	|	|	4.26
28.833	0.00	1.34	5.306	I o	|	|	|	4.26
28.917	0.00	1.34	5.296	I o	|	|	|	4.25
29.000	0.00	1.34	5.287	I o	|	|	|	4.24
29.083	0.00	1.33	5.278	I o	|	|	|	4.24
29.167	0.00	1.33	5.269	I o	|	|	|	4.23
29.250	0.00	1.33	5.260	I o	|	|	|	4.23
29.333	0.00	1.32	5.251	I o	|	|	|	4.22
29.417	0.00	1.32	5.241	I o	|	|	|	4.21
29.500	0.00	1.32	5.232	I o	|	|	|	4.21
29.583	0.00	1.31	5.223	I o	|	|	|	4.20
29.667	0.00	1.31	5.214	I o	|	|	|	4.20
29.750	0.00	1.31	5.205	I o	|	|	|	4.19
29.833	0.00	1.30	5.196	I o	|	|	|	4.18
29.917	0.00	1.30	5.187	I o	|	|	|	4.18
30.000	0.00	1.30	5.178	I o	|	|	|	4.17
30.083	0.00	1.29	5.169	I o	|	|	|	4.16
30.167	0.00	1.29	5.160	I o	|	|	|	4.16
30.250	0.00	1.29	5.152	I o	|	|	|	4.15
30.333	0.00	1.29	5.143	I o	|	|	|	4.15
30.417	0.00	1.28	5.134	I o	|	|	|	4.14
30.500	0.00	1.28	5.125	I o	|	|	|	4.14

30.583	0.00	1.28	5.116	I O	|	|	|	4.13
30.667	0.00	1.27	5.108	I O	|	|	|	4.12
30.750	0.00	1.27	5.099	I O	|	|	|	4.12
30.833	0.00	1.27	5.090	I O	|	|	|	4.11
30.917	0.00	1.26	5.081	I O	|	|	|	4.11
31.000	0.00	1.26	5.073	I O	|	|	|	4.10
31.083	0.00	1.26	5.064	I O	|	|	|	4.09
31.167	0.00	1.26	5.055	I O	|	|	|	4.09
31.250	0.00	1.25	5.047	I O	|	|	|	4.08
31.333	0.00	1.25	5.038	I O	|	|	|	4.08
31.417	0.00	1.25	5.029	I O	|	|	|	4.07
31.500	0.00	1.24	5.021	I O	|	|	|	4.07
31.583	0.00	1.24	5.012	I O	|	|	|	4.06
31.667	0.00	1.24	5.004	I O	|	|	|	4.05
31.750	0.00	1.23	4.995	I O	|	|	|	4.05
31.833	0.00	1.23	4.987	I O	|	|	|	4.04
31.917	0.00	1.23	4.978	I O	|	|	|	4.04
32.000	0.00	1.23	4.970	I O	|	|	|	4.03
32.083	0.00	1.22	4.961	I O	|	|	|	4.03
32.167	0.00	1.22	4.953	I O	|	|	|	4.02
32.250	0.00	1.22	4.945	I O	|	|	|	4.01
32.333	0.00	1.21	4.936	I O	|	|	|	4.01
32.417	0.00	1.21	4.928	I O	|	|	|	4.00
32.500	0.00	1.21	4.920	I O	|	|	|	4.00
32.583	0.00	1.20	4.911	I O	|	|	|	3.99
32.667	0.00	1.20	4.903	I O	|	|	|	3.99
32.750	0.00	1.19	4.895	I O	|	|	|	3.98
32.833	0.00	1.19	4.887	I O	|	|	|	3.98
32.917	0.00	1.18	4.878	I O	|	|	|	3.97
33.000	0.00	1.18	4.870	I O	|	|	|	3.96
33.083	0.00	1.17	4.862	I O	|	|	|	3.96
33.167	0.00	1.16	4.854	I O	|	|	|	3.95
33.250	0.00	1.16	4.846	I O	|	|	|	3.95
33.333	0.00	1.15	4.838	I O	|	|	|	3.94
33.417	0.00	1.15	4.830	I O	|	|	|	3.94
33.500	0.00	1.14	4.822	I O	|	|	|	3.93
33.583	0.00	1.14	4.815	I O	|	|	|	3.93
33.667	0.00	1.13	4.807	I O	|	|	|	3.92
33.750	0.00	1.13	4.799	I O	|	|	|	3.92
33.833	0.00	1.12	4.791	I O	|	|	|	3.91
33.917	0.00	1.12	4.783	I O	|	|	|	3.91
34.000	0.00	1.11	4.776	I O	|	|	|	3.90
34.083	0.00	1.11	4.768	I O	|	|	|	3.90
34.167	0.00	1.10	4.761	I O	|	|	|	3.89
34.250	0.00	1.10	4.753	I O	|	|	|	3.89
34.333	0.00	1.09	4.745	I O	|	|	|	3.88
34.417	0.00	1.09	4.738	I O	|	|	|	3.88
34.500	0.00	1.08	4.730	I O	|	|	|	3.87
34.583	0.00	1.08	4.723	I O	|	|	|	3.87
34.667	0.00	1.07	4.716	I O	|	|	|	3.86
34.750	0.00	1.07	4.708	I O	|	|	|	3.86
34.833	0.00	1.06	4.701	I O	|	|	|	3.85
34.917	0.00	1.06	4.694	I O	|	|	|	3.85
35.000	0.00	1.05	4.686	I O	|	|	|	3.84
35.083	0.00	1.05	4.679	I O	|	|	|	3.84
35.167	0.00	1.04	4.672	I O	|	|	|	3.83
35.250	0.00	1.04	4.665	I O	|	|	|	3.83
35.333	0.00	1.03	4.658	I O	|	|	|	3.82
35.417	0.00	1.03	4.650	I O	|	|	|	3.82
35.500	0.00	1.03	4.643	I O	|	|	|	3.81
35.583	0.00	1.02	4.636	I O	|	|	|	3.81
35.667	0.00	1.02	4.629	I O	|	|	|	3.80
35.750	0.00	1.01	4.622	I O	|	|	|	3.80
35.833	0.00	1.01	4.615	I O	|	|	|	3.79
35.917	0.00	1.00	4.608	I O	|	|	|	3.79
36.000	0.00	1.00	4.602	I O	|	|	|	3.78
36.083	0.00	0.99	4.595	I O	|	|	|	3.78
36.167	0.00	0.99	4.588	I O	|	|	|	3.77
36.250	0.00	0.98	4.581	I O	|	|	|	3.77
36.333	0.00	0.98	4.574	I O	|	|	|	3.76
36.417	0.00	0.97	4.568	I O	|	|	|	3.76
36.500	0.00	0.97	4.561	I O	|	|	|	3.76
36.583	0.00	0.97	4.554	I O	|	|	|	3.75
36.667	0.00	0.96	4.548	I O	|	|	|	3.75
36.750	0.00	0.96	4.541	I O	|	|	|	3.74

36.833	0.00	0.95	4.534	I O	|	|	|	|	3.74
36.917	0.00	0.95	4.528	I O	|	|	|	|	3.73
37.000	0.00	0.94	4.521	I O	|	|	|	|	3.73
37.083	0.00	0.94	4.515	I O	|	|	|	|	3.72
37.167	0.00	0.94	4.508	I O	|	|	|	|	3.72
37.250	0.00	0.93	4.502	I O	|	|	|	|	3.72
37.333	0.00	0.93	4.496	I O	|	|	|	|	3.71
37.417	0.00	0.92	4.489	I O	|	|	|	|	3.71
37.500	0.00	0.92	4.483	I O	|	|	|	|	3.70
37.583	0.00	0.91	4.477	I O	|	|	|	|	3.70
37.667	0.00	0.91	4.470	I O	|	|	|	|	3.69
37.750	0.00	0.91	4.464	I O	|	|	|	|	3.69
37.833	0.00	0.90	4.458	IO	|	|	|	|	3.69
37.917	0.00	0.90	4.452	IO	|	|	|	|	3.68
38.000	0.00	0.89	4.445	IO	|	|	|	|	3.68
38.083	0.00	0.89	4.439	IO	|	|	|	|	3.67
38.167	0.00	0.89	4.433	IO	|	|	|	|	3.67
38.250	0.00	0.88	4.427	IO	|	|	|	|	3.67
38.333	0.00	0.88	4.421	IO	|	|	|	|	3.66
38.417	0.00	0.87	4.415	IO	|	|	|	|	3.66
38.500	0.00	0.87	4.409	IO	|	|	|	|	3.65
38.583	0.00	0.87	4.403	IO	|	|	|	|	3.65
38.667	0.00	0.86	4.397	IO	|	|	|	|	3.65
38.750	0.00	0.86	4.391	IO	|	|	|	|	3.64
38.833	0.00	0.85	4.385	IO	|	|	|	|	3.64
38.917	0.00	0.85	4.379	IO	|	|	|	|	3.63
39.000	0.00	0.85	4.373	IO	|	|	|	|	3.63
39.083	0.00	0.84	4.368	IO	|	|	|	|	3.63
39.167	0.00	0.84	4.362	IO	|	|	|	|	3.62
39.250	0.00	0.84	4.356	IO	|	|	|	|	3.62
39.333	0.00	0.83	4.350	IO	|	|	|	|	3.61
39.417	0.00	0.83	4.345	IO	|	|	|	|	3.61
39.500	0.00	0.82	4.339	IO	|	|	|	|	3.61
39.583	0.00	0.82	4.333	IO	|	|	|	|	3.60
39.667	0.00	0.82	4.328	IO	|	|	|	|	3.60
39.750	0.00	0.81	4.322	IO	|	|	|	|	3.59
39.833	0.00	0.81	4.316	IO	|	|	|	|	3.59
39.917	0.00	0.81	4.311	IO	|	|	|	|	3.59
40.000	0.00	0.80	4.305	IO	|	|	|	|	3.58
40.083	0.00	0.80	4.300	IO	|	|	|	|	3.58
40.167	0.00	0.79	4.294	IO	|	|	|	|	3.58
40.250	0.00	0.79	4.289	IO	|	|	|	|	3.57
40.333	0.00	0.79	4.283	IO	|	|	|	|	3.57
40.417	0.00	0.78	4.278	IO	|	|	|	|	3.56
40.500	0.00	0.78	4.273	IO	|	|	|	|	3.56
40.583	0.00	0.78	4.267	IO	|	|	|	|	3.56
40.667	0.00	0.77	4.262	IO	|	|	|	|	3.55
40.750	0.00	0.77	4.257	IO	|	|	|	|	3.55
40.833	0.00	0.77	4.251	IO	|	|	|	|	3.55
40.917	0.00	0.76	4.246	IO	|	|	|	|	3.54
41.000	0.00	0.76	4.241	IO	|	|	|	|	3.54
41.083	0.00	0.76	4.236	IO	|	|	|	|	3.54
41.167	0.00	0.75	4.230	IO	|	|	|	|	3.53
41.250	0.00	0.75	4.225	IO	|	|	|	|	3.53
41.333	0.00	0.75	4.220	IO	|	|	|	|	3.53
41.417	0.00	0.74	4.215	IO	|	|	|	|	3.52
41.500	0.00	0.74	4.210	IO	|	|	|	|	3.52
41.583	0.00	0.74	4.205	IO	|	|	|	|	3.52
41.667	0.00	0.73	4.200	IO	|	|	|	|	3.51
41.750	0.00	0.73	4.195	IO	|	|	|	|	3.51
41.833	0.00	0.73	4.190	IO	|	|	|	|	3.51
41.917	0.00	0.72	4.185	IO	|	|	|	|	3.50
42.000	0.00	0.71	4.180	IO	|	|	|	|	3.50
42.083	0.00	0.69	4.175	IO	|	|	|	|	3.50
42.167	0.00	0.66	4.170	IO	|	|	|	|	3.49
42.250	0.00	0.65	4.166	IO	|	|	|	|	3.49
42.333	0.00	0.65	4.161	IO	|	|	|	|	3.49
42.417	0.00	0.65	4.157	IO	|	|	|	|	3.48
42.500	0.00	0.65	4.153	IO	|	|	|	|	3.48
42.583	0.00	0.65	4.148	IO	|	|	|	|	3.48
42.667	0.00	0.65	4.144	IO	|	|	|	|	3.47
42.750	0.00	0.65	4.139	IO	|	|	|	|	3.47
42.833	0.00	0.64	4.135	IO	|	|	|	|	3.47
42.917	0.00	0.64	4.130	IO	|	|	|	|	3.46
43.000	0.00	0.64	4.126	IO	|	|	|	|	3.46

43.083	0.00	0.64	4.121	IO					3.46
43.167	0.00	0.64	4.117	IO					3.46
43.250	0.00	0.64	4.113	IO					3.45
43.333	0.00	0.64	4.108	IO					3.45
43.417	0.00	0.64	4.104	IO					3.45
43.500	0.00	0.64	4.099	IO					3.44
43.583	0.00	0.64	4.095	IO					3.44
43.667	0.00	0.64	4.090	IO					3.44
43.750	0.00	0.64	4.086	IO					3.43
43.833	0.00	0.64	4.082	IO					3.43
43.917	0.00	0.64	4.077	IO					3.43
44.000	0.00	0.64	4.073	IO					3.43
44.083	0.00	0.64	4.068	IO					3.42
44.167	0.00	0.64	4.064	IO					3.42
44.250	0.00	0.64	4.060	IO					3.42
44.333	0.00	0.64	4.055	IO					3.41
44.417	0.00	0.64	4.051	IO					3.41
44.500	0.00	0.64	4.046	IO					3.41
44.583	0.00	0.64	4.042	IO					3.40
44.667	0.00	0.64	4.038	IO					3.40
44.750	0.00	0.64	4.033	IO					3.40
44.833	0.00	0.64	4.029	IO					3.40
44.917	0.00	0.64	4.024	IO					3.39
45.000	0.00	0.64	4.020	IO					3.39
45.083	0.00	0.64	4.016	IO					3.39
45.167	0.00	0.64	4.011	IO					3.38
45.250	0.00	0.64	4.007	IO					3.38
45.333	0.00	0.64	4.003	IO					3.38
45.417	0.00	0.64	3.998	IO					3.37
45.500	0.00	0.64	3.994	IO					3.37
45.583	0.00	0.63	3.989	IO					3.37
45.667	0.00	0.63	3.985	IO					3.37
45.750	0.00	0.63	3.981	IO					3.36
45.833	0.00	0.63	3.976	IO					3.36
45.917	0.00	0.63	3.972	IO					3.36
46.000	0.00	0.63	3.968	IO					3.35
46.083	0.00	0.63	3.963	IO					3.35
46.167	0.00	0.63	3.959	IO					3.35
46.250	0.00	0.63	3.954	IO					3.34
46.333	0.00	0.63	3.950	IO					3.34
46.417	0.00	0.63	3.946	IO					3.34
46.500	0.00	0.63	3.941	IO					3.34
46.583	0.00	0.63	3.937	IO					3.33
46.667	0.00	0.63	3.933	IO					3.33
46.750	0.00	0.63	3.928	IO					3.33
46.833	0.00	0.63	3.924	IO					3.32
46.917	0.00	0.63	3.920	IO					3.32
47.000	0.00	0.63	3.915	IO					3.32
47.083	0.00	0.63	3.911	IO					3.31
47.167	0.00	0.63	3.907	IO					3.31
47.250	0.00	0.63	3.902	IO					3.31
47.333	0.00	0.63	3.898	IO					3.31
47.417	0.00	0.63	3.894	IO					3.30
47.500	0.00	0.63	3.889	IO					3.30
47.583	0.00	0.63	3.885	IO					3.30
47.667	0.00	0.63	3.881	IO					3.29
47.750	0.00	0.63	3.876	IO					3.29
47.833	0.00	0.63	3.872	IO					3.29
47.917	0.00	0.63	3.868	IO					3.28
48.000	0.00	0.63	3.863	IO					3.28
48.083	0.00	0.63	3.859	IO					3.28
48.167	0.00	0.63	3.855	IO					3.28
48.250	0.00	0.63	3.851	IO					3.27
48.333	0.00	0.62	3.846	IO					3.27
48.417	0.00	0.62	3.842	IO					3.27
48.500	0.00	0.62	3.838	IO					3.26
48.583	0.00	0.62	3.833	IO					3.26
48.667	0.00	0.62	3.829	IO					3.26
48.750	0.00	0.62	3.825	IO					3.26
48.833	0.00	0.62	3.820	IO					3.25
48.917	0.00	0.62	3.816	IO					3.25
49.000	0.00	0.62	3.812	IO					3.25
49.083	0.00	0.62	3.808	IO					3.24
49.167	0.00	0.62	3.803	IO					3.24
49.250	0.00	0.62	3.799	IO					3.24

49.333	0.00	0.62	3.795	IO					3.23
49.417	0.00	0.62	3.790	IO					3.23
49.500	0.00	0.62	3.786	IO					3.23
49.583	0.00	0.62	3.782	IO					3.23
49.667	0.00	0.62	3.778	IO					3.22
49.750	0.00	0.62	3.773	IO					3.22
49.833	0.00	0.62	3.769	IO					3.22
49.917	0.00	0.62	3.765	IO					3.21
50.000	0.00	0.62	3.761	IO					3.21
50.083	0.00	0.62	3.756	IO					3.21
50.167	0.00	0.62	3.752	IO					3.21
50.250	0.00	0.62	3.748	IO					3.20
50.333	0.00	0.62	3.744	IO					3.20
50.417	0.00	0.62	3.739	IO					3.20
50.500	0.00	0.62	3.735	IO					3.19
50.583	0.00	0.62	3.731	IO					3.19
50.667	0.00	0.62	3.726	IO					3.19
50.750	0.00	0.62	3.722	IO					3.18
50.833	0.00	0.62	3.718	IO					3.18
50.917	0.00	0.62	3.714	IO					3.18
51.000	0.00	0.62	3.710	IO					3.18
51.083	0.00	0.62	3.705	IO					3.17
51.167	0.00	0.62	3.701	IO					3.17
51.250	0.00	0.61	3.697	IO					3.17
51.333	0.00	0.61	3.693	IO					3.16
51.417	0.00	0.61	3.688	IO					3.16
51.500	0.00	0.61	3.684	IO					3.16
51.583	0.00	0.61	3.680	IO					3.16
51.667	0.00	0.61	3.676	IO					3.15
51.750	0.00	0.61	3.671	IO					3.15
51.833	0.00	0.61	3.667	IO					3.15
51.917	0.00	0.61	3.663	IO					3.14
52.000	0.00	0.61	3.659	IO					3.14
52.083	0.00	0.61	3.655	IO					3.14
52.167	0.00	0.61	3.650	IO					3.14
52.250	0.00	0.61	3.646	IO					3.13
52.333	0.00	0.61	3.642	IO					3.13
52.417	0.00	0.61	3.638	IO					3.13
52.500	0.00	0.61	3.634	IO					3.12
52.583	0.00	0.61	3.629	IO					3.12
52.667	0.00	0.61	3.625	IO					3.12
52.750	0.00	0.61	3.621	IO					3.12
52.833	0.00	0.61	3.617	IO					3.11
52.917	0.00	0.61	3.613	IO					3.11
53.000	0.00	0.61	3.608	IO					3.11
53.083	0.00	0.61	3.604	IO					3.10
53.167	0.00	0.61	3.600	IO					3.10
53.250	0.00	0.61	3.596	IO					3.10
53.333	0.00	0.61	3.592	IO					3.10
53.417	0.00	0.61	3.587	IO					3.09
53.500	0.00	0.61	3.583	IO					3.09
53.583	0.00	0.61	3.579	IO					3.09
53.667	0.00	0.61	3.575	IO					3.08
53.750	0.00	0.61	3.571	IO					3.08
53.833	0.00	0.61	3.567	IO					3.08
53.917	0.00	0.61	3.562	IO					3.08
54.000	0.00	0.61	3.558	IO					3.07
54.083	0.00	0.60	3.554	IO					3.07
54.167	0.00	0.60	3.550	IO					3.07
54.250	0.00	0.60	3.546	IO					3.06
54.333	0.00	0.60	3.542	IO					3.06
54.417	0.00	0.60	3.537	IO					3.06
54.500	0.00	0.60	3.533	IO					3.06
54.583	0.00	0.60	3.529	IO					3.05
54.667	0.00	0.60	3.525	IO					3.05
54.750	0.00	0.60	3.521	IO					3.05
54.833	0.00	0.60	3.517	IO					3.04
54.917	0.00	0.60	3.512	IO					3.04
55.000	0.00	0.60	3.508	IO					3.04
55.083	0.00	0.60	3.504	IO					3.04
55.167	0.00	0.60	3.500	IO					3.03
55.250	0.00	0.60	3.496	IO					3.03
55.333	0.00	0.60	3.492	IO					3.03
55.417	0.00	0.60	3.488	IO					3.02
55.500	0.00	0.60	3.483	IO					3.02

55.583	0.00	0.60	3.479	IO					3.02
55.667	0.00	0.60	3.475	IO					3.02
55.750	0.00	0.60	3.471	IO					3.01
55.833	0.00	0.60	3.467	IO					3.01
55.917	0.00	0.60	3.463	IO					3.01
56.000	0.00	0.60	3.459	IO					3.00
56.083	0.00	0.60	3.455	IO					3.00
56.167	0.00	0.60	3.450	IO					3.00
56.250	0.00	0.60	3.446	IO					3.00
56.333	0.00	0.60	3.442	IO					2.99
56.417	0.00	0.60	3.438	IO					2.99
56.500	0.00	0.60	3.434	IO					2.99
56.583	0.00	0.60	3.430	IO					2.98
56.667	0.00	0.60	3.426	IO					2.98
56.750	0.00	0.60	3.422	IO					2.98
56.833	0.00	0.60	3.418	IO					2.97
56.917	0.00	0.59	3.414	IO					2.97
57.000	0.00	0.59	3.409	IO					2.97
57.083	0.00	0.59	3.405	IO					2.97
57.167	0.00	0.59	3.401	IO					2.96
57.250	0.00	0.59	3.397	IO					2.96
57.333	0.00	0.59	3.393	IO					2.96
57.417	0.00	0.59	3.389	IO					2.95
57.500	0.00	0.59	3.385	IO					2.95
57.583	0.00	0.59	3.381	IO					2.95
57.667	0.00	0.59	3.377	IO					2.95
57.750	0.00	0.59	3.373	IO					2.94
57.833	0.00	0.59	3.369	IO					2.94
57.917	0.00	0.59	3.365	IO					2.94
58.000	0.00	0.59	3.360	IO					2.93
58.083	0.00	0.59	3.356	IO					2.93
58.167	0.00	0.59	3.352	IO					2.93
58.250	0.00	0.59	3.348	IO					2.92
58.333	0.00	0.59	3.344	IO					2.92
58.417	0.00	0.59	3.340	IO					2.92
58.500	0.00	0.59	3.336	IO					2.92
58.583	0.00	0.59	3.332	IO					2.91
58.667	0.00	0.59	3.328	IO					2.91
58.750	0.00	0.59	3.324	IO					2.91
58.833	0.00	0.59	3.320	IO					2.90
58.917	0.00	0.59	3.316	IO					2.90
59.000	0.00	0.59	3.312	IO					2.90
59.083	0.00	0.59	3.308	IO					2.90
59.167	0.00	0.59	3.304	IO					2.89
59.250	0.00	0.59	3.300	IO					2.89
59.333	0.00	0.58	3.296	IO					2.89
59.417	0.00	0.58	3.292	IO					2.88
59.500	0.00	0.58	3.288	IO					2.88
59.583	0.00	0.58	3.284	IO					2.88
59.667	0.00	0.58	3.280	IO					2.88
59.750	0.00	0.58	3.276	IO					2.87
59.833	0.00	0.58	3.272	IO					2.87
59.917	0.00	0.58	3.268	IO					2.87
60.000	0.00	0.58	3.264	IO					2.86
60.083	0.00	0.58	3.260	IO					2.86
60.167	0.00	0.58	3.256	IO					2.86
60.250	0.00	0.58	3.252	IO					2.85
60.333	0.00	0.58	3.248	IO					2.85
60.417	0.00	0.58	3.244	IO					2.85
60.500	0.00	0.58	3.240	IO					2.85
60.583	0.00	0.58	3.236	IO					2.84
60.667	0.00	0.58	3.232	IO					2.84
60.750	0.00	0.58	3.228	IO					2.84
60.833	0.00	0.58	3.224	IO					2.83
60.917	0.00	0.58	3.220	IO					2.83
61.000	0.00	0.58	3.216	IO					2.83
61.083	0.00	0.58	3.212	IO					2.83
61.167	0.00	0.58	3.208	IO					2.82
61.250	0.00	0.58	3.204	IO					2.82
61.333	0.00	0.58	3.200	IO					2.82
61.417	0.00	0.58	3.196	IO					2.81
61.500	0.00	0.58	3.192	IO					2.81
61.583	0.00	0.58	3.188	IO					2.81
61.667	0.00	0.58	3.184	IO					2.81
61.750	0.00	0.58	3.180	IO					2.80

61.833	0.00	0.57	3.176	IO					2.80
61.917	0.00	0.57	3.172	IO					2.80
62.000	0.00	0.57	3.168	IO					2.79
62.083	0.00	0.57	3.164	IO					2.79
62.167	0.00	0.57	3.160	IO					2.79
62.250	0.00	0.57	3.156	IO					2.79
62.333	0.00	0.57	3.152	IO					2.78
62.417	0.00	0.57	3.148	IO					2.78
62.500	0.00	0.57	3.144	IO					2.78
62.583	0.00	0.57	3.140	IO					2.77
62.667	0.00	0.57	3.136	IO					2.77
62.750	0.00	0.57	3.133	IO					2.77
62.833	0.00	0.57	3.129	IO					2.77
62.917	0.00	0.57	3.125	IO					2.76
63.000	0.00	0.57	3.121	IO					2.76
63.083	0.00	0.57	3.117	IO					2.76
63.167	0.00	0.57	3.113	IO					2.75
63.250	0.00	0.57	3.109	IO					2.75
63.333	0.00	0.57	3.105	IO					2.75
63.417	0.00	0.57	3.101	IO					2.75
63.500	0.00	0.57	3.097	IO					2.74
63.583	0.00	0.57	3.093	IO					2.74
63.667	0.00	0.57	3.089	IO					2.74
63.750	0.00	0.57	3.085	IO					2.74
63.833	0.00	0.57	3.082	IO					2.73
63.917	0.00	0.57	3.078	IO					2.73
64.000	0.00	0.57	3.074	IO					2.73
64.083	0.00	0.57	3.070	IO					2.72
64.167	0.00	0.57	3.066	IO					2.72
64.250	0.00	0.57	3.062	IO					2.72
64.333	0.00	0.57	3.058	IO					2.72
64.417	0.00	0.56	3.054	IO					2.71
64.500	0.00	0.56	3.050	IO					2.71
64.583	0.00	0.56	3.047	IO					2.71
64.667	0.00	0.56	3.043	IO					2.70
64.750	0.00	0.56	3.039	IO					2.70
64.833	0.00	0.56	3.035	IO					2.70
64.917	0.00	0.56	3.031	IO					2.70
65.000	0.00	0.56	3.027	IO					2.69
65.083	0.00	0.56	3.023	IO					2.69
65.167	0.00	0.56	3.019	IO					2.69
65.250	0.00	0.56	3.016	IO					2.68
65.333	0.00	0.56	3.012	IO					2.68
65.417	0.00	0.56	3.008	IO					2.68
65.500	0.00	0.56	3.004	IO					2.68
65.583	0.00	0.56	3.000	IO					2.67
65.667	0.00	0.56	2.996	IO					2.67
65.750	0.00	0.56	2.992	IO					2.67
65.833	0.00	0.56	2.988	IO					2.67
65.917	0.00	0.56	2.985	IO					2.66
66.000	0.00	0.56	2.981	IO					2.66
66.083	0.00	0.56	2.977	IO					2.66
66.167	0.00	0.56	2.973	IO					2.65
66.250	0.00	0.56	2.969	IO					2.65
66.333	0.00	0.56	2.965	IO					2.65
66.417	0.00	0.56	2.962	IO					2.65
66.500	0.00	0.56	2.958	IO					2.64
66.583	0.00	0.56	2.954	IO					2.64
66.667	0.00	0.56	2.950	IO					2.64
66.750	0.00	0.56	2.946	IO					2.63
66.833	0.00	0.56	2.942	IO					2.63
66.917	0.00	0.56	2.939	IO					2.63
67.000	0.00	0.55	2.935	IO					2.63
67.083	0.00	0.55	2.931	IO					2.62
67.167	0.00	0.55	2.927	IO					2.62
67.250	0.00	0.55	2.923	IO					2.62
67.333	0.00	0.55	2.920	IO					2.62
67.417	0.00	0.55	2.916	IO					2.61
67.500	0.00	0.55	2.912	IO					2.61
67.583	0.00	0.55	2.908	IO					2.61
67.667	0.00	0.55	2.904	IO					2.60
67.750	0.00	0.55	2.901	IO					2.60
67.833	0.00	0.55	2.897	IO					2.60
67.917	0.00	0.55	2.893	IO					2.60
68.000	0.00	0.55	2.889	IO					2.59

68.083	0.00	0.55	2.885	IO					2.59
68.167	0.00	0.55	2.882	IO					2.59
68.250	0.00	0.55	2.878	IO					2.59
68.333	0.00	0.55	2.874	IO					2.58
68.417	0.00	0.55	2.870	IO					2.58
68.500	0.00	0.55	2.866	IO					2.58
68.583	0.00	0.55	2.863	IO					2.57
68.667	0.00	0.55	2.859	IO					2.57
68.750	0.00	0.55	2.855	IO					2.57
68.833	0.00	0.55	2.851	IO					2.57
68.917	0.00	0.55	2.848	IO					2.56
69.000	0.00	0.55	2.844	IO					2.56
69.083	0.00	0.55	2.840	IO					2.56
69.167	0.00	0.55	2.836	IO					2.56
69.250	0.00	0.55	2.832	IO					2.55
69.333	0.00	0.55	2.829	IO					2.55
69.417	0.00	0.55	2.825	IO					2.55
69.500	0.00	0.55	2.821	IO					2.54
69.583	0.00	0.54	2.817	IO					2.54
69.667	0.00	0.54	2.814	IO					2.54
69.750	0.00	0.54	2.810	IO					2.54
69.833	0.00	0.54	2.806	IO					2.53
69.917	0.00	0.54	2.802	IO					2.53
70.000	0.00	0.54	2.799	IO					2.53
70.083	0.00	0.54	2.795	IO					2.53
70.167	0.00	0.54	2.791	IO					2.52
70.250	0.00	0.54	2.787	IO					2.52
70.333	0.00	0.54	2.784	IO					2.52
70.417	0.00	0.54	2.780	IO					2.52
70.500	0.00	0.54	2.776	IO					2.51
70.583	0.00	0.54	2.773	IO					2.51
70.667	0.00	0.54	2.769	IO					2.51
70.750	0.00	0.54	2.765	IO					2.50
70.833	0.00	0.54	2.761	IO					2.50
70.917	0.00	0.54	2.758	IO					2.50
71.000	0.00	0.54	2.754	IO					2.50
71.083	0.00	0.54	2.750	IO					2.49
71.167	0.00	0.54	2.747	IO					2.49
71.250	0.00	0.54	2.743	IO					2.49
71.333	0.00	0.54	2.739	IO					2.49
71.417	0.00	0.54	2.735	IO					2.48
71.500	0.00	0.54	2.732	IO					2.48
71.583	0.00	0.54	2.728	IO					2.48
71.667	0.00	0.54	2.724	IO					2.47
71.750	0.00	0.54	2.721	IO					2.47
71.833	0.00	0.54	2.717	IO					2.47
71.917	0.00	0.54	2.713	IO					2.47
72.000	0.00	0.54	2.709	IO					2.46
72.083	0.00	0.54	2.706	IO					2.46
72.167	0.00	0.54	2.702	IO					2.46
72.250	0.00	0.53	2.698	IO					2.46
72.333	0.00	0.53	2.695	IO					2.45
72.417	0.00	0.53	2.691	IO					2.45
72.500	0.00	0.53	2.687	IO					2.45
72.583	0.00	0.53	2.684	IO					2.45
72.667	0.00	0.53	2.680	IO					2.44
72.750	0.00	0.53	2.676	IO					2.44
72.833	0.00	0.53	2.673	IO					2.44
72.917	0.00	0.53	2.669	IO					2.44
73.000	0.00	0.53	2.665	IO					2.43
73.083	0.00	0.53	2.662	IO					2.43
73.167	0.00	0.53	2.658	IO					2.43
73.250	0.00	0.53	2.654	IO					2.42
73.333	0.00	0.53	2.651	IO					2.42
73.417	0.00	0.53	2.647	IO					2.42
73.500	0.00	0.53	2.643	IO					2.42
73.583	0.00	0.53	2.640	IO					2.41
73.667	0.00	0.53	2.636	IO					2.41
73.750	0.00	0.53	2.632	IO					2.41
73.833	0.00	0.53	2.629	IO					2.41
73.917	0.00	0.53	2.625	IO					2.40
74.000	0.00	0.53	2.622	IO					2.40
74.083	0.00	0.53	2.618	IO					2.40
74.167	0.00	0.53	2.614	IO					2.40
74.250	0.00	0.53	2.611	IO					2.39

74.333	0.00	0.53	2.607	IO					2.39
74.417	0.00	0.53	2.603	IO					2.39
74.500	0.00	0.53	2.600	IO					2.39
74.583	0.00	0.53	2.596	IO					2.38
74.667	0.00	0.53	2.592	IO					2.38
74.750	0.00	0.53	2.589	IO					2.38
74.833	0.00	0.53	2.585	IO					2.37
74.917	0.00	0.53	2.582	IO					2.37
75.000	0.00	0.52	2.578	IO					2.37
75.083	0.00	0.52	2.574	IO					2.37
75.167	0.00	0.52	2.571	IO					2.36
75.250	0.00	0.52	2.567	IO					2.36
75.333	0.00	0.52	2.564	IO					2.36
75.417	0.00	0.52	2.560	IO					2.36
75.500	0.00	0.52	2.556	IO					2.35
75.583	0.00	0.52	2.553	IO					2.35
75.667	0.00	0.52	2.549	IO					2.35
75.750	0.00	0.52	2.546	IO					2.35
75.833	0.00	0.52	2.542	IO					2.34
75.917	0.00	0.52	2.538	IO					2.34
76.000	0.00	0.52	2.535	IO					2.34
76.083	0.00	0.52	2.531	IO					2.34
76.167	0.00	0.52	2.528	IO					2.33
76.250	0.00	0.52	2.524	IO					2.33
76.333	0.00	0.52	2.520	IO					2.33
76.417	0.00	0.52	2.517	IO					2.33
76.500	0.00	0.52	2.513	IO					2.32
76.583	0.00	0.52	2.510	IO					2.32
76.667	0.00	0.52	2.506	IO					2.32
76.750	0.00	0.52	2.503	IO					2.32
76.833	0.00	0.52	2.499	IO					2.31
76.917	0.00	0.52	2.495	IO					2.31
77.000	0.00	0.52	2.492	IO					2.31
77.083	0.00	0.52	2.488	IO					2.30
77.167	0.00	0.52	2.485	IO					2.30
77.250	0.00	0.52	2.481	IO					2.30
77.333	0.00	0.52	2.478	IO					2.30
77.417	0.00	0.52	2.474	IO					2.29
77.500	0.00	0.52	2.470	IO					2.29
77.583	0.00	0.52	2.467	IO					2.29
77.667	0.00	0.52	2.463	IO					2.29
77.750	0.00	0.51	2.460	IO					2.28
77.833	0.00	0.51	2.456	IO					2.28
77.917	0.00	0.51	2.453	IO					2.28
78.000	0.00	0.51	2.449	IO					2.28
78.083	0.00	0.51	2.446	IO					2.27
78.167	0.00	0.51	2.442	IO					2.27
78.250	0.00	0.51	2.439	IO					2.27
78.333	0.00	0.51	2.435	IO					2.27
78.417	0.00	0.51	2.432	IO					2.26
78.500	0.00	0.51	2.428	IO					2.26
78.583	0.00	0.51	2.424	IO					2.26
78.667	0.00	0.51	2.421	IO					2.26
78.750	0.00	0.51	2.417	IO					2.25
78.833	0.00	0.51	2.414	IO					2.25
78.917	0.00	0.51	2.410	IO					2.25
79.000	0.00	0.51	2.407	IO					2.25
79.083	0.00	0.51	2.403	IO					2.24
79.167	0.00	0.51	2.400	IO					2.24
79.250	0.00	0.51	2.396	IO					2.24
79.333	0.00	0.51	2.393	IO					2.24
79.417	0.00	0.51	2.389	IO					2.23
79.500	0.00	0.51	2.386	IO					2.23
79.583	0.00	0.51	2.382	IO					2.23
79.667	0.00	0.51	2.379	IO					2.23
79.750	0.00	0.51	2.375	IO					2.22
79.833	0.00	0.51	2.372	IO					2.22
79.917	0.00	0.51	2.368	IO					2.22
80.000	0.00	0.51	2.365	IO					2.22
80.083	0.00	0.51	2.361	IO					2.21
80.167	0.00	0.51	2.358	IO					2.21
80.250	0.00	0.51	2.354	IO					2.21
80.333	0.00	0.51	2.351	IO					2.21
80.417	0.00	0.51	2.347	IO					2.20
80.500	0.00	0.51	2.344	IO					2.20

80.583	0.00	0.51	2.340	IO				2.20
80.667	0.00	0.50	2.337	IO				2.20
80.750	0.00	0.50	2.333	IO				2.19
80.833	0.00	0.50	2.330	IO				2.19
80.917	0.00	0.50	2.327	IO				2.19
81.000	0.00	0.50	2.323	IO				2.19
81.083	0.00	0.50	2.320	IO				2.18
81.167	0.00	0.50	2.316	IO				2.18
81.250	0.00	0.50	2.313	IO				2.18
81.333	0.00	0.50	2.309	IO				2.18
81.417	0.00	0.50	2.306	IO				2.17
81.500	0.00	0.50	2.302	IO				2.17
81.583	0.00	0.50	2.299	IO				2.17
81.667	0.00	0.50	2.295	IO				2.17
81.750	0.00	0.50	2.292	IO				2.16
81.833	0.00	0.50	2.288	IO				2.16
81.917	0.00	0.50	2.285	IO				2.16
82.000	0.00	0.50	2.282	IO				2.16
82.083	0.00	0.50	2.278	IO				2.15
82.167	0.00	0.50	2.275	IO				2.15
82.250	0.00	0.50	2.271	IO				2.15
82.333	0.00	0.50	2.268	IO				2.15
82.417	0.00	0.50	2.264	IO				2.14
82.500	0.00	0.50	2.261	IO				2.14
82.583	0.00	0.50	2.258	IO				2.14
82.667	0.00	0.50	2.254	IO				2.14
82.750	0.00	0.50	2.251	IO				2.13
82.833	0.00	0.50	2.247	IO				2.13
82.917	0.00	0.50	2.244	IO				2.13
83.000	0.00	0.50	2.240	IO				2.13
83.083	0.00	0.50	2.237	IO				2.12
83.167	0.00	0.50	2.234	IO				2.12
83.250	0.00	0.50	2.230	IO				2.12
83.333	0.00	0.50	2.227	IO				2.12
83.417	0.00	0.50	2.223	IO				2.11
83.500	0.00	0.49	2.220	IO				2.11
83.583	0.00	0.49	2.217	IO				2.11
83.667	0.00	0.49	2.213	IO				2.11
83.750	0.00	0.49	2.210	IO				2.10
83.833	0.00	0.49	2.206	IO				2.10
83.917	0.00	0.49	2.203	IO				2.10
84.000	0.00	0.49	2.199	IO				2.10
84.083	0.00	0.49	2.196	IO				2.09
84.167	0.00	0.49	2.193	IO				2.09
84.250	0.00	0.49	2.189	IO				2.09
84.333	0.00	0.49	2.186	IO				2.09
84.417	0.00	0.49	2.183	IO				2.08
84.500	0.00	0.49	2.179	IO				2.08
84.583	0.00	0.49	2.176	IO				2.08
84.667	0.00	0.49	2.172	IO				2.08
84.750	0.00	0.49	2.169	IO				2.07
84.833	0.00	0.49	2.166	IO				2.07
84.917	0.00	0.49	2.162	IO				2.07
85.000	0.00	0.49	2.159	IO				2.07
85.083	0.00	0.49	2.155	IO				2.07
85.167	0.00	0.49	2.152	IO				2.06
85.250	0.00	0.49	2.149	IO				2.06
85.333	0.00	0.49	2.145	IO				2.06
85.417	0.00	0.49	2.142	IO				2.06
85.500	0.00	0.49	2.139	IO				2.05
85.583	0.00	0.49	2.135	IO				2.05
85.667	0.00	0.49	2.132	IO				2.05
85.750	0.00	0.49	2.129	IO				2.05
85.833	0.00	0.49	2.125	IO				2.04
85.917	0.00	0.49	2.122	IO				2.04
86.000	0.00	0.49	2.119	IO				2.04
86.083	0.00	0.49	2.115	IO				2.04
86.167	0.00	0.49	2.112	IO				2.03
86.250	0.00	0.49	2.108	IO				2.03
86.333	0.00	0.49	2.105	IO				2.03
86.417	0.00	0.49	2.102	IO				2.03
86.500	0.00	0.48	2.098	IO				2.02
86.583	0.00	0.48	2.095	IO				2.02
86.667	0.00	0.48	2.092	IO				2.02
86.750	0.00	0.48	2.088	IO				2.02

86.833	0.00	0.48	2.085	IO					2.01
86.917	0.00	0.48	2.082	IO					2.01
87.000	0.00	0.48	2.078	IO					2.01
87.083	0.00	0.48	2.075	IO					2.01
87.167	0.00	0.48	2.072	IO					2.00
87.250	0.00	0.48	2.068	IO					2.00
87.333	0.00	0.48	2.065	IO					2.00
87.417	0.00	0.48	2.062	IO					2.00
87.500	0.00	0.48	2.059	IO					1.99
87.583	0.00	0.48	2.055	IO					1.99
87.667	0.00	0.48	2.052	IO					1.99
87.750	0.00	0.48	2.049	IO					1.99
87.833	0.00	0.48	2.045	IO					1.98
87.917	0.00	0.48	2.042	IO					1.98
88.000	0.00	0.48	2.039	IO					1.98
88.083	0.00	0.48	2.035	IO					1.98
88.167	0.00	0.48	2.032	IO					1.97
88.250	0.00	0.48	2.029	IO					1.97
88.333	0.00	0.48	2.026	IO					1.97
88.417	0.00	0.48	2.022	IO					1.97
88.500	0.00	0.48	2.019	IO					1.96
88.583	0.00	0.48	2.016	IO					1.96
88.667	0.00	0.48	2.012	IO					1.96
88.750	0.00	0.47	2.009	IO					1.95
88.833	0.00	0.47	2.006	IO					1.95
88.917	0.00	0.47	2.003	IO					1.95
89.000	0.00	0.47	1.999	IO					1.95
89.083	0.00	0.47	1.996	IO					1.94
89.167	0.00	0.47	1.993	IO					1.94
89.250	0.00	0.47	1.990	IO					1.94
89.333	0.00	0.47	1.986	IO					1.94
89.417	0.00	0.47	1.983	IO					1.93
89.500	0.00	0.47	1.980	IO					1.93
89.583	0.00	0.47	1.977	IO					1.93
89.667	0.00	0.47	1.973	IO					1.93
89.750	0.00	0.47	1.970	IO					1.92
89.833	0.00	0.47	1.967	IO					1.92
89.917	0.00	0.47	1.964	IO					1.92
90.000	0.00	0.47	1.960	IO					1.91
90.083	0.00	0.47	1.957	IO					1.91
90.167	0.00	0.47	1.954	IO					1.91
90.250	0.00	0.47	1.951	IO					1.91
90.333	0.00	0.47	1.948	IO					1.90
90.417	0.00	0.47	1.944	IO					1.90
90.500	0.00	0.47	1.941	IO					1.90
90.583	0.00	0.47	1.938	IO					1.90
90.667	0.00	0.47	1.935	IO					1.89
90.750	0.00	0.47	1.931	IO					1.89
90.833	0.00	0.46	1.928	IO					1.89
90.917	0.00	0.46	1.925	IO					1.89
91.000	0.00	0.46	1.922	IO					1.88
91.083	0.00	0.46	1.919	IO					1.88
91.167	0.00	0.46	1.915	IO					1.88
91.250	0.00	0.46	1.912	IO					1.88
91.333	0.00	0.46	1.909	IO					1.87
91.417	0.00	0.46	1.906	IO					1.87
91.500	0.00	0.46	1.903	IO					1.87
91.583	0.00	0.46	1.900	IO					1.86
91.667	0.00	0.46	1.896	IO					1.86
91.750	0.00	0.46	1.893	IO					1.86
91.833	0.00	0.46	1.890	IO					1.86
91.917	0.00	0.46	1.887	IO					1.85
92.000	0.00	0.46	1.884	IO					1.85
92.083	0.00	0.46	1.881	IO					1.85
92.167	0.00	0.46	1.877	IO					1.85
92.250	0.00	0.46	1.874	IO					1.84
92.333	0.00	0.46	1.871	IO					1.84
92.417	0.00	0.46	1.868	IO					1.84
92.500	0.00	0.46	1.865	IO					1.84
92.583	0.00	0.46	1.862	IO					1.83
92.667	0.00	0.46	1.859	IO					1.83
92.750	0.00	0.46	1.855	IO					1.83
92.833	0.00	0.46	1.852	IO					1.83
92.917	0.00	0.45	1.849	IO					1.82
93.000	0.00	0.45	1.846	IO					1.82

93.083	0.00	0.45	1.843	IO					1.82
93.167	0.00	0.45	1.840	IO					1.82
93.250	0.00	0.45	1.837	IO					1.81
93.333	0.00	0.45	1.833	IO					1.81
93.417	0.00	0.45	1.830	IO					1.81
93.500	0.00	0.45	1.827	IO					1.81
93.583	0.00	0.45	1.824	IO					1.80
93.667	0.00	0.45	1.821	O					1.80
93.750	0.00	0.45	1.818	O					1.80
93.833	0.00	0.45	1.815	O					1.80
93.917	0.00	0.45	1.812	O					1.79
94.000	0.00	0.45	1.809	O					1.79
94.083	0.00	0.45	1.806	O					1.79
94.167	0.00	0.45	1.802	O					1.79
94.250	0.00	0.45	1.799	O					1.78
94.333	0.00	0.45	1.796	O					1.78
94.417	0.00	0.45	1.793	O					1.78
94.500	0.00	0.45	1.790	O					1.78
94.583	0.00	0.45	1.787	O					1.77
94.667	0.00	0.45	1.784	O					1.77
94.750	0.00	0.45	1.781	O					1.77
94.833	0.00	0.45	1.778	O					1.77
94.917	0.00	0.45	1.775	O					1.76
95.000	0.00	0.44	1.772	O					1.76
95.083	0.00	0.44	1.769	O					1.76
95.167	0.00	0.44	1.766	O					1.76
95.250	0.00	0.44	1.763	O					1.75
95.333	0.00	0.44	1.759	O					1.75
95.417	0.00	0.44	1.756	O					1.75
95.500	0.00	0.44	1.753	O					1.75
95.583	0.00	0.44	1.750	O					1.74
95.667	0.00	0.44	1.747	O					1.74
95.750	0.00	0.44	1.744	O					1.74
95.833	0.00	0.44	1.741	O					1.74
95.917	0.00	0.44	1.738	O					1.73
96.000	0.00	0.44	1.735	O					1.73
96.083	0.00	0.44	1.732	O					1.73
96.167	0.00	0.44	1.729	O					1.73
96.250	0.00	0.44	1.726	O					1.72
96.333	0.00	0.44	1.723	O					1.72
96.417	0.00	0.44	1.720	O					1.72
96.500	0.00	0.44	1.717	O					1.72
96.583	0.00	0.44	1.714	O					1.71
96.667	0.00	0.44	1.711	O					1.71
96.750	0.00	0.44	1.708	O					1.71
96.833	0.00	0.44	1.705	O					1.71
96.917	0.00	0.44	1.702	O					1.70
97.000	0.00	0.44	1.699	O					1.70
97.083	0.00	0.44	1.696	O					1.70
97.167	0.00	0.43	1.693	O					1.70
97.250	0.00	0.43	1.690	O					1.69
97.333	0.00	0.43	1.687	O					1.69
97.417	0.00	0.43	1.684	O					1.69
97.500	0.00	0.43	1.681	O					1.69
97.583	0.00	0.43	1.678	O					1.68
97.667	0.00	0.43	1.675	O					1.68
97.750	0.00	0.43	1.672	O					1.68
97.833	0.00	0.43	1.669	O					1.68
97.917	0.00	0.43	1.666	O					1.67
98.000	0.00	0.43	1.663	O					1.67
98.083	0.00	0.43	1.660	O					1.67
98.167	0.00	0.43	1.657	O					1.67
98.250	0.00	0.43	1.654	O					1.66
98.333	0.00	0.43	1.651	O					1.66
98.417	0.00	0.43	1.648	O					1.66
98.500	0.00	0.43	1.645	O					1.66
98.583	0.00	0.43	1.642	O					1.65
98.667	0.00	0.43	1.639	O					1.65
98.750	0.00	0.43	1.636	O					1.65
98.833	0.00	0.43	1.634	O					1.65
98.917	0.00	0.43	1.631	O					1.65
99.000	0.00	0.43	1.628	O					1.64
99.083	0.00	0.43	1.625	O					1.64
99.167	0.00	0.43	1.622	O					1.64
99.250	0.00	0.43	1.619	O					1.64

99.333	0.00	0.43	1.616	o	|	|	|	|	1.63
99.417	0.00	0.42	1.613	o	|	|	|	|	1.63
99.500	0.00	0.42	1.610	o	|	|	|	|	1.63
99.583	0.00	0.42	1.607	o	|	|	|	|	1.63
99.667	0.00	0.42	1.604	o	|	|	|	|	1.62
99.750	0.00	0.42	1.601	o	|	|	|	|	1.62
99.833	0.00	0.42	1.598	o	|	|	|	|	1.62
99.917	0.00	0.42	1.595	o	|	|	|	|	1.62
100.000	0.00	0.42	1.593	o	|	|	|	|	1.61
100.083	0.00	0.42	1.590	o	|	|	|	|	1.61
100.167	0.00	0.42	1.587	o	|	|	|	|	1.61
100.250	0.00	0.42	1.584	o	|	|	|	|	1.61
100.333	0.00	0.42	1.581	o	|	|	|	|	1.60
100.417	0.00	0.42	1.578	o	|	|	|	|	1.60
100.500	0.00	0.42	1.575	o	|	|	|	|	1.60
100.583	0.00	0.42	1.572	o	|	|	|	|	1.60
100.667	0.00	0.42	1.569	o	|	|	|	|	1.60
100.750	0.00	0.42	1.567	o	|	|	|	|	1.59
100.833	0.00	0.42	1.564	o	|	|	|	|	1.59
100.917	0.00	0.42	1.561	o	|	|	|	|	1.59
101.000	0.00	0.42	1.558	o	|	|	|	|	1.59
101.083	0.00	0.42	1.555	o	|	|	|	|	1.58
101.167	0.00	0.42	1.552	o	|	|	|	|	1.58
101.250	0.00	0.42	1.549	o	|	|	|	|	1.58
101.333	0.00	0.42	1.546	o	|	|	|	|	1.58
101.417	0.00	0.42	1.544	o	|	|	|	|	1.57
101.500	0.00	0.42	1.541	o	|	|	|	|	1.57
101.583	0.00	0.42	1.538	o	|	|	|	|	1.57
101.667	0.00	0.41	1.535	o	|	|	|	|	1.57
101.750	0.00	0.41	1.532	o	|	|	|	|	1.56
101.833	0.00	0.41	1.529	o	|	|	|	|	1.56
101.917	0.00	0.41	1.526	o	|	|	|	|	1.56
102.000	0.00	0.41	1.524	o	|	|	|	|	1.56
102.083	0.00	0.41	1.521	o	|	|	|	|	1.56
102.167	0.00	0.41	1.518	o	|	|	|	|	1.55
102.250	0.00	0.41	1.515	o	|	|	|	|	1.55
102.333	0.00	0.41	1.512	o	|	|	|	|	1.55
102.417	0.00	0.41	1.509	o	|	|	|	|	1.55
102.500	0.00	0.41	1.506	o	|	|	|	|	1.54
102.583	0.00	0.41	1.504	o	|	|	|	|	1.54
102.667	0.00	0.41	1.501	o	|	|	|	|	1.54
102.750	0.00	0.41	1.498	o	|	|	|	|	1.54
102.833	0.00	0.41	1.495	o	|	|	|	|	1.53
102.917	0.00	0.41	1.492	o	|	|	|	|	1.53
103.000	0.00	0.41	1.490	o	|	|	|	|	1.53
103.083	0.00	0.41	1.487	o	|	|	|	|	1.53
103.167	0.00	0.41	1.484	o	|	|	|	|	1.53
103.250	0.00	0.41	1.481	o	|	|	|	|	1.52
103.333	0.00	0.41	1.478	o	|	|	|	|	1.52
103.417	0.00	0.41	1.475	o	|	|	|	|	1.52
103.500	0.00	0.41	1.473	o	|	|	|	|	1.52
103.583	0.00	0.41	1.470	o	|	|	|	|	1.51
103.667	0.00	0.41	1.467	o	|	|	|	|	1.51
103.750	0.00	0.41	1.464	o	|	|	|	|	1.51
103.833	0.00	0.41	1.461	o	|	|	|	|	1.51
103.917	0.00	0.41	1.459	o	|	|	|	|	1.50
104.000	0.00	0.40	1.456	o	|	|	|	|	1.50
104.083	0.00	0.40	1.453	o	|	|	|	|	1.50
104.167	0.00	0.40	1.450	o	|	|	|	|	1.50
104.250	0.00	0.40	1.448	o	|	|	|	|	1.50
104.333	0.00	0.40	1.445	o	|	|	|	|	1.49
104.417	0.00	0.40	1.442	o	|	|	|	|	1.49
104.500	0.00	0.40	1.439	o	|	|	|	|	1.49
104.583	0.00	0.40	1.436	o	|	|	|	|	1.49
104.667	0.00	0.40	1.434	o	|	|	|	|	1.48
104.750	0.00	0.40	1.431	o	|	|	|	|	1.48
104.833	0.00	0.40	1.428	o	|	|	|	|	1.48
104.917	0.00	0.40	1.425	o	|	|	|	|	1.48
105.000	0.00	0.40	1.423	o	|	|	|	|	1.48
105.083	0.00	0.40	1.420	o	|	|	|	|	1.47
105.167	0.00	0.40	1.417	o	|	|	|	|	1.47
105.250	0.00	0.40	1.414	o	|	|	|	|	1.47
105.333	0.00	0.40	1.412	o	|	|	|	|	1.47
105.417	0.00	0.40	1.409	o	|	|	|	|	1.46
105.500	0.00	0.40	1.406	o	|	|	|	|	1.46

105.583	0.00	0.40	1.403	o	|	|	|	|	1.46
105.667	0.00	0.40	1.401	o	|	|	|	|	1.46
105.750	0.00	0.40	1.398	o	|	|	|	|	1.45
105.833	0.00	0.40	1.395	o	|	|	|	|	1.45
105.917	0.00	0.40	1.392	o	|	|	|	|	1.45
106.000	0.00	0.40	1.390	o	|	|	|	|	1.45
106.083	0.00	0.40	1.387	o	|	|	|	|	1.45
106.167	0.00	0.40	1.384	o	|	|	|	|	1.44
106.250	0.00	0.40	1.381	o	|	|	|	|	1.44
106.333	0.00	0.40	1.379	o	|	|	|	|	1.44
106.417	0.00	0.39	1.376	o	|	|	|	|	1.44
106.500	0.00	0.39	1.373	o	|	|	|	|	1.43
106.583	0.00	0.39	1.371	o	|	|	|	|	1.43
106.667	0.00	0.39	1.368	o	|	|	|	|	1.43
106.750	0.00	0.39	1.365	o	|	|	|	|	1.43
106.833	0.00	0.39	1.362	o	|	|	|	|	1.43
106.917	0.00	0.39	1.360	o	|	|	|	|	1.42
107.000	0.00	0.39	1.357	o	|	|	|	|	1.42
107.083	0.00	0.39	1.354	o	|	|	|	|	1.42
107.167	0.00	0.39	1.352	o	|	|	|	|	1.42
107.250	0.00	0.39	1.349	o	|	|	|	|	1.42
107.333	0.00	0.39	1.346	o	|	|	|	|	1.41
107.417	0.00	0.39	1.344	o	|	|	|	|	1.41
107.500	0.00	0.39	1.341	o	|	|	|	|	1.41
107.583	0.00	0.39	1.338	o	|	|	|	|	1.41
107.667	0.00	0.39	1.336	o	|	|	|	|	1.40
107.750	0.00	0.39	1.333	o	|	|	|	|	1.40
107.833	0.00	0.39	1.330	o	|	|	|	|	1.40
107.917	0.00	0.39	1.328	o	|	|	|	|	1.40
108.000	0.00	0.39	1.325	o	|	|	|	|	1.40
108.083	0.00	0.39	1.322	o	|	|	|	|	1.39
108.167	0.00	0.39	1.319	o	|	|	|	|	1.39
108.250	0.00	0.39	1.317	o	|	|	|	|	1.39
108.333	0.00	0.39	1.314	o	|	|	|	|	1.39
108.417	0.00	0.39	1.311	o	|	|	|	|	1.38
108.500	0.00	0.39	1.309	o	|	|	|	|	1.38
108.583	0.00	0.39	1.306	o	|	|	|	|	1.38
108.667	0.00	0.39	1.304	o	|	|	|	|	1.38
108.750	0.00	0.39	1.301	o	|	|	|	|	1.38
108.833	0.00	0.38	1.298	o	|	|	|	|	1.37
108.917	0.00	0.38	1.296	o	|	|	|	|	1.37
109.000	0.00	0.38	1.293	o	|	|	|	|	1.37
109.083	0.00	0.38	1.290	o	|	|	|	|	1.37
109.167	0.00	0.38	1.288	o	|	|	|	|	1.36
109.250	0.00	0.38	1.285	o	|	|	|	|	1.36
109.333	0.00	0.38	1.282	o	|	|	|	|	1.36
109.417	0.00	0.38	1.280	o	|	|	|	|	1.36
109.500	0.00	0.38	1.277	o	|	|	|	|	1.36
109.583	0.00	0.38	1.274	o	|	|	|	|	1.35
109.667	0.00	0.38	1.272	o	|	|	|	|	1.35
109.750	0.00	0.38	1.269	o	|	|	|	|	1.35
109.833	0.00	0.38	1.267	o	|	|	|	|	1.35
109.917	0.00	0.38	1.264	o	|	|	|	|	1.35
110.000	0.00	0.38	1.261	o	|	|	|	|	1.34
110.083	0.00	0.38	1.259	o	|	|	|	|	1.34
110.167	0.00	0.38	1.256	o	|	|	|	|	1.34
110.250	0.00	0.38	1.253	o	|	|	|	|	1.34
110.333	0.00	0.38	1.251	o	|	|	|	|	1.33
110.417	0.00	0.38	1.248	o	|	|	|	|	1.33
110.500	0.00	0.38	1.246	o	|	|	|	|	1.33
110.583	0.00	0.38	1.243	o	|	|	|	|	1.33
110.667	0.00	0.38	1.240	o	|	|	|	|	1.33
110.750	0.00	0.38	1.238	o	|	|	|	|	1.32
110.833	0.00	0.38	1.235	o	|	|	|	|	1.32
110.917	0.00	0.38	1.233	o	|	|	|	|	1.32
111.000	0.00	0.38	1.230	o	|	|	|	|	1.32
111.083	0.00	0.38	1.227	o	|	|	|	|	1.32
111.167	0.00	0.38	1.225	o	|	|	|	|	1.31
111.250	0.00	0.38	1.222	o	|	|	|	|	1.31
111.333	0.00	0.37	1.220	o	|	|	|	|	1.31
111.417	0.00	0.37	1.217	o	|	|	|	|	1.31
111.500	0.00	0.37	1.215	o	|	|	|	|	1.31
111.583	0.00	0.37	1.212	o	|	|	|	|	1.30
111.667	0.00	0.37	1.209	o	|	|	|	|	1.30
111.750	0.00	0.37	1.207	o	|	|	|	|	1.30

111.833	0.00	0.37	1.204	o	|	|	|	|	1.30
111.917	0.00	0.37	1.202	o	|	|	|	|	1.29
112.000	0.00	0.37	1.199	o	|	|	|	|	1.29
112.083	0.00	0.37	1.197	o	|	|	|	|	1.29
112.167	0.00	0.37	1.194	o	|	|	|	|	1.29
112.250	0.00	0.37	1.191	o	|	|	|	|	1.29
112.333	0.00	0.37	1.189	o	|	|	|	|	1.28
112.417	0.00	0.37	1.186	o	|	|	|	|	1.28
112.500	0.00	0.37	1.184	o	|	|	|	|	1.28
112.583	0.00	0.37	1.181	o	|	|	|	|	1.28
112.667	0.00	0.37	1.179	o	|	|	|	|	1.28
112.750	0.00	0.37	1.176	o	|	|	|	|	1.27
112.833	0.00	0.37	1.174	o	|	|	|	|	1.27
112.917	0.00	0.37	1.171	o	|	|	|	|	1.27
113.000	0.00	0.37	1.169	o	|	|	|	|	1.27
113.083	0.00	0.37	1.166	o	|	|	|	|	1.27
113.167	0.00	0.37	1.163	o	|	|	|	|	1.26
113.250	0.00	0.37	1.161	o	|	|	|	|	1.26
113.333	0.00	0.37	1.158	o	|	|	|	|	1.26
113.417	0.00	0.37	1.156	o	|	|	|	|	1.26
113.500	0.00	0.37	1.153	o	|	|	|	|	1.26
113.583	0.00	0.37	1.151	o	|	|	|	|	1.25
113.667	0.00	0.37	1.148	o	|	|	|	|	1.25
113.750	0.00	0.37	1.146	o	|	|	|	|	1.25
113.833	0.00	0.37	1.143	o	|	|	|	|	1.25
113.917	0.00	0.36	1.141	o	|	|	|	|	1.24
114.000	0.00	0.36	1.138	o	|	|	|	|	1.24
114.083	0.00	0.36	1.136	o	|	|	|	|	1.24
114.167	0.00	0.36	1.133	o	|	|	|	|	1.24
114.250	0.00	0.36	1.131	o	|	|	|	|	1.24
114.333	0.00	0.36	1.128	o	|	|	|	|	1.23
114.417	0.00	0.36	1.126	o	|	|	|	|	1.23
114.500	0.00	0.36	1.123	o	|	|	|	|	1.23
114.583	0.00	0.36	1.121	o	|	|	|	|	1.23
114.667	0.00	0.36	1.118	o	|	|	|	|	1.23
114.750	0.00	0.36	1.116	o	|	|	|	|	1.22
114.833	0.00	0.36	1.113	o	|	|	|	|	1.22
114.917	0.00	0.36	1.111	o	|	|	|	|	1.22
115.000	0.00	0.36	1.108	o	|	|	|	|	1.22
115.083	0.00	0.36	1.106	o	|	|	|	|	1.22
115.167	0.00	0.36	1.103	o	|	|	|	|	1.21
115.250	0.00	0.36	1.101	o	|	|	|	|	1.21
115.333	0.00	0.36	1.098	o	|	|	|	|	1.21
115.417	0.00	0.36	1.096	o	|	|	|	|	1.21
115.500	0.00	0.36	1.093	o	|	|	|	|	1.21
115.583	0.00	0.36	1.091	o	|	|	|	|	1.20
115.667	0.00	0.36	1.088	o	|	|	|	|	1.20
115.750	0.00	0.36	1.086	o	|	|	|	|	1.20
115.833	0.00	0.36	1.083	o	|	|	|	|	1.20
115.917	0.00	0.36	1.081	o	|	|	|	|	1.20
116.000	0.00	0.36	1.079	o	|	|	|	|	1.19
116.083	0.00	0.36	1.076	o	|	|	|	|	1.19
116.167	0.00	0.36	1.074	o	|	|	|	|	1.19
116.250	0.00	0.36	1.071	o	|	|	|	|	1.19
116.333	0.00	0.36	1.069	o	|	|	|	|	1.19
116.417	0.00	0.36	1.066	o	|	|	|	|	1.18
116.500	0.00	0.36	1.064	o	|	|	|	|	1.18
116.583	0.00	0.35	1.061	o	|	|	|	|	1.18
116.667	0.00	0.35	1.059	o	|	|	|	|	1.18
116.750	0.00	0.35	1.057	o	|	|	|	|	1.18
116.833	0.00	0.35	1.054	o	|	|	|	|	1.17
116.917	0.00	0.35	1.052	o	|	|	|	|	1.17
117.000	0.00	0.35	1.049	o	|	|	|	|	1.17
117.083	0.00	0.35	1.047	o	|	|	|	|	1.17
117.167	0.00	0.35	1.044	o	|	|	|	|	1.17
117.250	0.00	0.35	1.042	o	|	|	|	|	1.16
117.333	0.00	0.35	1.039	o	|	|	|	|	1.16
117.417	0.00	0.35	1.037	o	|	|	|	|	1.16
117.500	0.00	0.35	1.035	o	|	|	|	|	1.16
117.583	0.00	0.35	1.032	o	|	|	|	|	1.16
117.667	0.00	0.35	1.030	o	|	|	|	|	1.15
117.750	0.00	0.35	1.027	o	|	|	|	|	1.15
117.833	0.00	0.35	1.025	o	|	|	|	|	1.15
117.917	0.00	0.35	1.023	o	|	|	|	|	1.15
118.000	0.00	0.35	1.020	o	|	|	|	|	1.15

118.083	0.00	0.35	1.018	o	|	|	|	|	1.14
118.167	0.00	0.35	1.015	o	|	|	|	|	1.14
118.250	0.00	0.35	1.013	o	|	|	|	|	1.14
118.333	0.00	0.35	1.011	o	|	|	|	|	1.14
118.417	0.00	0.35	1.008	o	|	|	|	|	1.14
118.500	0.00	0.35	1.006	o	|	|	|	|	1.13
118.583	0.00	0.35	1.003	o	|	|	|	|	1.13
118.667	0.00	0.35	1.001	o	|	|	|	|	1.13
118.750	0.00	0.35	0.999	o	|	|	|	|	1.13
118.833	0.00	0.35	0.996	o	|	|	|	|	1.13
118.917	0.00	0.35	0.994	o	|	|	|	|	1.12
119.000	0.00	0.35	0.991	o	|	|	|	|	1.12
119.083	0.00	0.35	0.989	o	|	|	|	|	1.12
119.167	0.00	0.35	0.987	o	|	|	|	|	1.12
119.250	0.00	0.35	0.984	o	|	|	|	|	1.12
119.333	0.00	0.34	0.982	o	|	|	|	|	1.12
119.417	0.00	0.34	0.980	o	|	|	|	|	1.11
119.500	0.00	0.34	0.977	o	|	|	|	|	1.11
119.583	0.00	0.34	0.975	o	|	|	|	|	1.11
119.667	0.00	0.34	0.972	o	|	|	|	|	1.11
119.750	0.00	0.34	0.970	o	|	|	|	|	1.11
119.833	0.00	0.34	0.968	o	|	|	|	|	1.10
119.917	0.00	0.34	0.965	o	|	|	|	|	1.10
120.000	0.00	0.34	0.963	o	|	|	|	|	1.10
120.083	0.00	0.34	0.961	o	|	|	|	|	1.10
120.167	0.00	0.34	0.958	o	|	|	|	|	1.10
120.250	0.00	0.34	0.956	o	|	|	|	|	1.09
120.333	0.00	0.34	0.954	o	|	|	|	|	1.09
120.417	0.00	0.34	0.951	o	|	|	|	|	1.09
120.500	0.00	0.34	0.949	o	|	|	|	|	1.09
120.583	0.00	0.34	0.947	o	|	|	|	|	1.09
120.667	0.00	0.34	0.944	o	|	|	|	|	1.08
120.750	0.00	0.34	0.942	o	|	|	|	|	1.08
120.833	0.00	0.34	0.939	o	|	|	|	|	1.08
120.917	0.00	0.34	0.937	o	|	|	|	|	1.08
121.000	0.00	0.34	0.935	o	|	|	|	|	1.08
121.083	0.00	0.34	0.932	o	|	|	|	|	1.07
121.167	0.00	0.34	0.930	o	|	|	|	|	1.07
121.250	0.00	0.34	0.928	o	|	|	|	|	1.07
121.333	0.00	0.34	0.925	o	|	|	|	|	1.07
121.417	0.00	0.34	0.923	o	|	|	|	|	1.07
121.500	0.00	0.34	0.921	o	|	|	|	|	1.07
121.583	0.00	0.34	0.919	o	|	|	|	|	1.06
121.667	0.00	0.34	0.916	o	|	|	|	|	1.06
121.750	0.00	0.34	0.914	o	|	|	|	|	1.06
121.833	0.00	0.34	0.912	o	|	|	|	|	1.06
121.917	0.00	0.34	0.909	o	|	|	|	|	1.06
122.000	0.00	0.34	0.907	o	|	|	|	|	1.05
122.083	0.00	0.34	0.905	o	|	|	|	|	1.05
122.167	0.00	0.33	0.902	o	|	|	|	|	1.05
122.250	0.00	0.33	0.900	o	|	|	|	|	1.05
122.333	0.00	0.33	0.898	o	|	|	|	|	1.05
122.417	0.00	0.33	0.895	o	|	|	|	|	1.04
122.500	0.00	0.33	0.893	o	|	|	|	|	1.04
122.583	0.00	0.33	0.891	o	|	|	|	|	1.04
122.667	0.00	0.33	0.889	o	|	|	|	|	1.04
122.750	0.00	0.33	0.886	o	|	|	|	|	1.04
122.833	0.00	0.33	0.884	o	|	|	|	|	1.04
122.917	0.00	0.33	0.882	o	|	|	|	|	1.03
123.000	0.00	0.33	0.879	o	|	|	|	|	1.03
123.083	0.00	0.33	0.877	o	|	|	|	|	1.03
123.167	0.00	0.33	0.875	o	|	|	|	|	1.03
123.250	0.00	0.33	0.873	o	|	|	|	|	1.03
123.333	0.00	0.33	0.870	o	|	|	|	|	1.02
123.417	0.00	0.33	0.868	o	|	|	|	|	1.02
123.500	0.00	0.33	0.866	o	|	|	|	|	1.02
123.583	0.00	0.33	0.863	o	|	|	|	|	1.02
123.667	0.00	0.33	0.861	o	|	|	|	|	1.02
123.750	0.00	0.33	0.859	o	|	|	|	|	1.01
123.833	0.00	0.33	0.857	o	|	|	|	|	1.01
123.917	0.00	0.33	0.854	o	|	|	|	|	1.01
124.000	0.00	0.33	0.852	o	|	|	|	|	1.01
124.083	0.00	0.33	0.850	o	|	|	|	|	1.01
124.167	0.00	0.33	0.848	o	|	|	|	|	1.01
124.250	0.00	0.33	0.845	o	|	|	|	|	1.00

124.333	0.00	0.33	0.843	o	|	|	|	1.00
124.417	0.00	0.33	0.841	o	|	|	|	1.00
124.500	0.00	0.33	0.839	o	|	|	|	1.00
124.583	0.00	0.33	0.836	o	|	|	|	1.00
124.667	0.00	0.33	0.834	o	|	|	|	0.99
124.750	0.00	0.32	0.832	o	|	|	|	0.99
124.833	0.00	0.32	0.830	o	|	|	|	0.99
124.917	0.00	0.32	0.827	o	|	|	|	0.99
125.000	0.00	0.32	0.825	o	|	|	|	0.98
125.083	0.00	0.32	0.823	o	|	|	|	0.98
125.167	0.00	0.32	0.821	o	|	|	|	0.98
125.250	0.00	0.32	0.818	o	|	|	|	0.98
125.333	0.00	0.32	0.816	o	|	|	|	0.97
125.417	0.00	0.32	0.814	o	|	|	|	0.97
125.500	0.00	0.32	0.812	o	|	|	|	0.97
125.583	0.00	0.32	0.810	o	|	|	|	0.97
125.667	0.00	0.32	0.807	o	|	|	|	0.97
125.750	0.00	0.32	0.805	o	|	|	|	0.96
125.833	0.00	0.32	0.803	o	|	|	|	0.96
125.917	0.00	0.32	0.801	o	|	|	|	0.96
126.000	0.00	0.32	0.799	o	|	|	|	0.96
126.083	0.00	0.32	0.797	o	|	|	|	0.95
126.167	0.00	0.32	0.794	o	|	|	|	0.95
126.250	0.00	0.32	0.792	o	|	|	|	0.95
126.333	0.00	0.31	0.790	o	|	|	|	0.95
126.417	0.00	0.31	0.788	o	|	|	|	0.95
126.500	0.00	0.31	0.786	o	|	|	|	0.94
126.583	0.00	0.31	0.784	o	|	|	|	0.94
126.667	0.00	0.31	0.781	o	|	|	|	0.94
126.750	0.00	0.31	0.779	o	|	|	|	0.94
126.833	0.00	0.31	0.777	o	|	|	|	0.93
126.917	0.00	0.31	0.775	o	|	|	|	0.93
127.000	0.00	0.31	0.773	o	|	|	|	0.93
127.083	0.00	0.31	0.771	o	|	|	|	0.93
127.167	0.00	0.31	0.768	o	|	|	|	0.93
127.250	0.00	0.31	0.766	o	|	|	|	0.92
127.333	0.00	0.31	0.764	o	|	|	|	0.92
127.417	0.00	0.31	0.762	o	|	|	|	0.92
127.500	0.00	0.31	0.760	o	|	|	|	0.92
127.583	0.00	0.31	0.758	o	|	|	|	0.91
127.667	0.00	0.31	0.756	o	|	|	|	0.91
127.750	0.00	0.31	0.754	o	|	|	|	0.91
127.833	0.00	0.31	0.752	o	|	|	|	0.91
127.917	0.00	0.31	0.749	o	|	|	|	0.91
128.000	0.00	0.30	0.747	o	|	|	|	0.90
128.083	0.00	0.30	0.745	o	|	|	|	0.90
128.167	0.00	0.30	0.743	o	|	|	|	0.90
128.250	0.00	0.30	0.741	o	|	|	|	0.90
128.333	0.00	0.30	0.739	o	|	|	|	0.89
128.417	0.00	0.30	0.737	o	|	|	|	0.89
128.500	0.00	0.30	0.735	o	|	|	|	0.89
128.583	0.00	0.30	0.733	o	|	|	|	0.89
128.667	0.00	0.30	0.731	o	|	|	|	0.89
128.750	0.00	0.30	0.729	o	|	|	|	0.88
128.833	0.00	0.30	0.727	o	|	|	|	0.88
128.917	0.00	0.30	0.724	o	|	|	|	0.88
129.000	0.00	0.30	0.722	o	|	|	|	0.88
129.083	0.00	0.30	0.720	o	|	|	|	0.88
129.167	0.00	0.30	0.718	o	|	|	|	0.87
129.250	0.00	0.30	0.716	o	|	|	|	0.87
129.333	0.00	0.30	0.714	o	|	|	|	0.87
129.417	0.00	0.30	0.712	o	|	|	|	0.87
129.500	0.00	0.30	0.710	o	|	|	|	0.87
129.583	0.00	0.30	0.708	o	|	|	|	0.86
129.667	0.00	0.29	0.706	o	|	|	|	0.86
129.750	0.00	0.29	0.704	o	|	|	|	0.86
129.833	0.00	0.29	0.702	o	|	|	|	0.86
129.917	0.00	0.29	0.700	o	|	|	|	0.85
130.000	0.00	0.29	0.698	o	|	|	|	0.85
130.083	0.00	0.29	0.696	o	|	|	|	0.85
130.167	0.00	0.29	0.694	o	|	|	|	0.85
130.250	0.00	0.29	0.692	o	|	|	|	0.85
130.333	0.00	0.29	0.690	o	|	|	|	0.84
130.417	0.00	0.29	0.688	o	|	|	|	0.84
130.500	0.00	0.29	0.686	o	|	|	|	0.84

130.583	0.00	0.29	0.684	o	|	|	|	|	0.84
130.667	0.00	0.29	0.682	o	|	|	|	|	0.84
130.750	0.00	0.29	0.680	o	|	|	|	|	0.83
130.833	0.00	0.29	0.678	o	|	|	|	|	0.83
130.917	0.00	0.29	0.676	o	|	|	|	|	0.83
131.000	0.00	0.29	0.674	o	|	|	|	|	0.83
131.083	0.00	0.29	0.672	o	|	|	|	|	0.83
131.167	0.00	0.29	0.670	o	|	|	|	|	0.82
131.250	0.00	0.29	0.668	o	|	|	|	|	0.82
131.333	0.00	0.29	0.666	o	|	|	|	|	0.82
131.417	0.00	0.28	0.664	o	|	|	|	|	0.82
131.500	0.00	0.28	0.662	o	|	|	|	|	0.82
131.583	0.00	0.28	0.660	o	|	|	|	|	0.81
131.667	0.00	0.28	0.658	o	|	|	|	|	0.81
131.750	0.00	0.28	0.656	o	|	|	|	|	0.81
131.833	0.00	0.28	0.654	o	|	|	|	|	0.81
131.917	0.00	0.28	0.652	o	|	|	|	|	0.81
132.000	0.00	0.28	0.651	o	|	|	|	|	0.80
132.083	0.00	0.28	0.649	o	|	|	|	|	0.80
132.167	0.00	0.28	0.647	o	|	|	|	|	0.80
132.250	0.00	0.28	0.645	o	|	|	|	|	0.80
132.333	0.00	0.28	0.643	o	|	|	|	|	0.80
132.417	0.00	0.28	0.641	o	|	|	|	|	0.79
132.500	0.00	0.28	0.639	o	|	|	|	|	0.79
132.583	0.00	0.28	0.637	o	|	|	|	|	0.79
132.667	0.00	0.28	0.635	o	|	|	|	|	0.79
132.750	0.00	0.28	0.633	o	|	|	|	|	0.79
132.833	0.00	0.28	0.631	o	|	|	|	|	0.78
132.917	0.00	0.28	0.629	o	|	|	|	|	0.78
133.000	0.00	0.28	0.627	o	|	|	|	|	0.78
133.083	0.00	0.28	0.626	o	|	|	|	|	0.78
133.167	0.00	0.28	0.624	o	|	|	|	|	0.78
133.250	0.00	0.27	0.622	o	|	|	|	|	0.77
133.333	0.00	0.27	0.620	o	|	|	|	|	0.77
133.417	0.00	0.27	0.618	o	|	|	|	|	0.77
133.500	0.00	0.27	0.616	o	|	|	|	|	0.77
133.583	0.00	0.27	0.614	o	|	|	|	|	0.77
133.667	0.00	0.27	0.612	o	|	|	|	|	0.76
133.750	0.00	0.27	0.611	o	|	|	|	|	0.76
133.833	0.00	0.27	0.609	o	|	|	|	|	0.76
133.917	0.00	0.27	0.607	o	|	|	|	|	0.76
134.000	0.00	0.27	0.605	o	|	|	|	|	0.76
134.083	0.00	0.27	0.603	o	|	|	|	|	0.75
134.167	0.00	0.27	0.601	o	|	|	|	|	0.75
134.250	0.00	0.27	0.599	o	|	|	|	|	0.75
134.333	0.00	0.27	0.597	o	|	|	|	|	0.75
134.417	0.00	0.27	0.596	o	|	|	|	|	0.75
134.500	0.00	0.27	0.594	o	|	|	|	|	0.75
134.583	0.00	0.27	0.592	o	|	|	|	|	0.74
134.667	0.00	0.27	0.590	o	|	|	|	|	0.74
134.750	0.00	0.27	0.588	o	|	|	|	|	0.74
134.833	0.00	0.27	0.586	o	|	|	|	|	0.74
134.917	0.00	0.27	0.585	o	|	|	|	|	0.74
135.000	0.00	0.27	0.583	o	|	|	|	|	0.73
135.083	0.00	0.26	0.581	o	|	|	|	|	0.73
135.167	0.00	0.26	0.579	o	|	|	|	|	0.73
135.250	0.00	0.26	0.577	o	|	|	|	|	0.73
135.333	0.00	0.26	0.575	o	|	|	|	|	0.73
135.417	0.00	0.26	0.574	o	|	|	|	|	0.72
135.500	0.00	0.26	0.572	o	|	|	|	|	0.72
135.583	0.00	0.26	0.570	o	|	|	|	|	0.72
135.667	0.00	0.26	0.568	o	|	|	|	|	0.72
135.750	0.00	0.26	0.566	o	|	|	|	|	0.72
135.833	0.00	0.26	0.565	o	|	|	|	|	0.72
135.917	0.00	0.26	0.563	o	|	|	|	|	0.71
136.000	0.00	0.26	0.561	o	|	|	|	|	0.71
136.083	0.00	0.26	0.559	o	|	|	|	|	0.71
136.167	0.00	0.26	0.557	o	|	|	|	|	0.71
136.250	0.00	0.26	0.556	o	|	|	|	|	0.71
136.333	0.00	0.26	0.554	o	|	|	|	|	0.70
136.417	0.00	0.26	0.552	o	|	|	|	|	0.70
136.500	0.00	0.26	0.550	o	|	|	|	|	0.70
136.583	0.00	0.26	0.549	o	|	|	|	|	0.70
136.667	0.00	0.26	0.547	o	|	|	|	|	0.70
136.750	0.00	0.26	0.545	o	|	|	|	|	0.69

136.833	0.00	0.26	0.543	o					0.69
136.917	0.00	0.26	0.542	o					0.69
137.000	0.00	0.25	0.540	o					0.69
137.083	0.00	0.25	0.538	o					0.69
137.167	0.00	0.25	0.536	o					0.69
137.250	0.00	0.25	0.535	o					0.68
137.333	0.00	0.25	0.533	o					0.68
137.417	0.00	0.25	0.531	o					0.68
137.500	0.00	0.25	0.529	o					0.68
137.583	0.00	0.25	0.528	o					0.68
137.667	0.00	0.25	0.526	o					0.68
137.750	0.00	0.25	0.524	o					0.67
137.833	0.00	0.25	0.522	o					0.67
137.917	0.00	0.25	0.521	o					0.67
138.000	0.00	0.25	0.519	o					0.67
138.083	0.00	0.25	0.517	o					0.67
138.167	0.00	0.25	0.515	o					0.66
138.250	0.00	0.25	0.514	o					0.66
138.333	0.00	0.25	0.512	o					0.66
138.417	0.00	0.25	0.510	o					0.66
138.500	0.00	0.25	0.509	o					0.66
138.583	0.00	0.25	0.507	o					0.66
138.667	0.00	0.25	0.505	o					0.65
138.750	0.00	0.25	0.504	o					0.65
138.833	0.00	0.25	0.502	o					0.65
138.917	0.00	0.25	0.500	o					0.65
139.000	0.00	0.25	0.498	o					0.65
139.083	0.00	0.24	0.497	o					0.65
139.167	0.00	0.24	0.495	o					0.64
139.250	0.00	0.24	0.493	o					0.64
139.333	0.00	0.24	0.492	o					0.64
139.417	0.00	0.24	0.490	o					0.64
139.500	0.00	0.24	0.488	o					0.64
139.583	0.00	0.24	0.487	o					0.63
139.667	0.00	0.24	0.485	o					0.63
139.750	0.00	0.24	0.483	o					0.63
139.833	0.00	0.24	0.482	o					0.63
139.917	0.00	0.24	0.480	o					0.63
140.000	0.00	0.24	0.478	o					0.63
140.083	0.00	0.24	0.477	o					0.62
140.167	0.00	0.24	0.475	o					0.62
140.250	0.00	0.24	0.473	o					0.62
140.333	0.00	0.24	0.472	o					0.62
140.417	0.00	0.24	0.470	o					0.62
140.500	0.00	0.24	0.469	o					0.62
140.583	0.00	0.24	0.467	o					0.61
140.667	0.00	0.24	0.465	o					0.61
140.750	0.00	0.24	0.464	o					0.61
140.833	0.00	0.24	0.462	o					0.61
140.917	0.00	0.24	0.460	o					0.61
141.000	0.00	0.24	0.459	o					0.61
141.083	0.00	0.24	0.457	o					0.60
141.167	0.00	0.23	0.456	o					0.60
141.250	0.00	0.23	0.454	o					0.60
141.333	0.00	0.23	0.452	o					0.60
141.417	0.00	0.23	0.451	o					0.60
141.500	0.00	0.23	0.449	o					0.60
141.583	0.00	0.23	0.447	o					0.59
141.667	0.00	0.23	0.446	o					0.59
141.750	0.00	0.23	0.444	o					0.59
141.833	0.00	0.23	0.443	o					0.59
141.917	0.00	0.23	0.441	o					0.59
142.000	0.00	0.23	0.439	o					0.59
142.083	0.00	0.23	0.438	o					0.58
142.167	0.00	0.23	0.436	o					0.58
142.250	0.00	0.23	0.435	o					0.58
142.333	0.00	0.23	0.433	o					0.58
142.417	0.00	0.23	0.432	o					0.58
142.500	0.00	0.23	0.430	o					0.58
142.583	0.00	0.23	0.428	o					0.57
142.667	0.00	0.23	0.427	o					0.57
142.750	0.00	0.23	0.425	o					0.57
142.833	0.00	0.23	0.424	o					0.57
142.917	0.00	0.23	0.422	o					0.57
143.000	0.00	0.23	0.421	o					0.57

143.083	0.00	0.23	0.419	o	|	|	|	|	0.56
143.167	0.00	0.23	0.417	o	|	|	|	|	0.56
143.250	0.00	0.23	0.416	o	|	|	|	|	0.56
143.333	0.00	0.22	0.414	o	|	|	|	|	0.56
143.417	0.00	0.22	0.413	o	|	|	|	|	0.56
143.500	0.00	0.22	0.411	o	|	|	|	|	0.56
143.583	0.00	0.22	0.410	o	|	|	|	|	0.56
143.667	0.00	0.22	0.408	o	|	|	|	|	0.55
143.750	0.00	0.22	0.407	o	|	|	|	|	0.55
143.833	0.00	0.22	0.405	o	|	|	|	|	0.55
143.917	0.00	0.22	0.404	o	|	|	|	|	0.55
144.000	0.00	0.22	0.402	o	|	|	|	|	0.55
144.083	0.00	0.22	0.401	o	|	|	|	|	0.55
144.167	0.00	0.22	0.399	o	|	|	|	|	0.54
144.250	0.00	0.22	0.397	o	|	|	|	|	0.54
144.333	0.00	0.22	0.396	o	|	|	|	|	0.54
144.417	0.00	0.22	0.394	o	|	|	|	|	0.54
144.500	0.00	0.22	0.393	o	|	|	|	|	0.54
144.583	0.00	0.22	0.391	o	|	|	|	|	0.54
144.667	0.00	0.22	0.390	o	|	|	|	|	0.53
144.750	0.00	0.22	0.388	o	|	|	|	|	0.53
144.833	0.00	0.22	0.387	o	|	|	|	|	0.53
144.917	0.00	0.22	0.385	o	|	|	|	|	0.53
145.000	0.00	0.22	0.384	o	|	|	|	|	0.53
145.083	0.00	0.22	0.382	o	|	|	|	|	0.53
145.167	0.00	0.22	0.381	o	|	|	|	|	0.53
145.250	0.00	0.22	0.379	o	|	|	|	|	0.52
145.333	0.00	0.22	0.378	o	|	|	|	|	0.52
145.417	0.00	0.22	0.376	o	|	|	|	|	0.52
145.500	0.00	0.22	0.375	o	|	|	|	|	0.52
145.583	0.00	0.22	0.373	o	|	|	|	|	0.52
145.667	0.00	0.21	0.372	o	|	|	|	|	0.52
145.750	0.00	0.21	0.370	o	|	|	|	|	0.51
145.833	0.00	0.21	0.369	o	|	|	|	|	0.51
145.917	0.00	0.21	0.368	o	|	|	|	|	0.51
146.000	0.00	0.21	0.366	o	|	|	|	|	0.51
146.083	0.00	0.21	0.365	o	|	|	|	|	0.51
146.167	0.00	0.21	0.363	o	|	|	|	|	0.51
146.250	0.00	0.21	0.362	o	|	|	|	|	0.51
146.333	0.00	0.21	0.360	o	|	|	|	|	0.50
146.417	0.00	0.21	0.359	o	|	|	|	|	0.50
146.500	0.00	0.21	0.357	o	|	|	|	|	0.50
146.583	0.00	0.21	0.356	o	|	|	|	|	0.50
146.667	0.00	0.21	0.354	o	|	|	|	|	0.50
146.750	0.00	0.21	0.353	o	|	|	|	|	0.50
146.833	0.00	0.21	0.352	o	|	|	|	|	0.49
146.917	0.00	0.21	0.350	o	|	|	|	|	0.49
147.000	0.00	0.20	0.349	o	|	|	|	|	0.49
147.083	0.00	0.20	0.347	o	|	|	|	|	0.49
147.167	0.00	0.20	0.346	o	|	|	|	|	0.49
147.250	0.00	0.20	0.344	o	|	|	|	|	0.48
147.333	0.00	0.20	0.343	o	|	|	|	|	0.48
147.417	0.00	0.20	0.342	o	|	|	|	|	0.48
147.500	0.00	0.20	0.340	o	|	|	|	|	0.48
147.583	0.00	0.20	0.339	o	|	|	|	|	0.48
147.667	0.00	0.20	0.338	o	|	|	|	|	0.47
147.750	0.00	0.19	0.336	o	|	|	|	|	0.47
147.833	0.00	0.19	0.335	o	|	|	|	|	0.47
147.917	0.00	0.19	0.334	o	|	|	|	|	0.47
148.000	0.00	0.19	0.332	o	|	|	|	|	0.47
148.083	0.00	0.19	0.331	o	|	|	|	|	0.46
148.167	0.00	0.19	0.330	o	|	|	|	|	0.46
148.250	0.00	0.19	0.328	o	|	|	|	|	0.46
148.333	0.00	0.19	0.327	o	|	|	|	|	0.46
148.417	0.00	0.19	0.326	o	|	|	|	|	0.46
148.500	0.00	0.18	0.325	o	|	|	|	|	0.46
148.583	0.00	0.18	0.323	o	|	|	|	|	0.45
148.667	0.00	0.18	0.322	o	|	|	|	|	0.45
148.750	0.00	0.18	0.321	o	|	|	|	|	0.45
148.833	0.00	0.18	0.320	o	|	|	|	|	0.45
148.917	0.00	0.18	0.318	o	|	|	|	|	0.45
149.000	0.00	0.18	0.317	o	|	|	|	|	0.45
149.083	0.00	0.18	0.316	o	|	|	|	|	0.44
149.167	0.00	0.18	0.315	o	|	|	|	|	0.44
149.250	0.00	0.18	0.313	o	|	|	|	|	0.44

149.333	0.00	0.17	0.312	o	|	|	|	|	0.44
149.417	0.00	0.17	0.311	o	|	|	|	|	0.44
149.500	0.00	0.17	0.310	o	|	|	|	|	0.44
149.583	0.00	0.17	0.309	o	|	|	|	|	0.43
149.667	0.00	0.17	0.307	o	|	|	|	|	0.43
149.750	0.00	0.17	0.306	o	|	|	|	|	0.43
149.833	0.00	0.17	0.305	o	|	|	|	|	0.43
149.917	0.00	0.17	0.304	o	|	|	|	|	0.43
150.000	0.00	0.17	0.303	o	|	|	|	|	0.43
150.083	0.00	0.17	0.302	o	|	|	|	|	0.42
150.167	0.00	0.16	0.300	o	|	|	|	|	0.42
150.250	0.00	0.16	0.299	o	|	|	|	|	0.42
150.333	0.00	0.16	0.298	o	|	|	|	|	0.42
150.417	0.00	0.16	0.297	o	|	|	|	|	0.42
150.500	0.00	0.16	0.296	o	|	|	|	|	0.42
150.583	0.00	0.16	0.295	o	|	|	|	|	0.41
150.667	0.00	0.16	0.294	o	|	|	|	|	0.41
150.750	0.00	0.16	0.293	o	|	|	|	|	0.41
150.833	0.00	0.16	0.292	o	|	|	|	|	0.41
150.917	0.00	0.16	0.291	o	|	|	|	|	0.41
151.000	0.00	0.16	0.289	o	|	|	|	|	0.41
151.083	0.00	0.15	0.288	o	|	|	|	|	0.41
151.167	0.00	0.15	0.287	o	|	|	|	|	0.40
151.250	0.00	0.15	0.286	o	|	|	|	|	0.40
151.333	0.00	0.15	0.285	o	|	|	|	|	0.40
151.417	0.00	0.15	0.284	o	|	|	|	|	0.40
151.500	0.00	0.15	0.283	o	|	|	|	|	0.40
151.583	0.00	0.15	0.282	o	|	|	|	|	0.40
151.667	0.00	0.15	0.281	o	|	|	|	|	0.39
151.750	0.00	0.15	0.280	o	|	|	|	|	0.39
151.833	0.00	0.15	0.279	o	|	|	|	|	0.39
151.917	0.00	0.15	0.278	o	|	|	|	|	0.39
152.000	0.00	0.15	0.277	o	|	|	|	|	0.39
152.083	0.00	0.14	0.276	o	|	|	|	|	0.39
152.167	0.00	0.14	0.275	o	|	|	|	|	0.39
152.250	0.00	0.14	0.274	o	|	|	|	|	0.38
152.333	0.00	0.14	0.273	o	|	|	|	|	0.38
152.417	0.00	0.14	0.272	o	|	|	|	|	0.38
152.500	0.00	0.14	0.271	o	|	|	|	|	0.38
152.583	0.00	0.14	0.270	o	|	|	|	|	0.38
152.667	0.00	0.14	0.269	o	|	|	|	|	0.38
152.750	0.00	0.14	0.268	o	|	|	|	|	0.38
152.833	0.00	0.14	0.267	o	|	|	|	|	0.38
152.917	0.00	0.14	0.266	o	|	|	|	|	0.37
153.000	0.00	0.14	0.265	o	|	|	|	|	0.37
153.083	0.00	0.13	0.265	o	|	|	|	|	0.37
153.167	0.00	0.13	0.264	o	|	|	|	|	0.37
153.250	0.00	0.13	0.263	o	|	|	|	|	0.37
153.333	0.00	0.13	0.262	o	|	|	|	|	0.37
153.417	0.00	0.13	0.261	o	|	|	|	|	0.37
153.500	0.00	0.13	0.260	o	|	|	|	|	0.37
153.583	0.00	0.13	0.259	o	|	|	|	|	0.36
153.667	0.00	0.13	0.258	o	|	|	|	|	0.36
153.750	0.00	0.13	0.257	o	|	|	|	|	0.36
153.833	0.00	0.13	0.256	o	|	|	|	|	0.36
153.917	0.00	0.13	0.255	o	|	|	|	|	0.36
154.000	0.00	0.13	0.255	o	|	|	|	|	0.36
154.083	0.00	0.13	0.254	o	|	|	|	|	0.36
154.167	0.00	0.13	0.253	o	|	|	|	|	0.36
154.250	0.00	0.12	0.252	o	|	|	|	|	0.35
154.333	0.00	0.12	0.251	o	|	|	|	|	0.35
154.417	0.00	0.12	0.250	o	|	|	|	|	0.35
154.500	0.00	0.12	0.249	o	|	|	|	|	0.35
154.583	0.00	0.12	0.249	o	|	|	|	|	0.35
154.667	0.00	0.12	0.248	o	|	|	|	|	0.35
154.750	0.00	0.12	0.247	o	|	|	|	|	0.35
154.833	0.00	0.12	0.246	o	|	|	|	|	0.35
154.917	0.00	0.12	0.245	o	|	|	|	|	0.34
155.000	0.00	0.12	0.245	o	|	|	|	|	0.34
155.083	0.00	0.12	0.244	o	|	|	|	|	0.34
155.167	0.00	0.12	0.243	o	|	|	|	|	0.34
155.250	0.00	0.12	0.242	o	|	|	|	|	0.34
155.333	0.00	0.12	0.241	o	|	|	|	|	0.34
155.417	0.00	0.11	0.241	o	|	|	|	|	0.34
155.500	0.00	0.11	0.240	o	|	|	|	|	0.34

155.583	0.00	0.11	0.239	o	|	|	|	|	0.34
155.667	0.00	0.11	0.238	o	|	|	|	|	0.33
155.750	0.00	0.11	0.237	o	|	|	|	|	0.33
155.833	0.00	0.11	0.237	o	|	|	|	|	0.33
155.917	0.00	0.11	0.236	o	|	|	|	|	0.33
156.000	0.00	0.11	0.235	o	|	|	|	|	0.33
156.083	0.00	0.11	0.234	o	|	|	|	|	0.33
156.167	0.00	0.11	0.234	o	|	|	|	|	0.33
156.250	0.00	0.11	0.233	o	|	|	|	|	0.33
156.333	0.00	0.11	0.232	o	|	|	|	|	0.33
156.417	0.00	0.11	0.231	o	|	|	|	|	0.32
156.500	0.00	0.11	0.231	o	|	|	|	|	0.32
156.583	0.00	0.11	0.230	o	|	|	|	|	0.32
156.667	0.00	0.11	0.229	o	|	|	|	|	0.32
156.750	0.00	0.10	0.228	o	|	|	|	|	0.32
156.833	0.00	0.10	0.228	o	|	|	|	|	0.32
156.917	0.00	0.10	0.227	o	|	|	|	|	0.32
157.000	0.00	0.10	0.226	o	|	|	|	|	0.32
157.083	0.00	0.10	0.226	o	|	|	|	|	0.32
157.167	0.00	0.10	0.225	o	|	|	|	|	0.32
157.250	0.00	0.10	0.224	o	|	|	|	|	0.31
157.333	0.00	0.10	0.223	o	|	|	|	|	0.31
157.417	0.00	0.10	0.223	o	|	|	|	|	0.31
157.500	0.00	0.10	0.222	o	|	|	|	|	0.31
157.583	0.00	0.10	0.221	o	|	|	|	|	0.31
157.667	0.00	0.10	0.221	o	|	|	|	|	0.31
157.750	0.00	0.10	0.220	o	|	|	|	|	0.31
157.833	0.00	0.10	0.219	o	|	|	|	|	0.31
157.917	0.00	0.10	0.219	o	|	|	|	|	0.31
158.000	0.00	0.10	0.218	o	|	|	|	|	0.31
158.083	0.00	0.10	0.217	o	|	|	|	|	0.31
158.167	0.00	0.09	0.217	o	|	|	|	|	0.30
158.250	0.00	0.09	0.216	o	|	|	|	|	0.30
158.333	0.00	0.09	0.215	o	|	|	|	|	0.30
158.417	0.00	0.09	0.215	o	|	|	|	|	0.30
158.500	0.00	0.09	0.214	o	|	|	|	|	0.30
158.583	0.00	0.09	0.214	o	|	|	|	|	0.30
158.667	0.00	0.09	0.213	o	|	|	|	|	0.30
158.750	0.00	0.09	0.212	o	|	|	|	|	0.30
158.833	0.00	0.09	0.212	o	|	|	|	|	0.30
158.917	0.00	0.09	0.211	o	|	|	|	|	0.30
159.000	0.00	0.09	0.210	o	|	|	|	|	0.30
159.083	0.00	0.09	0.210	o	|	|	|	|	0.29
159.167	0.00	0.09	0.209	o	|	|	|	|	0.29
159.250	0.00	0.09	0.209	o	|	|	|	|	0.29
159.333	0.00	0.09	0.208	o	|	|	|	|	0.29
159.417	0.00	0.09	0.207	o	|	|	|	|	0.29
159.500	0.00	0.09	0.207	o	|	|	|	|	0.29
159.583	0.00	0.09	0.206	o	|	|	|	|	0.29
159.667	0.00	0.09	0.206	o	|	|	|	|	0.29
159.750	0.00	0.09	0.205	o	|	|	|	|	0.29
159.833	0.00	0.08	0.204	o	|	|	|	|	0.29
159.917	0.00	0.08	0.204	o	|	|	|	|	0.29
160.000	0.00	0.08	0.203	o	|	|	|	|	0.29
160.083	0.00	0.08	0.203	o	|	|	|	|	0.28
160.167	0.00	0.08	0.202	o	|	|	|	|	0.28
160.250	0.00	0.08	0.202	o	|	|	|	|	0.28
160.333	0.00	0.08	0.201	o	|	|	|	|	0.28
160.417	0.00	0.08	0.200	o	|	|	|	|	0.28
160.500	0.00	0.08	0.200	o	|	|	|	|	0.28
160.583	0.00	0.08	0.199	o	|	|	|	|	0.28
160.667	0.00	0.08	0.199	o	|	|	|	|	0.28
160.750	0.00	0.08	0.198	o	|	|	|	|	0.28
160.833	0.00	0.08	0.198	o	|	|	|	|	0.28
160.917	0.00	0.08	0.197	o	|	|	|	|	0.28
161.000	0.00	0.08	0.197	o	|	|	|	|	0.28
161.083	0.00	0.08	0.196	o	|	|	|	|	0.28
161.167	0.00	0.08	0.195	o	|	|	|	|	0.27
161.250	0.00	0.08	0.195	o	|	|	|	|	0.27
161.333	0.00	0.08	0.194	o	|	|	|	|	0.27
161.417	0.00	0.08	0.194	o	|	|	|	|	0.27
161.500	0.00	0.08	0.193	o	|	|	|	|	0.27
161.583	0.00	0.08	0.193	o	|	|	|	|	0.27
161.667	0.00	0.07	0.192	o	|	|	|	|	0.27
161.750	0.00	0.07	0.192	o	|	|	|	|	0.27

161.833	0.00	0.07	0.191	o	|	|	|	|	0.27
161.917	0.00	0.07	0.191	o	|	|	|	|	0.27
162.000	0.00	0.07	0.190	o	|	|	|	|	0.27
162.083	0.00	0.07	0.190	o	|	|	|	|	0.27
162.167	0.00	0.07	0.189	o	|	|	|	|	0.27
162.250	0.00	0.07	0.189	o	|	|	|	|	0.27
162.333	0.00	0.07	0.188	o	|	|	|	|	0.26
162.417	0.00	0.07	0.188	o	|	|	|	|	0.26
162.500	0.00	0.07	0.187	o	|	|	|	|	0.26
162.583	0.00	0.07	0.187	o	|	|	|	|	0.26
162.667	0.00	0.07	0.186	o	|	|	|	|	0.26
162.750	0.00	0.07	0.186	o	|	|	|	|	0.26
162.833	0.00	0.07	0.185	o	|	|	|	|	0.26
162.917	0.00	0.07	0.185	o	|	|	|	|	0.26
163.000	0.00	0.07	0.184	o	|	|	|	|	0.26
163.083	0.00	0.07	0.184	o	|	|	|	|	0.26
163.167	0.00	0.07	0.184	o	|	|	|	|	0.26
163.250	0.00	0.07	0.183	o	|	|	|	|	0.26
163.333	0.00	0.07	0.183	o	|	|	|	|	0.26
163.417	0.00	0.07	0.182	o	|	|	|	|	0.26
163.500	0.00	0.07	0.182	o	|	|	|	|	0.26
163.583	0.00	0.07	0.181	o	|	|	|	|	0.25
163.667	0.00	0.07	0.181	o	|	|	|	|	0.25
163.750	0.00	0.06	0.180	o	|	|	|	|	0.25
163.833	0.00	0.06	0.180	o	|	|	|	|	0.25
163.917	0.00	0.06	0.179	o	|	|	|	|	0.25
164.000	0.00	0.06	0.179	o	|	|	|	|	0.25
164.083	0.00	0.06	0.179	o	|	|	|	|	0.25
164.167	0.00	0.06	0.178	o	|	|	|	|	0.25
164.250	0.00	0.06	0.178	o	|	|	|	|	0.25
164.333	0.00	0.06	0.177	o	|	|	|	|	0.25
164.417	0.00	0.06	0.177	o	|	|	|	|	0.25
164.500	0.00	0.06	0.176	o	|	|	|	|	0.25
164.583	0.00	0.06	0.176	o	|	|	|	|	0.25
164.667	0.00	0.06	0.176	o	|	|	|	|	0.25
164.750	0.00	0.06	0.175	o	|	|	|	|	0.25
164.833	0.00	0.06	0.175	o	|	|	|	|	0.25
164.917	0.00	0.06	0.174	o	|	|	|	|	0.24
165.000	0.00	0.06	0.174	o	|	|	|	|	0.24
165.083	0.00	0.06	0.174	o	|	|	|	|	0.24
165.167	0.00	0.06	0.173	o	|	|	|	|	0.24
165.250	0.00	0.06	0.173	o	|	|	|	|	0.24
165.333	0.00	0.06	0.172	o	|	|	|	|	0.24
165.417	0.00	0.06	0.172	o	|	|	|	|	0.24
165.500	0.00	0.06	0.172	o	|	|	|	|	0.24
165.583	0.00	0.06	0.171	o	|	|	|	|	0.24
165.667	0.00	0.06	0.171	o	|	|	|	|	0.24
165.750	0.00	0.06	0.170	o	|	|	|	|	0.24
165.833	0.00	0.06	0.170	o	|	|	|	|	0.24
165.917	0.00	0.06	0.170	o	|	|	|	|	0.24
166.000	0.00	0.06	0.169	o	|	|	|	|	0.24
166.083	0.00	0.06	0.169	o	|	|	|	|	0.24
166.167	0.00	0.05	0.168	o	|	|	|	|	0.24
166.250	0.00	0.05	0.168	o	|	|	|	|	0.24
166.333	0.00	0.05	0.168	o	|	|	|	|	0.24
166.417	0.00	0.05	0.167	o	|	|	|	|	0.24
166.500	0.00	0.05	0.167	o	|	|	|	|	0.23
166.583	0.00	0.05	0.167	o	|	|	|	|	0.23
166.667	0.00	0.05	0.166	o	|	|	|	|	0.23
166.750	0.00	0.05	0.166	o	|	|	|	|	0.23
166.833	0.00	0.05	0.166	o	|	|	|	|	0.23
166.917	0.00	0.05	0.165	o	|	|	|	|	0.23
167.000	0.00	0.05	0.165	o	|	|	|	|	0.23
167.083	0.00	0.05	0.164	o	|	|	|	|	0.23
167.167	0.00	0.05	0.164	o	|	|	|	|	0.23
167.250	0.00	0.05	0.164	o	|	|	|	|	0.23
167.333	0.00	0.05	0.163	o	|	|	|	|	0.23
167.417	0.00	0.05	0.163	o	|	|	|	|	0.23
167.500	0.00	0.05	0.163	o	|	|	|	|	0.23
167.583	0.00	0.05	0.162	o	|	|	|	|	0.23
167.667	0.00	0.05	0.162	o	|	|	|	|	0.23
167.750	0.00	0.05	0.162	o	|	|	|	|	0.23
167.833	0.00	0.05	0.161	o	|	|	|	|	0.23
167.917	0.00	0.05	0.161	o	|	|	|	|	0.23
168.000	0.00	0.05	0.161	o	|	|	|	|	0.23

168.083	0.00	0.05	0.160	o	|	|	|	|	0.23
168.167	0.00	0.05	0.160	o	|	|	|	|	0.22
168.250	0.00	0.05	0.160	o	|	|	|	|	0.22
168.333	0.00	0.05	0.159	o	|	|	|	|	0.22
168.417	0.00	0.05	0.159	o	|	|	|	|	0.22
168.500	0.00	0.05	0.159	o	|	|	|	|	0.22
168.583	0.00	0.05	0.158	o	|	|	|	|	0.22
168.667	0.00	0.05	0.158	o	|	|	|	|	0.22
168.750	0.00	0.05	0.158	o	|	|	|	|	0.22
168.833	0.00	0.05	0.157	o	|	|	|	|	0.22
168.917	0.00	0.05	0.157	o	|	|	|	|	0.22
169.000	0.00	0.05	0.157	o	|	|	|	|	0.22
169.083	0.00	0.04	0.157	o	|	|	|	|	0.22
169.167	0.00	0.04	0.156	o	|	|	|	|	0.22
169.250	0.00	0.04	0.156	o	|	|	|	|	0.22
169.333	0.00	0.04	0.156	o	|	|	|	|	0.22
169.417	0.00	0.04	0.155	o	|	|	|	|	0.22
169.500	0.00	0.04	0.155	o	|	|	|	|	0.22
169.583	0.00	0.04	0.155	o	|	|	|	|	0.22
169.667	0.00	0.04	0.154	o	|	|	|	|	0.22
169.750	0.00	0.04	0.154	o	|	|	|	|	0.22
169.833	0.00	0.04	0.154	o	|	|	|	|	0.22
169.917	0.00	0.04	0.154	o	|	|	|	|	0.22
170.000	0.00	0.04	0.153	o	|	|	|	|	0.22
170.083	0.00	0.04	0.153	o	|	|	|	|	0.21
170.167	0.00	0.04	0.153	o	|	|	|	|	0.21
170.250	0.00	0.04	0.152	o	|	|	|	|	0.21
170.333	0.00	0.04	0.152	o	|	|	|	|	0.21
170.417	0.00	0.04	0.152	o	|	|	|	|	0.21
170.500	0.00	0.04	0.152	o	|	|	|	|	0.21
170.583	0.00	0.04	0.151	o	|	|	|	|	0.21
170.667	0.00	0.04	0.151	o	|	|	|	|	0.21
170.750	0.00	0.04	0.151	o	|	|	|	|	0.21
170.833	0.00	0.04	0.150	o	|	|	|	|	0.21
170.917	0.00	0.04	0.150	o	|	|	|	|	0.21
171.000	0.00	0.04	0.150	o	|	|	|	|	0.21
171.083	0.00	0.04	0.150	o	|	|	|	|	0.21
171.167	0.00	0.04	0.149	o	|	|	|	|	0.21
171.250	0.00	0.04	0.149	o	|	|	|	|	0.21
171.333	0.00	0.04	0.149	o	|	|	|	|	0.21
171.417	0.00	0.04	0.149	o	|	|	|	|	0.21
171.500	0.00	0.04	0.148	o	|	|	|	|	0.21
171.583	0.00	0.04	0.148	o	|	|	|	|	0.21
171.667	0.00	0.04	0.148	o	|	|	|	|	0.21
171.750	0.00	0.04	0.148	o	|	|	|	|	0.21
171.833	0.00	0.04	0.147	o	|	|	|	|	0.21
171.917	0.00	0.04	0.147	o	|	|	|	|	0.21
172.000	0.00	0.04	0.147	o	|	|	|	|	0.21
172.083	0.00	0.04	0.146	o	|	|	|	|	0.21
172.167	0.00	0.04	0.146	o	|	|	|	|	0.21
172.250	0.00	0.04	0.146	o	|	|	|	|	0.20
172.333	0.00	0.04	0.146	o	|	|	|	|	0.20
172.417	0.00	0.04	0.146	o	|	|	|	|	0.20
172.500	0.00	0.04	0.145	o	|	|	|	|	0.20
172.583	0.00	0.04	0.145	o	|	|	|	|	0.20
172.667	0.00	0.03	0.145	o	|	|	|	|	0.20
172.750	0.00	0.03	0.145	o	|	|	|	|	0.20
172.833	0.00	0.03	0.144	o	|	|	|	|	0.20
172.917	0.00	0.03	0.144	o	|	|	|	|	0.20
173.000	0.00	0.03	0.144	o	|	|	|	|	0.20
173.083	0.00	0.03	0.144	o	|	|	|	|	0.20
173.167	0.00	0.03	0.143	o	|	|	|	|	0.20
173.250	0.00	0.03	0.143	o	|	|	|	|	0.20
173.333	0.00	0.03	0.143	o	|	|	|	|	0.20
173.417	0.00	0.03	0.143	o	|	|	|	|	0.20
173.500	0.00	0.03	0.142	o	|	|	|	|	0.20
173.583	0.00	0.03	0.142	o	|	|	|	|	0.20
173.667	0.00	0.03	0.142	o	|	|	|	|	0.20
173.750	0.00	0.03	0.142	o	|	|	|	|	0.20
173.833	0.00	0.03	0.142	o	|	|	|	|	0.20
173.917	0.00	0.03	0.141	o	|	|	|	|	0.20
174.000	0.00	0.03	0.141	o	|	|	|	|	0.20
174.083	0.00	0.03	0.141	o	|	|	|	|	0.20
174.167	0.00	0.03	0.141	o	|	|	|	|	0.20
174.250	0.00	0.03	0.140	o	|	|	|	|	0.20

174.333	0.00	0.03	0.140	o	|	|	|	|	0.20
174.417	0.00	0.03	0.140	o	|	|	|	|	0.20
174.500	0.00	0.03	0.140	o	|	|	|	|	0.20
174.583	0.00	0.03	0.140	o	|	|	|	|	0.20
174.667	0.00	0.03	0.139	o	|	|	|	|	0.20
174.750	0.00	0.03	0.139	o	|	|	|	|	0.20
174.833	0.00	0.03	0.139	o	|	|	|	|	0.20
174.917	0.00	0.03	0.139	o	|	|	|	|	0.19
175.000	0.00	0.03	0.139	o	|	|	|	|	0.19
175.083	0.00	0.03	0.138	o	|	|	|	|	0.19
175.167	0.00	0.03	0.138	o	|	|	|	|	0.19
175.250	0.00	0.03	0.138	o	|	|	|	|	0.19
175.333	0.00	0.03	0.138	o	|	|	|	|	0.19
175.417	0.00	0.03	0.138	o	|	|	|	|	0.19
175.500	0.00	0.03	0.137	o	|	|	|	|	0.19
175.583	0.00	0.03	0.137	o	|	|	|	|	0.19
175.667	0.00	0.03	0.137	o	|	|	|	|	0.19
175.750	0.00	0.03	0.137	o	|	|	|	|	0.19
175.833	0.00	0.03	0.137	o	|	|	|	|	0.19
175.917	0.00	0.03	0.136	o	|	|	|	|	0.19
176.000	0.00	0.03	0.136	o	|	|	|	|	0.19
176.083	0.00	0.03	0.136	o	|	|	|	|	0.19
176.167	0.00	0.03	0.136	o	|	|	|	|	0.19
176.250	0.00	0.03	0.136	o	|	|	|	|	0.19
176.333	0.00	0.03	0.135	o	|	|	|	|	0.19
176.417	0.00	0.03	0.135	o	|	|	|	|	0.19
176.500	0.00	0.03	0.135	o	|	|	|	|	0.19
176.583	0.00	0.03	0.135	o	|	|	|	|	0.19
176.667	0.00	0.03	0.135	o	|	|	|	|	0.19
176.750	0.00	0.03	0.134	o	|	|	|	|	0.19
176.833	0.00	0.03	0.134	o	|	|	|	|	0.19
176.917	0.00	0.03	0.134	o	|	|	|	|	0.19
177.000	0.00	0.03	0.134	o	|	|	|	|	0.19
177.083	0.00	0.03	0.134	o	|	|	|	|	0.19
177.167	0.00	0.03	0.134	o	|	|	|	|	0.19
177.250	0.00	0.03	0.133	o	|	|	|	|	0.19
177.333	0.00	0.03	0.133	o	|	|	|	|	0.19
177.417	0.00	0.03	0.133	o	|	|	|	|	0.19
177.500	0.00	0.03	0.133	o	|	|	|	|	0.19
177.583	0.00	0.02	0.133	o	|	|	|	|	0.19
177.667	0.00	0.02	0.133	o	|	|	|	|	0.19
177.750	0.00	0.02	0.132	o	|	|	|	|	0.19
177.833	0.00	0.02	0.132	o	|	|	|	|	0.19
177.917	0.00	0.02	0.132	o	|	|	|	|	0.19
178.000	0.00	0.02	0.132	o	|	|	|	|	0.19
178.083	0.00	0.02	0.132	o	|	|	|	|	0.18
178.167	0.00	0.02	0.132	o	|	|	|	|	0.18
178.250	0.00	0.02	0.131	o	|	|	|	|	0.18
178.333	0.00	0.02	0.131	o	|	|	|	|	0.18
178.417	0.00	0.02	0.131	o	|	|	|	|	0.18
178.500	0.00	0.02	0.131	o	|	|	|	|	0.18
178.583	0.00	0.02	0.131	o	|	|	|	|	0.18
178.667	0.00	0.02	0.131	o	|	|	|	|	0.18
178.750	0.00	0.02	0.130	o	|	|	|	|	0.18
178.833	0.00	0.02	0.130	o	|	|	|	|	0.18
178.917	0.00	0.02	0.130	o	|	|	|	|	0.18
179.000	0.00	0.02	0.130	o	|	|	|	|	0.18
179.083	0.00	0.02	0.130	o	|	|	|	|	0.18
179.167	0.00	0.02	0.130	o	|	|	|	|	0.18
179.250	0.00	0.02	0.129	o	|	|	|	|	0.18
179.333	0.00	0.02	0.129	o	|	|	|	|	0.18
179.417	0.00	0.02	0.129	o	|	|	|	|	0.18
179.500	0.00	0.02	0.129	o	|	|	|	|	0.18
179.583	0.00	0.02	0.129	o	|	|	|	|	0.18
179.667	0.00	0.02	0.129	o	|	|	|	|	0.18
179.750	0.00	0.02	0.129	o	|	|	|	|	0.18
179.833	0.00	0.02	0.128	o	|	|	|	|	0.18
179.917	0.00	0.02	0.128	o	|	|	|	|	0.18
180.000	0.00	0.02	0.128	o	|	|	|	|	0.18
180.083	0.00	0.02	0.128	o	|	|	|	|	0.18
180.167	0.00	0.02	0.128	o	|	|	|	|	0.18
180.250	0.00	0.02	0.128	o	|	|	|	|	0.18
180.333	0.00	0.02	0.128	o	|	|	|	|	0.18
180.417	0.00	0.02	0.127	o	|	|	|	|	0.18
180.500	0.00	0.02	0.127	o	|	|	|	|	0.18

180.583	0.00	0.02	0.127	o	|	|	|	|	0.18
180.667	0.00	0.02	0.127	o	|	|	|	|	0.18
180.750	0.00	0.02	0.127	o	|	|	|	|	0.18
180.833	0.00	0.02	0.127	o	|	|	|	|	0.18
180.917	0.00	0.02	0.127	o	|	|	|	|	0.18
181.000	0.00	0.02	0.126	o	|	|	|	|	0.18
181.083	0.00	0.02	0.126	o	|	|	|	|	0.18
181.167	0.00	0.02	0.126	o	|	|	|	|	0.18
181.250	0.00	0.02	0.126	o	|	|	|	|	0.18
181.333	0.00	0.02	0.126	o	|	|	|	|	0.18
181.417	0.00	0.02	0.126	o	|	|	|	|	0.18
181.500	0.00	0.02	0.126	o	|	|	|	|	0.18
181.583	0.00	0.02	0.126	o	|	|	|	|	0.18
181.667	0.00	0.02	0.125	o	|	|	|	|	0.18
181.750	0.00	0.02	0.125	o	|	|	|	|	0.18
181.833	0.00	0.02	0.125	o	|	|	|	|	0.18
181.917	0.00	0.02	0.125	o	|	|	|	|	0.18
182.000	0.00	0.02	0.125	o	|	|	|	|	0.18
182.083	0.00	0.02	0.125	o	|	|	|	|	0.18
182.167	0.00	0.02	0.125	o	|	|	|	|	0.17
182.250	0.00	0.02	0.124	o	|	|	|	|	0.17
182.333	0.00	0.02	0.124	o	|	|	|	|	0.17
182.417	0.00	0.02	0.124	o	|	|	|	|	0.17
182.500	0.00	0.02	0.124	o	|	|	|	|	0.17
182.583	0.00	0.02	0.124	o	|	|	|	|	0.17
182.667	0.00	0.02	0.124	o	|	|	|	|	0.17
182.750	0.00	0.02	0.124	o	|	|	|	|	0.17
182.833	0.00	0.02	0.124	o	|	|	|	|	0.17
182.917	0.00	0.02	0.124	o	|	|	|	|	0.17
183.000	0.00	0.02	0.123	o	|	|	|	|	0.17
183.083	0.00	0.02	0.123	o	|	|	|	|	0.17
183.167	0.00	0.02	0.123	o	|	|	|	|	0.17
183.250	0.00	0.02	0.123	o	|	|	|	|	0.17
183.333	0.00	0.02	0.123	o	|	|	|	|	0.17
183.417	0.00	0.02	0.123	o	|	|	|	|	0.17
183.500	0.00	0.02	0.123	o	|	|	|	|	0.17
183.583	0.00	0.02	0.123	o	|	|	|	|	0.17
183.667	0.00	0.02	0.122	o	|	|	|	|	0.17
183.750	0.00	0.02	0.122	o	|	|	|	|	0.17
183.833	0.00	0.02	0.122	o	|	|	|	|	0.17
183.917	0.00	0.02	0.122	o	|	|	|	|	0.17
184.000	0.00	0.02	0.122	o	|	|	|	|	0.17
184.083	0.00	0.02	0.122	o	|	|	|	|	0.17
184.167	0.00	0.02	0.122	o	|	|	|	|	0.17
184.250	0.00	0.02	0.122	o	|	|	|	|	0.17
184.333	0.00	0.02	0.122	o	|	|	|	|	0.17
184.417	0.00	0.02	0.121	o	|	|	|	|	0.17
184.500	0.00	0.02	0.121	o	|	|	|	|	0.17
184.583	0.00	0.02	0.121	o	|	|	|	|	0.17
184.667	0.00	0.02	0.121	o	|	|	|	|	0.17
184.750	0.00	0.02	0.121	o	|	|	|	|	0.17
184.833	0.00	0.02	0.121	o	|	|	|	|	0.17
184.917	0.00	0.02	0.121	o	|	|	|	|	0.17
185.000	0.00	0.01	0.121	o	|	|	|	|	0.17
185.083	0.00	0.01	0.121	o	|	|	|	|	0.17
185.167	0.00	0.01	0.121	o	|	|	|	|	0.17
185.250	0.00	0.01	0.120	o	|	|	|	|	0.17
185.333	0.00	0.01	0.120	o	|	|	|	|	0.17
185.417	0.00	0.01	0.120	o	|	|	|	|	0.17
185.500	0.00	0.01	0.120	o	|	|	|	|	0.17
185.583	0.00	0.01	0.120	o	|	|	|	|	0.17
185.667	0.00	0.01	0.120	o	|	|	|	|	0.17
185.750	0.00	0.01	0.120	o	|	|	|	|	0.17
185.833	0.00	0.01	0.120	o	|	|	|	|	0.17
185.917	0.00	0.01	0.120	o	|	|	|	|	0.17
186.000	0.00	0.01	0.120	o	|	|	|	|	0.17
186.083	0.00	0.01	0.119	o	|	|	|	|	0.17
186.167	0.00	0.01	0.119	o	|	|	|	|	0.17
186.250	0.00	0.01	0.119	o	|	|	|	|	0.17
186.333	0.00	0.01	0.119	o	|	|	|	|	0.17
186.417	0.00	0.01	0.119	o	|	|	|	|	0.17
186.500	0.00	0.01	0.119	o	|	|	|	|	0.17
186.583	0.00	0.01	0.119	o	|	|	|	|	0.17
186.667	0.00	0.01	0.119	o	|	|	|	|	0.17
186.750	0.00	0.01	0.119	o	|	|	|	|	0.17

186.833	0.00	0.01	0.119	o	|	|	|	|	0.17
186.917	0.00	0.01	0.119	o	|	|	|	|	0.17
187.000	0.00	0.01	0.118	o	|	|	|	|	0.17
187.083	0.00	0.01	0.118	o	|	|	|	|	0.17
187.167	0.00	0.01	0.118	o	|	|	|	|	0.17
187.250	0.00	0.01	0.118	o	|	|	|	|	0.17
187.333	0.00	0.01	0.118	o	|	|	|	|	0.17
187.417	0.00	0.01	0.118	o	|	|	|	|	0.17
187.500	0.00	0.01	0.118	o	|	|	|	|	0.17
187.583	0.00	0.01	0.118	o	|	|	|	|	0.17
187.667	0.00	0.01	0.118	o	|	|	|	|	0.17
187.750	0.00	0.01	0.118	o	|	|	|	|	0.17
187.833	0.00	0.01	0.118	o	|	|	|	|	0.17
187.917	0.00	0.01	0.117	o	|	|	|	|	0.16
188.000	0.00	0.01	0.117	o	|	|	|	|	0.16
188.083	0.00	0.01	0.117	o	|	|	|	|	0.16
188.167	0.00	0.01	0.117	o	|	|	|	|	0.16
188.250	0.00	0.01	0.117	o	|	|	|	|	0.16
188.333	0.00	0.01	0.117	o	|	|	|	|	0.16
188.417	0.00	0.01	0.117	o	|	|	|	|	0.16
188.500	0.00	0.01	0.117	o	|	|	|	|	0.16
188.583	0.00	0.01	0.117	o	|	|	|	|	0.16
188.667	0.00	0.01	0.117	o	|	|	|	|	0.16
188.750	0.00	0.01	0.117	o	|	|	|	|	0.16
188.833	0.00	0.01	0.117	o	|	|	|	|	0.16
188.917	0.00	0.01	0.117	o	|	|	|	|	0.16
189.000	0.00	0.01	0.116	o	|	|	|	|	0.16
189.083	0.00	0.01	0.116	o	|	|	|	|	0.16
189.167	0.00	0.01	0.116	o	|	|	|	|	0.16
189.250	0.00	0.01	0.116	o	|	|	|	|	0.16
189.333	0.00	0.01	0.116	o	|	|	|	|	0.16
189.417	0.00	0.01	0.116	o	|	|	|	|	0.16
189.500	0.00	0.01	0.116	o	|	|	|	|	0.16
189.583	0.00	0.01	0.116	o	|	|	|	|	0.16
189.667	0.00	0.01	0.116	o	|	|	|	|	0.16
189.750	0.00	0.01	0.116	o	|	|	|	|	0.16
189.833	0.00	0.01	0.116	o	|	|	|	|	0.16
189.917	0.00	0.01	0.116	o	|	|	|	|	0.16
190.000	0.00	0.01	0.116	o	|	|	|	|	0.16
190.083	0.00	0.01	0.115	o	|	|	|	|	0.16
190.167	0.00	0.01	0.115	o	|	|	|	|	0.16
190.250	0.00	0.01	0.115	o	|	|	|	|	0.16
190.333	0.00	0.01	0.115	o	|	|	|	|	0.16
190.417	0.00	0.01	0.115	o	|	|	|	|	0.16
190.500	0.00	0.01	0.115	o	|	|	|	|	0.16
190.583	0.00	0.01	0.115	o	|	|	|	|	0.16
190.667	0.00	0.01	0.115	o	|	|	|	|	0.16
190.750	0.00	0.01	0.115	o	|	|	|	|	0.16
190.833	0.00	0.01	0.115	o	|	|	|	|	0.16
190.917	0.00	0.01	0.115	o	|	|	|	|	0.16
191.000	0.00	0.01	0.115	o	|	|	|	|	0.16
191.083	0.00	0.01	0.115	o	|	|	|	|	0.16
191.167	0.00	0.01	0.115	o	|	|	|	|	0.16
191.250	0.00	0.01	0.114	o	|	|	|	|	0.16
191.333	0.00	0.01	0.114	o	|	|	|	|	0.16
191.417	0.00	0.01	0.114	o	|	|	|	|	0.16
191.500	0.00	0.01	0.114	o	|	|	|	|	0.16
191.583	0.00	0.01	0.114	o	|	|	|	|	0.16
191.667	0.00	0.01	0.114	o	|	|	|	|	0.16
191.750	0.00	0.01	0.114	o	|	|	|	|	0.16
191.833	0.00	0.01	0.114	o	|	|	|	|	0.16
191.917	0.00	0.01	0.114	o	|	|	|	|	0.16
192.000	0.00	0.01	0.114	o	|	|	|	|	0.16
192.083	0.00	0.01	0.114	o	|	|	|	|	0.16
192.167	0.00	0.01	0.114	o	|	|	|	|	0.16
192.250	0.00	0.01	0.114	o	|	|	|	|	0.16
192.333	0.00	0.01	0.114	o	|	|	|	|	0.16
192.417	0.00	0.01	0.114	o	|	|	|	|	0.16
192.500	0.00	0.01	0.114	o	|	|	|	|	0.16
192.583	0.00	0.01	0.113	o	|	|	|	|	0.16
192.667	0.00	0.01	0.113	o	|	|	|	|	0.16
192.750	0.00	0.01	0.113	o	|	|	|	|	0.16
192.833	0.00	0.01	0.113	o	|	|	|	|	0.16
192.917	0.00	0.01	0.113	o	|	|	|	|	0.16
193.000	0.00	0.01	0.113	o	|	|	|	|	0.16

193.083	0.00	0.01	0.113	o	|	|	|	|	0.16
193.167	0.00	0.01	0.113	o	|	|	|	|	0.16
193.250	0.00	0.01	0.113	o	|	|	|	|	0.16
193.333	0.00	0.01	0.113	o	|	|	|	|	0.16
193.417	0.00	0.01	0.113	o	|	|	|	|	0.16
193.500	0.00	0.01	0.113	o	|	|	|	|	0.16
193.583	0.00	0.01	0.113	o	|	|	|	|	0.16
193.667	0.00	0.01	0.113	o	|	|	|	|	0.16
193.750	0.00	0.01	0.113	o	|	|	|	|	0.16
193.833	0.00	0.01	0.113	o	|	|	|	|	0.16
193.917	0.00	0.01	0.113	o	|	|	|	|	0.16
194.000	0.00	0.01	0.112	o	|	|	|	|	0.16
194.083	0.00	0.01	0.112	o	|	|	|	|	0.16
194.167	0.00	0.01	0.112	o	|	|	|	|	0.16
194.250	0.00	0.01	0.112	o	|	|	|	|	0.16
194.333	0.00	0.01	0.112	o	|	|	|	|	0.16
194.417	0.00	0.01	0.112	o	|	|	|	|	0.16
194.500	0.00	0.01	0.112	o	|	|	|	|	0.16
194.583	0.00	0.01	0.112	o	|	|	|	|	0.16
194.667	0.00	0.01	0.112	o	|	|	|	|	0.16
194.750	0.00	0.01	0.112	o	|	|	|	|	0.16
194.833	0.00	0.01	0.112	o	|	|	|	|	0.16
194.917	0.00	0.01	0.112	o	|	|	|	|	0.16
195.000	0.00	0.01	0.112	o	|	|	|	|	0.16
195.083	0.00	0.01	0.112	o	|	|	|	|	0.16
195.167	0.00	0.01	0.112	o	|	|	|	|	0.16
195.250	0.00	0.01	0.112	o	|	|	|	|	0.16
195.333	0.00	0.01	0.112	o	|	|	|	|	0.16
195.417	0.00	0.01	0.112	o	|	|	|	|	0.16
195.500	0.00	0.01	0.112	o	|	|	|	|	0.16
195.583	0.00	0.01	0.111	o	|	|	|	|	0.16
195.667	0.00	0.01	0.111	o	|	|	|	|	0.16
195.750	0.00	0.01	0.111	o	|	|	|	|	0.16
195.833	0.00	0.01	0.111	o	|	|	|	|	0.16
195.917	0.00	0.01	0.111	o	|	|	|	|	0.16
196.000	0.00	0.01	0.111	o	|	|	|	|	0.16
196.083	0.00	0.01	0.111	o	|	|	|	|	0.16
196.167	0.00	0.01	0.111	o	|	|	|	|	0.16
196.250	0.00	0.01	0.111	o	|	|	|	|	0.16
196.333	0.00	0.01	0.111	o	|	|	|	|	0.16
196.417	0.00	0.01	0.111	o	|	|	|	|	0.16
196.500	0.00	0.01	0.111	o	|	|	|	|	0.16
196.583	0.00	0.01	0.111	o	|	|	|	|	0.16
196.667	0.00	0.01	0.111	o	|	|	|	|	0.16
196.750	0.00	0.01	0.111	o	|	|	|	|	0.16
196.833	0.00	0.01	0.111	o	|	|	|	|	0.16
196.917	0.00	0.01	0.111	o	|	|	|	|	0.16
197.000	0.00	0.01	0.111	o	|	|	|	|	0.16
197.083	0.00	0.01	0.111	o	|	|	|	|	0.16
197.167	0.00	0.01	0.111	o	|	|	|	|	0.16
197.250	0.00	0.01	0.111	o	|	|	|	|	0.16
197.333	0.00	0.01	0.110	o	|	|	|	|	0.16
197.417	0.00	0.01	0.110	o	|	|	|	|	0.16
197.500	0.00	0.01	0.110	o	|	|	|	|	0.15
197.583	0.00	0.01	0.110	o	|	|	|	|	0.15
197.667	0.00	0.01	0.110	o	|	|	|	|	0.15
197.750	0.00	0.01	0.110	o	|	|	|	|	0.15
197.833	0.00	0.01	0.110	o	|	|	|	|	0.15
197.917	0.00	0.01	0.110	o	|	|	|	|	0.15
198.000	0.00	0.01	0.110	o	|	|	|	|	0.15
198.083	0.00	0.01	0.110	o	|	|	|	|	0.15
198.167	0.00	0.01	0.110	o	|	|	|	|	0.15
198.250	0.00	0.01	0.110	o	|	|	|	|	0.15
198.333	0.00	0.01	0.110	o	|	|	|	|	0.15
198.417	0.00	0.01	0.110	o	|	|	|	|	0.15
198.500	0.00	0.01	0.110	o	|	|	|	|	0.15
198.583	0.00	0.01	0.110	o	|	|	|	|	0.15
198.667	0.00	0.01	0.110	o	|	|	|	|	0.15
198.750	0.00	0.01	0.110	o	|	|	|	|	0.15
198.833	0.00	0.01	0.110	o	|	|	|	|	0.15
198.917	0.00	0.01	0.110	o	|	|	|	|	0.15
199.000	0.00	0.01	0.110	o	|	|	|	|	0.15
199.083	0.00	0.01	0.110	o	|	|	|	|	0.15
199.167	0.00	0.01	0.110	o	|	|	|	|	0.15
199.250	0.00	0.01	0.110	o	|	|	|	|	0.15

199.333	0.00	0.01	0.109	o	|	|	|	|	0.15
199.417	0.00	0.01	0.109	o	|	|	|	|	0.15
199.500	0.00	0.01	0.109	o	|	|	|	|	0.15
199.583	0.00	0.01	0.109	o	|	|	|	|	0.15
199.667	0.00	0.01	0.109	o	|	|	|	|	0.15
199.750	0.00	0.01	0.109	o	|	|	|	|	0.15
199.833	0.00	0.01	0.109	o	|	|	|	|	0.15
199.917	0.00	0.01	0.109	o	|	|	|	|	0.15
200.000	0.00	0.01	0.109	o	|	|	|	|	0.15
200.083	0.00	0.01	0.109	o	|	|	|	|	0.15
200.167	0.00	0.01	0.109	o	|	|	|	|	0.15
200.250	0.00	0.01	0.109	o	|	|	|	|	0.15
200.333	0.00	0.01	0.109	o	|	|	|	|	0.15
200.417	0.00	0.01	0.109	o	|	|	|	|	0.15
200.500	0.00	0.01	0.109	o	|	|	|	|	0.15
200.583	0.00	0.01	0.109	o	|	|	|	|	0.15
200.667	0.00	0.01	0.109	o	|	|	|	|	0.15
200.750	0.00	0.01	0.109	o	|	|	|	|	0.15
200.833	0.00	0.01	0.109	o	|	|	|	|	0.15
200.917	0.00	0.00	0.109	o	|	|	|	|	0.15
201.000	0.00	0.00	0.109	o	|	|	|	|	0.15
201.083	0.00	0.00	0.109	o	|	|	|	|	0.15
201.167	0.00	0.00	0.109	o	|	|	|	|	0.15
201.250	0.00	0.00	0.109	o	|	|	|	|	0.15
201.333	0.00	0.00	0.109	o	|	|	|	|	0.15
201.417	0.00	0.00	0.109	o	|	|	|	|	0.15
201.500	0.00	0.00	0.109	o	|	|	|	|	0.15
201.583	0.00	0.00	0.109	o	|	|	|	|	0.15
201.667	0.00	0.00	0.108	o	|	|	|	|	0.15
201.750	0.00	0.00	0.108	o	|	|	|	|	0.15
201.833	0.00	0.00	0.108	o	|	|	|	|	0.15
201.917	0.00	0.00	0.108	o	|	|	|	|	0.15
202.000	0.00	0.00	0.108	o	|	|	|	|	0.15
202.083	0.00	0.00	0.108	o	|	|	|	|	0.15
202.167	0.00	0.00	0.108	o	|	|	|	|	0.15
202.250	0.00	0.00	0.108	o	|	|	|	|	0.15
202.333	0.00	0.00	0.108	o	|	|	|	|	0.15
202.417	0.00	0.00	0.108	o	|	|	|	|	0.15
202.500	0.00	0.00	0.108	o	|	|	|	|	0.15
202.583	0.00	0.00	0.108	o	|	|	|	|	0.15
202.667	0.00	0.00	0.108	o	|	|	|	|	0.15
202.750	0.00	0.00	0.108	o	|	|	|	|	0.15
202.833	0.00	0.00	0.108	o	|	|	|	|	0.15
202.917	0.00	0.00	0.108	o	|	|	|	|	0.15
203.000	0.00	0.00	0.108	o	|	|	|	|	0.15
203.083	0.00	0.00	0.108	o	|	|	|	|	0.15
203.167	0.00	0.00	0.108	o	|	|	|	|	0.15
203.250	0.00	0.00	0.108	o	|	|	|	|	0.15
203.333	0.00	0.00	0.108	o	|	|	|	|	0.15
203.417	0.00	0.00	0.108	o	|	|	|	|	0.15
203.500	0.00	0.00	0.108	o	|	|	|	|	0.15
203.583	0.00	0.00	0.108	o	|	|	|	|	0.15
203.667	0.00	0.00	0.108	o	|	|	|	|	0.15
203.750	0.00	0.00	0.108	o	|	|	|	|	0.15
203.833	0.00	0.00	0.108	o	|	|	|	|	0.15
203.917	0.00	0.00	0.108	o	|	|	|	|	0.15
204.000	0.00	0.00	0.108	o	|	|	|	|	0.15
204.083	0.00	0.00	0.108	o	|	|	|	|	0.15
204.167	0.00	0.00	0.108	o	|	|	|	|	0.15
204.250	0.00	0.00	0.108	o	|	|	|	|	0.15
204.333	0.00	0.00	0.108	o	|	|	|	|	0.15
204.417	0.00	0.00	0.108	o	|	|	|	|	0.15
204.500	0.00	0.00	0.107	o	|	|	|	|	0.15
204.583	0.00	0.00	0.107	o	|	|	|	|	0.15
204.667	0.00	0.00	0.107	o	|	|	|	|	0.15
204.750	0.00	0.00	0.107	o	|	|	|	|	0.15
204.833	0.00	0.00	0.107	o	|	|	|	|	0.15
204.917	0.00	0.00	0.107	o	|	|	|	|	0.15
205.000	0.00	0.00	0.107	o	|	|	|	|	0.15
205.083	0.00	0.00	0.107	o	|	|	|	|	0.15
205.167	0.00	0.00	0.107	o	|	|	|	|	0.15
205.250	0.00	0.00	0.107	o	|	|	|	|	0.15
205.333	0.00	0.00	0.107	o	|	|	|	|	0.15
205.417	0.00	0.00	0.107	o	|	|	|	|	0.15
205.500	0.00	0.00	0.107	o	|	|	|	|	0.15

205.583	0.00	0.00	0.107	o	|	|	|	|	0.15
205.667	0.00	0.00	0.107	o	|	|	|	|	0.15
205.750	0.00	0.00	0.107	o	|	|	|	|	0.15
205.833	0.00	0.00	0.107	o	|	|	|	|	0.15
205.917	0.00	0.00	0.107	o	|	|	|	|	0.15
206.000	0.00	0.00	0.107	o	|	|	|	|	0.15
206.083	0.00	0.00	0.107	o	|	|	|	|	0.15
206.167	0.00	0.00	0.107	o	|	|	|	|	0.15
206.250	0.00	0.00	0.107	o	|	|	|	|	0.15
206.333	0.00	0.00	0.107	o	|	|	|	|	0.15
206.417	0.00	0.00	0.107	o	|	|	|	|	0.15
206.500	0.00	0.00	0.107	o	|	|	|	|	0.15
206.583	0.00	0.00	0.107	o	|	|	|	|	0.15
206.667	0.00	0.00	0.107	o	|	|	|	|	0.15
206.750	0.00	0.00	0.107	o	|	|	|	|	0.15
206.833	0.00	0.00	0.107	o	|	|	|	|	0.15
206.917	0.00	0.00	0.107	o	|	|	|	|	0.15
207.000	0.00	0.00	0.107	o	|	|	|	|	0.15
207.083	0.00	0.00	0.107	o	|	|	|	|	0.15
207.167	0.00	0.00	0.107	o	|	|	|	|	0.15
207.250	0.00	0.00	0.107	o	|	|	|	|	0.15
207.333	0.00	0.00	0.107	o	|	|	|	|	0.15
207.417	0.00	0.00	0.107	o	|	|	|	|	0.15
207.500	0.00	0.00	0.107	o	|	|	|	|	0.15
207.583	0.00	0.00	0.107	o	|	|	|	|	0.15
207.667	0.00	0.00	0.107	o	|	|	|	|	0.15
207.750	0.00	0.00	0.107	o	|	|	|	|	0.15
207.833	0.00	0.00	0.107	o	|	|	|	|	0.15
207.917	0.00	0.00	0.107	o	|	|	|	|	0.15
208.000	0.00	0.00	0.106	o	|	|	|	|	0.15
208.083	0.00	0.00	0.106	o	|	|	|	|	0.15
208.167	0.00	0.00	0.106	o	|	|	|	|	0.15
208.250	0.00	0.00	0.106	o	|	|	|	|	0.15
208.333	0.00	0.00	0.106	o	|	|	|	|	0.15
208.417	0.00	0.00	0.106	o	|	|	|	|	0.15
208.500	0.00	0.00	0.106	o	|	|	|	|	0.15
208.583	0.00	0.00	0.106	o	|	|	|	|	0.15
208.667	0.00	0.00	0.106	o	|	|	|	|	0.15
208.750	0.00	0.00	0.106	o	|	|	|	|	0.15
208.833	0.00	0.00	0.106	o	|	|	|	|	0.15
208.917	0.00	0.00	0.106	o	|	|	|	|	0.15
209.000	0.00	0.00	0.106	o	|	|	|	|	0.15
209.083	0.00	0.00	0.106	o	|	|	|	|	0.15
209.167	0.00	0.00	0.106	o	|	|	|	|	0.15
209.250	0.00	0.00	0.106	o	|	|	|	|	0.15
209.333	0.00	0.00	0.106	o	|	|	|	|	0.15
209.417	0.00	0.00	0.106	o	|	|	|	|	0.15
209.500	0.00	0.00	0.106	o	|	|	|	|	0.15
209.583	0.00	0.00	0.106	o	|	|	|	|	0.15
209.667	0.00	0.00	0.106	o	|	|	|	|	0.15
209.750	0.00	0.00	0.106	o	|	|	|	|	0.15
209.833	0.00	0.00	0.106	o	|	|	|	|	0.15
209.917	0.00	0.00	0.106	o	|	|	|	|	0.15
210.000	0.00	0.00	0.106	o	|	|	|	|	0.15
210.083	0.00	0.00	0.106	o	|	|	|	|	0.15
210.167	0.00	0.00	0.106	o	|	|	|	|	0.15
210.250	0.00	0.00	0.106	o	|	|	|	|	0.15
210.333	0.00	0.00	0.106	o	|	|	|	|	0.15
210.417	0.00	0.00	0.106	o	|	|	|	|	0.15
210.500	0.00	0.00	0.106	o	|	|	|	|	0.15
210.583	0.00	0.00	0.106	o	|	|	|	|	0.15
210.667	0.00	0.00	0.106	o	|	|	|	|	0.15
210.750	0.00	0.00	0.106	o	|	|	|	|	0.15
210.833	0.00	0.00	0.106	o	|	|	|	|	0.15
210.917	0.00	0.00	0.106	o	|	|	|	|	0.15
211.000	0.00	0.00	0.106	o	|	|	|	|	0.15
211.083	0.00	0.00	0.106	o	|	|	|	|	0.15
211.167	0.00	0.00	0.106	o	|	|	|	|	0.15
211.250	0.00	0.00	0.106	o	|	|	|	|	0.15
211.333	0.00	0.00	0.106	o	|	|	|	|	0.15
211.417	0.00	0.00	0.106	o	|	|	|	|	0.15
211.500	0.00	0.00	0.106	o	|	|	|	|	0.15
211.583	0.00	0.00	0.106	o	|	|	|	|	0.15
211.667	0.00	0.00	0.106	o	|	|	|	|	0.15
211.750	0.00	0.00	0.106	o	|	|	|	|	0.15

211.833	0.00	0.00	0.106	o	|	|	|	|	0.15
211.917	0.00	0.00	0.106	o	|	|	|	|	0.15
212.000	0.00	0.00	0.106	o	|	|	|	|	0.15
212.083	0.00	0.00	0.106	o	|	|	|	|	0.15
212.167	0.00	0.00	0.106	o	|	|	|	|	0.15
212.250	0.00	0.00	0.106	o	|	|	|	|	0.15
212.333	0.00	0.00	0.106	o	|	|	|	|	0.15
212.417	0.00	0.00	0.106	o	|	|	|	|	0.15
212.500	0.00	0.00	0.106	o	|	|	|	|	0.15
212.583	0.00	0.00	0.105	o	|	|	|	|	0.15
212.667	0.00	0.00	0.105	o	|	|	|	|	0.15
212.750	0.00	0.00	0.105	o	|	|	|	|	0.15
212.833	0.00	0.00	0.105	o	|	|	|	|	0.15
212.917	0.00	0.00	0.105	o	|	|	|	|	0.15
213.000	0.00	0.00	0.105	o	|	|	|	|	0.15
213.083	0.00	0.00	0.105	o	|	|	|	|	0.15
213.167	0.00	0.00	0.105	o	|	|	|	|	0.15
213.250	0.00	0.00	0.105	o	|	|	|	|	0.15
213.333	0.00	0.00	0.105	o	|	|	|	|	0.15
213.417	0.00	0.00	0.105	o	|	|	|	|	0.15
213.500	0.00	0.00	0.105	o	|	|	|	|	0.15
213.583	0.00	0.00	0.105	o	|	|	|	|	0.15
213.667	0.00	0.00	0.105	o	|	|	|	|	0.15
213.750	0.00	0.00	0.105	o	|	|	|	|	0.15
213.833	0.00	0.00	0.105	o	|	|	|	|	0.15
213.917	0.00	0.00	0.105	o	|	|	|	|	0.15
214.000	0.00	0.00	0.105	o	|	|	|	|	0.15
214.083	0.00	0.00	0.105	o	|	|	|	|	0.15
214.167	0.00	0.00	0.105	o	|	|	|	|	0.15
214.250	0.00	0.00	0.105	o	|	|	|	|	0.15
214.333	0.00	0.00	0.105	o	|	|	|	|	0.15
214.417	0.00	0.00	0.105	o	|	|	|	|	0.15
214.500	0.00	0.00	0.105	o	|	|	|	|	0.15
214.583	0.00	0.00	0.105	o	|	|	|	|	0.15
214.667	0.00	0.00	0.105	o	|	|	|	|	0.15
214.750	0.00	0.00	0.105	o	|	|	|	|	0.15
214.833	0.00	0.00	0.105	o	|	|	|	|	0.15
214.917	0.00	0.00	0.105	o	|	|	|	|	0.15
215.000	0.00	0.00	0.105	o	|	|	|	|	0.15
215.083	0.00	0.00	0.105	o	|	|	|	|	0.15
215.167	0.00	0.00	0.105	o	|	|	|	|	0.15
215.250	0.00	0.00	0.105	o	|	|	|	|	0.15
215.333	0.00	0.00	0.105	o	|	|	|	|	0.15
215.417	0.00	0.00	0.105	o	|	|	|	|	0.15
215.500	0.00	0.00	0.105	o	|	|	|	|	0.15
215.583	0.00	0.00	0.105	o	|	|	|	|	0.15
215.667	0.00	0.00	0.105	o	|	|	|	|	0.15
215.750	0.00	0.00	0.105	o	|	|	|	|	0.15
215.833	0.00	0.00	0.105	o	|	|	|	|	0.15
215.917	0.00	0.00	0.105	o	|	|	|	|	0.15
216.000	0.00	0.00	0.105	o	|	|	|	|	0.15
216.083	0.00	0.00	0.105	o	|	|	|	|	0.15
216.167	0.00	0.00	0.105	o	|	|	|	|	0.15
216.250	0.00	0.00	0.105	o	|	|	|	|	0.15
216.333	0.00	0.00	0.105	o	|	|	|	|	0.15
216.417	0.00	0.00	0.105	o	|	|	|	|	0.15
216.500	0.00	0.00	0.105	o	|	|	|	|	0.15
216.583	0.00	0.00	0.105	o	|	|	|	|	0.15
216.667	0.00	0.00	0.105	o	|	|	|	|	0.15
216.750	0.00	0.00	0.105	o	|	|	|	|	0.15
216.833	0.00	0.00	0.105	o	|	|	|	|	0.15
216.917	0.00	0.00	0.105	o	|	|	|	|	0.15
217.000	0.00	0.00	0.105	o	|	|	|	|	0.15
217.083	0.00	0.00	0.105	o	|	|	|	|	0.15
217.167	0.00	0.00	0.105	o	|	|	|	|	0.15
217.250	0.00	0.00	0.105	o	|	|	|	|	0.15
217.333	0.00	0.00	0.105	o	|	|	|	|	0.15
217.417	0.00	0.00	0.105	o	|	|	|	|	0.15
217.500	0.00	0.00	0.105	o	|	|	|	|	0.15
217.583	0.00	0.00	0.105	o	|	|	|	|	0.15
217.667	0.00	0.00	0.105	o	|	|	|	|	0.15
217.750	0.00	0.00	0.105	o	|	|	|	|	0.15
217.833	0.00	0.00	0.105	o	|	|	|	|	0.15
217.917	0.00	0.00	0.105	o	|	|	|	|	0.15
218.000	0.00	0.00	0.105	o	|	|	|	|	0.15

218.083	0.00	0.00	0.105	o	|	|	|	|	0.15
218.167	0.00	0.00	0.105	o	|	|	|	|	0.15
218.250	0.00	0.00	0.105	o	|	|	|	|	0.15
218.333	0.00	0.00	0.105	o	|	|	|	|	0.15
218.417	0.00	0.00	0.105	o	|	|	|	|	0.15
218.500	0.00	0.00	0.105	o	|	|	|	|	0.15
218.583	0.00	0.00	0.105	o	|	|	|	|	0.15
218.667	0.00	0.00	0.105	o	|	|	|	|	0.15
218.750	0.00	0.00	0.105	o	|	|	|	|	0.15
218.833	0.00	0.00	0.105	o	|	|	|	|	0.15
218.917	0.00	0.00	0.105	o	|	|	|	|	0.15
219.000	0.00	0.00	0.105	o	|	|	|	|	0.15
219.083	0.00	0.00	0.105	o	|	|	|	|	0.15
219.167	0.00	0.00	0.105	o	|	|	|	|	0.15
219.250	0.00	0.00	0.104	o	|	|	|	|	0.15
219.333	0.00	0.00	0.104	o	|	|	|	|	0.15
219.417	0.00	0.00	0.104	o	|	|	|	|	0.15
219.500	0.00	0.00	0.104	o	|	|	|	|	0.15
219.583	0.00	0.00	0.104	o	|	|	|	|	0.15
219.667	0.00	0.00	0.104	o	|	|	|	|	0.15
219.750	0.00	0.00	0.104	o	|	|	|	|	0.15
219.833	0.00	0.00	0.104	o	|	|	|	|	0.15
219.917	0.00	0.00	0.104	o	|	|	|	|	0.15
220.000	0.00	0.00	0.104	o	|	|	|	|	0.15
220.083	0.00	0.00	0.104	o	|	|	|	|	0.15
220.167	0.00	0.00	0.104	o	|	|	|	|	0.15
220.250	0.00	0.00	0.104	o	|	|	|	|	0.15
220.333	0.00	0.00	0.104	o	|	|	|	|	0.15
220.417	0.00	0.00	0.104	o	|	|	|	|	0.15
220.500	0.00	0.00	0.104	o	|	|	|	|	0.15
220.583	0.00	0.00	0.104	o	|	|	|	|	0.15
220.667	0.00	0.00	0.104	o	|	|	|	|	0.15
220.750	0.00	0.00	0.104	o	|	|	|	|	0.15
220.833	0.00	0.00	0.104	o	|	|	|	|	0.15
220.917	0.00	0.00	0.104	o	|	|	|	|	0.15
221.000	0.00	0.00	0.104	o	|	|	|	|	0.15
221.083	0.00	0.00	0.104	o	|	|	|	|	0.15
221.167	0.00	0.00	0.104	o	|	|	|	|	0.15
221.250	0.00	0.00	0.104	o	|	|	|	|	0.15
221.333	0.00	0.00	0.104	o	|	|	|	|	0.15
221.417	0.00	0.00	0.104	o	|	|	|	|	0.15
221.500	0.00	0.00	0.104	o	|	|	|	|	0.15
221.583	0.00	0.00	0.104	o	|	|	|	|	0.15
221.667	0.00	0.00	0.104	o	|	|	|	|	0.15
221.750	0.00	0.00	0.104	o	|	|	|	|	0.15
221.833	0.00	0.00	0.104	o	|	|	|	|	0.15
221.917	0.00	0.00	0.104	o	|	|	|	|	0.15
222.000	0.00	0.00	0.104	o	|	|	|	|	0.15
222.083	0.00	0.00	0.104	o	|	|	|	|	0.15
222.167	0.00	0.00	0.104	o	|	|	|	|	0.15
222.250	0.00	0.00	0.104	o	|	|	|	|	0.15
222.333	0.00	0.00	0.104	o	|	|	|	|	0.15
222.417	0.00	0.00	0.104	o	|	|	|	|	0.15
222.500	0.00	0.00	0.104	o	|	|	|	|	0.15
222.583	0.00	0.00	0.104	o	|	|	|	|	0.15
222.667	0.00	0.00	0.104	o	|	|	|	|	0.15
222.750	0.00	0.00	0.104	o	|	|	|	|	0.15
222.833	0.00	0.00	0.104	o	|	|	|	|	0.15
222.917	0.00	0.00	0.104	o	|	|	|	|	0.15
223.000	0.00	0.00	0.104	o	|	|	|	|	0.15
223.083	0.00	0.00	0.104	o	|	|	|	|	0.15
223.167	0.00	0.00	0.104	o	|	|	|	|	0.15
223.250	0.00	0.00	0.104	o	|	|	|	|	0.15
223.333	0.00	0.00	0.104	o	|	|	|	|	0.15
223.417	0.00	0.00	0.104	o	|	|	|	|	0.15
223.500	0.00	0.00	0.104	o	|	|	|	|	0.15
223.583	0.00	0.00	0.104	o	|	|	|	|	0.15
223.667	0.00	0.00	0.104	o	|	|	|	|	0.15
223.750	0.00	0.00	0.104	o	|	|	|	|	0.15
223.833	0.00	0.00	0.104	o	|	|	|	|	0.15
223.917	0.00	0.00	0.104	o	|	|	|	|	0.15
224.000	0.00	0.00	0.104	o	|	|	|	|	0.15
224.083	0.00	0.00	0.104	o	|	|	|	|	0.15
224.167	0.00	0.00	0.104	o	|	|	|	|	0.15
224.250	0.00	0.00	0.104	o	|	|	|	|	0.15

```
224.333    0.00    0.00      0.104  o       |       |       |       |     0.15

        Remaining water in basin =    0.10 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                      Number of intervals =  2692
                      Time interval =    5.0 (Min.)
                      Maximum/Peak flow rate =        3.182 (CFS)
                      Total volume =       8.219 (Ac.Ft)
               Status of hydrographs being held in storage
                         Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
               Peak (CFS)      0.000     0.000     0.000     0.000     0.000
               Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
        ***********************************************************************

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BASIN ROUTING
100-YEAR, 24-HOUR -HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 02/17/22

EXETER BSS BUILDING 3
100 YR 24 HR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH100YR24100.rte

**********HYDROGRAPH DATA**********

Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 25.340 (CFS)
Total volume = 13.670 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

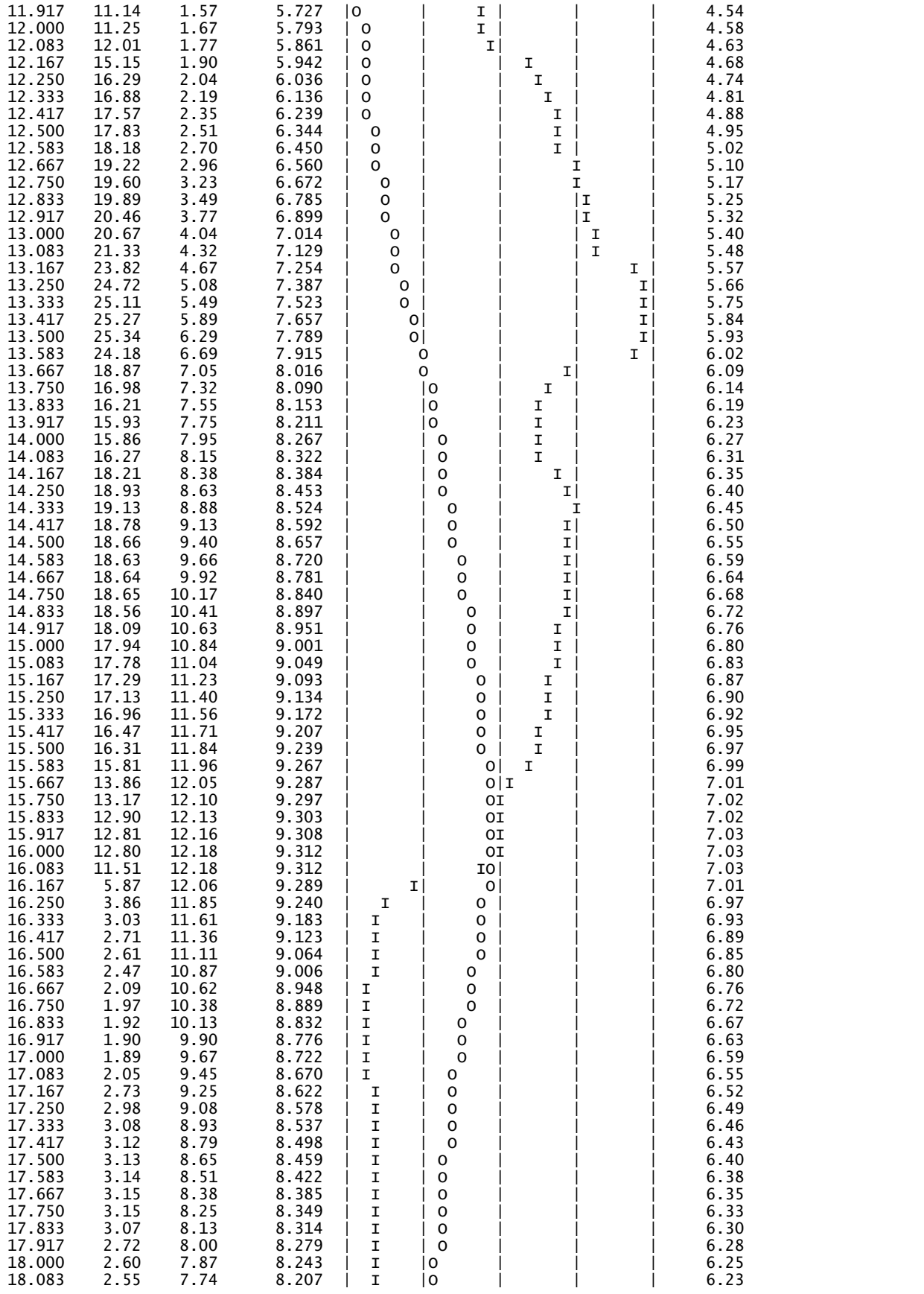
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
2.000	2.065	0.482	2.063	2.067
3.000	3.453	0.598	3.451	3.455
3.490	4.167	0.647	4.165	4.169
3.500	4.182	0.720	4.180	4.184
4.000	4.923	1.210	4.919	4.927
4.460	5.610	1.446	5.605	5.615
4.500	5.670	1.483	5.665	5.675
5.000	6.418	2.619	6.409	6.427
5.500	7.159	4.388	7.144	7.174
6.000	7.887	6.587	7.864	7.910
6.500	8.595	9.138	8.564	8.626
7.000	9.275	11.995	9.234	9.316
7.500	9.916	15.127	9.864	9.968
8.000	10.499	18.511	10.435	10.563
8.500	10.984	22.128	10.908	11.060
9.000	11.340	25.965	11.251	11.429

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 6.3 12.67 19.00 25.34	Depth (Ft.)
0.083	0.16	0.00	0.001	O	0.00
0.167	0.85	0.00	0.004	OI	0.01
0.250	1.09	0.00	0.011	OI	0.01
0.333	1.27	0.00	0.019	OI	0.03
0.417	1.66	0.00	0.029	O I	0.04
0.500	1.79	0.00	0.041	O I	0.06
0.583	1.85	0.00	0.053	O I	0.07
0.667	1.88	0.00	0.066	O I	0.09
0.750	1.88	0.00	0.079	O I	0.11
0.833	1.96	0.00	0.092	O I	0.13
0.917	2.31	0.00	0.107	O I	0.15
1.000	2.43	0.02	0.123	O I	0.17
1.083	2.41	0.03	0.140	O I	0.20
1.167	2.08	0.04	0.155	O I	0.22
1.250	1.96	0.05	0.169	O I	0.24
1.333	1.92	0.07	0.182	O I	0.25
1.417	1.90	0.08	0.194	O I	0.27
1.500	1.89	0.09	0.207	O I	0.29
1.583	1.89	0.10	0.219	O I	0.31
1.667	1.89	0.11	0.231	O I	0.32
1.750	1.89	0.12	0.244	O I	0.34
1.833	1.97	0.13	0.256	O I	0.36
1.917	2.31	0.14	0.270	O I	0.38
2.000	2.43	0.15	0.285	O I	0.40
2.083	2.49	0.17	0.301	O I	0.42
2.167	2.50	0.18	0.317	O I	0.45
2.250	2.51	0.19	0.333	O I	0.47
2.333	2.51	0.21	0.349	O I	0.49
2.417	2.52	0.21	0.365	O I	0.51
2.500	2.52	0.22	0.381	O I	0.53
2.583	2.59	0.22	0.397	O I	0.54
2.667	2.94	0.22	0.414	O I	0.56
2.750	3.06	0.23	0.433	O I	0.58
2.833	3.11	0.23	0.453	O I	0.60
2.917	3.13	0.24	0.473	O I	0.62
3.000	3.14	0.24	0.493	O I	0.64
3.083	3.14	0.25	0.513	O I	0.66
3.167	3.15	0.25	0.533	O I	0.68
3.250	3.15	0.26	0.553	O I	0.70
3.333	3.15	0.26	0.573	O I	0.72
3.417	3.15	0.27	0.592	O I	0.74
3.500	3.15	0.27	0.612	O I	0.76
3.583	3.15	0.28	0.632	O I	0.78
3.667	3.15	0.28	0.652	O I	0.80
3.750	3.15	0.29	0.671	O I	0.83
3.833	3.22	0.29	0.691	O I	0.85
3.917	3.57	0.30	0.713	O I	0.87
4.000	3.69	0.30	0.736	O I	0.89
4.083	3.74	0.31	0.759	O I	0.92
4.167	3.76	0.31	0.783	O I	0.94
4.250	3.77	0.32	0.807	O I	0.96
4.333	3.85	0.32	0.831	O I	0.99
4.417	4.20	0.33	0.856	O I	1.01
4.500	4.32	0.33	0.883	O I	1.03
4.583	4.37	0.34	0.911	O I	1.06
4.667	4.39	0.34	0.939	O I	1.08
4.750	4.40	0.34	0.967	O I	1.10
4.833	4.48	0.35	0.995	O I	1.13
4.917	4.83	0.35	1.025	O I	1.15
5.000	4.95	0.35	1.056	O I	1.18
5.083	4.84	0.36	1.087	O I	1.20
5.167	4.17	0.36	1.116	O I	1.22
5.250	3.93	0.36	1.141	O I	1.25
5.333	3.91	0.37	1.166	O I	1.27
5.417	4.22	0.37	1.191	O I	1.29
5.500	4.33	0.37	1.218	O I	1.31
5.583	4.45	0.38	1.246	O I	1.33

5.667	4.82	0.38	1.275	o	I	|	|	|	1.35
5.750	4.94	0.39	1.306	o	I	|	|	|	1.38
5.833	5.00	0.39	1.337	o	I	|	|	|	1.41
5.917	5.02	0.39	1.369	o	I	|	|	|	1.43
6.000	5.03	0.40	1.401	o	I	|	|	|	1.46
6.083	5.11	0.40	1.433	o	I	|	|	|	1.48
6.167	5.46	0.41	1.467	o	I	|	|	|	1.51
6.250	5.58	0.41	1.502	o	I	|	|	|	1.54
6.333	5.63	0.42	1.538	o	I	|	|	|	1.57
6.417	5.65	0.42	1.574	o	I	|	|	|	1.60
6.500	5.66	0.42	1.610	o	I	|	|	|	1.63
6.583	5.74	0.43	1.646	o	I	|	|	|	1.66
6.667	6.09	0.43	1.684	o	I	|	|	|	1.69
6.750	6.21	0.44	1.723	o	I	|	|	|	1.72
6.833	6.26	0.44	1.763	o	I	|	|	|	1.75
6.917	6.28	0.45	1.803	o	I	|	|	|	1.79
7.000	6.29	0.45	1.843	o	I	|	|	|	1.82
7.083	6.29	0.46	1.883	o	I	|	|	|	1.85
7.167	6.29	0.46	1.924	o	I	|	|	|	1.88
7.250	6.29	0.47	1.964	o	I	|	|	|	1.92
7.333	6.37	0.47	2.004	o	I	|	|	|	1.95
7.417	6.71	0.48	2.046	o	I	|	|	|	1.98
7.500	6.84	0.48	2.089	o	I	|	|	|	2.02
7.583	6.97	0.49	2.133	o	I	|	|	|	2.05
7.667	7.33	0.49	2.179	o	I	|	|	|	2.08
7.750	7.46	0.50	2.227	o	I	|	|	|	2.12
7.833	7.59	0.50	2.275	o	I	|	|	|	2.15
7.917	7.96	0.50	2.325	o	I	|	|	|	2.19
8.000	8.09	0.51	2.377	o	I	|	|	|	2.22
8.083	8.30	0.51	2.430	o	I	|	|	|	2.26
8.167	9.01	0.52	2.486	o	I	|	|	|	2.30
8.250	9.27	0.52	2.545	o	I	|	|	|	2.35
8.333	9.37	0.53	2.606	o	I	|	|	|	2.39
8.417	9.41	0.53	2.667	o	I	|	|	|	2.43
8.500	9.43	0.54	2.728	o	I	|	|	|	2.48
8.583	9.51	0.54	2.790	o	I	|	|	|	2.52
8.667	9.86	0.55	2.853	o	I	|	|	|	2.57
8.750	9.98	0.55	2.917	o	I	|	|	|	2.61
8.833	10.11	0.56	2.983	o	I	|	|	|	2.66
8.917	10.48	0.56	3.050	o	I	|	|	|	2.71
9.000	10.61	0.57	3.118	o	I	|	|	|	2.76
9.083	10.82	0.58	3.188	o	I	|	|	|	2.81
9.167	11.53	0.58	3.261	o	I	|	|	|	2.86
9.250	11.78	0.59	3.337	o	I	|	|	|	2.92
9.333	11.97	0.59	3.415	o	I	|	|	|	2.97
9.417	12.35	0.60	3.495	o	I	|	|	|	3.03
9.500	12.49	0.61	3.576	o	I	|	|	|	3.08
9.583	12.63	0.61	3.658	o	I	|	|	|	3.14
9.667	12.99	0.62	3.742	o	I	|	|	|	3.20
9.750	13.12	0.62	3.828	o	I	|	|	|	3.26
9.833	13.26	0.63	3.915	o	I	|	|	|	3.32
9.917	13.62	0.64	4.003	o	I	|	|	|	3.38
10.000	13.75	0.64	4.093	o	I	|	|	|	3.44
10.083	13.26	0.72	4.181	o	I	|	|	|	3.50
10.167	10.87	0.77	4.259	o	I	|	|	|	3.55
10.250	10.01	0.81	4.325	o	I	|	|	|	3.60
10.333	9.65	0.86	4.387	o	I	|	|	|	3.64
10.417	9.52	0.90	4.447	o	I	|	|	|	3.68
10.500	9.48	0.93	4.506	o	I	|	|	|	3.72
10.583	9.84	0.97	4.566	o	I	|	|	|	3.76
10.667	11.55	1.02	4.633	o	I	|	|	|	3.80
10.750	12.17	1.07	4.708	o	I	|	|	|	3.85
10.833	12.43	1.12	4.785	o	I	|	|	|	3.91
10.917	12.52	1.17	4.863	o	I	|	|	|	3.96
11.000	12.55	1.22	4.941	o	I	|	|	|	4.01
11.083	12.49	1.24	5.019	o	I	|	|	|	4.06
11.167	12.16	1.27	5.095	o	I	|	|	|	4.12
11.250	12.04	1.29	5.170	o	I	|	|	|	4.17
11.333	11.98	1.32	5.243	o	I	|	|	|	4.21
11.417	11.96	1.35	5.317	o	I	|	|	|	4.26
11.500	11.96	1.37	5.390	o	I	|	|	|	4.31
11.583	11.80	1.40	5.462	o	I	|	|	|	4.36
11.667	11.11	1.42	5.531	o	I	|	|	|	4.41
11.750	10.86	1.44	5.597	o	I	|	|	|	4.45
11.833	10.84	1.48	5.661	o	I	|	|	|	4.49



18.167	2.53	7.61	8.171	| I |o	|	|	|	6.20
18.250	2.52	7.49	8.137	| I |o	|	|	|	6.18
18.333	2.52	7.36	8.103	| I |o	|	|	|	6.15
18.417	2.52	7.25	8.070	| I |o	|	|	|	6.13
18.500	2.52	7.13	8.038	| I |o	|	|	|	6.11
18.583	2.44	7.02	8.006	| I o	|	|	|	6.08
18.667	2.09	6.90	7.974	| I o	|	|	|	6.06
18.750	1.97	6.78	7.941	| I o	|	|	|	6.04
18.833	1.84	6.66	7.907	| I o	|	|	|	6.01
18.917	1.48	6.55	7.873	|I o	|	|	|	5.99
19.000	1.35	6.44	7.838	|I o	|	|	|	5.97
19.083	1.37	6.34	7.804	|I o	|	|	|	5.94
19.167	1.69	6.24	7.771	| I o|	|	|	|	5.92
19.250	1.81	6.14	7.740	| I o|	|	|	|	5.90
19.333	1.94	6.06	7.711	| I o|	|	|	|	5.88
19.417	2.30	5.98	7.684	| I o|	|	|	|	5.86
19.500	2.43	5.90	7.660	| I o|	|	|	|	5.84
19.583	2.40	5.83	7.636	| I o|	|	|	|	5.83
19.667	2.08	5.76	7.612	| I o|	|	|	|	5.81
19.750	1.96	5.68	7.586	| I o|	|	|	|	5.79
19.833	1.84	5.60	7.560	| I o|	|	|	|	5.78
19.917	1.48	5.52	7.534	|I o |	|	|	|	5.76
20.000	1.35	5.43	7.506	|I o |	|	|	|	5.74
20.083	1.37	5.35	7.478	|I o |	|	|	|	5.72
20.167	1.69	5.27	7.452	| I o |	|	|	|	5.70
20.250	1.81	5.20	7.428	| I o |	|	|	|	5.68
20.333	1.86	5.13	7.405	| I o |	|	|	|	5.67
20.417	1.88	5.06	7.383	| I o |	|	|	|	5.65
20.500	1.88	5.00	7.361	| I o |	|	|	|	5.64
20.583	1.89	4.93	7.340	| I o |	|	|	|	5.62
20.667	1.89	4.87	7.319	| I o |	|	|	|	5.61
20.750	1.89	4.81	7.299	| I o |	|	|	|	5.60
20.833	1.81	4.75	7.278	| I o |	|	|	|	5.58
20.917	1.46	4.68	7.257	|I o |	|	|	|	5.57
21.000	1.34	4.62	7.235	|I o |	|	|	|	5.55
21.083	1.37	4.55	7.213	|I o |	|	|	|	5.54
21.167	1.69	4.49	7.192	| I o |	|	|	|	5.52
21.250	1.81	4.43	7.173	| I o |	|	|	|	5.51
21.333	1.78	4.38	7.155	| I o |	|	|	|	5.50
21.417	1.45	4.33	7.136	|I o |	|	|	|	5.48
21.500	1.33	4.29	7.116	|I o |	|	|	|	5.47
21.583	1.37	4.24	7.096	|I o |	|	|	|	5.46
21.667	1.69	4.19	7.078	| I o |	|	|	|	5.45
21.750	1.81	4.15	7.061	| I o |	|	|	|	5.43
21.833	1.78	4.12	7.045	| I o |	|	|	|	5.42
21.917	1.45	4.08	7.028	|I o |	|	|	|	5.41
22.000	1.33	4.03	7.010	|I o |	|	|	|	5.40
22.083	1.37	3.99	6.991	|I o |	|	|	|	5.39
22.167	1.69	3.95	6.974	| I o |	|	|	|	5.38
22.250	1.81	3.91	6.959	| I o |	|	|	|	5.37
22.333	1.78	3.88	6.945	| I o |	|	|	|	5.36
22.417	1.45	3.84	6.930	|I o |	|	|	|	5.35
22.500	1.33	3.80	6.913	|I o |	|	|	|	5.33
22.583	1.29	3.76	6.896	|I o |	|	|	|	5.32
22.667	1.27	3.72	6.879	|I o |	|	|	|	5.31
22.750	1.26	3.68	6.862	|I o |	|	|	|	5.30
22.833	1.26	3.64	6.846	|I o |	|	|	|	5.29
22.917	1.26	3.60	6.829	|I o |	|	|	|	5.28
23.000	1.26	3.56	6.813	|I o |	|	|	|	5.27
23.083	1.26	3.53	6.798	|I o |	|	|	|	5.26
23.167	1.26	3.49	6.782	|I o |	|	|	|	5.25
23.250	1.26	3.45	6.767	|I o |	|	|	|	5.24
23.333	1.26	3.42	6.752	|I o |	|	|	|	5.23
23.417	1.26	3.38	6.737	|I o |	|	|	|	5.22
23.500	1.26	3.35	6.723	|I o |	|	|	|	5.21
23.583	1.26	3.31	6.708	|I o |	|	|	|	5.20
23.667	1.26	3.28	6.694	|I o |	|	|	|	5.19
23.750	1.26	3.25	6.681	|I o |	|	|	|	5.18
23.833	1.26	3.21	6.667	|I o |	|	|	|	5.17
23.917	1.26	3.18	6.654	|I o |	|	|	|	5.16
24.000	1.26	3.15	6.641	|I o |	|	|	|	5.15
24.083	1.10	3.12	6.627	|I o |	|	|	|	5.14
24.167	0.41	3.08	6.611	I o |	|	|	|	5.13
24.250	0.16	3.03	6.592	I o |	|	|	|	5.12
24.333	0.06	2.99	6.572	I o |	|	|	|	5.10

24.417	0.02	2.94	6.552	I O	|	|	|	5.09
24.500	0.01	2.89	6.532	I O	|	|	|	5.08
24.583	0.00	2.84	6.512	I O	|	|	|	5.06
24.667	0.00	2.80	6.493	I O	|	|	|	5.05
24.750	0.00	2.75	6.474	I O	|	|	|	5.04
24.833	0.00	2.71	6.455	I O	|	|	|	5.02
24.917	0.00	2.66	6.436	I O	|	|	|	5.01
25.000	0.00	2.62	6.418	I O	|	|	|	5.00
25.083	0.00	2.59	6.400	I O	|	|	|	4.99
25.167	0.00	2.57	6.382	I O	|	|	|	4.98
25.250	0.00	2.54	6.365	I O	|	|	|	4.96
25.333	0.00	2.51	6.347	I O	|	|	|	4.95
25.417	0.00	2.49	6.330	I O	|	|	|	4.94
25.500	0.00	2.46	6.313	I O	|	|	|	4.93
25.583	0.00	2.43	6.296	I O	|	|	|	4.92
25.667	0.00	2.41	6.280	I O	|	|	|	4.91
25.750	0.00	2.38	6.263	I O	|	|	|	4.90
25.833	0.00	2.36	6.247	I O	|	|	|	4.89
25.917	0.00	2.33	6.231	I O	|	|	|	4.87
26.000	0.00	2.31	6.215	I O	|	|	|	4.86
26.083	0.00	2.29	6.199	I O	|	|	|	4.85
26.167	0.00	2.26	6.183	I O	|	|	|	4.84
26.250	0.00	2.24	6.168	I O	|	|	|	4.83
26.333	0.00	2.22	6.152	I O	|	|	|	4.82
26.417	0.00	2.19	6.137	I O	|	|	|	4.81
26.500	0.00	2.17	6.122	I O	|	|	|	4.80
26.583	0.00	2.15	6.107	I O	|	|	|	4.79
26.667	0.00	2.12	6.093	I O	|	|	|	4.78
26.750	0.00	2.10	6.078	I O	|	|	|	4.77
26.833	0.00	2.08	6.064	I O	|	|	|	4.76
26.917	0.00	2.06	6.049	I O	|	|	|	4.75
27.000	0.00	2.04	6.035	I O	|	|	|	4.74
27.083	0.00	2.02	6.021	I O	|	|	|	4.73
27.167	0.00	2.00	6.008	I O	|	|	|	4.73
27.250	0.00	1.97	5.994	I O	|	|	|	4.72
27.333	0.00	1.95	5.980	I O	|	|	|	4.71
27.417	0.00	1.93	5.967	I O	|	|	|	4.70
27.500	0.00	1.91	5.954	I O	|	|	|	4.69
27.583	0.00	1.89	5.941	I O	|	|	|	4.68
27.667	0.00	1.87	5.928	I O	|	|	|	4.67
27.750	0.00	1.85	5.915	I O	|	|	|	4.66
27.833	0.00	1.84	5.902	I O	|	|	|	4.66
27.917	0.00	1.82	5.889	I O	|	|	|	4.65
28.000	0.00	1.80	5.877	I O	|	|	|	4.64
28.083	0.00	1.78	5.865	I O	|	|	|	4.63
28.167	0.00	1.76	5.853	I O	|	|	|	4.62
28.250	0.00	1.74	5.840	I O	|	|	|	4.61
28.333	0.00	1.72	5.829	I O	|	|	|	4.61
28.417	0.00	1.71	5.817	I O	|	|	|	4.60
28.500	0.00	1.69	5.805	I O	|	|	|	4.59
28.583	0.00	1.67	5.793	I O	|	|	|	4.58
28.667	0.00	1.65	5.782	I O	|	|	|	4.57
28.750	0.00	1.64	5.771	I O	|	|	|	4.57
28.833	0.00	1.62	5.759	I O	|	|	|	4.56
28.917	0.00	1.60	5.748	I O	|	|	|	4.55
29.000	0.00	1.59	5.737	I O	|	|	|	4.55
29.083	0.00	1.57	5.727	IO	|	|	|	4.54
29.167	0.00	1.55	5.716	IO	|	|	|	4.53
29.250	0.00	1.54	5.705	IO	|	|	|	4.52
29.333	0.00	1.52	5.695	IO	|	|	|	4.52
29.417	0.00	1.50	5.684	IO	|	|	|	4.51
29.500	0.00	1.49	5.674	IO	|	|	|	4.50
29.583	0.00	1.48	5.664	IO	|	|	|	4.50
29.667	0.00	1.47	5.654	IO	|	|	|	4.49
29.750	0.00	1.47	5.643	IO	|	|	|	4.48
29.833	0.00	1.46	5.633	IO	|	|	|	4.48
29.917	0.00	1.45	5.623	IO	|	|	|	4.47
30.000	0.00	1.45	5.613	IO	|	|	|	4.46
30.083	0.00	1.44	5.603	IO	|	|	|	4.46
30.167	0.00	1.44	5.593	IO	|	|	|	4.45
30.250	0.00	1.44	5.584	IO	|	|	|	4.44
30.333	0.00	1.43	5.574	IO	|	|	|	4.44
30.417	0.00	1.43	5.564	IO	|	|	|	4.43
30.500	0.00	1.43	5.554	IO	|	|	|	4.42
30.583	0.00	1.42	5.544	IO	|	|	|	4.42

30.667	0.00	1.42	5.534	IO					4.41
30.750	0.00	1.42	5.525	IO					4.40
30.833	0.00	1.41	5.515	IO					4.40
30.917	0.00	1.41	5.505	IO					4.39
31.000	0.00	1.41	5.495	IO					4.38
31.083	0.00	1.40	5.486	IO					4.38
31.167	0.00	1.40	5.476	IO					4.37
31.250	0.00	1.40	5.466	IO					4.36
31.333	0.00	1.39	5.457	IO					4.36
31.417	0.00	1.39	5.447	IO					4.35
31.500	0.00	1.39	5.438	IO					4.34
31.583	0.00	1.38	5.428	IO					4.34
31.667	0.00	1.38	5.419	IO					4.33
31.750	0.00	1.38	5.409	IO					4.33
31.833	0.00	1.37	5.400	IO					4.32
31.917	0.00	1.37	5.390	IO					4.31
32.000	0.00	1.37	5.381	IO					4.31
32.083	0.00	1.36	5.371	IO					4.30
32.167	0.00	1.36	5.362	IO					4.29
32.250	0.00	1.36	5.353	IO					4.29
32.333	0.00	1.35	5.343	IO					4.28
32.417	0.00	1.35	5.334	IO					4.28
32.500	0.00	1.35	5.325	IO					4.27
32.583	0.00	1.34	5.315	IO					4.26
32.667	0.00	1.34	5.306	IO					4.26
32.750	0.00	1.34	5.297	IO					4.25
32.833	0.00	1.34	5.288	IO					4.24
32.917	0.00	1.33	5.279	IO					4.24
33.000	0.00	1.33	5.269	IO					4.23
33.083	0.00	1.33	5.260	IO					4.23
33.167	0.00	1.32	5.251	IO					4.22
33.250	0.00	1.32	5.242	IO					4.21
33.333	0.00	1.32	5.233	IO					4.21
33.417	0.00	1.31	5.224	IO					4.20
33.500	0.00	1.31	5.215	IO					4.20
33.583	0.00	1.31	5.206	IO					4.19
33.667	0.00	1.30	5.197	IO					4.18
33.750	0.00	1.30	5.188	IO					4.18
33.833	0.00	1.30	5.179	IO					4.17
33.917	0.00	1.29	5.170	IO					4.17
34.000	0.00	1.29	5.161	IO					4.16
34.083	0.00	1.29	5.152	IO					4.15
34.167	0.00	1.29	5.143	IO					4.15
34.250	0.00	1.28	5.134	IO					4.14
34.333	0.00	1.28	5.126	IO					4.14
34.417	0.00	1.28	5.117	IO					4.13
34.500	0.00	1.27	5.108	IO					4.12
34.583	0.00	1.27	5.099	IO					4.12
34.667	0.00	1.27	5.091	IO					4.11
34.750	0.00	1.26	5.082	IO					4.11
34.833	0.00	1.26	5.073	IO					4.10
34.917	0.00	1.26	5.064	IO					4.09
35.000	0.00	1.26	5.056	IO					4.09
35.083	0.00	1.25	5.047	IO					4.08
35.167	0.00	1.25	5.039	IO					4.08
35.250	0.00	1.25	5.030	IO					4.07
35.333	0.00	1.24	5.021	IO					4.07
35.417	0.00	1.24	5.013	IO					4.06
35.500	0.00	1.24	5.004	IO					4.05
35.583	0.00	1.24	4.996	IO					4.05
35.667	0.00	1.23	4.987	IO					4.04
35.750	0.00	1.23	4.979	IO					4.04
35.833	0.00	1.23	4.970	IO					4.03
35.917	0.00	1.22	4.962	IO					4.03
36.000	0.00	1.22	4.954	IO					4.02
36.083	0.00	1.22	4.945	IO					4.01
36.167	0.00	1.21	4.937	IO					4.01
36.250	0.00	1.21	4.928	IO					4.00
36.333	0.00	1.21	4.920	IO					4.00
36.417	0.00	1.20	4.912	IO					3.99
36.500	0.00	1.20	4.903	IO					3.99
36.583	0.00	1.19	4.895	IO					3.98
36.667	0.00	1.19	4.887	IO					3.98
36.750	0.00	1.18	4.879	IO					3.97
36.833	0.00	1.18	4.871	IO					3.96

36.917	0.00	1.17	4.863	IO					3.96
37.000	0.00	1.16	4.855	IO					3.95
37.083	0.00	1.16	4.847	IO					3.95
37.167	0.00	1.15	4.839	IO					3.94
37.250	0.00	1.15	4.831	IO					3.94
37.333	0.00	1.14	4.823	IO					3.93
37.417	0.00	1.14	4.815	IO					3.93
37.500	0.00	1.13	4.807	IO					3.92
37.583	0.00	1.13	4.799	IO					3.92
37.667	0.00	1.12	4.792	IO					3.91
37.750	0.00	1.12	4.784	IO					3.91
37.833	0.00	1.11	4.776	IO					3.90
37.917	0.00	1.11	4.769	IO					3.90
38.000	0.00	1.10	4.761	IO					3.89
38.083	0.00	1.10	4.753	IO					3.89
38.167	0.00	1.09	4.746	IO					3.88
38.250	0.00	1.09	4.738	IO					3.88
38.333	0.00	1.08	4.731	IO					3.87
38.417	0.00	1.08	4.723	IO					3.87
38.500	0.00	1.07	4.716	IO					3.86
38.583	0.00	1.07	4.709	IO					3.86
38.667	0.00	1.06	4.701	IO					3.85
38.750	0.00	1.06	4.694	IO					3.85
38.833	0.00	1.05	4.687	IO					3.84
38.917	0.00	1.05	4.680	IO					3.84
39.000	0.00	1.04	4.672	IO					3.83
39.083	0.00	1.04	4.665	IO					3.83
39.167	0.00	1.03	4.658	IO					3.82
39.250	0.00	1.03	4.651	IO					3.82
39.333	0.00	1.03	4.644	IO					3.81
39.417	0.00	1.02	4.637	IO					3.81
39.500	0.00	1.02	4.630	IO					3.80
39.583	0.00	1.01	4.623	IO					3.80
39.667	0.00	1.01	4.616	IO					3.79
39.750	0.00	1.00	4.609	IO					3.79
39.833	0.00	1.00	4.602	IO					3.78
39.917	0.00	0.99	4.595	IO					3.78
40.000	0.00	0.99	4.588	IO					3.77
40.083	0.00	0.98	4.582	IO					3.77
40.167	0.00	0.98	4.575	IO					3.77
40.250	0.00	0.98	4.568	IO					3.76
40.333	0.00	0.97	4.561	IO					3.76
40.417	0.00	0.97	4.555	IO					3.75
40.500	0.00	0.96	4.548	IO					3.75
40.583	0.00	0.96	4.541	IO					3.74
40.667	0.00	0.95	4.535	IO					3.74
40.750	0.00	0.95	4.528	IO					3.73
40.833	0.00	0.94	4.522	IO					3.73
40.917	0.00	0.94	4.515	IO					3.72
41.000	0.00	0.94	4.509	IO					3.72
41.083	0.00	0.93	4.502	IO					3.72
41.167	0.00	0.93	4.496	IO					3.71
41.250	0.00	0.92	4.490	IO					3.71
41.333	0.00	0.92	4.483	IO					3.70
41.417	0.00	0.92	4.477	IO					3.70
41.500	0.00	0.91	4.471	IO					3.69
41.583	0.00	0.91	4.464	IO					3.69
41.667	0.00	0.90	4.458	IO					3.69
41.750	0.00	0.90	4.452	IO					3.68
41.833	0.00	0.89	4.446	IO					3.68
41.917	0.00	0.89	4.440	IO					3.67
42.000	0.00	0.89	4.434	IO					3.67
42.083	0.00	0.88	4.427	IO					3.67
42.167	0.00	0.88	4.421	IO					3.66
42.250	0.00	0.87	4.415	IO					3.66
42.333	0.00	0.87	4.409	IO					3.65
42.417	0.00	0.87	4.403	IO					3.65
42.500	0.00	0.86	4.397	IO					3.65
42.583	0.00	0.86	4.391	IO					3.64
42.667	0.00	0.85	4.386	IO					3.64
42.750	0.00	0.85	4.380	IO					3.63
42.833	0.00	0.85	4.374	IO					3.63
42.917	0.00	0.84	4.368	IO					3.63
43.000	0.00	0.84	4.362	IO					3.62
43.083	0.00	0.84	4.356	IO					3.62

43.167	0.00	0.83	4.351	IO					3.61
43.250	0.00	0.83	4.345	IO					3.61
43.333	0.00	0.82	4.339	IO					3.61
43.417	0.00	0.82	4.334	IO					3.60
43.500	0.00	0.82	4.328	IO					3.60
43.583	0.00	0.81	4.322	IO					3.59
43.667	0.00	0.81	4.317	IO					3.59
43.750	0.00	0.81	4.311	IO					3.59
43.833	0.00	0.80	4.306	IO					3.58
43.917	0.00	0.80	4.300	IO					3.58
44.000	0.00	0.79	4.295	IO					3.58
44.083	0.00	0.79	4.289	O					3.57
44.167	0.00	0.79	4.284	O					3.57
44.250	0.00	0.78	4.278	O					3.57
44.333	0.00	0.78	4.273	O					3.56
44.417	0.00	0.78	4.268	O					3.56
44.500	0.00	0.77	4.262	O					3.55
44.583	0.00	0.77	4.257	O					3.55
44.667	0.00	0.77	4.252	O					3.55
44.750	0.00	0.76	4.246	O					3.54
44.833	0.00	0.76	4.241	O					3.54
44.917	0.00	0.76	4.236	O					3.54
45.000	0.00	0.75	4.231	O					3.53
45.083	0.00	0.75	4.226	O					3.53
45.167	0.00	0.75	4.221	O					3.53
45.250	0.00	0.74	4.215	O					3.52
45.333	0.00	0.74	4.210	O					3.52
45.417	0.00	0.74	4.205	O					3.52
45.500	0.00	0.73	4.200	O					3.51
45.583	0.00	0.73	4.195	O					3.51
45.667	0.00	0.73	4.190	O					3.51
45.750	0.00	0.72	4.185	O					3.50
45.833	0.00	0.71	4.180	O					3.50
45.917	0.00	0.69	4.175	O					3.50
46.000	0.00	0.67	4.171	O					3.49
46.083	0.00	0.65	4.166	O					3.49
46.167	0.00	0.65	4.162	O					3.49
46.250	0.00	0.65	4.157	O					3.48
46.333	0.00	0.65	4.153	O					3.48
46.417	0.00	0.65	4.148	O					3.48
46.500	0.00	0.65	4.144	O					3.47
46.583	0.00	0.65	4.140	O					3.47
46.667	0.00	0.64	4.135	O					3.47
46.750	0.00	0.64	4.131	O					3.47
46.833	0.00	0.64	4.126	O					3.46
46.917	0.00	0.64	4.122	O					3.46
47.000	0.00	0.64	4.117	O					3.46
47.083	0.00	0.64	4.113	O					3.45
47.167	0.00	0.64	4.108	O					3.45
47.250	0.00	0.64	4.104	O					3.45
47.333	0.00	0.64	4.100	O					3.44
47.417	0.00	0.64	4.095	O					3.44
47.500	0.00	0.64	4.091	O					3.44
47.583	0.00	0.64	4.086	O					3.43
47.667	0.00	0.64	4.082	O					3.43
47.750	0.00	0.64	4.078	O					3.43
47.833	0.00	0.64	4.073	O					3.43
47.917	0.00	0.64	4.069	O					3.42
48.000	0.00	0.64	4.064	O					3.42
48.083	0.00	0.64	4.060	O					3.42
48.167	0.00	0.64	4.055	O					3.41
48.250	0.00	0.64	4.051	O					3.41
48.333	0.00	0.64	4.047	O					3.41
48.417	0.00	0.64	4.042	O					3.40
48.500	0.00	0.64	4.038	O					3.40
48.583	0.00	0.64	4.033	O					3.40
48.667	0.00	0.64	4.029	O					3.40
48.750	0.00	0.64	4.025	O					3.39
48.833	0.00	0.64	4.020	O					3.39
48.917	0.00	0.64	4.016	O					3.39
49.000	0.00	0.64	4.012	O					3.38
49.083	0.00	0.64	4.007	O					3.38
49.167	0.00	0.64	4.003	O					3.38
49.250	0.00	0.64	3.998	O					3.37
49.333	0.00	0.64	3.994	O					3.37

49.417	0.00	0.63	3.990	o	|	|	|	|	3.37
49.500	0.00	0.63	3.985	o	|	|	|	|	3.37
49.583	0.00	0.63	3.981	o	|	|	|	|	3.36
49.667	0.00	0.63	3.977	o	|	|	|	|	3.36
49.750	0.00	0.63	3.972	o	|	|	|	|	3.36
49.833	0.00	0.63	3.968	o	|	|	|	|	3.35
49.917	0.00	0.63	3.963	o	|	|	|	|	3.35
50.000	0.00	0.63	3.959	o	|	|	|	|	3.35
50.083	0.00	0.63	3.955	o	|	|	|	|	3.34
50.167	0.00	0.63	3.950	o	|	|	|	|	3.34
50.250	0.00	0.63	3.946	o	|	|	|	|	3.34
50.333	0.00	0.63	3.942	o	|	|	|	|	3.34
50.417	0.00	0.63	3.937	o	|	|	|	|	3.33
50.500	0.00	0.63	3.933	o	|	|	|	|	3.33
50.583	0.00	0.63	3.929	o	|	|	|	|	3.33
50.667	0.00	0.63	3.924	o	|	|	|	|	3.32
50.750	0.00	0.63	3.920	o	|	|	|	|	3.32
50.833	0.00	0.63	3.916	o	|	|	|	|	3.32
50.917	0.00	0.63	3.911	o	|	|	|	|	3.31
51.000	0.00	0.63	3.907	o	|	|	|	|	3.31
51.083	0.00	0.63	3.903	o	|	|	|	|	3.31
51.167	0.00	0.63	3.898	o	|	|	|	|	3.31
51.250	0.00	0.63	3.894	o	|	|	|	|	3.30
51.333	0.00	0.63	3.890	o	|	|	|	|	3.30
51.417	0.00	0.63	3.885	o	|	|	|	|	3.30
51.500	0.00	0.63	3.881	o	|	|	|	|	3.29
51.583	0.00	0.63	3.877	o	|	|	|	|	3.29
51.667	0.00	0.63	3.872	o	|	|	|	|	3.29
51.750	0.00	0.63	3.868	o	|	|	|	|	3.28
51.833	0.00	0.63	3.864	o	|	|	|	|	3.28
51.917	0.00	0.63	3.859	o	|	|	|	|	3.28
52.000	0.00	0.63	3.855	o	|	|	|	|	3.28
52.083	0.00	0.63	3.851	o	|	|	|	|	3.27
52.167	0.00	0.63	3.847	o	|	|	|	|	3.27
52.250	0.00	0.62	3.842	o	|	|	|	|	3.27
52.333	0.00	0.62	3.838	o	|	|	|	|	3.26
52.417	0.00	0.62	3.834	o	|	|	|	|	3.26
52.500	0.00	0.62	3.829	o	|	|	|	|	3.26
52.583	0.00	0.62	3.825	o	|	|	|	|	3.26
52.667	0.00	0.62	3.821	o	|	|	|	|	3.25
52.750	0.00	0.62	3.816	o	|	|	|	|	3.25
52.833	0.00	0.62	3.812	o	|	|	|	|	3.25
52.917	0.00	0.62	3.808	o	|	|	|	|	3.24
53.000	0.00	0.62	3.804	o	|	|	|	|	3.24
53.083	0.00	0.62	3.799	o	|	|	|	|	3.24
53.167	0.00	0.62	3.795	o	|	|	|	|	3.23
53.250	0.00	0.62	3.791	o	|	|	|	|	3.23
53.333	0.00	0.62	3.786	o	|	|	|	|	3.23
53.417	0.00	0.62	3.782	o	|	|	|	|	3.23
53.500	0.00	0.62	3.778	o	|	|	|	|	3.22
53.583	0.00	0.62	3.774	o	|	|	|	|	3.22
53.667	0.00	0.62	3.769	o	|	|	|	|	3.22
53.750	0.00	0.62	3.765	o	|	|	|	|	3.21
53.833	0.00	0.62	3.761	o	|	|	|	|	3.21
53.917	0.00	0.62	3.757	o	|	|	|	|	3.21
54.000	0.00	0.62	3.752	o	|	|	|	|	3.21
54.083	0.00	0.62	3.748	o	|	|	|	|	3.20
54.167	0.00	0.62	3.744	o	|	|	|	|	3.20
54.250	0.00	0.62	3.740	o	|	|	|	|	3.20
54.333	0.00	0.62	3.735	o	|	|	|	|	3.19
54.417	0.00	0.62	3.731	o	|	|	|	|	3.19
54.500	0.00	0.62	3.727	o	|	|	|	|	3.19
54.583	0.00	0.62	3.723	o	|	|	|	|	3.18
54.667	0.00	0.62	3.718	o	|	|	|	|	3.18
54.750	0.00	0.62	3.714	o	|	|	|	|	3.18
54.833	0.00	0.62	3.710	o	|	|	|	|	3.18
54.917	0.00	0.62	3.706	o	|	|	|	|	3.17
55.000	0.00	0.62	3.701	o	|	|	|	|	3.17
55.083	0.00	0.61	3.697	o	|	|	|	|	3.17
55.167	0.00	0.61	3.693	o	|	|	|	|	3.16
55.250	0.00	0.61	3.689	o	|	|	|	|	3.16
55.333	0.00	0.61	3.684	o	|	|	|	|	3.16
55.417	0.00	0.61	3.680	o	|	|	|	|	3.16
55.500	0.00	0.61	3.676	o	|	|	|	|	3.15
55.583	0.00	0.61	3.672	o	|	|	|	|	3.15

55.667	0.00	0.61	3.667	o	|	|	|	|	3.15
55.750	0.00	0.61	3.663	o	|	|	|	|	3.14
55.833	0.00	0.61	3.659	o	|	|	|	|	3.14
55.917	0.00	0.61	3.655	o	|	|	|	|	3.14
56.000	0.00	0.61	3.651	o	|	|	|	|	3.14
56.083	0.00	0.61	3.646	o	|	|	|	|	3.13
56.167	0.00	0.61	3.642	o	|	|	|	|	3.13
56.250	0.00	0.61	3.638	o	|	|	|	|	3.13
56.333	0.00	0.61	3.634	o	|	|	|	|	3.12
56.417	0.00	0.61	3.630	o	|	|	|	|	3.12
56.500	0.00	0.61	3.625	o	|	|	|	|	3.12
56.583	0.00	0.61	3.621	o	|	|	|	|	3.12
56.667	0.00	0.61	3.617	o	|	|	|	|	3.11
56.750	0.00	0.61	3.613	o	|	|	|	|	3.11
56.833	0.00	0.61	3.609	o	|	|	|	|	3.11
56.917	0.00	0.61	3.604	o	|	|	|	|	3.10
57.000	0.00	0.61	3.600	o	|	|	|	|	3.10
57.083	0.00	0.61	3.596	o	|	|	|	|	3.10
57.167	0.00	0.61	3.592	o	|	|	|	|	3.10
57.250	0.00	0.61	3.588	o	|	|	|	|	3.09
57.333	0.00	0.61	3.583	o	|	|	|	|	3.09
57.417	0.00	0.61	3.579	o	|	|	|	|	3.09
57.500	0.00	0.61	3.575	o	|	|	|	|	3.08
57.583	0.00	0.61	3.571	o	|	|	|	|	3.08
57.667	0.00	0.61	3.567	o	|	|	|	|	3.08
57.750	0.00	0.61	3.563	o	|	|	|	|	3.08
57.833	0.00	0.61	3.558	o	|	|	|	|	3.07
57.917	0.00	0.60	3.554	o	|	|	|	|	3.07
58.000	0.00	0.60	3.550	o	|	|	|	|	3.07
58.083	0.00	0.60	3.546	o	|	|	|	|	3.06
58.167	0.00	0.60	3.542	o	|	|	|	|	3.06
58.250	0.00	0.60	3.538	o	|	|	|	|	3.06
58.333	0.00	0.60	3.533	o	|	|	|	|	3.06
58.417	0.00	0.60	3.529	o	|	|	|	|	3.05
58.500	0.00	0.60	3.525	o	|	|	|	|	3.05
58.583	0.00	0.60	3.521	o	|	|	|	|	3.05
58.667	0.00	0.60	3.517	o	|	|	|	|	3.04
58.750	0.00	0.60	3.513	o	|	|	|	|	3.04
58.833	0.00	0.60	3.509	o	|	|	|	|	3.04
58.917	0.00	0.60	3.504	o	|	|	|	|	3.04
59.000	0.00	0.60	3.500	o	|	|	|	|	3.03
59.083	0.00	0.60	3.496	o	|	|	|	|	3.03
59.167	0.00	0.60	3.492	o	|	|	|	|	3.03
59.250	0.00	0.60	3.488	o	|	|	|	|	3.02
59.333	0.00	0.60	3.484	o	|	|	|	|	3.02
59.417	0.00	0.60	3.480	o	|	|	|	|	3.02
59.500	0.00	0.60	3.475	o	|	|	|	|	3.02
59.583	0.00	0.60	3.471	o	|	|	|	|	3.01
59.667	0.00	0.60	3.467	o	|	|	|	|	3.01
59.750	0.00	0.60	3.463	o	|	|	|	|	3.01
59.833	0.00	0.60	3.459	o	|	|	|	|	3.00
59.917	0.00	0.60	3.455	o	|	|	|	|	3.00
60.000	0.00	0.60	3.451	o	|	|	|	|	3.00
60.083	0.00	0.60	3.447	o	|	|	|	|	3.00
60.167	0.00	0.60	3.443	o	|	|	|	|	2.99
60.250	0.00	0.60	3.438	o	|	|	|	|	2.99
60.333	0.00	0.60	3.434	o	|	|	|	|	2.99
60.417	0.00	0.60	3.430	o	|	|	|	|	2.98
60.500	0.00	0.60	3.426	o	|	|	|	|	2.98
60.583	0.00	0.60	3.422	o	|	|	|	|	2.98
60.667	0.00	0.60	3.418	o	|	|	|	|	2.97
60.750	0.00	0.59	3.414	o	|	|	|	|	2.97
60.833	0.00	0.59	3.410	o	|	|	|	|	2.97
60.917	0.00	0.59	3.406	o	|	|	|	|	2.97
61.000	0.00	0.59	3.402	o	|	|	|	|	2.96
61.083	0.00	0.59	3.397	o	|	|	|	|	2.96
61.167	0.00	0.59	3.393	o	|	|	|	|	2.96
61.250	0.00	0.59	3.389	o	|	|	|	|	2.95
61.333	0.00	0.59	3.385	o	|	|	|	|	2.95
61.417	0.00	0.59	3.381	o	|	|	|	|	2.95
61.500	0.00	0.59	3.377	o	|	|	|	|	2.95
61.583	0.00	0.59	3.373	o	|	|	|	|	2.94
61.667	0.00	0.59	3.369	o	|	|	|	|	2.94
61.750	0.00	0.59	3.365	o	|	|	|	|	2.94
61.833	0.00	0.59	3.361	o	|	|	|	|	2.93

61.917	0.00	0.59	3.357	o	|	|	|	2.93
62.000	0.00	0.59	3.353	o	|	|	|	2.93
62.083	0.00	0.59	3.349	o	|	|	|	2.92
62.167	0.00	0.59	3.344	o	|	|	|	2.92
62.250	0.00	0.59	3.340	o	|	|	|	2.92
62.333	0.00	0.59	3.336	o	|	|	|	2.92
62.417	0.00	0.59	3.332	o	|	|	|	2.91
62.500	0.00	0.59	3.328	o	|	|	|	2.91
62.583	0.00	0.59	3.324	o	|	|	|	2.91
62.667	0.00	0.59	3.320	o	|	|	|	2.90
62.750	0.00	0.59	3.316	o	|	|	|	2.90
62.833	0.00	0.59	3.312	o	|	|	|	2.90
62.917	0.00	0.59	3.308	o	|	|	|	2.90
63.000	0.00	0.59	3.304	o	|	|	|	2.89
63.083	0.00	0.59	3.300	o	|	|	|	2.89
63.167	0.00	0.58	3.296	o	|	|	|	2.89
63.250	0.00	0.58	3.292	o	|	|	|	2.88
63.333	0.00	0.58	3.288	o	|	|	|	2.88
63.417	0.00	0.58	3.284	o	|	|	|	2.88
63.500	0.00	0.58	3.280	o	|	|	|	2.88
63.583	0.00	0.58	3.276	o	|	|	|	2.87
63.667	0.00	0.58	3.272	o	|	|	|	2.87
63.750	0.00	0.58	3.268	o	|	|	|	2.87
63.833	0.00	0.58	3.264	o	|	|	|	2.86
63.917	0.00	0.58	3.260	o	|	|	|	2.86
64.000	0.00	0.58	3.256	o	|	|	|	2.86
64.083	0.00	0.58	3.252	o	|	|	|	2.86
64.167	0.00	0.58	3.248	o	|	|	|	2.85
64.250	0.00	0.58	3.244	o	|	|	|	2.85
64.333	0.00	0.58	3.240	o	|	|	|	2.85
64.417	0.00	0.58	3.236	o	|	|	|	2.84
64.500	0.00	0.58	3.232	o	|	|	|	2.84
64.583	0.00	0.58	3.228	o	|	|	|	2.84
64.667	0.00	0.58	3.224	o	|	|	|	2.83
64.750	0.00	0.58	3.220	o	|	|	|	2.83
64.833	0.00	0.58	3.216	o	|	|	|	2.83
64.917	0.00	0.58	3.212	o	|	|	|	2.83
65.000	0.00	0.58	3.208	o	|	|	|	2.82
65.083	0.00	0.58	3.204	o	|	|	|	2.82
65.167	0.00	0.58	3.200	o	|	|	|	2.82
65.250	0.00	0.58	3.196	o	|	|	|	2.81
65.333	0.00	0.58	3.192	o	|	|	|	2.81
65.417	0.00	0.58	3.188	o	|	|	|	2.81
65.500	0.00	0.58	3.184	o	|	|	|	2.81
65.583	0.00	0.58	3.180	o	|	|	|	2.80
65.667	0.00	0.57	3.176	o	|	|	|	2.80
65.750	0.00	0.57	3.172	o	|	|	|	2.80
65.833	0.00	0.57	3.168	o	|	|	|	2.79
65.917	0.00	0.57	3.164	o	|	|	|	2.79
66.000	0.00	0.57	3.160	o	|	|	|	2.79
66.083	0.00	0.57	3.156	o	|	|	|	2.79
66.167	0.00	0.57	3.152	o	|	|	|	2.78
66.250	0.00	0.57	3.149	o	|	|	|	2.78
66.333	0.00	0.57	3.145	o	|	|	|	2.78
66.417	0.00	0.57	3.141	o	|	|	|	2.77
66.500	0.00	0.57	3.137	o	|	|	|	2.77
66.583	0.00	0.57	3.133	o	|	|	|	2.77
66.667	0.00	0.57	3.129	o	|	|	|	2.77
66.750	0.00	0.57	3.125	o	|	|	|	2.76
66.833	0.00	0.57	3.121	o	|	|	|	2.76
66.917	0.00	0.57	3.117	o	|	|	|	2.76
67.000	0.00	0.57	3.113	o	|	|	|	2.76
67.083	0.00	0.57	3.109	o	|	|	|	2.75
67.167	0.00	0.57	3.105	o	|	|	|	2.75
67.250	0.00	0.57	3.101	o	|	|	|	2.75
67.333	0.00	0.57	3.097	o	|	|	|	2.74
67.417	0.00	0.57	3.094	o	|	|	|	2.74
67.500	0.00	0.57	3.090	o	|	|	|	2.74
67.583	0.00	0.57	3.086	o	|	|	|	2.74
67.667	0.00	0.57	3.082	o	|	|	|	2.73
67.750	0.00	0.57	3.078	o	|	|	|	2.73
67.833	0.00	0.57	3.074	o	|	|	|	2.73
67.917	0.00	0.57	3.070	o	|	|	|	2.72
68.000	0.00	0.57	3.066	o	|	|	|	2.72
68.083	0.00	0.57	3.062	o	|	|	|	2.72

68.167	0.00	0.57	3.058	o	|	|	|	|	2.72
68.250	0.00	0.56	3.055	o	|	|	|	|	2.71
68.333	0.00	0.56	3.051	o	|	|	|	|	2.71
68.417	0.00	0.56	3.047	o	|	|	|	|	2.71
68.500	0.00	0.56	3.043	o	|	|	|	|	2.70
68.583	0.00	0.56	3.039	o	|	|	|	|	2.70
68.667	0.00	0.56	3.035	o	|	|	|	|	2.70
68.750	0.00	0.56	3.031	o	|	|	|	|	2.70
68.833	0.00	0.56	3.027	o	|	|	|	|	2.69
68.917	0.00	0.56	3.023	o	|	|	|	|	2.69
69.000	0.00	0.56	3.020	o	|	|	|	|	2.69
69.083	0.00	0.56	3.016	o	|	|	|	|	2.68
69.167	0.00	0.56	3.012	o	|	|	|	|	2.68
69.250	0.00	0.56	3.008	o	|	|	|	|	2.68
69.333	0.00	0.56	3.004	o	|	|	|	|	2.68
69.417	0.00	0.56	3.000	o	|	|	|	|	2.67
69.500	0.00	0.56	2.996	o	|	|	|	|	2.67
69.583	0.00	0.56	2.993	o	|	|	|	|	2.67
69.667	0.00	0.56	2.989	o	|	|	|	|	2.67
69.750	0.00	0.56	2.985	o	|	|	|	|	2.66
69.833	0.00	0.56	2.981	o	|	|	|	|	2.66
69.917	0.00	0.56	2.977	o	|	|	|	|	2.66
70.000	0.00	0.56	2.973	o	|	|	|	|	2.65
70.083	0.00	0.56	2.970	o	|	|	|	|	2.65
70.167	0.00	0.56	2.966	o	|	|	|	|	2.65
70.250	0.00	0.56	2.962	o	|	|	|	|	2.65
70.333	0.00	0.56	2.958	o	|	|	|	|	2.64
70.417	0.00	0.56	2.954	o	|	|	|	|	2.64
70.500	0.00	0.56	2.950	o	|	|	|	|	2.64
70.583	0.00	0.56	2.947	o	|	|	|	|	2.64
70.667	0.00	0.56	2.943	o	|	|	|	|	2.63
70.750	0.00	0.56	2.939	o	|	|	|	|	2.63
70.833	0.00	0.55	2.935	o	|	|	|	|	2.63
70.917	0.00	0.55	2.931	o	|	|	|	|	2.62
71.000	0.00	0.55	2.927	o	|	|	|	|	2.62
71.083	0.00	0.55	2.924	o	|	|	|	|	2.62
71.167	0.00	0.55	2.920	o	|	|	|	|	2.62
71.250	0.00	0.55	2.916	o	|	|	|	|	2.61
71.333	0.00	0.55	2.912	o	|	|	|	|	2.61
71.417	0.00	0.55	2.908	o	|	|	|	|	2.61
71.500	0.00	0.55	2.905	o	|	|	|	|	2.60
71.583	0.00	0.55	2.901	o	|	|	|	|	2.60
71.667	0.00	0.55	2.897	o	|	|	|	|	2.60
71.750	0.00	0.55	2.893	o	|	|	|	|	2.60
71.833	0.00	0.55	2.889	o	|	|	|	|	2.59
71.917	0.00	0.55	2.886	o	|	|	|	|	2.59
72.000	0.00	0.55	2.882	o	|	|	|	|	2.59
72.083	0.00	0.55	2.878	o	|	|	|	|	2.59
72.167	0.00	0.55	2.874	o	|	|	|	|	2.58
72.250	0.00	0.55	2.870	o	|	|	|	|	2.58
72.333	0.00	0.55	2.867	o	|	|	|	|	2.58
72.417	0.00	0.55	2.863	o	|	|	|	|	2.57
72.500	0.00	0.55	2.859	o	|	|	|	|	2.57
72.583	0.00	0.55	2.855	o	|	|	|	|	2.57
72.667	0.00	0.55	2.852	o	|	|	|	|	2.57
72.750	0.00	0.55	2.848	o	|	|	|	|	2.56
72.833	0.00	0.55	2.844	o	|	|	|	|	2.56
72.917	0.00	0.55	2.840	o	|	|	|	|	2.56
73.000	0.00	0.55	2.836	o	|	|	|	|	2.56
73.083	0.00	0.55	2.833	o	|	|	|	|	2.55
73.167	0.00	0.55	2.829	o	|	|	|	|	2.55
73.250	0.00	0.55	2.825	o	|	|	|	|	2.55
73.333	0.00	0.55	2.821	o	|	|	|	|	2.54
73.417	0.00	0.54	2.818	o	|	|	|	|	2.54
73.500	0.00	0.54	2.814	o	|	|	|	|	2.54
73.583	0.00	0.54	2.810	o	|	|	|	|	2.54
73.667	0.00	0.54	2.806	o	|	|	|	|	2.53
73.750	0.00	0.54	2.803	o	|	|	|	|	2.53
73.833	0.00	0.54	2.799	o	|	|	|	|	2.53
73.917	0.00	0.54	2.795	o	|	|	|	|	2.53
74.000	0.00	0.54	2.791	o	|	|	|	|	2.52
74.083	0.00	0.54	2.788	o	|	|	|	|	2.52
74.167	0.00	0.54	2.784	o	|	|	|	|	2.52
74.250	0.00	0.54	2.780	o	|	|	|	|	2.52
74.333	0.00	0.54	2.777	o	|	|	|	|	2.51

74.417	0.00	0.54	2.773	o	|	|	|	|	2.51
74.500	0.00	0.54	2.769	o	|	|	|	|	2.51
74.583	0.00	0.54	2.765	o	|	|	|	|	2.50
74.667	0.00	0.54	2.762	o	|	|	|	|	2.50
74.750	0.00	0.54	2.758	o	|	|	|	|	2.50
74.833	0.00	0.54	2.754	o	|	|	|	|	2.50
74.917	0.00	0.54	2.750	o	|	|	|	|	2.49
75.000	0.00	0.54	2.747	o	|	|	|	|	2.49
75.083	0.00	0.54	2.743	o	|	|	|	|	2.49
75.167	0.00	0.54	2.739	o	|	|	|	|	2.49
75.250	0.00	0.54	2.736	o	|	|	|	|	2.48
75.333	0.00	0.54	2.732	o	|	|	|	|	2.48
75.417	0.00	0.54	2.728	o	|	|	|	|	2.48
75.500	0.00	0.54	2.725	o	|	|	|	|	2.48
75.583	0.00	0.54	2.721	o	|	|	|	|	2.47
75.667	0.00	0.54	2.717	o	|	|	|	|	2.47
75.750	0.00	0.54	2.713	o	|	|	|	|	2.47
75.833	0.00	0.54	2.710	o	|	|	|	|	2.46
75.917	0.00	0.54	2.706	o	|	|	|	|	2.46
76.000	0.00	0.54	2.702	o	|	|	|	|	2.46
76.083	0.00	0.53	2.699	o	|	|	|	|	2.46
76.167	0.00	0.53	2.695	o	|	|	|	|	2.45
76.250	0.00	0.53	2.691	o	|	|	|	|	2.45
76.333	0.00	0.53	2.688	o	|	|	|	|	2.45
76.417	0.00	0.53	2.684	o	|	|	|	|	2.45
76.500	0.00	0.53	2.680	o	|	|	|	|	2.44
76.583	0.00	0.53	2.677	o	|	|	|	|	2.44
76.667	0.00	0.53	2.673	o	|	|	|	|	2.44
76.750	0.00	0.53	2.669	o	|	|	|	|	2.44
76.833	0.00	0.53	2.666	o	|	|	|	|	2.43
76.917	0.00	0.53	2.662	o	|	|	|	|	2.43
77.000	0.00	0.53	2.658	o	|	|	|	|	2.43
77.083	0.00	0.53	2.655	o	|	|	|	|	2.42
77.167	0.00	0.53	2.651	o	|	|	|	|	2.42
77.250	0.00	0.53	2.647	o	|	|	|	|	2.42
77.333	0.00	0.53	2.644	o	|	|	|	|	2.42
77.417	0.00	0.53	2.640	o	|	|	|	|	2.41
77.500	0.00	0.53	2.636	o	|	|	|	|	2.41
77.583	0.00	0.53	2.633	o	|	|	|	|	2.41
77.667	0.00	0.53	2.629	o	|	|	|	|	2.41
77.750	0.00	0.53	2.625	o	|	|	|	|	2.40
77.833	0.00	0.53	2.622	o	|	|	|	|	2.40
77.917	0.00	0.53	2.618	o	|	|	|	|	2.40
78.000	0.00	0.53	2.614	o	|	|	|	|	2.40
78.083	0.00	0.53	2.611	o	|	|	|	|	2.39
78.167	0.00	0.53	2.607	o	|	|	|	|	2.39
78.250	0.00	0.53	2.604	o	|	|	|	|	2.39
78.333	0.00	0.53	2.600	o	|	|	|	|	2.39
78.417	0.00	0.53	2.596	o	|	|	|	|	2.38
78.500	0.00	0.53	2.593	o	|	|	|	|	2.38
78.583	0.00	0.53	2.589	o	|	|	|	|	2.38
78.667	0.00	0.53	2.585	o	|	|	|	|	2.37
78.750	0.00	0.53	2.582	o	|	|	|	|	2.37
78.833	0.00	0.52	2.578	o	|	|	|	|	2.37
78.917	0.00	0.52	2.575	o	|	|	|	|	2.37
79.000	0.00	0.52	2.571	o	|	|	|	|	2.36
79.083	0.00	0.52	2.567	o	|	|	|	|	2.36
79.167	0.00	0.52	2.564	o	|	|	|	|	2.36
79.250	0.00	0.52	2.560	o	|	|	|	|	2.36
79.333	0.00	0.52	2.557	o	|	|	|	|	2.35
79.417	0.00	0.52	2.553	o	|	|	|	|	2.35
79.500	0.00	0.52	2.549	o	|	|	|	|	2.35
79.583	0.00	0.52	2.546	o	|	|	|	|	2.35
79.667	0.00	0.52	2.542	o	|	|	|	|	2.34
79.750	0.00	0.52	2.539	o	|	|	|	|	2.34
79.833	0.00	0.52	2.535	o	|	|	|	|	2.34
79.917	0.00	0.52	2.531	o	|	|	|	|	2.34
80.000	0.00	0.52	2.528	o	|	|	|	|	2.33
80.083	0.00	0.52	2.524	o	|	|	|	|	2.33
80.167	0.00	0.52	2.521	o	|	|	|	|	2.33
80.250	0.00	0.52	2.517	o	|	|	|	|	2.33
80.333	0.00	0.52	2.514	o	|	|	|	|	2.32
80.417	0.00	0.52	2.510	o	|	|	|	|	2.32
80.500	0.00	0.52	2.506	o	|	|	|	|	2.32
80.583	0.00	0.52	2.503	o	|	|	|	|	2.32

80.667	0.00	0.52	2.499	o	|	|	|	|	2.31
80.750	0.00	0.52	2.496	o	|	|	|	|	2.31
80.833	0.00	0.52	2.492	o	|	|	|	|	2.31
80.917	0.00	0.52	2.489	o	|	|	|	|	2.31
81.000	0.00	0.52	2.485	o	|	|	|	|	2.30
81.083	0.00	0.52	2.481	o	|	|	|	|	2.30
81.167	0.00	0.52	2.478	o	|	|	|	|	2.30
81.250	0.00	0.52	2.474	o	|	|	|	|	2.29
81.333	0.00	0.52	2.471	o	|	|	|	|	2.29
81.417	0.00	0.52	2.467	o	|	|	|	|	2.29
81.500	0.00	0.52	2.464	o	|	|	|	|	2.29
81.583	0.00	0.52	2.460	o	|	|	|	|	2.28
81.667	0.00	0.51	2.457	o	|	|	|	|	2.28
81.750	0.00	0.51	2.453	o	|	|	|	|	2.28
81.833	0.00	0.51	2.449	o	|	|	|	|	2.28
81.917	0.00	0.51	2.446	o	|	|	|	|	2.27
82.000	0.00	0.51	2.442	o	|	|	|	|	2.27
82.083	0.00	0.51	2.439	o	|	|	|	|	2.27
82.167	0.00	0.51	2.435	o	|	|	|	|	2.27
82.250	0.00	0.51	2.432	o	|	|	|	|	2.26
82.333	0.00	0.51	2.428	o	|	|	|	|	2.26
82.417	0.00	0.51	2.425	o	|	|	|	|	2.26
82.500	0.00	0.51	2.421	o	|	|	|	|	2.26
82.583	0.00	0.51	2.418	o	|	|	|	|	2.25
82.667	0.00	0.51	2.414	o	|	|	|	|	2.25
82.750	0.00	0.51	2.411	o	|	|	|	|	2.25
82.833	0.00	0.51	2.407	o	|	|	|	|	2.25
82.917	0.00	0.51	2.404	o	|	|	|	|	2.24
83.000	0.00	0.51	2.400	o	|	|	|	|	2.24
83.083	0.00	0.51	2.397	o	|	|	|	|	2.24
83.167	0.00	0.51	2.393	o	|	|	|	|	2.24
83.250	0.00	0.51	2.390	o	|	|	|	|	2.23
83.333	0.00	0.51	2.386	o	|	|	|	|	2.23
83.417	0.00	0.51	2.383	o	|	|	|	|	2.23
83.500	0.00	0.51	2.379	o	|	|	|	|	2.23
83.583	0.00	0.51	2.376	o	|	|	|	|	2.22
83.667	0.00	0.51	2.372	o	|	|	|	|	2.22
83.750	0.00	0.51	2.369	o	|	|	|	|	2.22
83.833	0.00	0.51	2.365	o	|	|	|	|	2.22
83.917	0.00	0.51	2.362	o	|	|	|	|	2.21
84.000	0.00	0.51	2.358	o	|	|	|	|	2.21
84.083	0.00	0.51	2.355	o	|	|	|	|	2.21
84.167	0.00	0.51	2.351	o	|	|	|	|	2.21
84.250	0.00	0.51	2.348	o	|	|	|	|	2.20
84.333	0.00	0.51	2.344	o	|	|	|	|	2.20
84.417	0.00	0.51	2.341	o	|	|	|	|	2.20
84.500	0.00	0.50	2.337	o	|	|	|	|	2.20
84.583	0.00	0.50	2.334	o	|	|	|	|	2.19
84.667	0.00	0.50	2.330	o	|	|	|	|	2.19
84.750	0.00	0.50	2.327	o	|	|	|	|	2.19
84.833	0.00	0.50	2.323	o	|	|	|	|	2.19
84.917	0.00	0.50	2.320	o	|	|	|	|	2.18
85.000	0.00	0.50	2.316	o	|	|	|	|	2.18
85.083	0.00	0.50	2.313	o	|	|	|	|	2.18
85.167	0.00	0.50	2.309	o	|	|	|	|	2.18
85.250	0.00	0.50	2.306	o	|	|	|	|	2.17
85.333	0.00	0.50	2.303	o	|	|	|	|	2.17
85.417	0.00	0.50	2.299	o	|	|	|	|	2.17
85.500	0.00	0.50	2.296	o	|	|	|	|	2.17
85.583	0.00	0.50	2.292	o	|	|	|	|	2.16
85.667	0.00	0.50	2.289	o	|	|	|	|	2.16
85.750	0.00	0.50	2.285	o	|	|	|	|	2.16
85.833	0.00	0.50	2.282	o	|	|	|	|	2.16
85.917	0.00	0.50	2.278	o	|	|	|	|	2.15
86.000	0.00	0.50	2.275	o	|	|	|	|	2.15
86.083	0.00	0.50	2.271	o	|	|	|	|	2.15
86.167	0.00	0.50	2.268	o	|	|	|	|	2.15
86.250	0.00	0.50	2.265	o	|	|	|	|	2.14
86.333	0.00	0.50	2.261	o	|	|	|	|	2.14
86.417	0.00	0.50	2.258	o	|	|	|	|	2.14
86.500	0.00	0.50	2.254	o	|	|	|	|	2.14
86.583	0.00	0.50	2.251	o	|	|	|	|	2.13
86.667	0.00	0.50	2.247	o	|	|	|	|	2.13
86.750	0.00	0.50	2.244	o	|	|	|	|	2.13
86.833	0.00	0.50	2.241	o	|	|	|	|	2.13

86.917	0.00	0.50	2.237	o	|	|	|	|	2.12
87.000	0.00	0.50	2.234	o	|	|	|	|	2.12
87.083	0.00	0.50	2.230	o	|	|	|	|	2.12
87.167	0.00	0.50	2.227	o	|	|	|	|	2.12
87.250	0.00	0.50	2.224	o	|	|	|	|	2.11
87.333	0.00	0.49	2.220	o	|	|	|	|	2.11
87.417	0.00	0.49	2.217	o	|	|	|	|	2.11
87.500	0.00	0.49	2.213	o	|	|	|	|	2.11
87.583	0.00	0.49	2.210	o	|	|	|	|	2.10
87.667	0.00	0.49	2.207	o	|	|	|	|	2.10
87.750	0.00	0.49	2.203	o	|	|	|	|	2.10
87.833	0.00	0.49	2.200	o	|	|	|	|	2.10
87.917	0.00	0.49	2.196	o	|	|	|	|	2.09
88.000	0.00	0.49	2.193	o	|	|	|	|	2.09
88.083	0.00	0.49	2.190	o	|	|	|	|	2.09
88.167	0.00	0.49	2.186	o	|	|	|	|	2.09
88.250	0.00	0.49	2.183	o	|	|	|	|	2.08
88.333	0.00	0.49	2.179	o	|	|	|	|	2.08
88.417	0.00	0.49	2.176	o	|	|	|	|	2.08
88.500	0.00	0.49	2.173	o	|	|	|	|	2.08
88.583	0.00	0.49	2.169	o	|	|	|	|	2.08
88.667	0.00	0.49	2.166	o	|	|	|	|	2.07
88.750	0.00	0.49	2.162	o	|	|	|	|	2.07
88.833	0.00	0.49	2.159	o	|	|	|	|	2.07
88.917	0.00	0.49	2.156	o	|	|	|	|	2.07
89.000	0.00	0.49	2.152	o	|	|	|	|	2.06
89.083	0.00	0.49	2.149	o	|	|	|	|	2.06
89.167	0.00	0.49	2.146	o	|	|	|	|	2.06
89.250	0.00	0.49	2.142	o	|	|	|	|	2.06
89.333	0.00	0.49	2.139	o	|	|	|	|	2.05
89.417	0.00	0.49	2.136	o	|	|	|	|	2.05
89.500	0.00	0.49	2.132	o	|	|	|	|	2.05
89.583	0.00	0.49	2.129	o	|	|	|	|	2.05
89.667	0.00	0.49	2.125	o	|	|	|	|	2.04
89.750	0.00	0.49	2.122	o	|	|	|	|	2.04
89.833	0.00	0.49	2.119	o	|	|	|	|	2.04
89.917	0.00	0.49	2.115	o	|	|	|	|	2.04
90.000	0.00	0.49	2.112	o	|	|	|	|	2.03
90.083	0.00	0.49	2.109	o	|	|	|	|	2.03
90.167	0.00	0.49	2.105	o	|	|	|	|	2.03
90.250	0.00	0.49	2.102	o	|	|	|	|	2.03
90.333	0.00	0.48	2.099	o	|	|	|	|	2.02
90.417	0.00	0.48	2.095	o	|	|	|	|	2.02
90.500	0.00	0.48	2.092	o	|	|	|	|	2.02
90.583	0.00	0.48	2.089	o	|	|	|	|	2.02
90.667	0.00	0.48	2.085	o	|	|	|	|	2.01
90.750	0.00	0.48	2.082	o	|	|	|	|	2.01
90.833	0.00	0.48	2.079	o	|	|	|	|	2.01
90.917	0.00	0.48	2.075	o	|	|	|	|	2.01
91.000	0.00	0.48	2.072	o	|	|	|	|	2.01
91.083	0.00	0.48	2.069	o	|	|	|	|	2.00
91.167	0.00	0.48	2.065	o	|	|	|	|	2.00
91.250	0.00	0.48	2.062	o	|	|	|	|	2.00
91.333	0.00	0.48	2.059	o	|	|	|	|	1.99
91.417	0.00	0.48	2.055	o	|	|	|	|	1.99
91.500	0.00	0.48	2.052	o	|	|	|	|	1.99
91.583	0.00	0.48	2.049	o	|	|	|	|	1.99
91.667	0.00	0.48	2.046	o	|	|	|	|	1.98
91.750	0.00	0.48	2.042	o	|	|	|	|	1.98
91.833	0.00	0.48	2.039	o	|	|	|	|	1.98
91.917	0.00	0.48	2.036	o	|	|	|	|	1.98
92.000	0.00	0.48	2.032	o	|	|	|	|	1.97
92.083	0.00	0.48	2.029	o	|	|	|	|	1.97
92.167	0.00	0.48	2.026	o	|	|	|	|	1.97
92.250	0.00	0.48	2.022	o	|	|	|	|	1.97
92.333	0.00	0.48	2.019	o	|	|	|	|	1.96
92.417	0.00	0.48	2.016	o	|	|	|	|	1.96
92.500	0.00	0.48	2.013	o	|	|	|	|	1.96
92.583	0.00	0.47	2.009	o	|	|	|	|	1.95
92.667	0.00	0.47	2.006	o	|	|	|	|	1.95
92.750	0.00	0.47	2.003	o	|	|	|	|	1.95
92.833	0.00	0.47	2.000	o	|	|	|	|	1.95
92.917	0.00	0.47	1.996	o	|	|	|	|	1.94
93.000	0.00	0.47	1.993	o	|	|	|	|	1.94
93.083	0.00	0.47	1.990	o	|	|	|	|	1.94

93.167	0.00	0.47	1.987	o	|	|	|	|	1.94
93.250	0.00	0.47	1.983	o	|	|	|	|	1.93
93.333	0.00	0.47	1.980	o	|	|	|	|	1.93
93.417	0.00	0.47	1.977	o	|	|	|	|	1.93
93.500	0.00	0.47	1.974	o	|	|	|	|	1.93
93.583	0.00	0.47	1.970	o	|	|	|	|	1.92
93.667	0.00	0.47	1.967	o	|	|	|	|	1.92
93.750	0.00	0.47	1.964	o	|	|	|	|	1.92
93.833	0.00	0.47	1.961	o	|	|	|	|	1.91
93.917	0.00	0.47	1.957	o	|	|	|	|	1.91
94.000	0.00	0.47	1.954	o	|	|	|	|	1.91
94.083	0.00	0.47	1.951	o	|	|	|	|	1.91
94.167	0.00	0.47	1.948	o	|	|	|	|	1.90
94.250	0.00	0.47	1.945	o	|	|	|	|	1.90
94.333	0.00	0.47	1.941	o	|	|	|	|	1.90
94.417	0.00	0.47	1.938	o	|	|	|	|	1.90
94.500	0.00	0.47	1.935	o	|	|	|	|	1.89
94.583	0.00	0.47	1.932	o	|	|	|	|	1.89
94.667	0.00	0.46	1.928	o	|	|	|	|	1.89
94.750	0.00	0.46	1.925	o	|	|	|	|	1.89
94.833	0.00	0.46	1.922	o	|	|	|	|	1.88
94.917	0.00	0.46	1.919	o	|	|	|	|	1.88
95.000	0.00	0.46	1.916	o	|	|	|	|	1.88
95.083	0.00	0.46	1.913	o	|	|	|	|	1.88
95.167	0.00	0.46	1.909	o	|	|	|	|	1.87
95.250	0.00	0.46	1.906	o	|	|	|	|	1.87
95.333	0.00	0.46	1.903	o	|	|	|	|	1.87
95.417	0.00	0.46	1.900	o	|	|	|	|	1.87
95.500	0.00	0.46	1.897	o	|	|	|	|	1.86
95.583	0.00	0.46	1.893	o	|	|	|	|	1.86
95.667	0.00	0.46	1.890	o	|	|	|	|	1.86
95.750	0.00	0.46	1.887	o	|	|	|	|	1.85
95.833	0.00	0.46	1.884	o	|	|	|	|	1.85
95.917	0.00	0.46	1.881	o	|	|	|	|	1.85
96.000	0.00	0.46	1.878	o	|	|	|	|	1.85
96.083	0.00	0.46	1.874	o	|	|	|	|	1.84
96.167	0.00	0.46	1.871	o	|	|	|	|	1.84
96.250	0.00	0.46	1.868	o	|	|	|	|	1.84
96.333	0.00	0.46	1.865	o	|	|	|	|	1.84
96.417	0.00	0.46	1.862	o	|	|	|	|	1.83
96.500	0.00	0.46	1.859	o	|	|	|	|	1.83
96.583	0.00	0.46	1.856	o	|	|	|	|	1.83
96.667	0.00	0.46	1.852	o	|	|	|	|	1.83
96.750	0.00	0.45	1.849	o	|	|	|	|	1.82
96.833	0.00	0.45	1.846	o	|	|	|	|	1.82
96.917	0.00	0.45	1.843	o	|	|	|	|	1.82
97.000	0.00	0.45	1.840	o	|	|	|	|	1.82
97.083	0.00	0.45	1.837	o	|	|	|	|	1.81
97.167	0.00	0.45	1.834	o	|	|	|	|	1.81
97.250	0.00	0.45	1.831	o	|	|	|	|	1.81
97.333	0.00	0.45	1.827	o	|	|	|	|	1.81
97.417	0.00	0.45	1.824	o	|	|	|	|	1.80
97.500	0.00	0.45	1.821	o	|	|	|	|	1.80
97.583	0.00	0.45	1.818	o	|	|	|	|	1.80
97.667	0.00	0.45	1.815	o	|	|	|	|	1.80
97.750	0.00	0.45	1.812	o	|	|	|	|	1.79
97.833	0.00	0.45	1.809	o	|	|	|	|	1.79
97.917	0.00	0.45	1.806	o	|	|	|	|	1.79
98.000	0.00	0.45	1.803	o	|	|	|	|	1.79
98.083	0.00	0.45	1.800	o	|	|	|	|	1.78
98.167	0.00	0.45	1.796	o	|	|	|	|	1.78
98.250	0.00	0.45	1.793	o	|	|	|	|	1.78
98.333	0.00	0.45	1.790	o	|	|	|	|	1.78
98.417	0.00	0.45	1.787	o	|	|	|	|	1.77
98.500	0.00	0.45	1.784	o	|	|	|	|	1.77
98.583	0.00	0.45	1.781	o	|	|	|	|	1.77
98.667	0.00	0.45	1.778	o	|	|	|	|	1.77
98.750	0.00	0.45	1.775	o	|	|	|	|	1.76
98.833	0.00	0.44	1.772	o	|	|	|	|	1.76
98.917	0.00	0.44	1.769	o	|	|	|	|	1.76
99.000	0.00	0.44	1.766	o	|	|	|	|	1.76
99.083	0.00	0.44	1.763	o	|	|	|	|	1.75
99.167	0.00	0.44	1.760	o	|	|	|	|	1.75
99.250	0.00	0.44	1.757	o	|	|	|	|	1.75
99.333	0.00	0.44	1.754	o	|	|	|	|	1.75

99.417	0.00	0.44	1.751	o	|	|	|	|	1.74
99.500	0.00	0.44	1.747	o	|	|	|	|	1.74
99.583	0.00	0.44	1.744	o	|	|	|	|	1.74
99.667	0.00	0.44	1.741	o	|	|	|	|	1.74
99.750	0.00	0.44	1.738	o	|	|	|	|	1.73
99.833	0.00	0.44	1.735	o	|	|	|	|	1.73
99.917	0.00	0.44	1.732	o	|	|	|	|	1.73
100.000	0.00	0.44	1.729	o	|	|	|	|	1.73
100.083	0.00	0.44	1.726	o	|	|	|	|	1.72
100.167	0.00	0.44	1.723	o	|	|	|	|	1.72
100.250	0.00	0.44	1.720	o	|	|	|	|	1.72
100.333	0.00	0.44	1.717	o	|	|	|	|	1.72
100.417	0.00	0.44	1.714	o	|	|	|	|	1.71
100.500	0.00	0.44	1.711	o	|	|	|	|	1.71
100.583	0.00	0.44	1.708	o	|	|	|	|	1.71
100.667	0.00	0.44	1.705	o	|	|	|	|	1.71
100.750	0.00	0.44	1.702	o	|	|	|	|	1.70
100.833	0.00	0.44	1.699	o	|	|	|	|	1.70
100.917	0.00	0.44	1.696	o	|	|	|	|	1.70
101.000	0.00	0.43	1.693	o	|	|	|	|	1.70
101.083	0.00	0.43	1.690	o	|	|	|	|	1.69
101.167	0.00	0.43	1.687	o	|	|	|	|	1.69
101.250	0.00	0.43	1.684	o	|	|	|	|	1.69
101.333	0.00	0.43	1.681	o	|	|	|	|	1.69
101.417	0.00	0.43	1.678	o	|	|	|	|	1.68
101.500	0.00	0.43	1.675	o	|	|	|	|	1.68
101.583	0.00	0.43	1.672	o	|	|	|	|	1.68
101.667	0.00	0.43	1.669	o	|	|	|	|	1.68
101.750	0.00	0.43	1.666	o	|	|	|	|	1.67
101.833	0.00	0.43	1.663	o	|	|	|	|	1.67
101.917	0.00	0.43	1.660	o	|	|	|	|	1.67
102.000	0.00	0.43	1.657	o	|	|	|	|	1.67
102.083	0.00	0.43	1.654	o	|	|	|	|	1.66
102.167	0.00	0.43	1.651	o	|	|	|	|	1.66
102.250	0.00	0.43	1.648	o	|	|	|	|	1.66
102.333	0.00	0.43	1.646	o	|	|	|	|	1.66
102.417	0.00	0.43	1.643	o	|	|	|	|	1.65
102.500	0.00	0.43	1.640	o	|	|	|	|	1.65
102.583	0.00	0.43	1.637	o	|	|	|	|	1.65
102.667	0.00	0.43	1.634	o	|	|	|	|	1.65
102.750	0.00	0.43	1.631	o	|	|	|	|	1.65
102.833	0.00	0.43	1.628	o	|	|	|	|	1.64
102.917	0.00	0.43	1.625	o	|	|	|	|	1.64
103.000	0.00	0.43	1.622	o	|	|	|	|	1.64
103.083	0.00	0.43	1.619	o	|	|	|	|	1.64
103.167	0.00	0.43	1.616	o	|	|	|	|	1.63
103.250	0.00	0.42	1.613	o	|	|	|	|	1.63
103.333	0.00	0.42	1.610	o	|	|	|	|	1.63
103.417	0.00	0.42	1.607	o	|	|	|	|	1.63
103.500	0.00	0.42	1.604	o	|	|	|	|	1.62
103.583	0.00	0.42	1.602	o	|	|	|	|	1.62
103.667	0.00	0.42	1.599	o	|	|	|	|	1.62
103.750	0.00	0.42	1.596	o	|	|	|	|	1.62
103.833	0.00	0.42	1.593	o	|	|	|	|	1.61
103.917	0.00	0.42	1.590	o	|	|	|	|	1.61
104.000	0.00	0.42	1.587	o	|	|	|	|	1.61
104.083	0.00	0.42	1.584	o	|	|	|	|	1.61
104.167	0.00	0.42	1.581	o	|	|	|	|	1.60
104.250	0.00	0.42	1.578	o	|	|	|	|	1.60
104.333	0.00	0.42	1.575	o	|	|	|	|	1.60
104.417	0.00	0.42	1.572	o	|	|	|	|	1.60
104.500	0.00	0.42	1.570	o	|	|	|	|	1.60
104.583	0.00	0.42	1.567	o	|	|	|	|	1.59
104.667	0.00	0.42	1.564	o	|	|	|	|	1.59
104.750	0.00	0.42	1.561	o	|	|	|	|	1.59
104.833	0.00	0.42	1.558	o	|	|	|	|	1.59
104.917	0.00	0.42	1.555	o	|	|	|	|	1.58
105.000	0.00	0.42	1.552	o	|	|	|	|	1.58
105.083	0.00	0.42	1.549	o	|	|	|	|	1.58
105.167	0.00	0.42	1.547	o	|	|	|	|	1.58
105.250	0.00	0.42	1.544	o	|	|	|	|	1.57
105.333	0.00	0.42	1.541	o	|	|	|	|	1.57
105.417	0.00	0.42	1.538	o	|	|	|	|	1.57
105.500	0.00	0.41	1.535	o	|	|	|	|	1.57
105.583	0.00	0.41	1.532	o	|	|	|	|	1.56

105.667	0.00	0.41	1.529	o	|	|	|	|	1.56
105.750	0.00	0.41	1.527	o	|	|	|	|	1.56
105.833	0.00	0.41	1.524	o	|	|	|	|	1.56
105.917	0.00	0.41	1.521	o	|	|	|	|	1.56
106.000	0.00	0.41	1.518	o	|	|	|	|	1.55
106.083	0.00	0.41	1.515	o	|	|	|	|	1.55
106.167	0.00	0.41	1.512	o	|	|	|	|	1.55
106.250	0.00	0.41	1.510	o	|	|	|	|	1.55
106.333	0.00	0.41	1.507	o	|	|	|	|	1.54
106.417	0.00	0.41	1.504	o	|	|	|	|	1.54
106.500	0.00	0.41	1.501	o	|	|	|	|	1.54
106.583	0.00	0.41	1.498	o	|	|	|	|	1.54
106.667	0.00	0.41	1.495	o	|	|	|	|	1.53
106.750	0.00	0.41	1.493	o	|	|	|	|	1.53
106.833	0.00	0.41	1.490	o	|	|	|	|	1.53
106.917	0.00	0.41	1.487	o	|	|	|	|	1.53
107.000	0.00	0.41	1.484	o	|	|	|	|	1.53
107.083	0.00	0.41	1.481	o	|	|	|	|	1.52
107.167	0.00	0.41	1.478	o	|	|	|	|	1.52
107.250	0.00	0.41	1.476	o	|	|	|	|	1.52
107.333	0.00	0.41	1.473	o	|	|	|	|	1.52
107.417	0.00	0.41	1.470	o	|	|	|	|	1.51
107.500	0.00	0.41	1.467	o	|	|	|	|	1.51
107.583	0.00	0.41	1.464	o	|	|	|	|	1.51
107.667	0.00	0.41	1.462	o	|	|	|	|	1.51
107.750	0.00	0.41	1.459	o	|	|	|	|	1.50
107.833	0.00	0.40	1.456	o	|	|	|	|	1.50
107.917	0.00	0.40	1.453	o	|	|	|	|	1.50
108.000	0.00	0.40	1.451	o	|	|	|	|	1.50
108.083	0.00	0.40	1.448	o	|	|	|	|	1.50
108.167	0.00	0.40	1.445	o	|	|	|	|	1.49
108.250	0.00	0.40	1.442	o	|	|	|	|	1.49
108.333	0.00	0.40	1.439	o	|	|	|	|	1.49
108.417	0.00	0.40	1.437	o	|	|	|	|	1.49
108.500	0.00	0.40	1.434	o	|	|	|	|	1.48
108.583	0.00	0.40	1.431	o	|	|	|	|	1.48
108.667	0.00	0.40	1.428	o	|	|	|	|	1.48
108.750	0.00	0.40	1.426	o	|	|	|	|	1.48
108.833	0.00	0.40	1.423	o	|	|	|	|	1.48
108.917	0.00	0.40	1.420	o	|	|	|	|	1.47
109.000	0.00	0.40	1.417	o	|	|	|	|	1.47
109.083	0.00	0.40	1.415	o	|	|	|	|	1.47
109.167	0.00	0.40	1.412	o	|	|	|	|	1.47
109.250	0.00	0.40	1.409	o	|	|	|	|	1.46
109.333	0.00	0.40	1.406	o	|	|	|	|	1.46
109.417	0.00	0.40	1.404	o	|	|	|	|	1.46
109.500	0.00	0.40	1.401	o	|	|	|	|	1.46
109.583	0.00	0.40	1.398	o	|	|	|	|	1.46
109.667	0.00	0.40	1.395	o	|	|	|	|	1.45
109.750	0.00	0.40	1.393	o	|	|	|	|	1.45
109.833	0.00	0.40	1.390	o	|	|	|	|	1.45
109.917	0.00	0.40	1.387	o	|	|	|	|	1.45
110.000	0.00	0.40	1.384	o	|	|	|	|	1.44
110.083	0.00	0.40	1.382	o	|	|	|	|	1.44
110.167	0.00	0.40	1.379	o	|	|	|	|	1.44
110.250	0.00	0.39	1.376	o	|	|	|	|	1.44
110.333	0.00	0.39	1.374	o	|	|	|	|	1.44
110.417	0.00	0.39	1.371	o	|	|	|	|	1.43
110.500	0.00	0.39	1.368	o	|	|	|	|	1.43
110.583	0.00	0.39	1.365	o	|	|	|	|	1.43
110.667	0.00	0.39	1.363	o	|	|	|	|	1.43
110.750	0.00	0.39	1.360	o	|	|	|	|	1.42
110.833	0.00	0.39	1.357	o	|	|	|	|	1.42
110.917	0.00	0.39	1.355	o	|	|	|	|	1.42
111.000	0.00	0.39	1.352	o	|	|	|	|	1.42
111.083	0.00	0.39	1.349	o	|	|	|	|	1.42
111.167	0.00	0.39	1.346	o	|	|	|	|	1.41
111.250	0.00	0.39	1.344	o	|	|	|	|	1.41
111.333	0.00	0.39	1.341	o	|	|	|	|	1.41
111.417	0.00	0.39	1.338	o	|	|	|	|	1.41
111.500	0.00	0.39	1.336	o	|	|	|	|	1.40
111.583	0.00	0.39	1.333	o	|	|	|	|	1.40
111.667	0.00	0.39	1.330	o	|	|	|	|	1.40
111.750	0.00	0.39	1.328	o	|	|	|	|	1.40
111.833	0.00	0.39	1.325	o	|	|	|	|	1.40

111.917	0.00	0.39	1.322	o	|	|	|	|	1.39
112.000	0.00	0.39	1.320	o	|	|	|	|	1.39
112.083	0.00	0.39	1.317	o	|	|	|	|	1.39
112.167	0.00	0.39	1.314	o	|	|	|	|	1.39
112.250	0.00	0.39	1.312	o	|	|	|	|	1.38
112.333	0.00	0.39	1.309	o	|	|	|	|	1.38
112.417	0.00	0.39	1.306	o	|	|	|	|	1.38
112.500	0.00	0.39	1.304	o	|	|	|	|	1.38
112.583	0.00	0.39	1.301	o	|	|	|	|	1.38
112.667	0.00	0.38	1.298	o	|	|	|	|	1.37
112.750	0.00	0.38	1.296	o	|	|	|	|	1.37
112.833	0.00	0.38	1.293	o	|	|	|	|	1.37
112.917	0.00	0.38	1.290	o	|	|	|	|	1.37
113.000	0.00	0.38	1.288	o	|	|	|	|	1.37
113.083	0.00	0.38	1.285	o	|	|	|	|	1.36
113.167	0.00	0.38	1.283	o	|	|	|	|	1.36
113.250	0.00	0.38	1.280	o	|	|	|	|	1.36
113.333	0.00	0.38	1.277	o	|	|	|	|	1.36
113.417	0.00	0.38	1.275	o	|	|	|	|	1.35
113.500	0.00	0.38	1.272	o	|	|	|	|	1.35
113.583	0.00	0.38	1.269	o	|	|	|	|	1.35
113.667	0.00	0.38	1.267	o	|	|	|	|	1.35
113.750	0.00	0.38	1.264	o	|	|	|	|	1.35
113.833	0.00	0.38	1.261	o	|	|	|	|	1.34
113.917	0.00	0.38	1.259	o	|	|	|	|	1.34
114.000	0.00	0.38	1.256	o	|	|	|	|	1.34
114.083	0.00	0.38	1.254	o	|	|	|	|	1.34
114.167	0.00	0.38	1.251	o	|	|	|	|	1.33
114.250	0.00	0.38	1.248	o	|	|	|	|	1.33
114.333	0.00	0.38	1.246	o	|	|	|	|	1.33
114.417	0.00	0.38	1.243	o	|	|	|	|	1.33
114.500	0.00	0.38	1.241	o	|	|	|	|	1.33
114.583	0.00	0.38	1.238	o	|	|	|	|	1.32
114.667	0.00	0.38	1.235	o	|	|	|	|	1.32
114.750	0.00	0.38	1.233	o	|	|	|	|	1.32
114.833	0.00	0.38	1.230	o	|	|	|	|	1.32
114.917	0.00	0.38	1.228	o	|	|	|	|	1.32
115.000	0.00	0.38	1.225	o	|	|	|	|	1.31
115.083	0.00	0.38	1.222	o	|	|	|	|	1.31
115.167	0.00	0.37	1.220	o	|	|	|	|	1.31
115.250	0.00	0.37	1.217	o	|	|	|	|	1.31
115.333	0.00	0.37	1.215	o	|	|	|	|	1.31
115.417	0.00	0.37	1.212	o	|	|	|	|	1.30
115.500	0.00	0.37	1.210	o	|	|	|	|	1.30
115.583	0.00	0.37	1.207	o	|	|	|	|	1.30
115.667	0.00	0.37	1.204	o	|	|	|	|	1.30
115.750	0.00	0.37	1.202	o	|	|	|	|	1.29
115.833	0.00	0.37	1.199	o	|	|	|	|	1.29
115.917	0.00	0.37	1.197	o	|	|	|	|	1.29
116.000	0.00	0.37	1.194	o	|	|	|	|	1.29
116.083	0.00	0.37	1.192	o	|	|	|	|	1.29
116.167	0.00	0.37	1.189	o	|	|	|	|	1.28
116.250	0.00	0.37	1.186	o	|	|	|	|	1.28
116.333	0.00	0.37	1.184	o	|	|	|	|	1.28
116.417	0.00	0.37	1.181	o	|	|	|	|	1.28
116.500	0.00	0.37	1.179	o	|	|	|	|	1.28
116.583	0.00	0.37	1.176	o	|	|	|	|	1.27
116.667	0.00	0.37	1.174	o	|	|	|	|	1.27
116.750	0.00	0.37	1.171	o	|	|	|	|	1.27
116.833	0.00	0.37	1.169	o	|	|	|	|	1.27
116.917	0.00	0.37	1.166	o	|	|	|	|	1.27
117.000	0.00	0.37	1.164	o	|	|	|	|	1.26
117.083	0.00	0.37	1.161	o	|	|	|	|	1.26
117.167	0.00	0.37	1.159	o	|	|	|	|	1.26
117.250	0.00	0.37	1.156	o	|	|	|	|	1.26
117.333	0.00	0.37	1.153	o	|	|	|	|	1.26
117.417	0.00	0.37	1.151	o	|	|	|	|	1.25
117.500	0.00	0.37	1.148	o	|	|	|	|	1.25
117.583	0.00	0.37	1.146	o	|	|	|	|	1.25
117.667	0.00	0.37	1.143	o	|	|	|	|	1.25
117.750	0.00	0.36	1.141	o	|	|	|	|	1.25
117.833	0.00	0.36	1.138	o	|	|	|	|	1.24
117.917	0.00	0.36	1.136	o	|	|	|	|	1.24
118.000	0.00	0.36	1.133	o	|	|	|	|	1.24
118.083	0.00	0.36	1.131	o	|	|	|	|	1.24

118.167	0.00	0.36	1.128	o	|	|	|	|	1.23
118.250	0.00	0.36	1.126	o	|	|	|	|	1.23
118.333	0.00	0.36	1.123	o	|	|	|	|	1.23
118.417	0.00	0.36	1.121	o	|	|	|	|	1.23
118.500	0.00	0.36	1.118	o	|	|	|	|	1.23
118.583	0.00	0.36	1.116	o	|	|	|	|	1.22
118.667	0.00	0.36	1.113	o	|	|	|	|	1.22
118.750	0.00	0.36	1.111	o	|	|	|	|	1.22
118.833	0.00	0.36	1.108	o	|	|	|	|	1.22
118.917	0.00	0.36	1.106	o	|	|	|	|	1.22
119.000	0.00	0.36	1.103	o	|	|	|	|	1.21
119.083	0.00	0.36	1.101	o	|	|	|	|	1.21
119.167	0.00	0.36	1.098	o	|	|	|	|	1.21
119.250	0.00	0.36	1.096	o	|	|	|	|	1.21
119.333	0.00	0.36	1.094	o	|	|	|	|	1.21
119.417	0.00	0.36	1.091	o	|	|	|	|	1.20
119.500	0.00	0.36	1.089	o	|	|	|	|	1.20
119.583	0.00	0.36	1.086	o	|	|	|	|	1.20
119.667	0.00	0.36	1.084	o	|	|	|	|	1.20
119.750	0.00	0.36	1.081	o	|	|	|	|	1.20
119.833	0.00	0.36	1.079	o	|	|	|	|	1.19
119.917	0.00	0.36	1.076	o	|	|	|	|	1.19
120.000	0.00	0.36	1.074	o	|	|	|	|	1.19
120.083	0.00	0.36	1.071	o	|	|	|	|	1.19
120.167	0.00	0.36	1.069	o	|	|	|	|	1.19
120.250	0.00	0.36	1.066	o	|	|	|	|	1.18
120.333	0.00	0.36	1.064	o	|	|	|	|	1.18
120.417	0.00	0.35	1.062	o	|	|	|	|	1.18
120.500	0.00	0.35	1.059	o	|	|	|	|	1.18
120.583	0.00	0.35	1.057	o	|	|	|	|	1.18
120.667	0.00	0.35	1.054	o	|	|	|	|	1.17
120.750	0.00	0.35	1.052	o	|	|	|	|	1.17
120.833	0.00	0.35	1.049	o	|	|	|	|	1.17
120.917	0.00	0.35	1.047	o	|	|	|	|	1.17
121.000	0.00	0.35	1.045	o	|	|	|	|	1.17
121.083	0.00	0.35	1.042	o	|	|	|	|	1.16
121.167	0.00	0.35	1.040	o	|	|	|	|	1.16
121.250	0.00	0.35	1.037	o	|	|	|	|	1.16
121.333	0.00	0.35	1.035	o	|	|	|	|	1.16
121.417	0.00	0.35	1.032	o	|	|	|	|	1.16
121.500	0.00	0.35	1.030	o	|	|	|	|	1.15
121.583	0.00	0.35	1.028	o	|	|	|	|	1.15
121.667	0.00	0.35	1.025	o	|	|	|	|	1.15
121.750	0.00	0.35	1.023	o	|	|	|	|	1.15
121.833	0.00	0.35	1.020	o	|	|	|	|	1.15
121.917	0.00	0.35	1.018	o	|	|	|	|	1.14
122.000	0.00	0.35	1.016	o	|	|	|	|	1.14
122.083	0.00	0.35	1.013	o	|	|	|	|	1.14
122.167	0.00	0.35	1.011	o	|	|	|	|	1.14
122.250	0.00	0.35	1.008	o	|	|	|	|	1.14
122.333	0.00	0.35	1.006	o	|	|	|	|	1.13
122.417	0.00	0.35	1.004	o	|	|	|	|	1.13
122.500	0.00	0.35	1.001	o	|	|	|	|	1.13
122.583	0.00	0.35	0.999	o	|	|	|	|	1.13
122.667	0.00	0.35	0.996	o	|	|	|	|	1.13
122.750	0.00	0.35	0.994	o	|	|	|	|	1.12
122.833	0.00	0.35	0.992	o	|	|	|	|	1.12
122.917	0.00	0.35	0.989	o	|	|	|	|	1.12
123.000	0.00	0.35	0.987	o	|	|	|	|	1.12
123.083	0.00	0.35	0.984	o	|	|	|	|	1.12
123.167	0.00	0.34	0.982	o	|	|	|	|	1.12
123.250	0.00	0.34	0.980	o	|	|	|	|	1.11
123.333	0.00	0.34	0.977	o	|	|	|	|	1.11
123.417	0.00	0.34	0.975	o	|	|	|	|	1.11
123.500	0.00	0.34	0.973	o	|	|	|	|	1.11
123.583	0.00	0.34	0.970	o	|	|	|	|	1.11
123.667	0.00	0.34	0.968	o	|	|	|	|	1.10
123.750	0.00	0.34	0.965	o	|	|	|	|	1.10
123.833	0.00	0.34	0.963	o	|	|	|	|	1.10
123.917	0.00	0.34	0.961	o	|	|	|	|	1.10
124.000	0.00	0.34	0.958	o	|	|	|	|	1.10
124.083	0.00	0.34	0.956	o	|	|	|	|	1.09
124.167	0.00	0.34	0.954	o	|	|	|	|	1.09
124.250	0.00	0.34	0.951	o	|	|	|	|	1.09
124.333	0.00	0.34	0.949	o	|	|	|	|	1.09

124.417	0.00	0.34	0.947	o	|	|	|	|	1.09
124.500	0.00	0.34	0.944	o	|	|	|	|	1.08
124.583	0.00	0.34	0.942	o	|	|	|	|	1.08
124.667	0.00	0.34	0.940	o	|	|	|	|	1.08
124.750	0.00	0.34	0.937	o	|	|	|	|	1.08
124.833	0.00	0.34	0.935	o	|	|	|	|	1.08
124.917	0.00	0.34	0.933	o	|	|	|	|	1.07
125.000	0.00	0.34	0.930	o	|	|	|	|	1.07
125.083	0.00	0.34	0.928	o	|	|	|	|	1.07
125.167	0.00	0.34	0.926	o	|	|	|	|	1.07
125.250	0.00	0.34	0.923	o	|	|	|	|	1.07
125.333	0.00	0.34	0.921	o	|	|	|	|	1.07
125.417	0.00	0.34	0.919	o	|	|	|	|	1.06
125.500	0.00	0.34	0.916	o	|	|	|	|	1.06
125.583	0.00	0.34	0.914	o	|	|	|	|	1.06
125.667	0.00	0.34	0.912	o	|	|	|	|	1.06
125.750	0.00	0.34	0.909	o	|	|	|	|	1.06
125.833	0.00	0.34	0.907	o	|	|	|	|	1.05
125.917	0.00	0.34	0.905	o	|	|	|	|	1.05
126.000	0.00	0.33	0.902	o	|	|	|	|	1.05
126.083	0.00	0.33	0.900	o	|	|	|	|	1.05
126.167	0.00	0.33	0.898	o	|	|	|	|	1.05
126.250	0.00	0.33	0.896	o	|	|	|	|	1.04
126.333	0.00	0.33	0.893	o	|	|	|	|	1.04
126.417	0.00	0.33	0.891	o	|	|	|	|	1.04
126.500	0.00	0.33	0.889	o	|	|	|	|	1.04
126.583	0.00	0.33	0.886	o	|	|	|	|	1.04
126.667	0.00	0.33	0.884	o	|	|	|	|	1.04
126.750	0.00	0.33	0.882	o	|	|	|	|	1.03
126.833	0.00	0.33	0.880	o	|	|	|	|	1.03
126.917	0.00	0.33	0.877	o	|	|	|	|	1.03
127.000	0.00	0.33	0.875	o	|	|	|	|	1.03
127.083	0.00	0.33	0.873	o	|	|	|	|	1.03
127.167	0.00	0.33	0.870	o	|	|	|	|	1.02
127.250	0.00	0.33	0.868	o	|	|	|	|	1.02
127.333	0.00	0.33	0.866	o	|	|	|	|	1.02
127.417	0.00	0.33	0.864	o	|	|	|	|	1.02
127.500	0.00	0.33	0.861	o	|	|	|	|	1.02
127.583	0.00	0.33	0.859	o	|	|	|	|	1.01
127.667	0.00	0.33	0.857	o	|	|	|	|	1.01
127.750	0.00	0.33	0.855	o	|	|	|	|	1.01
127.833	0.00	0.33	0.852	o	|	|	|	|	1.01
127.917	0.00	0.33	0.850	o	|	|	|	|	1.01
128.000	0.00	0.33	0.848	o	|	|	|	|	1.01
128.083	0.00	0.33	0.845	o	|	|	|	|	1.00
128.167	0.00	0.33	0.843	o	|	|	|	|	1.00
128.250	0.00	0.33	0.841	o	|	|	|	|	1.00
128.333	0.00	0.33	0.839	o	|	|	|	|	1.00
128.417	0.00	0.33	0.836	o	|	|	|	|	1.00
128.500	0.00	0.33	0.834	o	|	|	|	|	0.99
128.583	0.00	0.32	0.832	o	|	|	|	|	0.99
128.667	0.00	0.32	0.830	o	|	|	|	|	0.99
128.750	0.00	0.32	0.828	o	|	|	|	|	0.99
128.833	0.00	0.32	0.825	o	|	|	|	|	0.98
128.917	0.00	0.32	0.823	o	|	|	|	|	0.98
129.000	0.00	0.32	0.821	o	|	|	|	|	0.98
129.083	0.00	0.32	0.819	o	|	|	|	|	0.98
129.167	0.00	0.32	0.816	o	|	|	|	|	0.97
129.250	0.00	0.32	0.814	o	|	|	|	|	0.97
129.333	0.00	0.32	0.812	o	|	|	|	|	0.97
129.417	0.00	0.32	0.810	o	|	|	|	|	0.97
129.500	0.00	0.32	0.808	o	|	|	|	|	0.97
129.583	0.00	0.32	0.805	o	|	|	|	|	0.96
129.667	0.00	0.32	0.803	o	|	|	|	|	0.96
129.750	0.00	0.32	0.801	o	|	|	|	|	0.96
129.833	0.00	0.32	0.799	o	|	|	|	|	0.96
129.917	0.00	0.32	0.797	o	|	|	|	|	0.95
130.000	0.00	0.32	0.794	o	|	|	|	|	0.95
130.083	0.00	0.32	0.792	o	|	|	|	|	0.95
130.167	0.00	0.31	0.790	o	|	|	|	|	0.95
130.250	0.00	0.31	0.788	o	|	|	|	|	0.95
130.333	0.00	0.31	0.786	o	|	|	|	|	0.94
130.417	0.00	0.31	0.784	o	|	|	|	|	0.94
130.500	0.00	0.31	0.781	o	|	|	|	|	0.94
130.583	0.00	0.31	0.779	o	|	|	|	|	0.94

130.667	0.00	0.31	0.777	o	|	|	|	|	0.93
130.750	0.00	0.31	0.775	o	|	|	|	|	0.93
130.833	0.00	0.31	0.773	o	|	|	|	|	0.93
130.917	0.00	0.31	0.771	o	|	|	|	|	0.93
131.000	0.00	0.31	0.769	o	|	|	|	|	0.93
131.083	0.00	0.31	0.766	o	|	|	|	|	0.92
131.167	0.00	0.31	0.764	o	|	|	|	|	0.92
131.250	0.00	0.31	0.762	o	|	|	|	|	0.92
131.333	0.00	0.31	0.760	o	|	|	|	|	0.92
131.417	0.00	0.31	0.758	o	|	|	|	|	0.91
131.500	0.00	0.31	0.756	o	|	|	|	|	0.91
131.583	0.00	0.31	0.754	o	|	|	|	|	0.91
131.667	0.00	0.31	0.752	o	|	|	|	|	0.91
131.750	0.00	0.31	0.750	o	|	|	|	|	0.91
131.833	0.00	0.30	0.747	o	|	|	|	|	0.90
131.917	0.00	0.30	0.745	o	|	|	|	|	0.90
132.000	0.00	0.30	0.743	o	|	|	|	|	0.90
132.083	0.00	0.30	0.741	o	|	|	|	|	0.90
132.167	0.00	0.30	0.739	o	|	|	|	|	0.89
132.250	0.00	0.30	0.737	o	|	|	|	|	0.89
132.333	0.00	0.30	0.735	o	|	|	|	|	0.89
132.417	0.00	0.30	0.733	o	|	|	|	|	0.89
132.500	0.00	0.30	0.731	o	|	|	|	|	0.89
132.583	0.00	0.30	0.729	o	|	|	|	|	0.88
132.667	0.00	0.30	0.727	o	|	|	|	|	0.88
132.750	0.00	0.30	0.725	o	|	|	|	|	0.88
132.833	0.00	0.30	0.723	o	|	|	|	|	0.88
132.917	0.00	0.30	0.720	o	|	|	|	|	0.88
133.000	0.00	0.30	0.718	o	|	|	|	|	0.87
133.083	0.00	0.30	0.716	o	|	|	|	|	0.87
133.167	0.00	0.30	0.714	o	|	|	|	|	0.87
133.250	0.00	0.30	0.712	o	|	|	|	|	0.87
133.333	0.00	0.30	0.710	o	|	|	|	|	0.87
133.417	0.00	0.30	0.708	o	|	|	|	|	0.86
133.500	0.00	0.29	0.706	o	|	|	|	|	0.86
133.583	0.00	0.29	0.704	o	|	|	|	|	0.86
133.667	0.00	0.29	0.702	o	|	|	|	|	0.86
133.750	0.00	0.29	0.700	o	|	|	|	|	0.85
133.833	0.00	0.29	0.698	o	|	|	|	|	0.85
133.917	0.00	0.29	0.696	o	|	|	|	|	0.85
134.000	0.00	0.29	0.694	o	|	|	|	|	0.85
134.083	0.00	0.29	0.692	o	|	|	|	|	0.85
134.167	0.00	0.29	0.690	o	|	|	|	|	0.84
134.250	0.00	0.29	0.688	o	|	|	|	|	0.84
134.333	0.00	0.29	0.686	o	|	|	|	|	0.84
134.417	0.00	0.29	0.684	o	|	|	|	|	0.84
134.500	0.00	0.29	0.682	o	|	|	|	|	0.84
134.583	0.00	0.29	0.680	o	|	|	|	|	0.83
134.667	0.00	0.29	0.678	o	|	|	|	|	0.83
134.750	0.00	0.29	0.676	o	|	|	|	|	0.83
134.833	0.00	0.29	0.674	o	|	|	|	|	0.83
134.917	0.00	0.29	0.672	o	|	|	|	|	0.83
135.000	0.00	0.29	0.670	o	|	|	|	|	0.82
135.083	0.00	0.29	0.668	o	|	|	|	|	0.82
135.167	0.00	0.29	0.666	o	|	|	|	|	0.82
135.250	0.00	0.28	0.664	o	|	|	|	|	0.82
135.333	0.00	0.28	0.662	o	|	|	|	|	0.82
135.417	0.00	0.28	0.660	o	|	|	|	|	0.81
135.500	0.00	0.28	0.658	o	|	|	|	|	0.81
135.583	0.00	0.28	0.656	o	|	|	|	|	0.81
135.667	0.00	0.28	0.655	o	|	|	|	|	0.81
135.750	0.00	0.28	0.653	o	|	|	|	|	0.81
135.833	0.00	0.28	0.651	o	|	|	|	|	0.80
135.917	0.00	0.28	0.649	o	|	|	|	|	0.80
136.000	0.00	0.28	0.647	o	|	|	|	|	0.80
136.083	0.00	0.28	0.645	o	|	|	|	|	0.80
136.167	0.00	0.28	0.643	o	|	|	|	|	0.80
136.250	0.00	0.28	0.641	o	|	|	|	|	0.79
136.333	0.00	0.28	0.639	o	|	|	|	|	0.79
136.417	0.00	0.28	0.637	o	|	|	|	|	0.79
136.500	0.00	0.28	0.635	o	|	|	|	|	0.79
136.583	0.00	0.28	0.633	o	|	|	|	|	0.79
136.667	0.00	0.28	0.631	o	|	|	|	|	0.78
136.750	0.00	0.28	0.630	o	|	|	|	|	0.78
136.833	0.00	0.28	0.628	o	|	|	|	|	0.78

136.917	0.00	0.28	0.626	o	|	|	|	|	0.78
137.000	0.00	0.28	0.624	o	|	|	|	|	0.78
137.083	0.00	0.27	0.622	o	|	|	|	|	0.77
137.167	0.00	0.27	0.620	o	|	|	|	|	0.77
137.250	0.00	0.27	0.618	o	|	|	|	|	0.77
137.333	0.00	0.27	0.616	o	|	|	|	|	0.77
137.417	0.00	0.27	0.614	o	|	|	|	|	0.77
137.500	0.00	0.27	0.613	o	|	|	|	|	0.76
137.583	0.00	0.27	0.611	o	|	|	|	|	0.76
137.667	0.00	0.27	0.609	o	|	|	|	|	0.76
137.750	0.00	0.27	0.607	o	|	|	|	|	0.76
137.833	0.00	0.27	0.605	o	|	|	|	|	0.76
137.917	0.00	0.27	0.603	o	|	|	|	|	0.75
138.000	0.00	0.27	0.601	o	|	|	|	|	0.75
138.083	0.00	0.27	0.599	o	|	|	|	|	0.75
138.167	0.00	0.27	0.598	o	|	|	|	|	0.75
138.250	0.00	0.27	0.596	o	|	|	|	|	0.75
138.333	0.00	0.27	0.594	o	|	|	|	|	0.75
138.417	0.00	0.27	0.592	o	|	|	|	|	0.74
138.500	0.00	0.27	0.590	o	|	|	|	|	0.74
138.583	0.00	0.27	0.588	o	|	|	|	|	0.74
138.667	0.00	0.27	0.587	o	|	|	|	|	0.74
138.750	0.00	0.27	0.585	o	|	|	|	|	0.74
138.833	0.00	0.27	0.583	o	|	|	|	|	0.73
138.917	0.00	0.26	0.581	o	|	|	|	|	0.73
139.000	0.00	0.26	0.579	o	|	|	|	|	0.73
139.083	0.00	0.26	0.577	o	|	|	|	|	0.73
139.167	0.00	0.26	0.576	o	|	|	|	|	0.73
139.250	0.00	0.26	0.574	o	|	|	|	|	0.72
139.333	0.00	0.26	0.572	o	|	|	|	|	0.72
139.417	0.00	0.26	0.570	o	|	|	|	|	0.72
139.500	0.00	0.26	0.568	o	|	|	|	|	0.72
139.583	0.00	0.26	0.567	o	|	|	|	|	0.72
139.667	0.00	0.26	0.565	o	|	|	|	|	0.72
139.750	0.00	0.26	0.563	o	|	|	|	|	0.71
139.833	0.00	0.26	0.561	o	|	|	|	|	0.71
139.917	0.00	0.26	0.559	o	|	|	|	|	0.71
140.000	0.00	0.26	0.558	o	|	|	|	|	0.71
140.083	0.00	0.26	0.556	o	|	|	|	|	0.71
140.167	0.00	0.26	0.554	o	|	|	|	|	0.70
140.250	0.00	0.26	0.552	o	|	|	|	|	0.70
140.333	0.00	0.26	0.550	o	|	|	|	|	0.70
140.417	0.00	0.26	0.549	o	|	|	|	|	0.70
140.500	0.00	0.26	0.547	o	|	|	|	|	0.70
140.583	0.00	0.26	0.545	o	|	|	|	|	0.70
140.667	0.00	0.26	0.543	o	|	|	|	|	0.69
140.750	0.00	0.26	0.542	o	|	|	|	|	0.69
140.833	0.00	0.25	0.540	o	|	|	|	|	0.69
140.917	0.00	0.25	0.538	o	|	|	|	|	0.69
141.000	0.00	0.25	0.536	o	|	|	|	|	0.69
141.083	0.00	0.25	0.535	o	|	|	|	|	0.68
141.167	0.00	0.25	0.533	o	|	|	|	|	0.68
141.250	0.00	0.25	0.531	o	|	|	|	|	0.68
141.333	0.00	0.25	0.529	o	|	|	|	|	0.68
141.417	0.00	0.25	0.528	o	|	|	|	|	0.68
141.500	0.00	0.25	0.526	o	|	|	|	|	0.68
141.583	0.00	0.25	0.524	o	|	|	|	|	0.67
141.667	0.00	0.25	0.522	o	|	|	|	|	0.67
141.750	0.00	0.25	0.521	o	|	|	|	|	0.67
141.833	0.00	0.25	0.519	o	|	|	|	|	0.67
141.917	0.00	0.25	0.517	o	|	|	|	|	0.67
142.000	0.00	0.25	0.516	o	|	|	|	|	0.66
142.083	0.00	0.25	0.514	o	|	|	|	|	0.66
142.167	0.00	0.25	0.512	o	|	|	|	|	0.66
142.250	0.00	0.25	0.510	o	|	|	|	|	0.66
142.333	0.00	0.25	0.509	o	|	|	|	|	0.66
142.417	0.00	0.25	0.507	o	|	|	|	|	0.66
142.500	0.00	0.25	0.505	o	|	|	|	|	0.65
142.583	0.00	0.25	0.504	o	|	|	|	|	0.65
142.667	0.00	0.25	0.502	o	|	|	|	|	0.65
142.750	0.00	0.25	0.500	o	|	|	|	|	0.65
142.833	0.00	0.25	0.499	o	|	|	|	|	0.65
142.917	0.00	0.24	0.497	o	|	|	|	|	0.65
143.000	0.00	0.24	0.495	o	|	|	|	|	0.64
143.083	0.00	0.24	0.494	o	|	|	|	|	0.64

143.167	0.00	0.24	0.492	o	|	|	|	|	0.64
143.250	0.00	0.24	0.490	o	|	|	|	|	0.64
143.333	0.00	0.24	0.488	o	|	|	|	|	0.64
143.417	0.00	0.24	0.487	o	|	|	|	|	0.63
143.500	0.00	0.24	0.485	o	|	|	|	|	0.63
143.583	0.00	0.24	0.483	o	|	|	|	|	0.63
143.667	0.00	0.24	0.482	o	|	|	|	|	0.63
143.750	0.00	0.24	0.480	o	|	|	|	|	0.63
143.833	0.00	0.24	0.479	o	|	|	|	|	0.63
143.917	0.00	0.24	0.477	o	|	|	|	|	0.62
144.000	0.00	0.24	0.475	o	|	|	|	|	0.62
144.083	0.00	0.24	0.474	o	|	|	|	|	0.62
144.167	0.00	0.24	0.472	o	|	|	|	|	0.62
144.250	0.00	0.24	0.470	o	|	|	|	|	0.62
144.333	0.00	0.24	0.469	o	|	|	|	|	0.62
144.417	0.00	0.24	0.467	o	|	|	|	|	0.61
144.500	0.00	0.24	0.465	o	|	|	|	|	0.61
144.583	0.00	0.24	0.464	o	|	|	|	|	0.61
144.667	0.00	0.24	0.462	o	|	|	|	|	0.61
144.750	0.00	0.24	0.460	o	|	|	|	|	0.61
144.833	0.00	0.24	0.459	o	|	|	|	|	0.61
144.917	0.00	0.24	0.457	o	|	|	|	|	0.60
145.000	0.00	0.23	0.456	o	|	|	|	|	0.60
145.083	0.00	0.23	0.454	o	|	|	|	|	0.60
145.167	0.00	0.23	0.452	o	|	|	|	|	0.60
145.250	0.00	0.23	0.451	o	|	|	|	|	0.60
145.333	0.00	0.23	0.449	o	|	|	|	|	0.60
145.417	0.00	0.23	0.448	o	|	|	|	|	0.59
145.500	0.00	0.23	0.446	o	|	|	|	|	0.59
145.583	0.00	0.23	0.444	o	|	|	|	|	0.59
145.667	0.00	0.23	0.443	o	|	|	|	|	0.59
145.750	0.00	0.23	0.441	o	|	|	|	|	0.59
145.833	0.00	0.23	0.440	o	|	|	|	|	0.59
145.917	0.00	0.23	0.438	o	|	|	|	|	0.58
146.000	0.00	0.23	0.436	o	|	|	|	|	0.58
146.083	0.00	0.23	0.435	o	|	|	|	|	0.58
146.167	0.00	0.23	0.433	o	|	|	|	|	0.58
146.250	0.00	0.23	0.432	o	|	|	|	|	0.58
146.333	0.00	0.23	0.430	o	|	|	|	|	0.58
146.417	0.00	0.23	0.429	o	|	|	|	|	0.57
146.500	0.00	0.23	0.427	o	|	|	|	|	0.57
146.583	0.00	0.23	0.425	o	|	|	|	|	0.57
146.667	0.00	0.23	0.424	o	|	|	|	|	0.57
146.750	0.00	0.23	0.422	o	|	|	|	|	0.57
146.833	0.00	0.23	0.421	o	|	|	|	|	0.57
146.917	0.00	0.23	0.419	o	|	|	|	|	0.57
147.000	0.00	0.23	0.418	o	|	|	|	|	0.56
147.083	0.00	0.23	0.416	o	|	|	|	|	0.56
147.167	0.00	0.22	0.414	o	|	|	|	|	0.56
147.250	0.00	0.22	0.413	o	|	|	|	|	0.56
147.333	0.00	0.22	0.411	o	|	|	|	|	0.56
147.417	0.00	0.22	0.410	o	|	|	|	|	0.56
147.500	0.00	0.22	0.408	o	|	|	|	|	0.55
147.583	0.00	0.22	0.407	o	|	|	|	|	0.55
147.667	0.00	0.22	0.405	o	|	|	|	|	0.55
147.750	0.00	0.22	0.404	o	|	|	|	|	0.55
147.833	0.00	0.22	0.402	o	|	|	|	|	0.55
147.917	0.00	0.22	0.401	o	|	|	|	|	0.55
148.000	0.00	0.22	0.399	o	|	|	|	|	0.54
148.083	0.00	0.22	0.398	o	|	|	|	|	0.54
148.167	0.00	0.22	0.396	o	|	|	|	|	0.54
148.250	0.00	0.22	0.395	o	|	|	|	|	0.54
148.333	0.00	0.22	0.393	o	|	|	|	|	0.54
148.417	0.00	0.22	0.391	o	|	|	|	|	0.54
148.500	0.00	0.22	0.390	o	|	|	|	|	0.54
148.583	0.00	0.22	0.388	o	|	|	|	|	0.53
148.667	0.00	0.22	0.387	o	|	|	|	|	0.53
148.750	0.00	0.22	0.385	o	|	|	|	|	0.53
148.833	0.00	0.22	0.384	o	|	|	|	|	0.53
148.917	0.00	0.22	0.382	o	|	|	|	|	0.53
149.000	0.00	0.22	0.381	o	|	|	|	|	0.53
149.083	0.00	0.22	0.379	o	|	|	|	|	0.52
149.167	0.00	0.22	0.378	o	|	|	|	|	0.52
149.250	0.00	0.22	0.377	o	|	|	|	|	0.52
149.333	0.00	0.22	0.375	o	|	|	|	|	0.52

149.417	0.00	0.22	0.374	o					0.52
149.500	0.00	0.21	0.372	o					0.52
149.583	0.00	0.21	0.371	o					0.52
149.667	0.00	0.21	0.369	o					0.51
149.750	0.00	0.21	0.368	o					0.51
149.833	0.00	0.21	0.366	o					0.51
149.917	0.00	0.21	0.365	o					0.51
150.000	0.00	0.21	0.363	o					0.51
150.083	0.00	0.21	0.362	o					0.51
150.167	0.00	0.21	0.360	o					0.50
150.250	0.00	0.21	0.359	o					0.50
150.333	0.00	0.21	0.357	o					0.50
150.417	0.00	0.21	0.356	o					0.50
150.500	0.00	0.21	0.354	o					0.50
150.583	0.00	0.21	0.353	o					0.50
150.667	0.00	0.21	0.352	o					0.49
150.750	0.00	0.21	0.350	o					0.49
150.833	0.00	0.20	0.349	o					0.49
150.917	0.00	0.20	0.347	o					0.49
151.000	0.00	0.20	0.346	o					0.49
151.083	0.00	0.20	0.345	o					0.48
151.167	0.00	0.20	0.343	o					0.48
151.250	0.00	0.20	0.342	o					0.48
151.333	0.00	0.20	0.340	o					0.48
151.417	0.00	0.20	0.339	o					0.48
151.500	0.00	0.20	0.338	o					0.47
151.583	0.00	0.19	0.336	o					0.47
151.667	0.00	0.19	0.335	o					0.47
151.750	0.00	0.19	0.334	o					0.47
151.833	0.00	0.19	0.332	o					0.47
151.917	0.00	0.19	0.331	o					0.46
152.000	0.00	0.19	0.330	o					0.46
152.083	0.00	0.19	0.328	o					0.46
152.167	0.00	0.19	0.327	o					0.46
152.250	0.00	0.19	0.326	o					0.46
152.333	0.00	0.18	0.325	o					0.46
152.417	0.00	0.18	0.323	o					0.45
152.500	0.00	0.18	0.322	o					0.45
152.583	0.00	0.18	0.321	o					0.45
152.667	0.00	0.18	0.320	o					0.45
152.750	0.00	0.18	0.318	o					0.45
152.833	0.00	0.18	0.317	o					0.45
152.917	0.00	0.18	0.316	o					0.44
153.000	0.00	0.18	0.315	o					0.44
153.083	0.00	0.18	0.313	o					0.44
153.167	0.00	0.17	0.312	o					0.44
153.250	0.00	0.17	0.311	o					0.44
153.333	0.00	0.17	0.310	o					0.44
153.417	0.00	0.17	0.309	o					0.43
153.500	0.00	0.17	0.307	o					0.43
153.583	0.00	0.17	0.306	o					0.43
153.667	0.00	0.17	0.305	o					0.43
153.750	0.00	0.17	0.304	o					0.43
153.833	0.00	0.17	0.303	o					0.43
153.917	0.00	0.17	0.302	o					0.42
154.000	0.00	0.16	0.301	o					0.42
154.083	0.00	0.16	0.299	o					0.42
154.167	0.00	0.16	0.298	o					0.42
154.250	0.00	0.16	0.297	o					0.42
154.333	0.00	0.16	0.296	o					0.42
154.417	0.00	0.16	0.295	o					0.41
154.500	0.00	0.16	0.294	o					0.41
154.583	0.00	0.16	0.293	o					0.41
154.667	0.00	0.16	0.292	o					0.41
154.750	0.00	0.16	0.291	o					0.41
154.833	0.00	0.16	0.290	o					0.41
154.917	0.00	0.15	0.288	o					0.41
155.000	0.00	0.15	0.287	o					0.40
155.083	0.00	0.15	0.286	o					0.40
155.167	0.00	0.15	0.285	o					0.40
155.250	0.00	0.15	0.284	o					0.40
155.333	0.00	0.15	0.283	o					0.40
155.417	0.00	0.15	0.282	o					0.40
155.500	0.00	0.15	0.281	o					0.39
155.583	0.00	0.15	0.280	o					0.39

155.667	0.00	0.15	0.279	o	|	|	|	|	0.39
155.750	0.00	0.15	0.278	o	|	|	|	|	0.39
155.833	0.00	0.15	0.277	o	|	|	|	|	0.39
155.917	0.00	0.14	0.276	o	|	|	|	|	0.39
156.000	0.00	0.14	0.275	o	|	|	|	|	0.39
156.083	0.00	0.14	0.274	o	|	|	|	|	0.38
156.167	0.00	0.14	0.273	o	|	|	|	|	0.38
156.250	0.00	0.14	0.272	o	|	|	|	|	0.38
156.333	0.00	0.14	0.271	o	|	|	|	|	0.38
156.417	0.00	0.14	0.270	o	|	|	|	|	0.38
156.500	0.00	0.14	0.269	o	|	|	|	|	0.38
156.583	0.00	0.14	0.268	o	|	|	|	|	0.38
156.667	0.00	0.14	0.267	o	|	|	|	|	0.38
156.750	0.00	0.14	0.266	o	|	|	|	|	0.37
156.833	0.00	0.14	0.266	o	|	|	|	|	0.37
156.917	0.00	0.13	0.265	o	|	|	|	|	0.37
157.000	0.00	0.13	0.264	o	|	|	|	|	0.37
157.083	0.00	0.13	0.263	o	|	|	|	|	0.37
157.167	0.00	0.13	0.262	o	|	|	|	|	0.37
157.250	0.00	0.13	0.261	o	|	|	|	|	0.37
157.333	0.00	0.13	0.260	o	|	|	|	|	0.37
157.417	0.00	0.13	0.259	o	|	|	|	|	0.36
157.500	0.00	0.13	0.258	o	|	|	|	|	0.36
157.583	0.00	0.13	0.257	o	|	|	|	|	0.36
157.667	0.00	0.13	0.256	o	|	|	|	|	0.36
157.750	0.00	0.13	0.256	o	|	|	|	|	0.36
157.833	0.00	0.13	0.255	o	|	|	|	|	0.36
157.917	0.00	0.13	0.254	o	|	|	|	|	0.36
158.000	0.00	0.13	0.253	o	|	|	|	|	0.36
158.083	0.00	0.12	0.252	o	|	|	|	|	0.35
158.167	0.00	0.12	0.251	o	|	|	|	|	0.35
158.250	0.00	0.12	0.250	o	|	|	|	|	0.35
158.333	0.00	0.12	0.250	o	|	|	|	|	0.35
158.417	0.00	0.12	0.249	o	|	|	|	|	0.35
158.500	0.00	0.12	0.248	o	|	|	|	|	0.35
158.583	0.00	0.12	0.247	o	|	|	|	|	0.35
158.667	0.00	0.12	0.246	o	|	|	|	|	0.35
158.750	0.00	0.12	0.245	o	|	|	|	|	0.34
158.833	0.00	0.12	0.245	o	|	|	|	|	0.34
158.917	0.00	0.12	0.244	o	|	|	|	|	0.34
159.000	0.00	0.12	0.243	o	|	|	|	|	0.34
159.083	0.00	0.12	0.242	o	|	|	|	|	0.34
159.167	0.00	0.12	0.241	o	|	|	|	|	0.34
159.250	0.00	0.11	0.241	o	|	|	|	|	0.34
159.333	0.00	0.11	0.240	o	|	|	|	|	0.34
159.417	0.00	0.11	0.239	o	|	|	|	|	0.34
159.500	0.00	0.11	0.238	o	|	|	|	|	0.33
159.583	0.00	0.11	0.237	o	|	|	|	|	0.33
159.667	0.00	0.11	0.237	o	|	|	|	|	0.33
159.750	0.00	0.11	0.236	o	|	|	|	|	0.33
159.833	0.00	0.11	0.235	o	|	|	|	|	0.33
159.917	0.00	0.11	0.234	o	|	|	|	|	0.33
160.000	0.00	0.11	0.234	o	|	|	|	|	0.33
160.083	0.00	0.11	0.233	o	|	|	|	|	0.33
160.167	0.00	0.11	0.232	o	|	|	|	|	0.33
160.250	0.00	0.11	0.231	o	|	|	|	|	0.32
160.333	0.00	0.11	0.231	o	|	|	|	|	0.32
160.417	0.00	0.11	0.230	o	|	|	|	|	0.32
160.500	0.00	0.11	0.229	o	|	|	|	|	0.32
160.583	0.00	0.10	0.228	o	|	|	|	|	0.32
160.667	0.00	0.10	0.228	o	|	|	|	|	0.32
160.750	0.00	0.10	0.227	o	|	|	|	|	0.32
160.833	0.00	0.10	0.226	o	|	|	|	|	0.32
160.917	0.00	0.10	0.226	o	|	|	|	|	0.32
161.000	0.00	0.10	0.225	o	|	|	|	|	0.32
161.083	0.00	0.10	0.224	o	|	|	|	|	0.31
161.167	0.00	0.10	0.224	o	|	|	|	|	0.31
161.250	0.00	0.10	0.223	o	|	|	|	|	0.31
161.333	0.00	0.10	0.222	o	|	|	|	|	0.31
161.417	0.00	0.10	0.221	o	|	|	|	|	0.31
161.500	0.00	0.10	0.221	o	|	|	|	|	0.31
161.583	0.00	0.10	0.220	o	|	|	|	|	0.31
161.667	0.00	0.10	0.219	o	|	|	|	|	0.31
161.750	0.00	0.10	0.219	o	|	|	|	|	0.31
161.833	0.00	0.10	0.218	o	|	|	|	|	0.31

161.917	0.00	0.10	0.217	o	|	|	|	|	0.31
162.000	0.00	0.09	0.217	o	|	|	|	|	0.30
162.083	0.00	0.09	0.216	o	|	|	|	|	0.30
162.167	0.00	0.09	0.215	o	|	|	|	|	0.30
162.250	0.00	0.09	0.215	o	|	|	|	|	0.30
162.333	0.00	0.09	0.214	o	|	|	|	|	0.30
162.417	0.00	0.09	0.214	o	|	|	|	|	0.30
162.500	0.00	0.09	0.213	o	|	|	|	|	0.30
162.583	0.00	0.09	0.212	o	|	|	|	|	0.30
162.667	0.00	0.09	0.212	o	|	|	|	|	0.30
162.750	0.00	0.09	0.211	o	|	|	|	|	0.30
162.833	0.00	0.09	0.210	o	|	|	|	|	0.30
162.917	0.00	0.09	0.210	o	|	|	|	|	0.29
163.000	0.00	0.09	0.209	o	|	|	|	|	0.29
163.083	0.00	0.09	0.209	o	|	|	|	|	0.29
163.167	0.00	0.09	0.208	o	|	|	|	|	0.29
163.250	0.00	0.09	0.207	o	|	|	|	|	0.29
163.333	0.00	0.09	0.207	o	|	|	|	|	0.29
163.417	0.00	0.09	0.206	o	|	|	|	|	0.29
163.500	0.00	0.09	0.206	o	|	|	|	|	0.29
163.583	0.00	0.09	0.205	o	|	|	|	|	0.29
163.667	0.00	0.08	0.204	o	|	|	|	|	0.29
163.750	0.00	0.08	0.204	o	|	|	|	|	0.29
163.833	0.00	0.08	0.203	o	|	|	|	|	0.29
163.917	0.00	0.08	0.203	o	|	|	|	|	0.28
164.000	0.00	0.08	0.202	o	|	|	|	|	0.28
164.083	0.00	0.08	0.202	o	|	|	|	|	0.28
164.167	0.00	0.08	0.201	o	|	|	|	|	0.28
164.250	0.00	0.08	0.200	o	|	|	|	|	0.28
164.333	0.00	0.08	0.200	o	|	|	|	|	0.28
164.417	0.00	0.08	0.199	o	|	|	|	|	0.28
164.500	0.00	0.08	0.199	o	|	|	|	|	0.28
164.583	0.00	0.08	0.198	o	|	|	|	|	0.28
164.667	0.00	0.08	0.198	o	|	|	|	|	0.28
164.750	0.00	0.08	0.197	o	|	|	|	|	0.28
164.833	0.00	0.08	0.197	o	|	|	|	|	0.28
164.917	0.00	0.08	0.196	o	|	|	|	|	0.28
165.000	0.00	0.08	0.196	o	|	|	|	|	0.27
165.083	0.00	0.08	0.195	o	|	|	|	|	0.27
165.167	0.00	0.08	0.194	o	|	|	|	|	0.27
165.250	0.00	0.08	0.194	o	|	|	|	|	0.27
165.333	0.00	0.08	0.193	o	|	|	|	|	0.27
165.417	0.00	0.08	0.193	o	|	|	|	|	0.27
165.500	0.00	0.07	0.192	o	|	|	|	|	0.27
165.583	0.00	0.07	0.192	o	|	|	|	|	0.27
165.667	0.00	0.07	0.191	o	|	|	|	|	0.27
165.750	0.00	0.07	0.191	o	|	|	|	|	0.27
165.833	0.00	0.07	0.190	o	|	|	|	|	0.27
165.917	0.00	0.07	0.190	o	|	|	|	|	0.27
166.000	0.00	0.07	0.189	o	|	|	|	|	0.27
166.083	0.00	0.07	0.189	o	|	|	|	|	0.27
166.167	0.00	0.07	0.188	o	|	|	|	|	0.26
166.250	0.00	0.07	0.188	o	|	|	|	|	0.26
166.333	0.00	0.07	0.187	o	|	|	|	|	0.26
166.417	0.00	0.07	0.187	o	|	|	|	|	0.26
166.500	0.00	0.07	0.186	o	|	|	|	|	0.26
166.583	0.00	0.07	0.186	o	|	|	|	|	0.26
166.667	0.00	0.07	0.185	o	|	|	|	|	0.26
166.750	0.00	0.07	0.185	o	|	|	|	|	0.26
166.833	0.00	0.07	0.185	o	|	|	|	|	0.26
166.917	0.00	0.07	0.184	o	|	|	|	|	0.26
167.000	0.00	0.07	0.184	o	|	|	|	|	0.26
167.083	0.00	0.07	0.183	o	|	|	|	|	0.26
167.167	0.00	0.07	0.183	o	|	|	|	|	0.26
167.250	0.00	0.07	0.182	o	|	|	|	|	0.26
167.333	0.00	0.07	0.182	o	|	|	|	|	0.26
167.417	0.00	0.07	0.181	o	|	|	|	|	0.25
167.500	0.00	0.07	0.181	o	|	|	|	|	0.25
167.583	0.00	0.06	0.180	o	|	|	|	|	0.25
167.667	0.00	0.06	0.180	o	|	|	|	|	0.25
167.750	0.00	0.06	0.180	o	|	|	|	|	0.25
167.833	0.00	0.06	0.179	o	|	|	|	|	0.25
167.917	0.00	0.06	0.179	o	|	|	|	|	0.25
168.000	0.00	0.06	0.178	o	|	|	|	|	0.25
168.083	0.00	0.06	0.178	o	|	|	|	|	0.25

168.167	0.00	0.06	0.177	o	|	|	|	|	0.25
168.250	0.00	0.06	0.177	o	|	|	|	|	0.25
168.333	0.00	0.06	0.176	o	|	|	|	|	0.25
168.417	0.00	0.06	0.176	o	|	|	|	|	0.25
168.500	0.00	0.06	0.176	o	|	|	|	|	0.25
168.583	0.00	0.06	0.175	o	|	|	|	|	0.25
168.667	0.00	0.06	0.175	o	|	|	|	|	0.25
168.750	0.00	0.06	0.174	o	|	|	|	|	0.24
168.833	0.00	0.06	0.174	o	|	|	|	|	0.24
168.917	0.00	0.06	0.174	o	|	|	|	|	0.24
169.000	0.00	0.06	0.173	o	|	|	|	|	0.24
169.083	0.00	0.06	0.173	o	|	|	|	|	0.24
169.167	0.00	0.06	0.172	o	|	|	|	|	0.24
169.250	0.00	0.06	0.172	o	|	|	|	|	0.24
169.333	0.00	0.06	0.172	o	|	|	|	|	0.24
169.417	0.00	0.06	0.171	o	|	|	|	|	0.24
169.500	0.00	0.06	0.171	o	|	|	|	|	0.24
169.583	0.00	0.06	0.170	o	|	|	|	|	0.24
169.667	0.00	0.06	0.170	o	|	|	|	|	0.24
169.750	0.00	0.06	0.170	o	|	|	|	|	0.24
169.833	0.00	0.06	0.169	o	|	|	|	|	0.24
169.917	0.00	0.06	0.169	o	|	|	|	|	0.24
170.000	0.00	0.05	0.169	o	|	|	|	|	0.24
170.083	0.00	0.05	0.168	o	|	|	|	|	0.24
170.167	0.00	0.05	0.168	o	|	|	|	|	0.24
170.250	0.00	0.05	0.167	o	|	|	|	|	0.24
170.333	0.00	0.05	0.167	o	|	|	|	|	0.23
170.417	0.00	0.05	0.167	o	|	|	|	|	0.23
170.500	0.00	0.05	0.166	o	|	|	|	|	0.23
170.583	0.00	0.05	0.166	o	|	|	|	|	0.23
170.667	0.00	0.05	0.166	o	|	|	|	|	0.23
170.750	0.00	0.05	0.165	o	|	|	|	|	0.23
170.833	0.00	0.05	0.165	o	|	|	|	|	0.23
170.917	0.00	0.05	0.164	o	|	|	|	|	0.23
171.000	0.00	0.05	0.164	o	|	|	|	|	0.23
171.083	0.00	0.05	0.164	o	|	|	|	|	0.23
171.167	0.00	0.05	0.163	o	|	|	|	|	0.23
171.250	0.00	0.05	0.163	o	|	|	|	|	0.23
171.333	0.00	0.05	0.163	o	|	|	|	|	0.23
171.417	0.00	0.05	0.162	o	|	|	|	|	0.23
171.500	0.00	0.05	0.162	o	|	|	|	|	0.23
171.583	0.00	0.05	0.162	o	|	|	|	|	0.23
171.667	0.00	0.05	0.161	o	|	|	|	|	0.23
171.750	0.00	0.05	0.161	o	|	|	|	|	0.23
171.833	0.00	0.05	0.161	o	|	|	|	|	0.23
171.917	0.00	0.05	0.160	o	|	|	|	|	0.23
172.000	0.00	0.05	0.160	o	|	|	|	|	0.22
172.083	0.00	0.05	0.160	o	|	|	|	|	0.22
172.167	0.00	0.05	0.159	o	|	|	|	|	0.22
172.250	0.00	0.05	0.159	o	|	|	|	|	0.22
172.333	0.00	0.05	0.159	o	|	|	|	|	0.22
172.417	0.00	0.05	0.158	o	|	|	|	|	0.22
172.500	0.00	0.05	0.158	o	|	|	|	|	0.22
172.583	0.00	0.05	0.158	o	|	|	|	|	0.22
172.667	0.00	0.05	0.157	o	|	|	|	|	0.22
172.750	0.00	0.05	0.157	o	|	|	|	|	0.22
172.833	0.00	0.05	0.157	o	|	|	|	|	0.22
172.917	0.00	0.04	0.157	o	|	|	|	|	0.22
173.000	0.00	0.04	0.156	o	|	|	|	|	0.22
173.083	0.00	0.04	0.156	o	|	|	|	|	0.22
173.167	0.00	0.04	0.156	o	|	|	|	|	0.22
173.250	0.00	0.04	0.155	o	|	|	|	|	0.22
173.333	0.00	0.04	0.155	o	|	|	|	|	0.22
173.417	0.00	0.04	0.155	o	|	|	|	|	0.22
173.500	0.00	0.04	0.154	o	|	|	|	|	0.22
173.583	0.00	0.04	0.154	o	|	|	|	|	0.22
173.667	0.00	0.04	0.154	o	|	|	|	|	0.22
173.750	0.00	0.04	0.154	o	|	|	|	|	0.22
173.833	0.00	0.04	0.153	o	|	|	|	|	0.22
173.917	0.00	0.04	0.153	o	|	|	|	|	0.21
174.000	0.00	0.04	0.153	o	|	|	|	|	0.21
174.083	0.00	0.04	0.152	o	|	|	|	|	0.21
174.167	0.00	0.04	0.152	o	|	|	|	|	0.21
174.250	0.00	0.04	0.152	o	|	|	|	|	0.21
174.333	0.00	0.04	0.152	o	|	|	|	|	0.21

174.417	0.00	0.04	0.151	o					0.21
174.500	0.00	0.04	0.151	o					0.21
174.583	0.00	0.04	0.151	o					0.21
174.667	0.00	0.04	0.150	o					0.21
174.750	0.00	0.04	0.150	o					0.21
174.833	0.00	0.04	0.150	o					0.21
174.917	0.00	0.04	0.150	o					0.21
175.000	0.00	0.04	0.149	o					0.21
175.083	0.00	0.04	0.149	o					0.21
175.167	0.00	0.04	0.149	o					0.21
175.250	0.00	0.04	0.149	o					0.21
175.333	0.00	0.04	0.148	o					0.21
175.417	0.00	0.04	0.148	o					0.21
175.500	0.00	0.04	0.148	o					0.21
175.583	0.00	0.04	0.148	o					0.21
175.667	0.00	0.04	0.147	o					0.21
175.750	0.00	0.04	0.147	o					0.21
175.833	0.00	0.04	0.147	o					0.21
175.917	0.00	0.04	0.147	o					0.21
176.000	0.00	0.04	0.146	o					0.21
176.083	0.00	0.04	0.146	o					0.21
176.167	0.00	0.04	0.146	o					0.20
176.250	0.00	0.04	0.146	o					0.20
176.333	0.00	0.04	0.145	o					0.20
176.417	0.00	0.04	0.145	o					0.20
176.500	0.00	0.03	0.145	o					0.20
176.583	0.00	0.03	0.145	o					0.20
176.667	0.00	0.03	0.144	o					0.20
176.750	0.00	0.03	0.144	o					0.20
176.833	0.00	0.03	0.144	o					0.20
176.917	0.00	0.03	0.144	o					0.20
177.000	0.00	0.03	0.143	o					0.20
177.083	0.00	0.03	0.143	o					0.20
177.167	0.00	0.03	0.143	o					0.20
177.250	0.00	0.03	0.143	o					0.20
177.333	0.00	0.03	0.142	o					0.20
177.417	0.00	0.03	0.142	o					0.20
177.500	0.00	0.03	0.142	o					0.20
177.583	0.00	0.03	0.142	o					0.20
177.667	0.00	0.03	0.142	o					0.20
177.750	0.00	0.03	0.141	o					0.20
177.833	0.00	0.03	0.141	o					0.20
177.917	0.00	0.03	0.141	o					0.20
178.000	0.00	0.03	0.141	o					0.20
178.083	0.00	0.03	0.140	o					0.20
178.167	0.00	0.03	0.140	o					0.20
178.250	0.00	0.03	0.140	o					0.20
178.333	0.00	0.03	0.140	o					0.20
178.417	0.00	0.03	0.140	o					0.20
178.500	0.00	0.03	0.139	o					0.20
178.583	0.00	0.03	0.139	o					0.20
178.667	0.00	0.03	0.139	o					0.20
178.750	0.00	0.03	0.139	o					0.19
178.833	0.00	0.03	0.139	o					0.19
178.917	0.00	0.03	0.138	o					0.19
179.000	0.00	0.03	0.138	o					0.19
179.083	0.00	0.03	0.138	o					0.19
179.167	0.00	0.03	0.138	o					0.19
179.250	0.00	0.03	0.138	o					0.19
179.333	0.00	0.03	0.137	o					0.19
179.417	0.00	0.03	0.137	o					0.19
179.500	0.00	0.03	0.137	o					0.19
179.583	0.00	0.03	0.137	o					0.19
179.667	0.00	0.03	0.137	o					0.19
179.750	0.00	0.03	0.136	o					0.19
179.833	0.00	0.03	0.136	o					0.19
179.917	0.00	0.03	0.136	o					0.19
180.000	0.00	0.03	0.136	o					0.19
180.083	0.00	0.03	0.136	o					0.19
180.167	0.00	0.03	0.135	o					0.19
180.250	0.00	0.03	0.135	o					0.19
180.333	0.00	0.03	0.135	o					0.19
180.417	0.00	0.03	0.135	o					0.19
180.500	0.00	0.03	0.135	o					0.19
180.583	0.00	0.03	0.134	o					0.19

180.667	0.00	0.03	0.134	o	|	|	|	|	0.19
180.750	0.00	0.03	0.134	o	|	|	|	|	0.19
180.833	0.00	0.03	0.134	o	|	|	|	|	0.19
180.917	0.00	0.03	0.134	o	|	|	|	|	0.19
181.000	0.00	0.03	0.134	o	|	|	|	|	0.19
181.083	0.00	0.03	0.133	o	|	|	|	|	0.19
181.167	0.00	0.03	0.133	o	|	|	|	|	0.19
181.250	0.00	0.03	0.133	o	|	|	|	|	0.19
181.333	0.00	0.03	0.133	o	|	|	|	|	0.19
181.417	0.00	0.02	0.133	o	|	|	|	|	0.19
181.500	0.00	0.02	0.133	o	|	|	|	|	0.19
181.583	0.00	0.02	0.132	o	|	|	|	|	0.19
181.667	0.00	0.02	0.132	o	|	|	|	|	0.19
181.750	0.00	0.02	0.132	o	|	|	|	|	0.19
181.833	0.00	0.02	0.132	o	|	|	|	|	0.19
181.917	0.00	0.02	0.132	o	|	|	|	|	0.18
182.000	0.00	0.02	0.132	o	|	|	|	|	0.18
182.083	0.00	0.02	0.131	o	|	|	|	|	0.18
182.167	0.00	0.02	0.131	o	|	|	|	|	0.18
182.250	0.00	0.02	0.131	o	|	|	|	|	0.18
182.333	0.00	0.02	0.131	o	|	|	|	|	0.18
182.417	0.00	0.02	0.131	o	|	|	|	|	0.18
182.500	0.00	0.02	0.131	o	|	|	|	|	0.18
182.583	0.00	0.02	0.130	o	|	|	|	|	0.18
182.667	0.00	0.02	0.130	o	|	|	|	|	0.18
182.750	0.00	0.02	0.130	o	|	|	|	|	0.18
182.833	0.00	0.02	0.130	o	|	|	|	|	0.18
182.917	0.00	0.02	0.130	o	|	|	|	|	0.18
183.000	0.00	0.02	0.130	o	|	|	|	|	0.18
183.083	0.00	0.02	0.129	o	|	|	|	|	0.18
183.167	0.00	0.02	0.129	o	|	|	|	|	0.18
183.250	0.00	0.02	0.129	o	|	|	|	|	0.18
183.333	0.00	0.02	0.129	o	|	|	|	|	0.18
183.417	0.00	0.02	0.129	o	|	|	|	|	0.18
183.500	0.00	0.02	0.129	o	|	|	|	|	0.18
183.583	0.00	0.02	0.129	o	|	|	|	|	0.18
183.667	0.00	0.02	0.128	o	|	|	|	|	0.18
183.750	0.00	0.02	0.128	o	|	|	|	|	0.18
183.833	0.00	0.02	0.128	o	|	|	|	|	0.18
183.917	0.00	0.02	0.128	o	|	|	|	|	0.18
184.000	0.00	0.02	0.128	o	|	|	|	|	0.18
184.083	0.00	0.02	0.128	o	|	|	|	|	0.18
184.167	0.00	0.02	0.128	o	|	|	|	|	0.18
184.250	0.00	0.02	0.127	o	|	|	|	|	0.18
184.333	0.00	0.02	0.127	o	|	|	|	|	0.18
184.417	0.00	0.02	0.127	o	|	|	|	|	0.18
184.500	0.00	0.02	0.127	o	|	|	|	|	0.18
184.583	0.00	0.02	0.127	o	|	|	|	|	0.18
184.667	0.00	0.02	0.127	o	|	|	|	|	0.18
184.750	0.00	0.02	0.127	o	|	|	|	|	0.18
184.833	0.00	0.02	0.126	o	|	|	|	|	0.18
184.917	0.00	0.02	0.126	o	|	|	|	|	0.18
185.000	0.00	0.02	0.126	o	|	|	|	|	0.18
185.083	0.00	0.02	0.126	o	|	|	|	|	0.18
185.167	0.00	0.02	0.126	o	|	|	|	|	0.18
185.250	0.00	0.02	0.126	o	|	|	|	|	0.18
185.333	0.00	0.02	0.126	o	|	|	|	|	0.18
185.417	0.00	0.02	0.126	o	|	|	|	|	0.18
185.500	0.00	0.02	0.125	o	|	|	|	|	0.18
185.583	0.00	0.02	0.125	o	|	|	|	|	0.18
185.667	0.00	0.02	0.125	o	|	|	|	|	0.18
185.750	0.00	0.02	0.125	o	|	|	|	|	0.18
185.833	0.00	0.02	0.125	o	|	|	|	|	0.18
185.917	0.00	0.02	0.125	o	|	|	|	|	0.18
186.000	0.00	0.02	0.125	o	|	|	|	|	0.17
186.083	0.00	0.02	0.125	o	|	|	|	|	0.17
186.167	0.00	0.02	0.124	o	|	|	|	|	0.17
186.250	0.00	0.02	0.124	o	|	|	|	|	0.17
186.333	0.00	0.02	0.124	o	|	|	|	|	0.17
186.417	0.00	0.02	0.124	o	|	|	|	|	0.17
186.500	0.00	0.02	0.124	o	|	|	|	|	0.17
186.583	0.00	0.02	0.124	o	|	|	|	|	0.17
186.667	0.00	0.02	0.124	o	|	|	|	|	0.17
186.750	0.00	0.02	0.124	o	|	|	|	|	0.17
186.833	0.00	0.02	0.123	o	|	|	|	|	0.17

186.917	0.00	0.02	0.123	o	|	|	|	|	0.17
187.000	0.00	0.02	0.123	o	|	|	|	|	0.17
187.083	0.00	0.02	0.123	o	|	|	|	|	0.17
187.167	0.00	0.02	0.123	o	|	|	|	|	0.17
187.250	0.00	0.02	0.123	o	|	|	|	|	0.17
187.333	0.00	0.02	0.123	o	|	|	|	|	0.17
187.417	0.00	0.02	0.123	o	|	|	|	|	0.17
187.500	0.00	0.02	0.122	o	|	|	|	|	0.17
187.583	0.00	0.02	0.122	o	|	|	|	|	0.17
187.667	0.00	0.02	0.122	o	|	|	|	|	0.17
187.750	0.00	0.02	0.122	o	|	|	|	|	0.17
187.833	0.00	0.02	0.122	o	|	|	|	|	0.17
187.917	0.00	0.02	0.122	o	|	|	|	|	0.17
188.000	0.00	0.02	0.122	o	|	|	|	|	0.17
188.083	0.00	0.02	0.122	o	|	|	|	|	0.17
188.167	0.00	0.02	0.122	o	|	|	|	|	0.17
188.250	0.00	0.02	0.121	o	|	|	|	|	0.17
188.333	0.00	0.02	0.121	o	|	|	|	|	0.17
188.417	0.00	0.02	0.121	o	|	|	|	|	0.17
188.500	0.00	0.02	0.121	o	|	|	|	|	0.17
188.583	0.00	0.02	0.121	o	|	|	|	|	0.17
188.667	0.00	0.02	0.121	o	|	|	|	|	0.17
188.750	0.00	0.02	0.121	o	|	|	|	|	0.17
188.833	0.00	0.01	0.121	o	|	|	|	|	0.17
188.917	0.00	0.01	0.121	o	|	|	|	|	0.17
189.000	0.00	0.01	0.121	o	|	|	|	|	0.17
189.083	0.00	0.01	0.120	o	|	|	|	|	0.17
189.167	0.00	0.01	0.120	o	|	|	|	|	0.17
189.250	0.00	0.01	0.120	o	|	|	|	|	0.17
189.333	0.00	0.01	0.120	o	|	|	|	|	0.17
189.417	0.00	0.01	0.120	o	|	|	|	|	0.17
189.500	0.00	0.01	0.120	o	|	|	|	|	0.17
189.583	0.00	0.01	0.120	o	|	|	|	|	0.17
189.667	0.00	0.01	0.120	o	|	|	|	|	0.17
189.750	0.00	0.01	0.120	o	|	|	|	|	0.17
189.833	0.00	0.01	0.120	o	|	|	|	|	0.17
189.917	0.00	0.01	0.119	o	|	|	|	|	0.17
190.000	0.00	0.01	0.119	o	|	|	|	|	0.17
190.083	0.00	0.01	0.119	o	|	|	|	|	0.17
190.167	0.00	0.01	0.119	o	|	|	|	|	0.17
190.250	0.00	0.01	0.119	o	|	|	|	|	0.17
190.333	0.00	0.01	0.119	o	|	|	|	|	0.17
190.417	0.00	0.01	0.119	o	|	|	|	|	0.17
190.500	0.00	0.01	0.119	o	|	|	|	|	0.17
190.583	0.00	0.01	0.119	o	|	|	|	|	0.17
190.667	0.00	0.01	0.119	o	|	|	|	|	0.17
190.750	0.00	0.01	0.119	o	|	|	|	|	0.17
190.833	0.00	0.01	0.118	o	|	|	|	|	0.17
190.917	0.00	0.01	0.118	o	|	|	|	|	0.17
191.000	0.00	0.01	0.118	o	|	|	|	|	0.17
191.083	0.00	0.01	0.118	o	|	|	|	|	0.17
191.167	0.00	0.01	0.118	o	|	|	|	|	0.17
191.250	0.00	0.01	0.118	o	|	|	|	|	0.17
191.333	0.00	0.01	0.118	o	|	|	|	|	0.17
191.417	0.00	0.01	0.118	o	|	|	|	|	0.17
191.500	0.00	0.01	0.118	o	|	|	|	|	0.17
191.583	0.00	0.01	0.118	o	|	|	|	|	0.17
191.667	0.00	0.01	0.118	o	|	|	|	|	0.17
191.750	0.00	0.01	0.117	o	|	|	|	|	0.16
191.833	0.00	0.01	0.117	o	|	|	|	|	0.16
191.917	0.00	0.01	0.117	o	|	|	|	|	0.16
192.000	0.00	0.01	0.117	o	|	|	|	|	0.16
192.083	0.00	0.01	0.117	o	|	|	|	|	0.16
192.167	0.00	0.01	0.117	o	|	|	|	|	0.16
192.250	0.00	0.01	0.117	o	|	|	|	|	0.16
192.333	0.00	0.01	0.117	o	|	|	|	|	0.16
192.417	0.00	0.01	0.117	o	|	|	|	|	0.16
192.500	0.00	0.01	0.117	o	|	|	|	|	0.16
192.583	0.00	0.01	0.117	o	|	|	|	|	0.16
192.667	0.00	0.01	0.117	o	|	|	|	|	0.16
192.750	0.00	0.01	0.117	o	|	|	|	|	0.16
192.833	0.00	0.01	0.116	o	|	|	|	|	0.16
192.917	0.00	0.01	0.116	o	|	|	|	|	0.16
193.000	0.00	0.01	0.116	o	|	|	|	|	0.16
193.083	0.00	0.01	0.116	o	|	|	|	|	0.16

193.167	0.00	0.01	0.116	o	|	|	|	|	0.16
193.250	0.00	0.01	0.116	o	|	|	|	|	0.16
193.333	0.00	0.01	0.116	o	|	|	|	|	0.16
193.417	0.00	0.01	0.116	o	|	|	|	|	0.16
193.500	0.00	0.01	0.116	o	|	|	|	|	0.16
193.583	0.00	0.01	0.116	o	|	|	|	|	0.16
193.667	0.00	0.01	0.116	o	|	|	|	|	0.16
193.750	0.00	0.01	0.116	o	|	|	|	|	0.16
193.833	0.00	0.01	0.116	o	|	|	|	|	0.16
193.917	0.00	0.01	0.115	o	|	|	|	|	0.16
194.000	0.00	0.01	0.115	o	|	|	|	|	0.16
194.083	0.00	0.01	0.115	o	|	|	|	|	0.16
194.167	0.00	0.01	0.115	o	|	|	|	|	0.16
194.250	0.00	0.01	0.115	o	|	|	|	|	0.16
194.333	0.00	0.01	0.115	o	|	|	|	|	0.16
194.417	0.00	0.01	0.115	o	|	|	|	|	0.16
194.500	0.00	0.01	0.115	o	|	|	|	|	0.16
194.583	0.00	0.01	0.115	o	|	|	|	|	0.16
194.667	0.00	0.01	0.115	o	|	|	|	|	0.16
194.750	0.00	0.01	0.115	o	|	|	|	|	0.16
194.833	0.00	0.01	0.115	o	|	|	|	|	0.16
194.917	0.00	0.01	0.115	o	|	|	|	|	0.16
195.000	0.00	0.01	0.115	o	|	|	|	|	0.16
195.083	0.00	0.01	0.114	o	|	|	|	|	0.16
195.167	0.00	0.01	0.114	o	|	|	|	|	0.16
195.250	0.00	0.01	0.114	o	|	|	|	|	0.16
195.333	0.00	0.01	0.114	o	|	|	|	|	0.16
195.417	0.00	0.01	0.114	o	|	|	|	|	0.16
195.500	0.00	0.01	0.114	o	|	|	|	|	0.16
195.583	0.00	0.01	0.114	o	|	|	|	|	0.16
195.667	0.00	0.01	0.114	o	|	|	|	|	0.16
195.750	0.00	0.01	0.114	o	|	|	|	|	0.16
195.833	0.00	0.01	0.114	o	|	|	|	|	0.16
195.917	0.00	0.01	0.114	o	|	|	|	|	0.16
196.000	0.00	0.01	0.114	o	|	|	|	|	0.16
196.083	0.00	0.01	0.114	o	|	|	|	|	0.16
196.167	0.00	0.01	0.114	o	|	|	|	|	0.16
196.250	0.00	0.01	0.114	o	|	|	|	|	0.16
196.333	0.00	0.01	0.114	o	|	|	|	|	0.16
196.417	0.00	0.01	0.113	o	|	|	|	|	0.16
196.500	0.00	0.01	0.113	o	|	|	|	|	0.16
196.583	0.00	0.01	0.113	o	|	|	|	|	0.16
196.667	0.00	0.01	0.113	o	|	|	|	|	0.16
196.750	0.00	0.01	0.113	o	|	|	|	|	0.16
196.833	0.00	0.01	0.113	o	|	|	|	|	0.16
196.917	0.00	0.01	0.113	o	|	|	|	|	0.16
197.000	0.00	0.01	0.113	o	|	|	|	|	0.16
197.083	0.00	0.01	0.113	o	|	|	|	|	0.16
197.167	0.00	0.01	0.113	o	|	|	|	|	0.16
197.250	0.00	0.01	0.113	o	|	|	|	|	0.16
197.333	0.00	0.01	0.113	o	|	|	|	|	0.16
197.417	0.00	0.01	0.113	o	|	|	|	|	0.16
197.500	0.00	0.01	0.113	o	|	|	|	|	0.16
197.583	0.00	0.01	0.113	o	|	|	|	|	0.16
197.667	0.00	0.01	0.113	o	|	|	|	|	0.16
197.750	0.00	0.01	0.113	o	|	|	|	|	0.16
197.833	0.00	0.01	0.112	o	|	|	|	|	0.16
197.917	0.00	0.01	0.112	o	|	|	|	|	0.16
198.000	0.00	0.01	0.112	o	|	|	|	|	0.16
198.083	0.00	0.01	0.112	o	|	|	|	|	0.16
198.167	0.00	0.01	0.112	o	|	|	|	|	0.16
198.250	0.00	0.01	0.112	o	|	|	|	|	0.16
198.333	0.00	0.01	0.112	o	|	|	|	|	0.16
198.417	0.00	0.01	0.112	o	|	|	|	|	0.16
198.500	0.00	0.01	0.112	o	|	|	|	|	0.16
198.583	0.00	0.01	0.112	o	|	|	|	|	0.16
198.667	0.00	0.01	0.112	o	|	|	|	|	0.16
198.750	0.00	0.01	0.112	o	|	|	|	|	0.16
198.833	0.00	0.01	0.112	o	|	|	|	|	0.16
198.917	0.00	0.01	0.112	o	|	|	|	|	0.16
199.000	0.00	0.01	0.112	o	|	|	|	|	0.16
199.083	0.00	0.01	0.112	o	|	|	|	|	0.16
199.167	0.00	0.01	0.112	o	|	|	|	|	0.16
199.250	0.00	0.01	0.112	o	|	|	|	|	0.16
199.333	0.00	0.01	0.112	o	|	|	|	|	0.16

199.417	0.00	0.01	0.111	o	|	|	|	|	0.16
199.500	0.00	0.01	0.111	o	|	|	|	|	0.16
199.583	0.00	0.01	0.111	o	|	|	|	|	0.16
199.667	0.00	0.01	0.111	o	|	|	|	|	0.16
199.750	0.00	0.01	0.111	o	|	|	|	|	0.16
199.833	0.00	0.01	0.111	o	|	|	|	|	0.16
199.917	0.00	0.01	0.111	o	|	|	|	|	0.16
200.000	0.00	0.01	0.111	o	|	|	|	|	0.16
200.083	0.00	0.01	0.111	o	|	|	|	|	0.16
200.167	0.00	0.01	0.111	o	|	|	|	|	0.16
200.250	0.00	0.01	0.111	o	|	|	|	|	0.16
200.333	0.00	0.01	0.111	o	|	|	|	|	0.16
200.417	0.00	0.01	0.111	o	|	|	|	|	0.16
200.500	0.00	0.01	0.111	o	|	|	|	|	0.16
200.583	0.00	0.01	0.111	o	|	|	|	|	0.16
200.667	0.00	0.01	0.111	o	|	|	|	|	0.16
200.750	0.00	0.01	0.111	o	|	|	|	|	0.16
200.833	0.00	0.01	0.111	o	|	|	|	|	0.16
200.917	0.00	0.01	0.111	o	|	|	|	|	0.16
201.000	0.00	0.01	0.111	o	|	|	|	|	0.16
201.083	0.00	0.01	0.111	o	|	|	|	|	0.16
201.167	0.00	0.01	0.110	o	|	|	|	|	0.16
201.250	0.00	0.01	0.110	o	|	|	|	|	0.16
201.333	0.00	0.01	0.110	o	|	|	|	|	0.15
201.417	0.00	0.01	0.110	o	|	|	|	|	0.15
201.500	0.00	0.01	0.110	o	|	|	|	|	0.15
201.583	0.00	0.01	0.110	o	|	|	|	|	0.15
201.667	0.00	0.01	0.110	o	|	|	|	|	0.15
201.750	0.00	0.01	0.110	o	|	|	|	|	0.15
201.833	0.00	0.01	0.110	o	|	|	|	|	0.15
201.917	0.00	0.01	0.110	o	|	|	|	|	0.15
202.000	0.00	0.01	0.110	o	|	|	|	|	0.15
202.083	0.00	0.01	0.110	o	|	|	|	|	0.15
202.167	0.00	0.01	0.110	o	|	|	|	|	0.15
202.250	0.00	0.01	0.110	o	|	|	|	|	0.15
202.333	0.00	0.01	0.110	o	|	|	|	|	0.15
202.417	0.00	0.01	0.110	o	|	|	|	|	0.15
202.500	0.00	0.01	0.110	o	|	|	|	|	0.15
202.583	0.00	0.01	0.110	o	|	|	|	|	0.15
202.667	0.00	0.01	0.110	o	|	|	|	|	0.15
202.750	0.00	0.01	0.110	o	|	|	|	|	0.15
202.833	0.00	0.01	0.110	o	|	|	|	|	0.15
202.917	0.00	0.01	0.110	o	|	|	|	|	0.15
203.000	0.00	0.01	0.110	o	|	|	|	|	0.15
203.083	0.00	0.01	0.110	o	|	|	|	|	0.15
203.167	0.00	0.01	0.109	o	|	|	|	|	0.15
203.250	0.00	0.01	0.109	o	|	|	|	|	0.15
203.333	0.00	0.01	0.109	o	|	|	|	|	0.15
203.417	0.00	0.01	0.109	o	|	|	|	|	0.15
203.500	0.00	0.01	0.109	o	|	|	|	|	0.15
203.583	0.00	0.01	0.109	o	|	|	|	|	0.15
203.667	0.00	0.01	0.109	o	|	|	|	|	0.15
203.750	0.00	0.01	0.109	o	|	|	|	|	0.15
203.833	0.00	0.01	0.109	o	|	|	|	|	0.15
203.917	0.00	0.01	0.109	o	|	|	|	|	0.15
204.000	0.00	0.01	0.109	o	|	|	|	|	0.15
204.083	0.00	0.01	0.109	o	|	|	|	|	0.15
204.167	0.00	0.01	0.109	o	|	|	|	|	0.15
204.250	0.00	0.01	0.109	o	|	|	|	|	0.15
204.333	0.00	0.01	0.109	o	|	|	|	|	0.15
204.417	0.00	0.01	0.109	o	|	|	|	|	0.15
204.500	0.00	0.01	0.109	o	|	|	|	|	0.15
204.583	0.00	0.01	0.109	o	|	|	|	|	0.15
204.667	0.00	0.01	0.109	o	|	|	|	|	0.15
204.750	0.00	0.01	0.109	o	|	|	|	|	0.15
204.833	0.00	0.00	0.109	o	|	|	|	|	0.15
204.917	0.00	0.00	0.109	o	|	|	|	|	0.15
205.000	0.00	0.00	0.109	o	|	|	|	|	0.15
205.083	0.00	0.00	0.109	o	|	|	|	|	0.15
205.167	0.00	0.00	0.109	o	|	|	|	|	0.15
205.250	0.00	0.00	0.109	o	|	|	|	|	0.15
205.333	0.00	0.00	0.109	o	|	|	|	|	0.15
205.417	0.00	0.00	0.109	o	|	|	|	|	0.15
205.500	0.00	0.00	0.108	o	|	|	|	|	0.15
205.583	0.00	0.00	0.108	o	|	|	|	|	0.15

205.667	0.00	0.00	0.108	o	|	|	|	|	0.15
205.750	0.00	0.00	0.108	o	|	|	|	|	0.15
205.833	0.00	0.00	0.108	o	|	|	|	|	0.15
205.917	0.00	0.00	0.108	o	|	|	|	|	0.15
206.000	0.00	0.00	0.108	o	|	|	|	|	0.15
206.083	0.00	0.00	0.108	o	|	|	|	|	0.15
206.167	0.00	0.00	0.108	o	|	|	|	|	0.15
206.250	0.00	0.00	0.108	o	|	|	|	|	0.15
206.333	0.00	0.00	0.108	o	|	|	|	|	0.15
206.417	0.00	0.00	0.108	o	|	|	|	|	0.15
206.500	0.00	0.00	0.108	o	|	|	|	|	0.15
206.583	0.00	0.00	0.108	o	|	|	|	|	0.15
206.667	0.00	0.00	0.108	o	|	|	|	|	0.15
206.750	0.00	0.00	0.108	o	|	|	|	|	0.15
206.833	0.00	0.00	0.108	o	|	|	|	|	0.15
206.917	0.00	0.00	0.108	o	|	|	|	|	0.15
207.000	0.00	0.00	0.108	o	|	|	|	|	0.15
207.083	0.00	0.00	0.108	o	|	|	|	|	0.15
207.167	0.00	0.00	0.108	o	|	|	|	|	0.15
207.250	0.00	0.00	0.108	o	|	|	|	|	0.15
207.333	0.00	0.00	0.108	o	|	|	|	|	0.15
207.417	0.00	0.00	0.108	o	|	|	|	|	0.15
207.500	0.00	0.00	0.108	o	|	|	|	|	0.15
207.583	0.00	0.00	0.108	o	|	|	|	|	0.15
207.667	0.00	0.00	0.108	o	|	|	|	|	0.15
207.750	0.00	0.00	0.108	o	|	|	|	|	0.15
207.833	0.00	0.00	0.108	o	|	|	|	|	0.15
207.917	0.00	0.00	0.108	o	|	|	|	|	0.15
208.000	0.00	0.00	0.108	o	|	|	|	|	0.15
208.083	0.00	0.00	0.108	o	|	|	|	|	0.15
208.167	0.00	0.00	0.108	o	|	|	|	|	0.15
208.250	0.00	0.00	0.108	o	|	|	|	|	0.15
208.333	0.00	0.00	0.107	o	|	|	|	|	0.15
208.417	0.00	0.00	0.107	o	|	|	|	|	0.15
208.500	0.00	0.00	0.107	o	|	|	|	|	0.15
208.583	0.00	0.00	0.107	o	|	|	|	|	0.15
208.667	0.00	0.00	0.107	o	|	|	|	|	0.15
208.750	0.00	0.00	0.107	o	|	|	|	|	0.15
208.833	0.00	0.00	0.107	o	|	|	|	|	0.15
208.917	0.00	0.00	0.107	o	|	|	|	|	0.15
209.000	0.00	0.00	0.107	o	|	|	|	|	0.15
209.083	0.00	0.00	0.107	o	|	|	|	|	0.15
209.167	0.00	0.00	0.107	o	|	|	|	|	0.15
209.250	0.00	0.00	0.107	o	|	|	|	|	0.15
209.333	0.00	0.00	0.107	o	|	|	|	|	0.15
209.417	0.00	0.00	0.107	o	|	|	|	|	0.15
209.500	0.00	0.00	0.107	o	|	|	|	|	0.15
209.583	0.00	0.00	0.107	o	|	|	|	|	0.15
209.667	0.00	0.00	0.107	o	|	|	|	|	0.15
209.750	0.00	0.00	0.107	o	|	|	|	|	0.15
209.833	0.00	0.00	0.107	o	|	|	|	|	0.15
209.917	0.00	0.00	0.107	o	|	|	|	|	0.15
210.000	0.00	0.00	0.107	o	|	|	|	|	0.15
210.083	0.00	0.00	0.107	o	|	|	|	|	0.15
210.167	0.00	0.00	0.107	o	|	|	|	|	0.15
210.250	0.00	0.00	0.107	o	|	|	|	|	0.15
210.333	0.00	0.00	0.107	o	|	|	|	|	0.15
210.417	0.00	0.00	0.107	o	|	|	|	|	0.15
210.500	0.00	0.00	0.107	o	|	|	|	|	0.15
210.583	0.00	0.00	0.107	o	|	|	|	|	0.15
210.667	0.00	0.00	0.107	o	|	|	|	|	0.15
210.750	0.00	0.00	0.107	o	|	|	|	|	0.15
210.833	0.00	0.00	0.107	o	|	|	|	|	0.15
210.917	0.00	0.00	0.107	o	|	|	|	|	0.15
211.000	0.00	0.00	0.107	o	|	|	|	|	0.15
211.083	0.00	0.00	0.107	o	|	|	|	|	0.15
211.167	0.00	0.00	0.107	o	|	|	|	|	0.15
211.250	0.00	0.00	0.107	o	|	|	|	|	0.15
211.333	0.00	0.00	0.107	o	|	|	|	|	0.15
211.417	0.00	0.00	0.107	o	|	|	|	|	0.15
211.500	0.00	0.00	0.107	o	|	|	|	|	0.15
211.583	0.00	0.00	0.107	o	|	|	|	|	0.15
211.667	0.00	0.00	0.107	o	|	|	|	|	0.15
211.750	0.00	0.00	0.107	o	|	|	|	|	0.15
211.833	0.00	0.00	0.106	o	|	|	|	|	0.15

211.917	0.00	0.00	0.106	o	|	|	|	|	0.15
212.000	0.00	0.00	0.106	o	|	|	|	|	0.15
212.083	0.00	0.00	0.106	o	|	|	|	|	0.15
212.167	0.00	0.00	0.106	o	|	|	|	|	0.15
212.250	0.00	0.00	0.106	o	|	|	|	|	0.15
212.333	0.00	0.00	0.106	o	|	|	|	|	0.15
212.417	0.00	0.00	0.106	o	|	|	|	|	0.15
212.500	0.00	0.00	0.106	o	|	|	|	|	0.15
212.583	0.00	0.00	0.106	o	|	|	|	|	0.15
212.667	0.00	0.00	0.106	o	|	|	|	|	0.15
212.750	0.00	0.00	0.106	o	|	|	|	|	0.15
212.833	0.00	0.00	0.106	o	|	|	|	|	0.15
212.917	0.00	0.00	0.106	o	|	|	|	|	0.15
213.000	0.00	0.00	0.106	o	|	|	|	|	0.15
213.083	0.00	0.00	0.106	o	|	|	|	|	0.15
213.167	0.00	0.00	0.106	o	|	|	|	|	0.15
213.250	0.00	0.00	0.106	o	|	|	|	|	0.15
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213.500	0.00	0.00	0.106	o	|	|	|	|	0.15
213.583	0.00	0.00	0.106	o	|	|	|	|	0.15
213.667	0.00	0.00	0.106	o	|	|	|	|	0.15
213.750	0.00	0.00	0.106	o	|	|	|	|	0.15
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213.917	0.00	0.00	0.106	o	|	|	|	|	0.15
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214.917	0.00	0.00	0.106	o	|	|	|	|	0.15
215.000	0.00	0.00	0.106	o	|	|	|	|	0.15
215.083	0.00	0.00	0.106	o	|	|	|	|	0.15
215.167	0.00	0.00	0.106	o	|	|	|	|	0.15
215.250	0.00	0.00	0.106	o	|	|	|	|	0.15
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218.000	0.00	0.00	0.105	o	|	|	|	|	0.15
218.083	0.00	0.00	0.105	o	|	|	|	|	0.15

218.167	0.00	0.00	0.105	o	|	|	|	|	0.15
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218.917	0.00	0.00	0.105	o	|	|	|	|	0.15
219.000	0.00	0.00	0.105	o	|	|	|	|	0.15
219.083	0.00	0.00	0.105	o	|	|	|	|	0.15
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219.917	0.00	0.00	0.105	o	|	|	|	|	0.15
220.000	0.00	0.00	0.105	o	|	|	|	|	0.15
220.083	0.00	0.00	0.105	o	|	|	|	|	0.15
220.167	0.00	0.00	0.105	o	|	|	|	|	0.15
220.250	0.00	0.00	0.105	o	|	|	|	|	0.15
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225.750	0.00	0.00	0.104	o	|	|	|	|	0.15
225.833	0.00	0.00	0.104	o	|	|	|	|	0.15
225.917	0.00	0.00	0.104	o	|	|	|	|	0.15
226.000	0.00	0.00	0.104	o	|	|	|	|	0.15
226.083	0.00	0.00	0.104	o	|	|	|	|	0.15
226.167	0.00	0.00	0.104	o	|	|	|	|	0.15
226.250	0.00	0.00	0.104	o	|	|	|	|	0.15
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226.417	0.00	0.00	0.104	o	|	|	|	|	0.15
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227.000	0.00	0.00	0.104	o	|	|	|	|	0.15
227.083	0.00	0.00	0.104	o	|	|	|	|	0.15
227.167	0.00	0.00	0.104	o	|	|	|	|	0.15
227.250	0.00	0.00	0.104	o	|	|	|	|	0.15
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227.833	0.00	0.00	0.104	o	|	|	|	|	0.15
227.917	0.00	0.00	0.104	o	|	|	|	|	0.15
228.000	0.00	0.00	0.104	o	|	|	|	|	0.15
228.083	0.00	0.00	0.104	o	|	|	|	|	0.15
228.167	0.00	0.00	0.104	o	|	|	|	|	0.15

Remaining water in basin = 0.10 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2738
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 12.177 (CFS)
Total volume = 13.566 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

Preliminary Drainage Study – Building 2

Beaumont Summit Station – Building 2
TPM 38223
County of Riverside, California

Preliminary Drainage Study

Prepared for:
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Original Date Prepared: August 2021
Revision Date(s): April 2022

[Stamp]

Byanka Velasco
Senior Engineer

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EXISTING CONDITION 10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH
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INFILTRATION REPORT

SECTION 1 - SUMMARY

PURPOSE

The purpose of this report is to document the hydrologic and hydraulic analyses performed in support of the Beaumont Summit Station (BSS) - Building 2 project located in the City of Beaumont, County of Riverside, California. The overall project site consists of approximately 188 acres of TPM 38223 which currently contains mostly vacant land with some pavement and structures and is bounded by Cherry Valley Boulevard to the north, Brookside Avenue to the south, residential lots to the east and vacant land to the west. TPM 38223 consists of approximately 145.4 acres of e-commerce, 11.4 acres of commercial, and 31.2 acres of open space areas. This report will focus on the BSS - Building 2 project, a proposed e-commerce development on approximately 66.7 acres of the western portion of the overall project area. The BSS – Building 2 project is bounded by the future BSS -Building 3 development to the north, residential lots to the east, vacant Parcel 5 of TPM 38223 to the south and the future BSS – Building 1 development to the west. This report will summarize the hydrologic and hydraulic analyses that were conducted in order to determine the necessary drainage improvements required to provide flood protection for the proposed building and safely convey the runoff through the site.

The scope of this report will include the following:

- Determine the peak 100-year and 10-year flow rates for the developed condition using the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Rational Method.
- Determine the required storm drain facilities, alignment, and sizes required to flood protect the project site.
- Preparation of a preliminary report summarizing the hydrology and hydraulic results.

DESCRIPTION OF WATERSHED

As previously described, the project is proposing to build an e-commerce development of three warehouses on approximately 145.4 acres of vacant land with some pavement and structures. The BSS project is located within the Sunny Cal Specific Plan. Existing elevations across the site vary from 2554 to 2419 (NAVD88 datum). The slopes throughout the site vary, while the general existing drainage pattern for the site is characterized by sheet flow to the southwest. Along the southwestern boundary of the BSS project, an existing escarpment conveys runoff from the site into a vegetated streambed which runs northwest. A portion of the eastern and southern areas of the site drain south, where the streambed parallels Brookside Avenue. The majority of the site drains southwest into the same streambed, further downstream. A field survey was performed to determine the boundary of the project site in order to reduce the impacts on the existing vegetated streambed. The streambed eventually enters an existing concrete ditch along Calimesa Boulevard to the northwest of the project.

EXISTING CONDITIONS

The BSS- Building 2 project is proposing an e-commerce development on approximately 66.7 acres of the southern portion of the overall BSS project boundary. Existing elevations across the site vary from 2562 to 2447 (NAVD88 datum). The north area of the site currently slopes down at approximately 6% to southwest. The existing drainage pattern for the site and the general area is characterized by sheet flow to the southwest.

PROPOSED CONDITIONS

The overall project includes development of Buildings 1, 2, and 3 with mass grading of Parcel 4. Prior to the individual building developments, the overall BSS site will be mass graded. During mass grading, the backbone infrastructure will be constructed, including "A", "B", and "C" Streets and the emergency

access road along with associated utilities. After mass grading, the individual building sites will be developed separately. Each building will mitigate for increased runoff within its own site. Facilities proposed to mitigate for increased runoff will be constructed as part of the individual building developments. Parcel 4 will be mass graded for future commercial development and will treat for water quality requirements and mitigate for increased runoff within its site once fully developed.

In the proposed condition, onsite runoff will be conveyed through the site via proposed curb and gutters, and ribbon gutters. Runoff is collected via a network of inlets provided at low points throughout the site and conveyed via underground storm drain towards the proposed infiltration basin at the southwest corner of the site. The infiltration basin is proposed to provide water quality treatment (additional information can be found in the separate Preliminary WQMP Report). The infiltration basin has been sized to mitigate any increase in runoff for the 2-year, 5-year, 10-year and 100-year storm events with a duration of 24-hours (See Section 4). For preliminary purposes, it was assumed this will result in the largest mitigation volume required. Additional durations will be analyzed during final engineering. Further details on the mitigation for increased runoff for the overall BSS project area, may be found in the "Beaumont Summit Station Preliminary Drainage Study" (See Appendix D). An outlet structure will allow 100-year storm flows to bypass the infiltration basin. Runoff will discharge from the infiltration basin into the existing vegetated streambed to the southern boundary of the site. The relevant agencies do not have required setbacks or buffers for the stream that are globally set or dictated, but project design will be implemented to ensure the avoided jurisdictional features are not directly or indirectly impacted. Permits are in process to obtain approval with the relevant agencies. If necessary, modifications will be made through the permit processes and changes will be implemented in final design.

METHODOLOGY

HYDROLOGY

Hydrologic calculations were performed in accordance with the RCFC&WCD Hydrology Manual, dated April 1978. The Rational Method was utilized in determining peak flow rates.

The hydrological parameters, including rainfall values and soil types were derived from the RCFC&WCD Hydrology Manual. The isohyetal maps and soil map have been included in Section 2.

Rational Method calculations were performed using a computer program developed by CivilDesign Corporation and Joseph E. Bonadiman and Associates Inc. The computer program is commonly referred to as CivilD which incorporates the hydrological parameters outlined in the RCFC&WCD Hydrology Manual.

The Rational Method was used to determine the peak flow rates to size and design the drainage facilities need to convey onsite flows through the site to the proposed basin. The flow rates were computed by generating a hydrologic "link-node" model in which the overall area is divided into separate drainage sub-areas, each tributary to a concentration point (node) determined by the proposed layout and grading.

The Unit Hydrograph Method was used to determine the peak flow rates and volumes associated with the 2-year, 5-year, 10-year, and 100-year storm events for the site. Calculations were performed for both the existing condition and developed condition to be used in the sizing of the infiltration basin and CMP detention system. See "Beaumont Summit Station Preliminary Drainage Study" in Appendix D for additional information and results regarding the hydrologic analyses performed for the overall BSS project.

HYDRAULICS

Water quality calculations were performed using spreadsheets that were created by RCFC&WCD. Final calculations and additional details can be found in the Preliminary-WQMP.

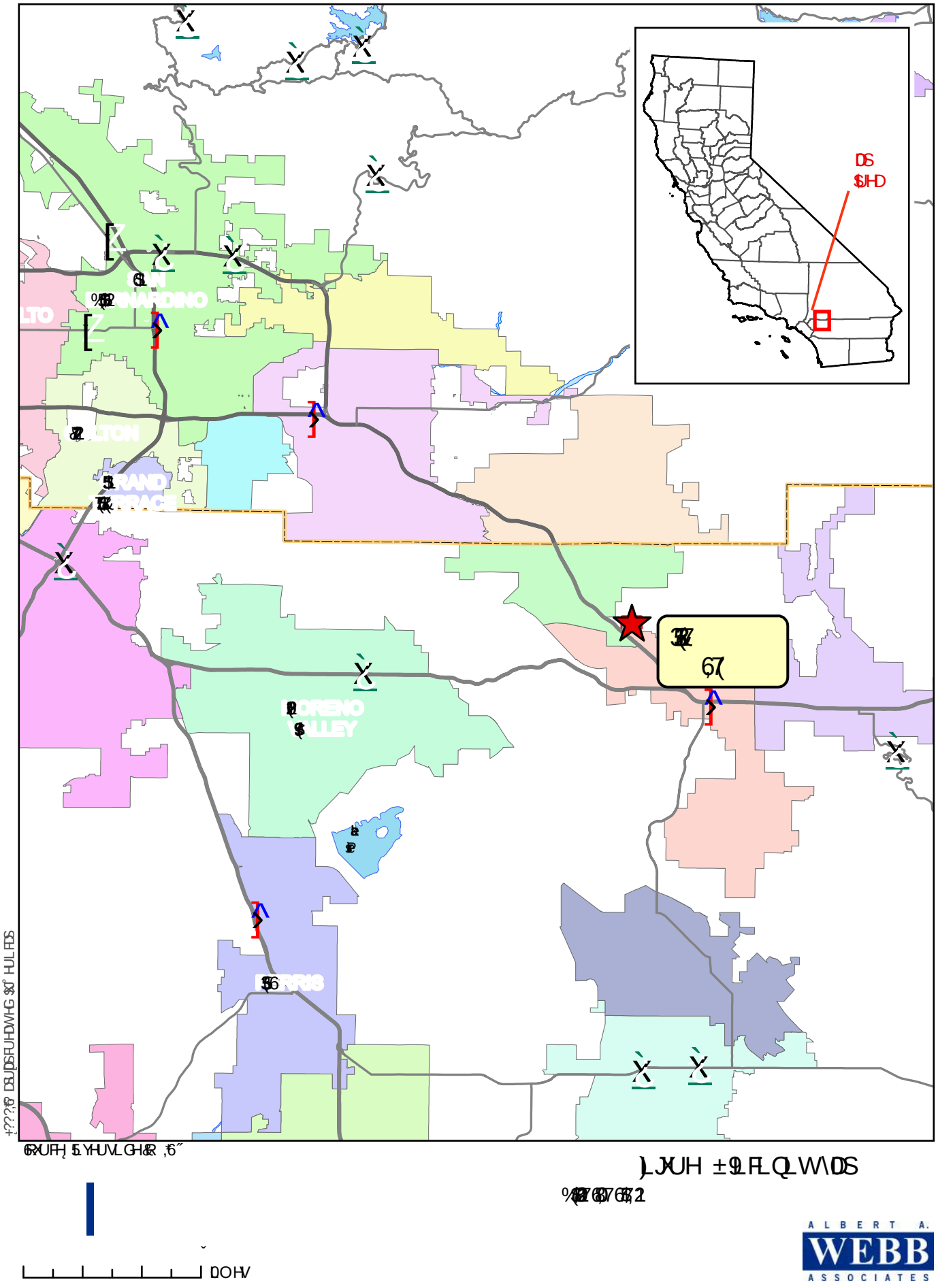
Hydraulic calculations to determine the required pipe sizes of proposed storm drain facilities will be provided in the Final Drainage Study.

FIG. 1 VICINITY MAP

FIG. 2 USGS TOPOGRAPHY MAP

FIG. 3 AERIAL PHOTOGRAPH

FIG. 4 RECEIVING WATERBODIES


SAN BERNARDINO
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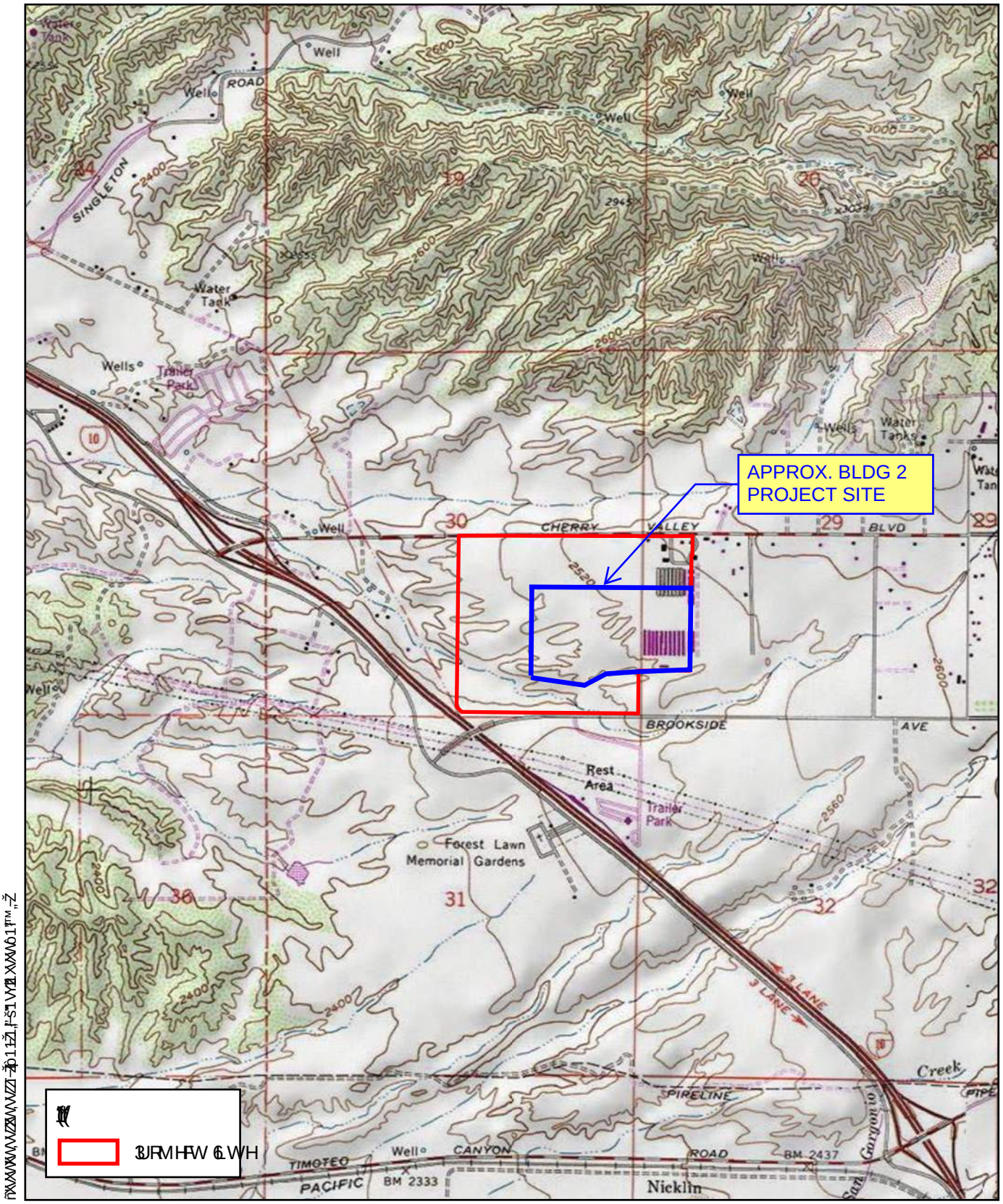
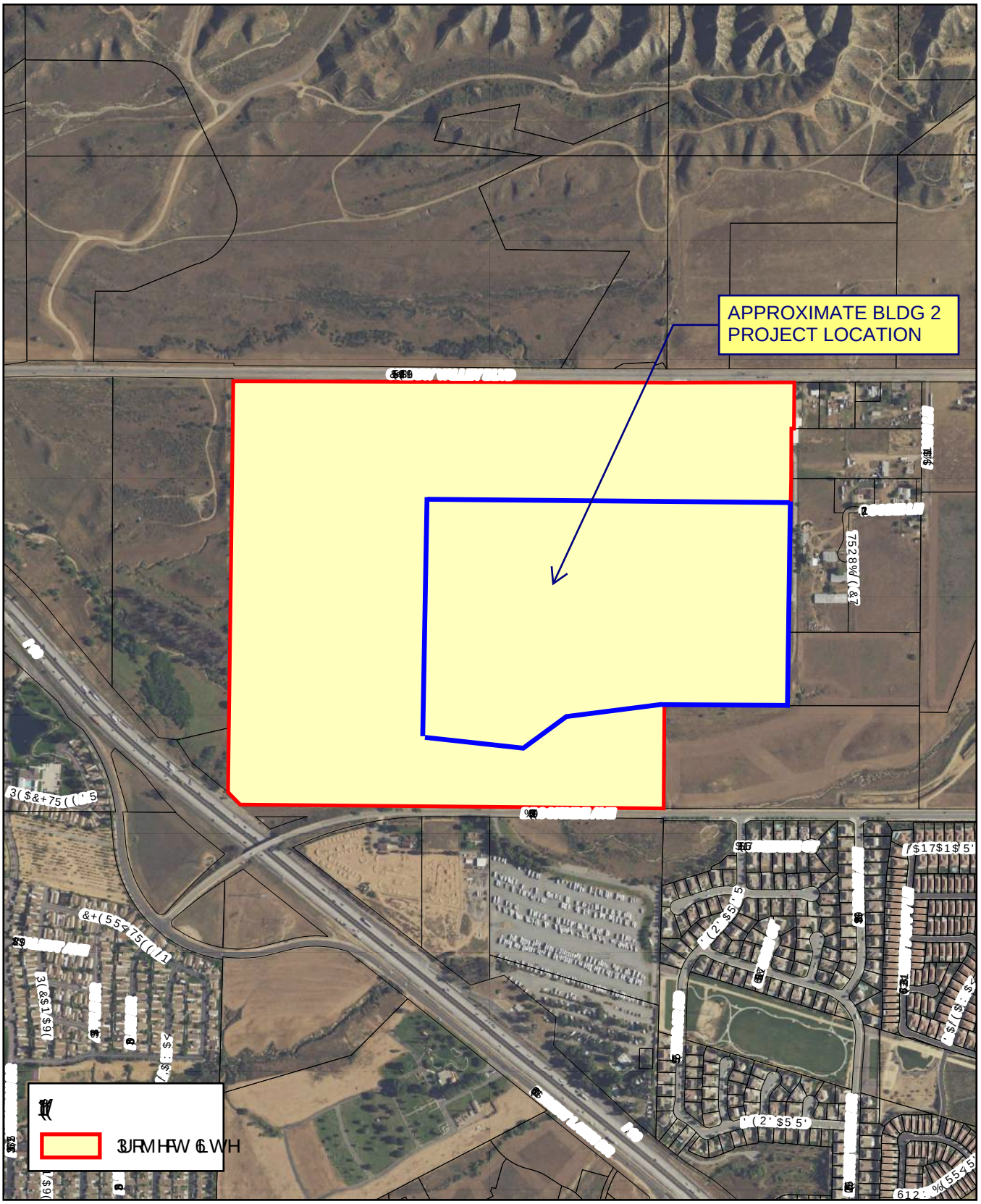
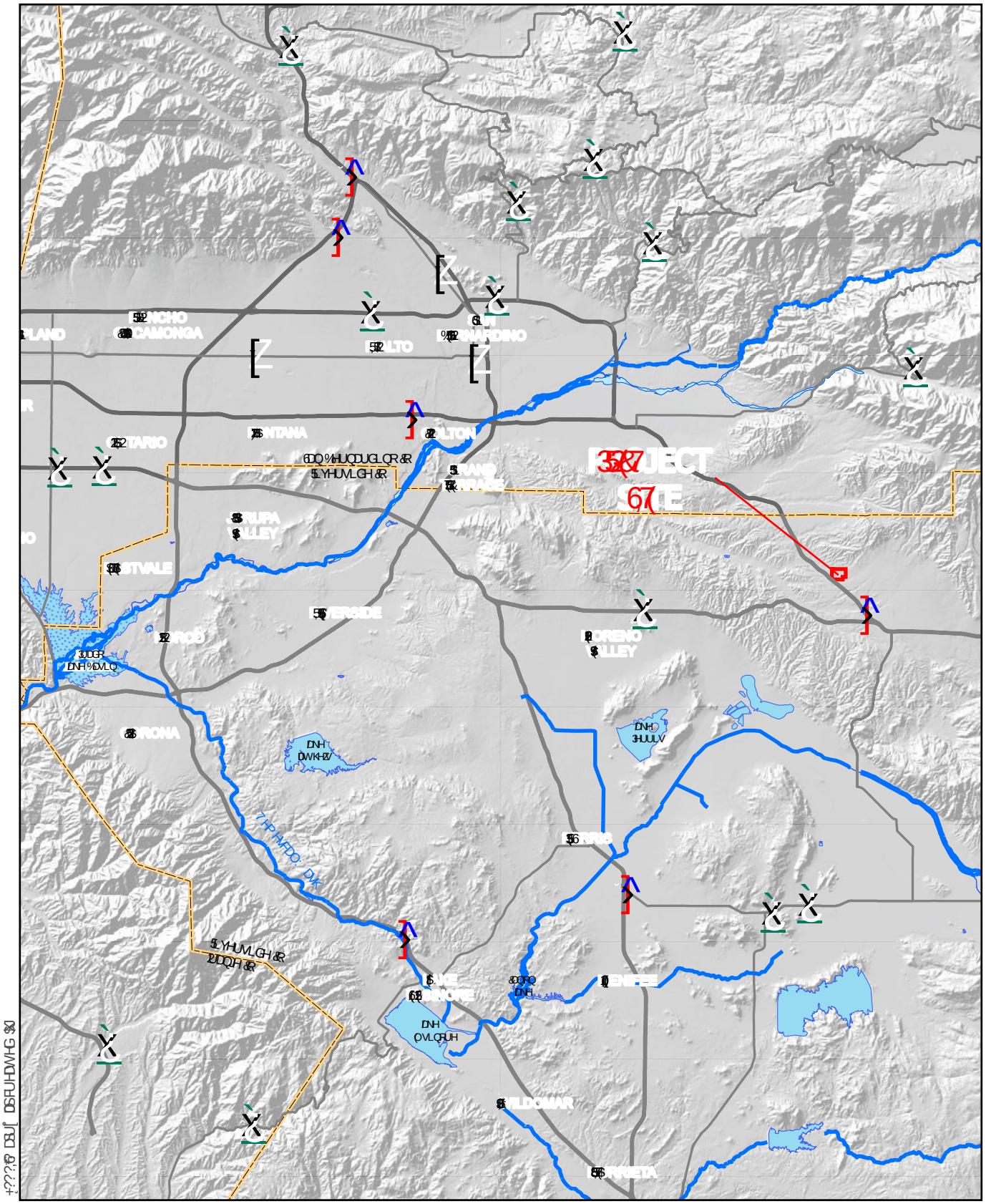

APPROX. BLDG 2
PROJECT SITE
CHERRY
VALLEY
BLVD
BROOKSIDE
AVE
Rest
Area
Trailer
Park
Forest Lawn
Memorial Gardens
SINGLETON
ROAD
Water
Tank
Wells
Well
TIMOTEO
CANYON
PACIFIC
BM 2333
BM 2437
Nicklin
Creek
PIPELINE
3 LANE
3 LANE


APPROXIMATE BLDG 2
PROJECT LOCATION



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%6 6 7 6 2

DOHV

ALBERT A. WEBB ASSOCIATES

SECTION 2 - HYDROLOGY ANALYSIS

HYDROLOGY PARAMETERS

The RCFC&WCD Hydrology Manual was used to determine several of the hydrological parameters. The following rainfall depths were utilized in the hydrology analyses, which were obtained from the NOAA Atlas 14:

Table 1 – Precipitation Values

	Duration
Storm Event	1-Hour (inches)
2-Year	0.581
100-Year	1.67

The NOAA Atlas 14 rainfall data can be found in Appendix A.

Based on the Plate C-1.18 (El Casco) in the RCFC&WCD Hydrology Manual, the project site is classified as soil type B and D. The soils map is included in Appendix A.

OVERALL SITE RATIONAL METHOD HYDROLOGY

The existing condition rational method was performed for the overall site for reference purposes. Mitigation of increased runoff for the developed condition is based on the unit hydrograph analysis for the 2-, 5-, 10- and 100-year storm events (See Section 4). The overall site was divided into two main areas. Approximately 106.4 areas of the north and west site are analyzed in the 700 series. Approximately 50.2 acres of the south and east site were analyzed in the 800 series. The undeveloped site primarily consists of undeveloped land with varying slopes. Therefore, it was analyzed as a natural channel type flow through the undeveloped sections. The site drains to the existing streambed which runs to the west along the southern border of the site. The 700 series leaves the site at the western boundary while the 800 series discharges into the streambed area at the southern boundary of the site.

In the developed condition, approximately 1.5 acres between the northern BSS project boundary and proposed right-of-way are draining to Cherry Valley Boulevard. Approximately 9.5 acres of landscaped areas along the western boundary of the BSS – Building 1 site are to drain directly offsite to the west and south of the site, as in the existing condition. These approximately 11 acres were not accounted for in the developed condition rational method analysis and therefore create a difference in the total areas analyzed in the existing and developed conditions. These areas were analyzed in the unit hydrograph and routing calculations for mitigation of onsite flows.

ON-SITE RATIONAL METHOD HYDROLOGY

The rational method was used to determine peak flow rates in order to adequately size the proposed subsurface storm drains and associated inlets used to convey on-site flows to the infiltration basin. Approximately 72.3 acres are tributary to the infiltration basin. This includes 66.7 acres of the BSS - Building 2 site along with 5.6 acres of "B" Street to the west of Building 2. "B" Street connects to Cherry Valley Boulevard to the north and runs south through the overall BSS project site. A catch basin at the end of the cul-de-sac will convey street runoff to the infiltration basin. These areas were broken up into

two major areas (the 300-Series and the 400-Series) based on the locations of proposed inlets at low points throughout the site. Each series contains its own storm drain line which discharges into the basin. The subareas were further broken up into smaller areas in order to be modelled properly in the calculations. Most subareas consist of roof, landscaped areas, parking lots and drive aisles.

The 300-Series consists of approximately 36.6 acres of the northern and western project area. The 400-Series consists of approximately 35.7 acres of the southern and eastern project area.

The following tables summarize the rational method results at key points:

Table 2 – Overall Project Watershed Rational Method Results

	Existing Condition			Developed Condition		
Point of Interest	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**
Node 705- Total Flows from North and West Areas	106.4	105.0	195.6	-	-	-
Node 803- Total Flows from South and East Areas	50.2	55.3	101.2	-	-	-
Node 110 – Total Building 1 Flows	-	-	-	43.0	84.1	139.3
Node 414 – Total Building 2 Flows	-	-	-	72.3	155.9	257.4
Node 603 - Total Building 3 and Parcel 4 Flows	-	-	-	30.2	54.7	95.9
Total	156.6	160.3	296.8	145.5	294.7	492.6

Table 3 – On-site Rational Method Results

Proposed Condition Point of Interest	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**
Node 320- Flows from North and West of Building 2 & "B" Street	36.6	79.3	130.8
Node 411- Flows from East and South of Building 2	35.7	67.5	110.9
Node 414- Total Flows	72.3	155.9	257.4
Building 2 Basin Mitigated Outflow*	-	16.9	39.9

*See Section 4 for the routing analysis details

The rational method output files and hydrology map have been included in Appendix A.

OFF-SITE RATIONAL METHOD HYDROLOGY

All flows entering the proposed storm drains and associated inlets are generated on-site. Cross gutters are proposed along "A", "B" and "C" Streets to prevent runoff from Cherry Valley Boulevard from entering the site. Approximately 39.4 acres to the east of BSS - Building 2 and Parcel 4 produce runoff which would flow onsite. In the existing condition, flows from the offsite area would ultimately flow into the existing stream to the south of the BSS project site. A concrete channel is proposed with the development of Buildings 2 and 3 to divert flows south towards the existing stream without impacting the project site (see Section 3 for channel details). The offsite rational method analysis was performed for a total of 44.1 acres. This includes the area to the east of the project and 4.7 acres of the south of the BSS - Building 2 site which will be conveyed through a culvert across the emergency access road proposed to connect the BSS site to Brookside Avenue to the south. The following tables summarize the rational method results at key points:

Table 4 – Off-site Rational Method Results

Off-site Rational Method Point of Interest	Area (ac)	Q_{10} (cfs)	Q_{100} (cfs)
Node 3- Flows from Area East of Building 2 and Parcel 3	39.4	56.8	102.0
Node 4- Total Flows Entering Proposed Culvert	44.1	63.6	114.0

The rational method output files and hydrology map have been included in Appendix A.

SECTION 3 - HYDRAULIC ANALYSIS

ON-SITE STORM DRAIN FACILITIES

Storm drain facilities throughout the site have been preliminarily designed to convey the 100-year storm event based on the rational method analysis. Runoff generated onsite is conveyed via proposed curb and gutter and ribbon gutters towards proposed water quality treatment and mitigation systems on each building project area. For Building 2, an infiltration basin will provide water quality treatment to onsite flows. The basin is proposed to provide storage and mitigate for increased runoff. Hydraulic analysis and sizing of the proposed storm drain lines are to be provided with the final engineering.

Building 2 – Infiltration Basin

Based on the calculations that can be found in the Preliminary WQMP Report for the BSS – Building 2 project, the proposed infiltration basin has a treatment volume of 144,000 cubic ft with a maximum water quality depth of 1.4 ft. A weir is proposed at the top of ponding produced by the water quality volume and the 2-year storm and serves to mitigate the peak flow rates for the 5-year storm event. A weir opening is proposed at the maximum ponding level of the 5-year storm event. This weir opening in the outlet structure serves to mitigate the 10-year peak flow rate. At the maximum ponding level of the 10-year storm event, a weir is proposed to mitigate the 100-year storm event. This produces a ponding of 3.36 ft above the basin bottom. Additional information regarding these depths can be found in Section 4. Due to the above ground nature of the basin, the basin was designed to infiltrate within 48 hours after a 24-hour storm event in order to prevent vector issues. The routing analysis of the 100-year, 24-hour storm event shows that the maximum drawdown time is 35.7 hours within the basin. A rip rap energy dissipator is proposed at the outlet of each storm drain line discharging into the basin. The rip rap sections have been sized per Riverside County Standard Drawing No. 314. The lengths and thickness of the rip rap sections are based on the pipe diameter and design velocity, respectively. The rip rap sections are 3.4' thick ½ ton rock based on a design velocity of approximately 14 fps at the outlets based on the rational method analysis.

A concrete spillway is proposed along the southern boundary of the basin in order to provide an emergency escape for the 100-year storm event. The invert elevation of the concrete spillway is set at the maximum ponding level of the 100-year 24-hour storm event. The emergency spillway will produce a maximum ponding elevation of 4.17 ft above the basin bottom. Calculations for the emergency spillway have been included in Appendix B.

The infiltration basin will also treat the water quality volume in excess of the capacity of the proposed bioretention basin of the BSS - Building 1 site. The Building 1 pump system will be designed to ensure that no runoff from the Building 1 site will enter the infiltration basin until the entire Building 2 water quality volume has infiltrated. This will be approximately 70,590 cubic ft of runoff, which is less than the water quality volume produced by the Building 2 site. Therefore, the infiltration basin design based on the detention of the water quality volume of Building 2 will be adequate to detain the Building 1 water quality flows as they are treated along with increased runoff from the Building 2 site which will be mitigated. See the "Beaumont Summit Station – Building 1 Preliminary WQMP" for more details regarding the water quality treatment of the Building 1 site.

OFF-SITE STORM DRAIN FACILITIES

Cutoff Channel

A concrete cutoff channel is proposed along the eastern boundary of the BSS project site to divert flows generated on approximately 39.4 acres east of the BSS – Building 2 and Parcel 4 site towards the existing stream to the south. The channel is proposed to be 6 ft wide with 2:1 side slopes and will have a depth of 1.1 ft to convey the 100-year peak flow rate of 102 cfs. The hydraulic model for the channel is included in Appendix B. The cutoff channel is proposed to be constructed with the mass grading and backbone

infrastructure of the overall BSS site and is to remain with future development of the Building 2 and Parcel 4 sites to prevent offsite flows from impacting the BSS site.

Emergency Access Road Culvert

A culvert is proposed south of the BSS – Building 2 site to convey flows across the proposed emergency access road which provides access from Brookside Avenue to the BSS project site. The culvert is a proposed 36" storm drain line which has been sized to convey the 100-year peak flow rate of 114 cfs across the access road to the existing stream. The rip rap section at the outlet of the culvert has been sized per the Riverside County Standard Drawing No. 314. The lengths and thickness of the rip rap section are based on the pipe diameter and design velocity, respectively. A 12 ft long and 5.4 ft thick rip rap section of 2 ton rock with a 1 ft thick 1" crushed rock filter layer is proposed based on preliminary culvert sizing. The hydraulic model for the culvert is included in Appendix B.

SECTION 4 - BASIN ANALYSIS

HYDROLOGY PARAMETERS

The RCFC&WCD Hydrology Manual was used to determine several of the hydrological parameters. The following rainfall depths were utilized in the hydrology analyses, which were obtained from the isohyetal maps provided in the RCFC&WCD Hydrology Manual:

Table 5 – Precipitation Values

	Duration			
Storm Event	1-Hour (inches)	3-Hour (inches)	6-Hour (inches)	24-Hour (inches)
2-Year	0.55	0.95	1.40	2.50
100-Year	1.25	2.05	3.00	6.50

The value for slope of intensity was determined to be 0.53. The isohyetal maps have been included in Appendix A.

Based on the Plate C-1.18 (El Casco) in the RCFC&WCD Hydrology Manual, the project site is classified as soil types B and D. The soils map is included in Appendix A.

The cover type was determined based on the existing land cover and proposed land use of the site. Hydrological computations for the existing condition were done using Natural Grass and Residential or Commercial. The Urban or Residential or Commercial cover type was used to represent the developed condition. The table below summarizes the runoff index values and the recommended values for percentage of impervious cover for each category:

Table 6 – Cover Type

Cover Type	Soil Group A	Soil Group B	Soil Group C	Soil Group D	Percentage of Impervious Cover
Existing Condition Natural Grass	-	78	-	89	12.0% (Area A) 33.0% (Area B)
Existing Residential or Commercial	-	56	-	75	
Developed Urban Residential or Commercial – Building 2	-	56	-	75	73.6%

ON-SITE UNIT HYDROGRAPH METHOD HYDROLOGY

The unit hydrograph method was used to determine the peak flow rates and volumes in order to adequately size the proposed basin to address increased runoff mitigation. Unit hydrographs were performed for both the 24-hour existing condition and developed condition only in the preliminary condition since it was assumed that the 24-hour condition will require the greatest mitigation volume. The existing condition is used to establish a baseline for comparative purposes. The developed condition is used for design purposes, it was utilized in the basin routing analysis in order to size and analyze the proposed basin and chamber detention systems. The unit hydrograph analysis for both the existing and

developed condition was conducted for a total of 156.8 acres. This comprises the entirety of the proposed development with the BSS project site.

In the existing condition analysis, the overall project site has two discharge points into the existing stream to the south and was therefore broken up into two areas. Approximately 106.4 acres are labelled as Area A (700-Series in the rational method analysis) and is tributary to the existing streambed area to the west of the project site. The remaining 50.4 acres are labelled as Area B (800-Series) and are tributary to a region of the streambed to the south of the project site. Area B is referred to as the South Area in the developed condition and corresponds to the Building 2 project site, consisting of approximately 67.8 acres. In the developed condition, approximately 17.4 acres of area which was tributary to Area A in the existing condition have been included in the development of the South Area (part of the existing condition Area B). Therefore, the developed South Area will be over mitigating for flows as a greater area, and therefore greater discharge, is included in the developed condition analysis. While the existing condition Area A will be under mitigated once developed, the overall BSS site will be mass graded together as grading will require cut from the Building 2 area, in Area B, to be used in fill for mass grading of the Building 1 project site. Therefore, overall the BSS project will be fully mitigated once developed.

The following table summarizes the results of the unit hydrograph analysis:

Table 7 – Unit Hydrograph Results

EXISTING CONDITION - AREA B (SOUTH)					DEVELOPED CONDITION - SOUTH				
AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)
EX100YRB	100	1	4.2	147.87	SOUTH100YR	100	1	6.2	198.82
		3	5.7	80.72			3	9.2	112.81
		6	7.5	74.35			6	13.1	106.26
		24	14.7	34.45			24	27	50.90
EX10YRB	10	1	2.5	95.19	SOUTH10YR	10	1	3.9	129.69
		3	3.3	51.45			3	6	73.73
		6	4.5	47.26			6	8.5	69.58
		24	7.6	18.23			24	16.3	29.05
EX5YRB	5	1	1.7	72.26	SOUTH5YR	5	1	3.1	104.72
		3	2.3	35.60			3	4.9	57.66
		6	3.1	32.86			6	7.1	54.62
		24	5.3	8.78			24	13.4	22.01
EX2YRB	2	1	1.2	51.91	SOUTH2YR	2	1	2.3	78.02
		3	1.7	24.06			3	3.8	42.40
		6	2.3	22.47			6	5.5	40.35
		24	3.9	6.39			24	9.7	16.01

The unit hydrograph output files and hydrology map have been included in Appendix C.

BASIN ROUTING ANALYSIS

A routing analysis was completed to demonstrate that the basin contains substantial volume needed to mitigate flows down to existing condition peak flow rates.

Basin routing calculations were conducted for each building area (west, north and south). A stage-storage-discharge table was determined for each area. The stage-storage-discharge tables provide input data at select elevations in the basin and/or chambers which will determine the storage and discharge at each point based on the mitigation configuration of the outlet structures.

For the BSS – Building 2 area, a constant flow rate of 9.4 cfs was assumed for the basin in order to account for the expected infiltration within the basin extents. This value was determined based on a recommended infiltration rate of 11.5 in/hr within the basin (see Appendix D for the infiltration report), the bottom basin area, and a factor of safety of 3. The water quality volume produces a maximum ponding of 1.4 ft above the basin bottom. Routing of the 2-year, 24-hour storm event shows that the infiltration within the basin is sufficient to meet the existing condition flow rates while producing 2.15 ft of ponding above the basin bottom. The proposed outlet structure consists of a rectangular weir with a length of 6 ft set at the 2-year storm ponding depth. This weir mitigates the 5-year storm event and produces a ponding depth of 2.67 ft. A 6-ft weir mitigates for the 10-year storm event and creates a maximum ponding depth of 2.98 ft within the basin. At the 10-year ponding elevation, a 6-ft weir mitigates for the 100-year storm. The 100-year storm creates a total ponding of 3.36 ft from the basin bottom, allowing at least 1 ft of freeboard below the top of the basin.

The following tables present the result of routing analysis for the 2-, 5-, 10-, and 100-year 24-hour storm events to demonstrate that the basin provides the necessary storage volume needed to restrict the outflow to existing condition flow rates. The basin routing calculations and other hydraulic calculations have been provided in Appendix C. Based on the tables, the proposed infiltration basin has the capacity to mitigate for all the required HCOC and RCFC&WCD storm events. All discharge flow rates in the developed condition are lower than or within ten percent of the flow rate exiting the site in the existing condition.

Table 8 – Basin Routing Results

		Existing Condition		Developed Condition		Basin Routing Results
		Area B (50.4 ac)		South Area (67.8 ac)		South Area
Storm Event		Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	*Peak Flow(cfs)
2-Year	1-Hour	1.2	**51.9**	2.30	78.02	*To be analyzed during Final Engineering*
	3-Hour	1.7	**24.1**	3.80	42.40	
	6-Hour	2.3	**22.5**	5.50	40.35	
	24-Hour	3.9	**6.4**	9.70	16.01	*0*
5-Year	1-Hour	1.7	**72.3**	3.10	104.72	*To be analyzed during Final Engineering*
	3-Hour	2.3	**35.6**	4.90	57.66	
	6-Hour	3.1	**32.9**	7.10	54.62	
	24-Hour	5.3	**8.8**	13.40	22.01	*8.10*
10-Year	1-Hour	2.5	**95.2**	3.90	129.69	*To be analyzed during Final Engineering*
	3-Hour	3.3	**51.5**	6.00	73.73	
	6-Hour	4.5	**47.3**	8.50	69.58	
	24-Hour	7.6	**18.2**	16.30	29.05	*16.86*
100-Year	1-Hour	4.2	**147.9**	6.2	198.82	*To be analyzed during Final Engineering*
	3-Hour	5.7	**80.7**	9.2	112.81	
	6-Hour	7.5	**74.4**	13.1	106.26	
	24-Hour	14.7	**34.5**	27.0	50.90	*39.90*

Note:

**For the routing analysis of the South Area (Building 2), a constant flow rate of 9.4 cfs is assumed to be infiltrating within the basin extents (based on 11.5 in/hr infiltration rate, the basin bottom area, and a factor of safety of 3) and has been subtracted from the peak flow results from the routing analysis.*

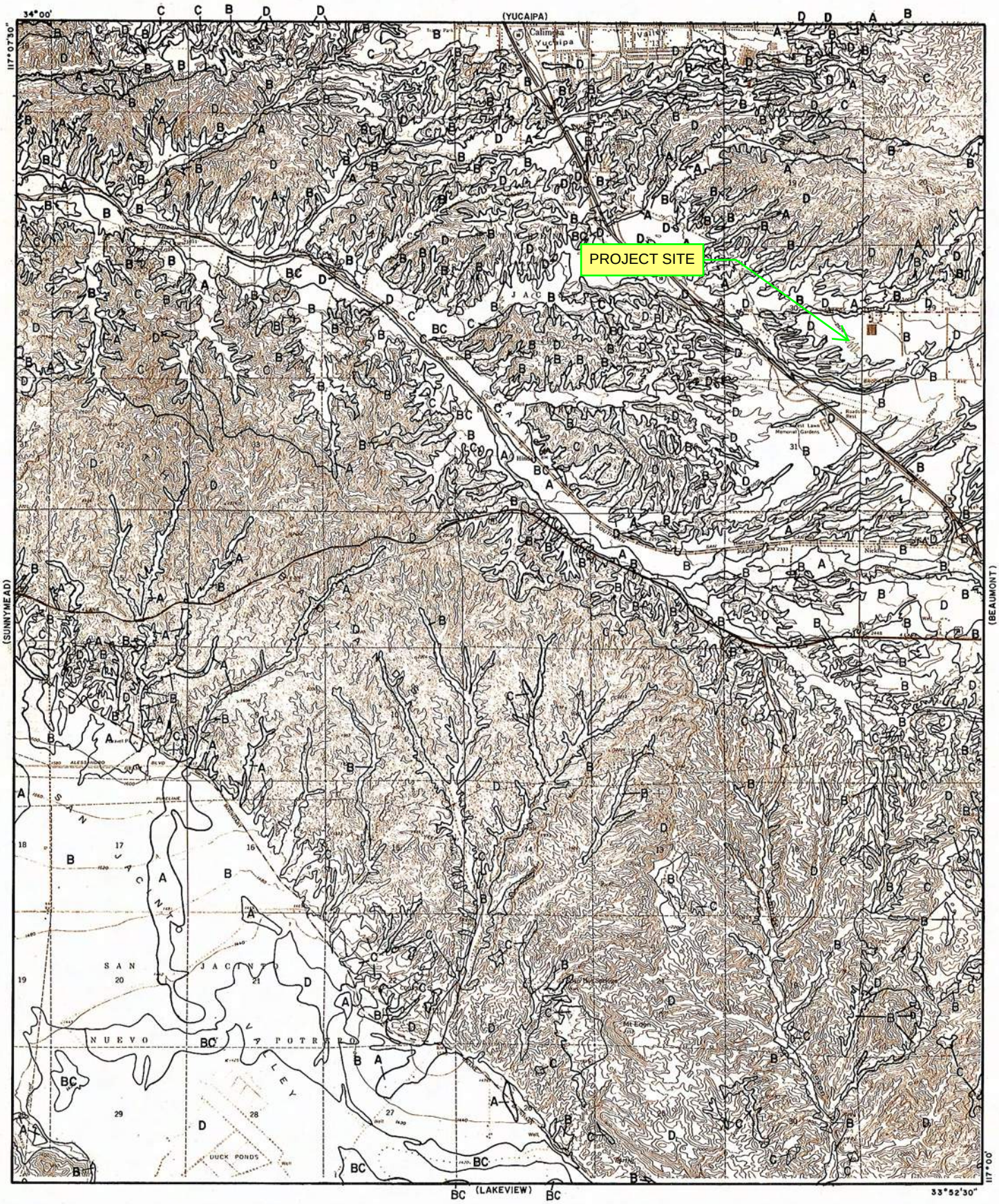
SECTION 5 - CONCLUSION

Based on the analyses and results of this report, the following conclusions were derived from the hydrology and hydraulic results:

- The proposed drainage improvements will adequately convey flows to the basin and provide flood protection for the 100-year storm event.
- The proposed basins will provide adequate water quality treatment.
- The proposed project will not impact flooding condition to upstream or downstream properties.

APPENDIX A – HYDROLOGY ANALYSIS

HYDROLOGIC SOILS GROUP MAP (PLATE C-1.18)



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC&WCD

HYDROLOGY MANUAL

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR EL CASCO

PLATE C-1.18

RAINFALL INTENSITY

NOAA Atlas 14, Volume 6, Version 2
Location name: Beaumont, California, USA*
Latitude: 33.9648°, Longitude: -117.0173°
Elevation: 2522.8 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.123 (0.102-0.149)	0.156 (0.130-0.189)	0.204 (0.170-0.249)	0.249 (0.205-0.305)	0.318 (0.252-0.403)	0.378 (0.294-0.491)	0.448 (0.340-0.597)	0.530 (0.391-0.726)	0.660 (0.466-0.943)	0.778 (0.530-1.15)
10-min	0.176 (0.147-0.213)	0.223 (0.186-0.271)	0.293 (0.243-0.357)	0.356 (0.293-0.438)	0.455 (0.362-0.578)	0.542 (0.422-0.704)	0.643 (0.488-0.855)	0.760 (0.560-1.04)	0.946 (0.668-1.35)	1.12 (0.760-1.65)
15-min	0.213 (0.177-0.258)	0.270 (0.225-0.328)	0.354 (0.294-0.431)	0.431 (0.355-0.529)	0.550 (0.438-0.699)	0.656 (0.510-0.852)	0.777 (0.590-1.03)	0.919 (0.677-1.26)	1.14 (0.808-1.64)	1.35 (0.919-2.00)
30-min	0.312 (0.260-0.379)	0.397 (0.330-0.482)	0.521 (0.432-0.634)	0.633 (0.521-0.778)	0.809 (0.643-1.03)	0.964 (0.750-1.25)	1.14 (0.866-1.52)	1.35 (0.995-1.85)	1.68 (1.19-2.40)	1.98 (1.35-2.93)
60-min	0.457 (0.381-0.555)	0.581 (0.483-0.705)	0.762 (0.632-0.928)	0.927 (0.763-1.14)	1.18 (0.941-1.50)	1.41 (1.10-1.83)	1.67 (1.27-2.23)	1.98 (1.46-2.71)	2.46 (1.74-3.52)	2.90 (1.98-4.29)
2-hr	0.654 (0.545-0.793)	0.815 (0.678-0.990)	1.05 (0.868-1.27)	1.25 (1.03-1.54)	1.56 (1.24-1.98)	1.82 (1.42-2.36)	2.11 (1.60-2.81)	2.43 (1.79-3.33)	2.92 (2.07-4.18)	3.35 (2.28-4.96)
3-hr	0.805 (0.671-0.976)	0.999 (0.831-1.21)	1.27 (1.06-1.55)	1.51 (1.24-1.85)	1.86 (1.48-2.36)	2.15 (1.68-2.80)	2.47 (1.88-3.29)	2.83 (2.08-3.87)	3.35 (2.36-4.79)	3.79 (2.58-5.61)
6-hr	1.17 (0.973-1.42)	1.45 (1.20-1.76)	1.83 (1.52-2.23)	2.16 (1.78-2.65)	2.63 (2.09-3.34)	3.01 (2.35-3.91)	3.42 (2.60-4.56)	3.86 (2.85-5.29)	4.50 (3.18-6.43)	5.01 (3.42-7.43)
12-hr	1.59 (1.33-1.93)	2.01 (1.67-2.44)	2.57 (2.13-3.13)	3.04 (2.50-3.73)	3.70 (2.94-4.70)	4.22 (3.28-5.47)	4.76 (3.61-6.34)	5.33 (3.93-7.30)	6.13 (4.33-8.76)	6.76 (4.61-10.0)
24-hr	2.12 (1.88-2.45)	2.76 (2.44-3.18)	3.60 (3.17-4.16)	4.29 (3.76-5.01)	5.26 (4.45-6.34)	6.01 (4.99-7.39)	6.79 (5.50-8.55)	7.60 (6.00-9.84)	8.73 (6.61-11.8)	9.61 (7.04-13.4)
2-day	2.59 (2.30-2.99)	3.43 (3.04-3.96)	4.59 (4.04-5.31)	5.56 (4.87-6.49)	6.95 (5.89-8.37)	8.07 (6.70-9.92)	9.25 (7.49-11.6)	10.5 (8.29-13.6)	12.3 (9.32-16.6)	13.8 (10.1-19.2)
3-day	2.81 (2.49-3.24)	3.76 (3.33-4.34)	5.10 (4.49-5.90)	6.25 (5.47-7.29)	7.93 (6.72-9.55)	9.31 (7.73-11.4)	10.8 (8.75-13.6)	12.4 (9.80-16.1)	14.8 (11.2-19.9)	16.7 (12.3-23.3)
4-day	3.06 (2.71-3.52)	4.11 (3.64-4.75)	5.60 (4.94-6.49)	6.90 (6.04-8.05)	8.80 (7.45-10.6)	10.4 (8.61-12.8)	12.1 (9.78-15.2)	13.9 (11.0-18.0)	16.6 (12.6-22.4)	18.9 (13.9-26.4)
7-day	3.53 (3.12-4.06)	4.75 (4.20-5.48)	6.46 (5.70-7.48)	7.94 (6.95-9.26)	10.1 (8.54-12.1)	11.8 (9.82-14.6)	13.7 (11.1-17.3)	15.8 (12.4-20.4)	18.7 (14.2-25.2)	21.2 (15.5-29.5)
10-day	3.87 (3.42-4.46)	5.21 (4.61-6.01)	7.08 (6.24-8.19)	8.68 (7.60-10.1)	11.0 (9.31-13.2)	12.9 (10.7-15.8)	14.9 (12.1-18.7)	17.0 (13.4-22.1)	20.2 (15.3-27.2)	22.7 (16.6-31.7)
20-day	4.78 (4.23-5.50)	6.49 (5.74-7.49)	8.85 (7.80-10.2)	10.8 (9.49-12.7)	13.7 (11.6-16.5)	16.0 (13.3-19.7)	18.4 (14.9-23.2)	21.0 (16.6-27.2)	24.7 (18.7-33.3)	27.7 (20.3-38.6)
30-day	5.61 (4.97-6.47)	7.66 (6.77-8.84)	10.4 (9.21-12.1)	12.8 (11.2-14.9)	16.2 (13.7-19.5)	18.8 (15.6-23.2)	21.6 (17.5-27.3)	24.6 (19.4-31.9)	28.9 (21.9-38.9)	32.3 (23.6-45.0)
45-day	6.73 (5.96-7.76)	9.18 (8.11-10.6)	12.5 (11.0-14.5)	15.3 (13.4-17.8)	19.2 (16.3-23.2)	22.4 (18.6-27.5)	25.7 (20.8-32.3)	29.2 (23.0-37.7)	34.1 (25.8-45.9)	38.0 (27.8-53.0)
60-day	7.85 (6.95-9.05)	10.7 (9.43-12.3)	14.5 (12.8-16.7)	17.7 (15.4-20.6)	22.1 (18.7-26.7)	25.7 (21.3-31.6)	29.4 (23.8-37.0)	33.4 (26.3-43.2)	38.9 (29.4-52.4)	43.3 (31.7-60.3)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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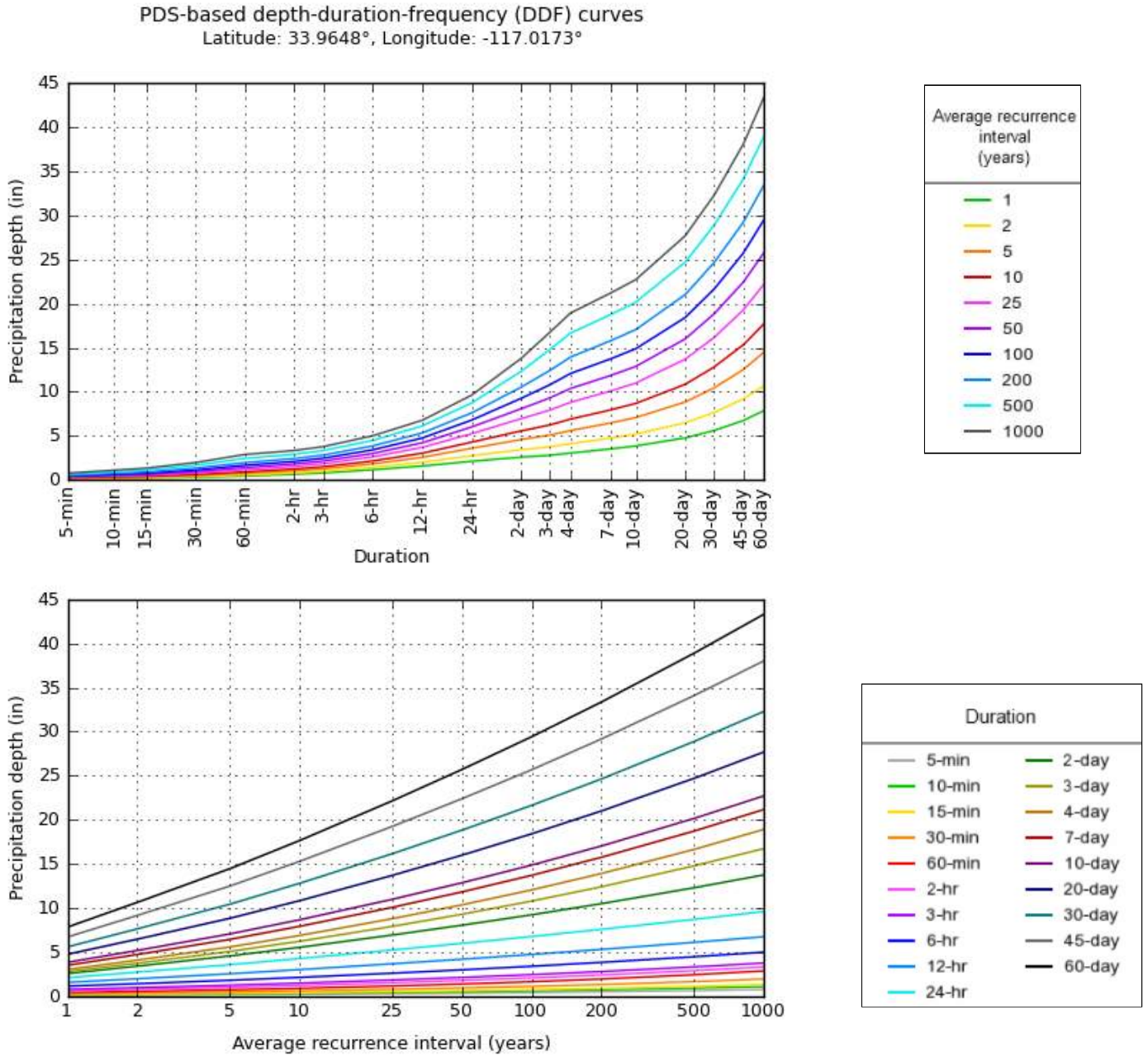
PF graphical



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Fri Dec 10 00:04:40 2021

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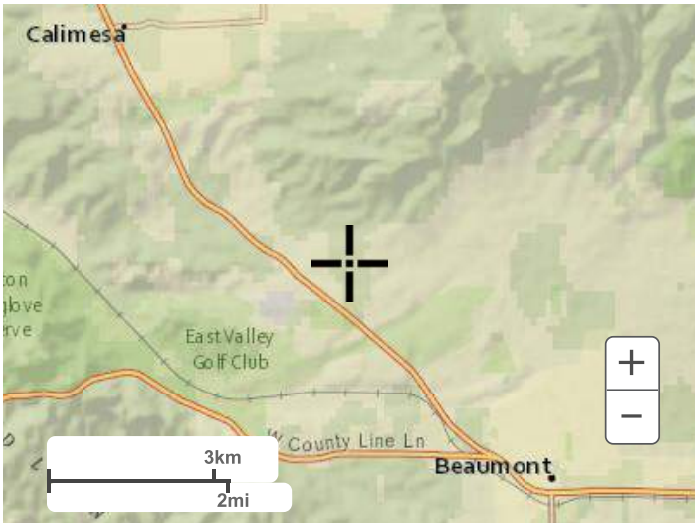
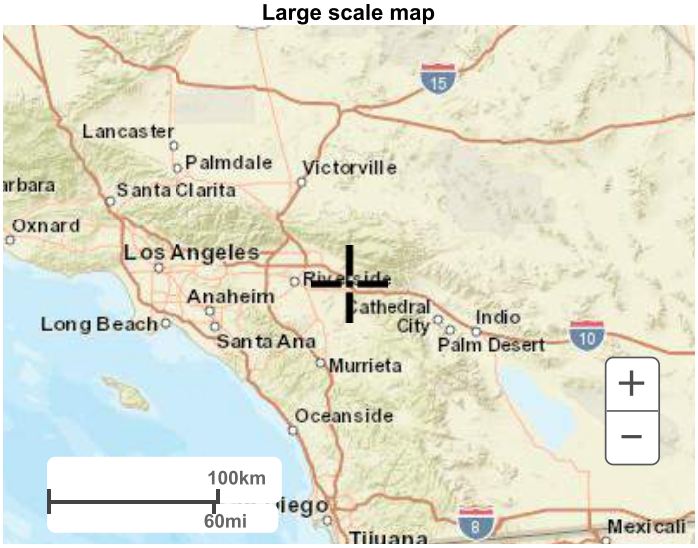
Maps & aerials

Small scale terrain

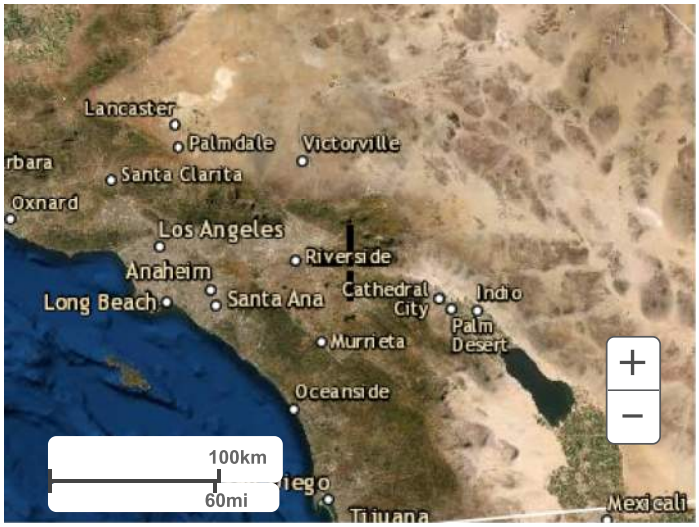


Large scale terrain

Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Approximate Project Location
(i=0.55)

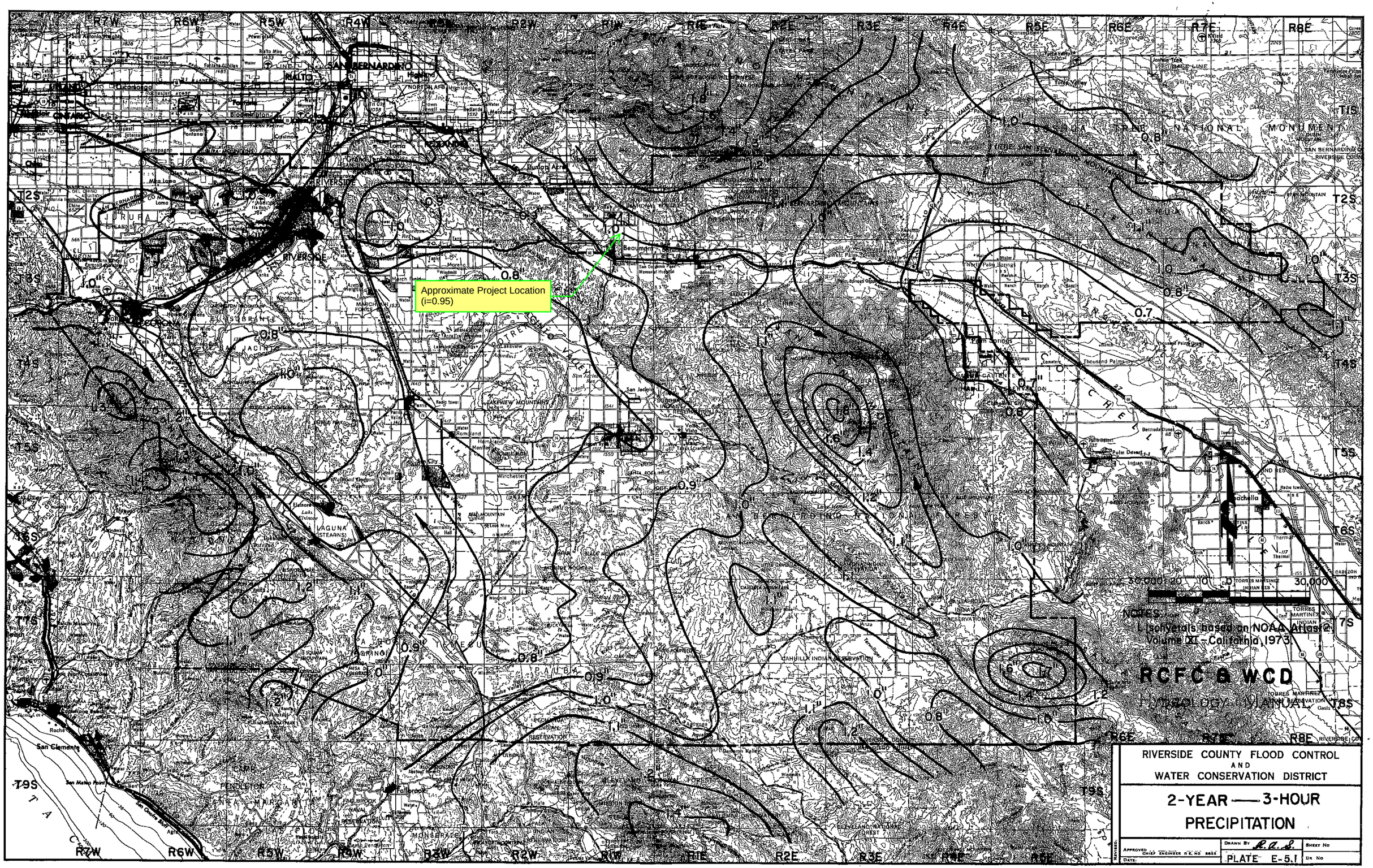
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973

RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 1-HOUR PRECIPITATION

APPROVED CHIEF ENGINEER R.E. NO. 8882	DRAWN BY R.A.S.	SHEET NO
DATE	PLATE D-4.3	DR NO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(i=0.95)
Notes:
Isohyetals based on NOAA Atlas 2,
Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
2-YEAR — 3-HOUR
PRECIPITATION
DRAWN BY R.A.S.
SHEET NO
APPROVED CHIEF ENGINEER R.E. NO. 8812
PLATE E-5.1
DR NO
DATE:
REVISED:

Approximate Project Location
(i=1.4)

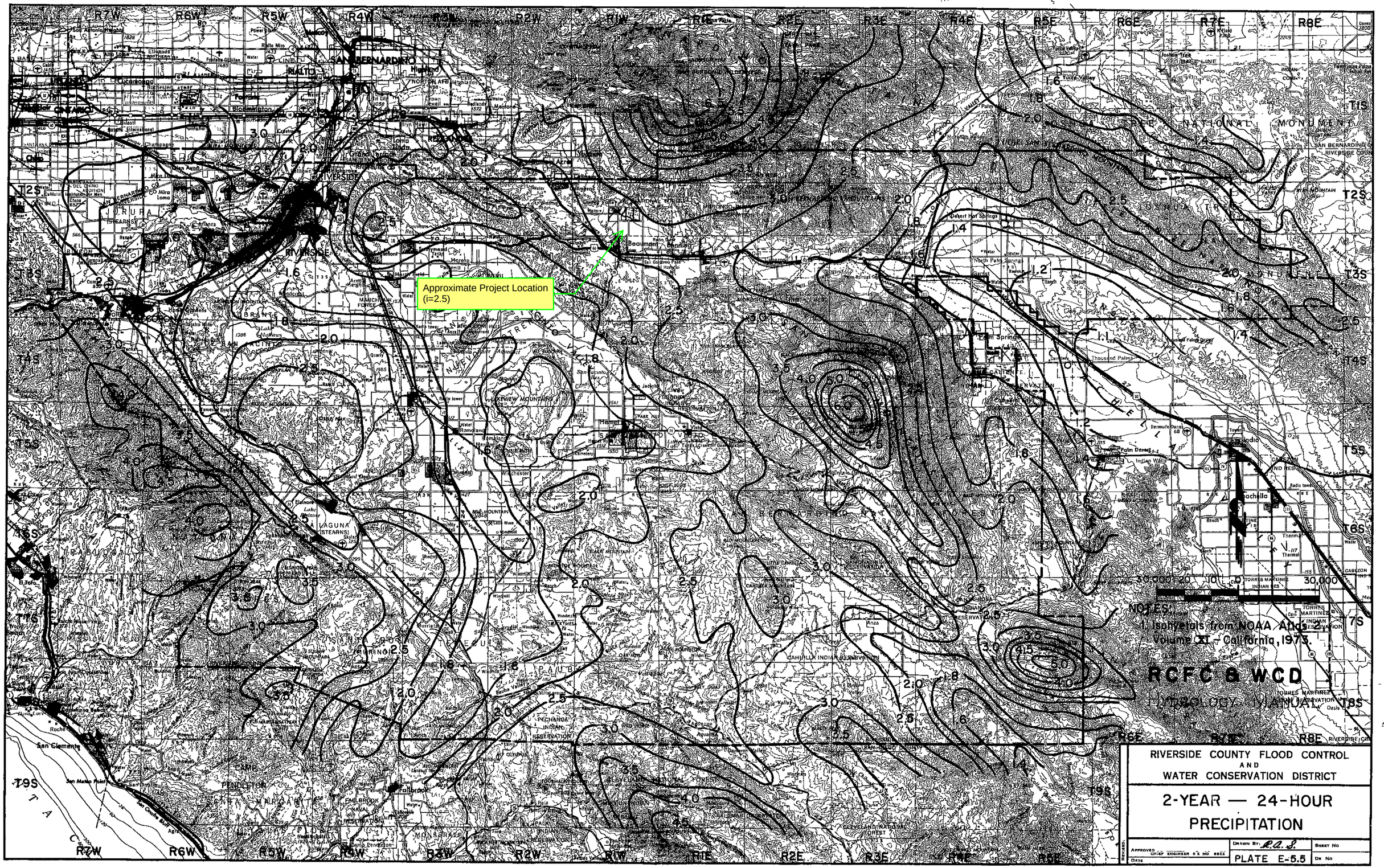
NOTES:
1. Isohyetals from NOAA Atlas 2 Volume XI - California, 1973

RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 6-HOUR
PRECIPITATION

APPROVED: CHIEF ENGINEER R.E. NO. 8822	DRAWN BY:	SHEET NO
DATE:	PLATE E-5.3	DR NO

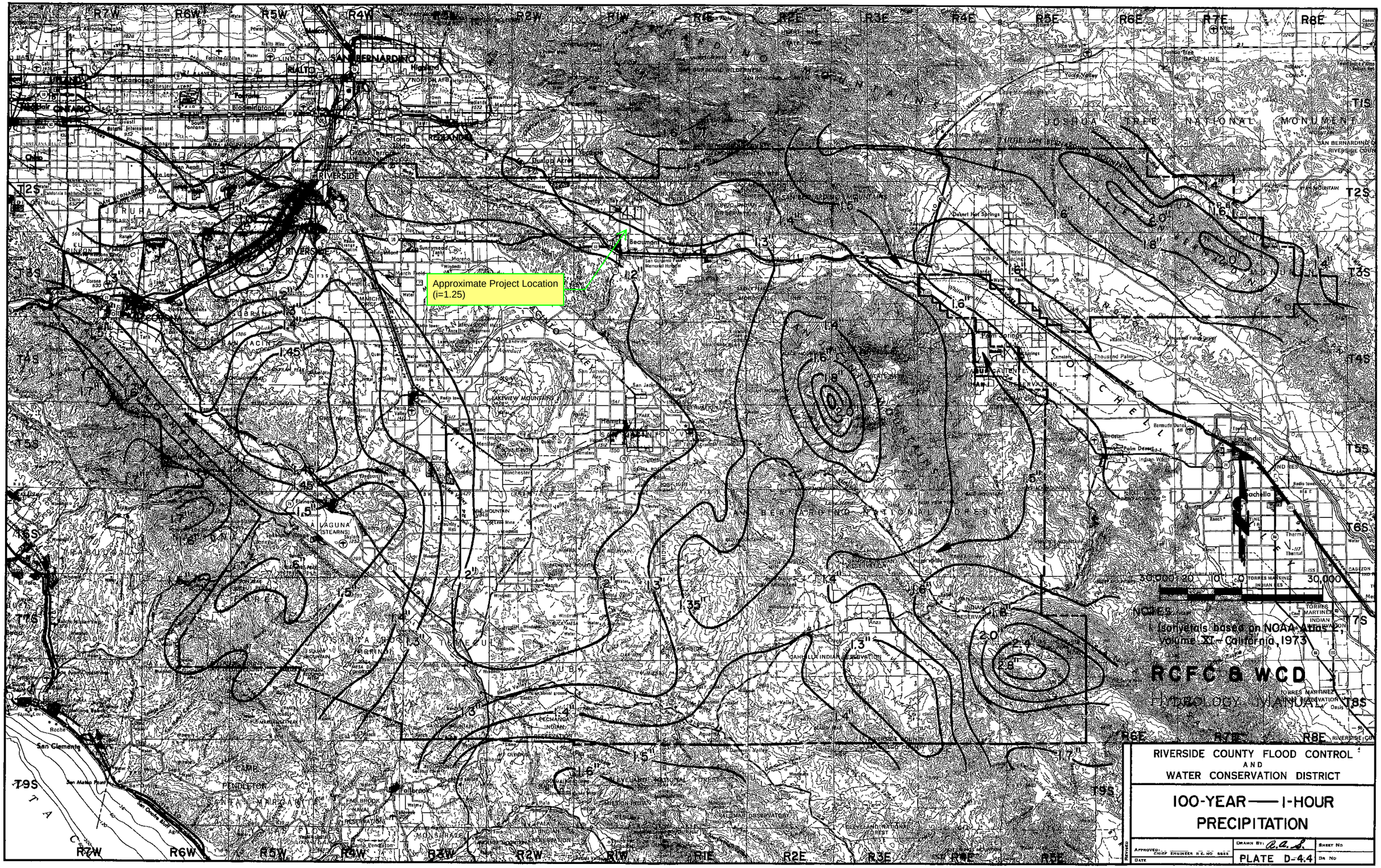


RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 24-HOUR PRECIPITATION

REVISED	APPROVED CHIEF ENGINEER R.E. NO. 8825	DRAWN BY: R.A.S.
	DATE	PLATE E-5.5

SHEET NO
DR NO

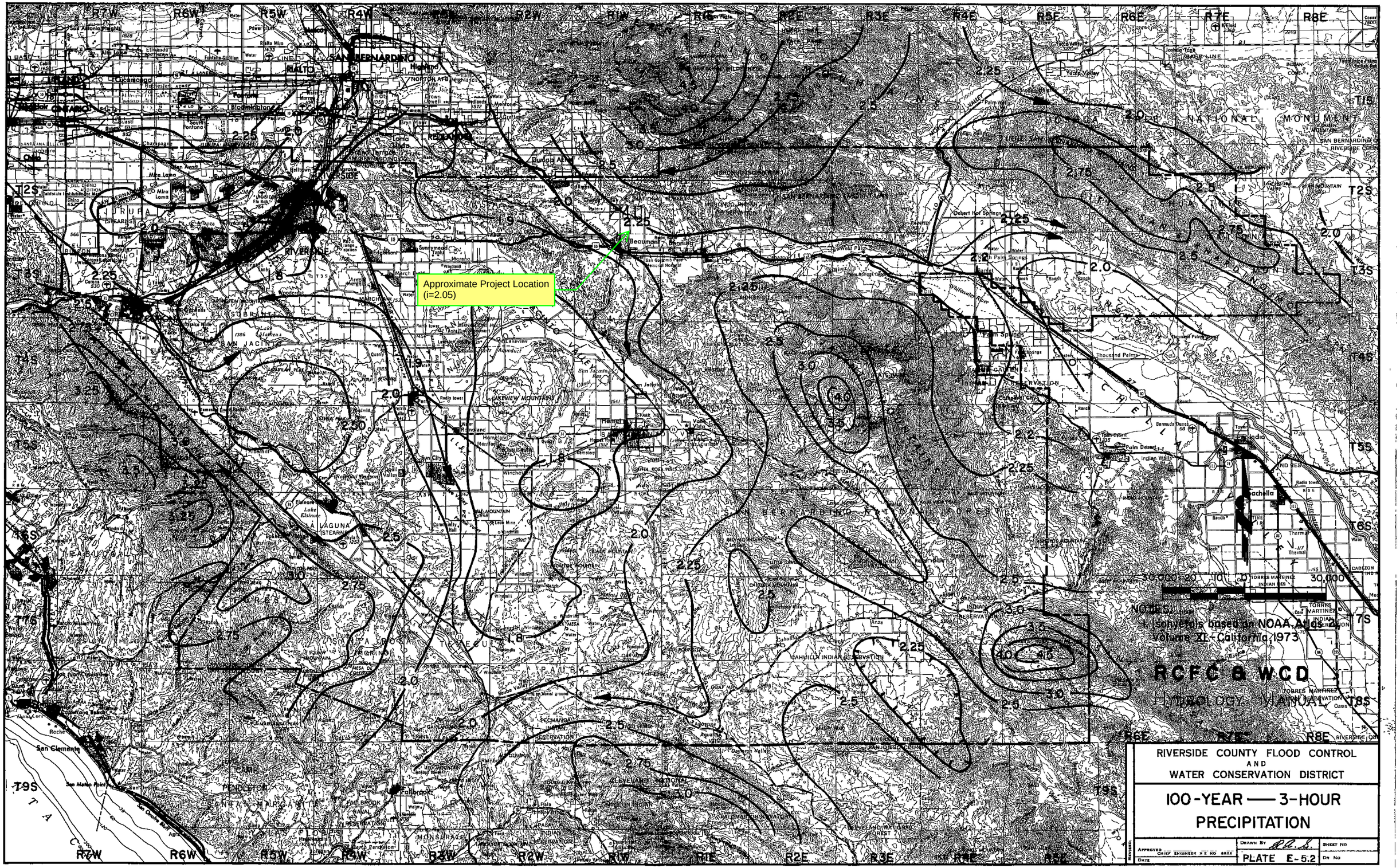


RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

100-YEAR — 1-HOUR PRECIPITATION

APPROVED: CHIEF ENGINEER R.E. NO. 6825	DRAWN BY: A.A.L.	SHEET NO
DATE	PLATE D-4.4	DR NO

REVISED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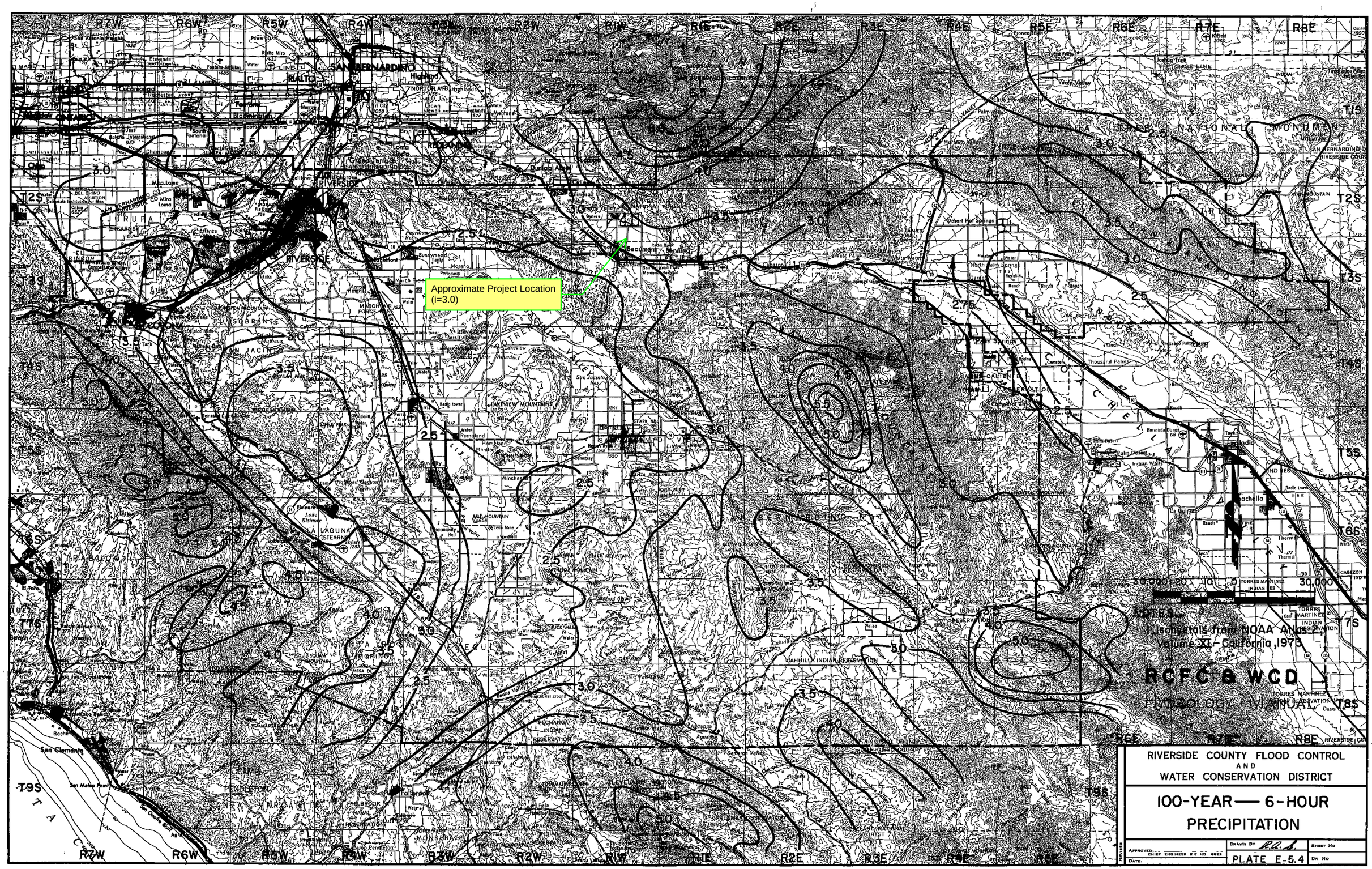
NOTES:
1. Isohyetals based on NOAA Atlas 2
Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 3-HOUR
PRECIPITATION
PLATE E-5.2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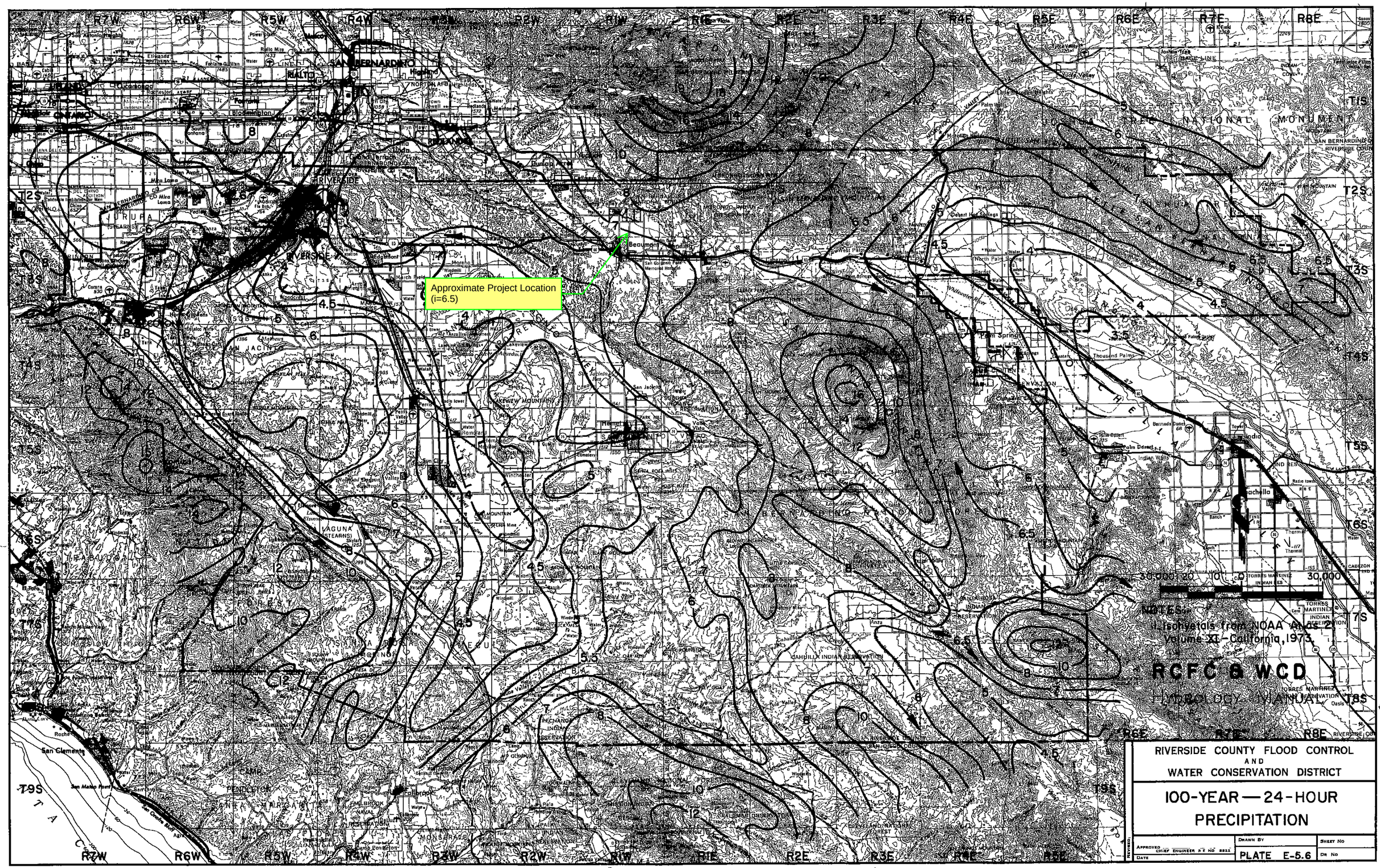
NOTES:
1. Isohyetals from NOAA Atlas 2,
Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 6-HOUR
PRECIPITATION
APPROVED: CHIEF ENGINEER R E NO 4625
DATE:
DRAWN BY R.C.S.
SHEET NO
PLATE E-5.4
DR NO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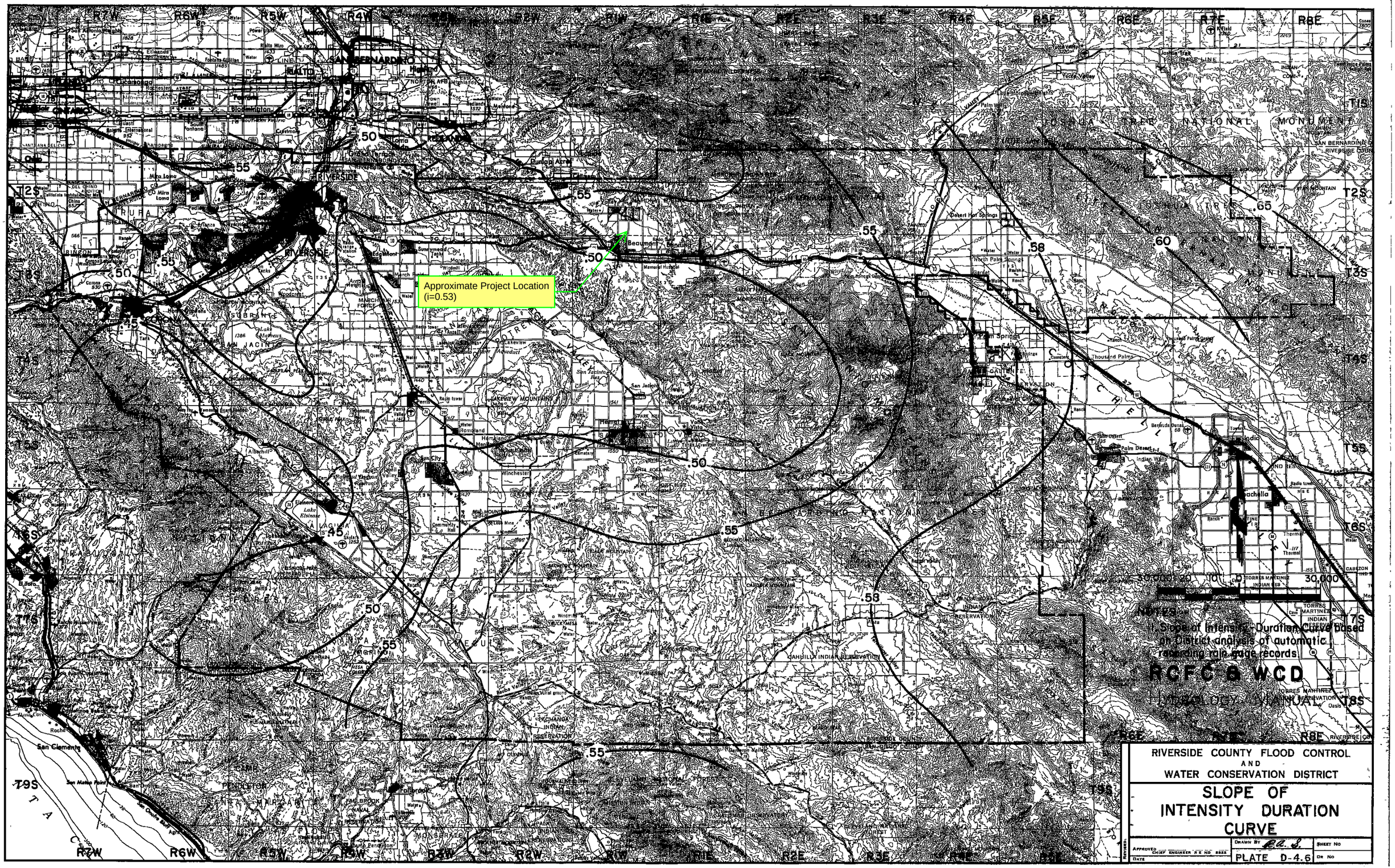
NOTES
Isohyetals from NOAA Atlas 2
Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 24-HOUR
PRECIPITATION
APPROVED
CHIEF ENGINEER R.E. NO. 8833
DATE
DRAWN BY
PLATE E-5.6
SHEET NO
DR NO
REVISED


Approximate Project Location
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SAN BERNARDINO
RIVERSIDE
COLTON
RIALTO
LOMA LINDA
REDLANDS
Beaumont
Banning
Calimesa
Yucaipa
Desert Hot Springs
North Palm Springs
Cabazon
Thousand Palms
Palm Springs
Palm Desert
Indian Wells
La Quinta
Indio
Coachella
Mecca
Bermuda Dunes
Winchester
Hemet
San Jacinto
Elsinore
Lake Elsinore
Temecula
Murrieta
Fallbrook
Bonsall
Oceanside
San Clemente
San Mateo Point
Rancho California
Pechanga Indian Reservation
Cahuilla Indian Reservation
Torres Martinez Indian Reservation
Agua Caliente Indian Reservation
Morongo Indian Reservation
Santa Rosa Mountains
Lake Cahuilla
Salton Sea
Joshua Tree National Monument
Box Canyon
Whitewater River
Coachella Valley
San Gorgonio Pass
San Jacinto Mountains
Santa Ana River
Temecula Creek
San Luis Rey River
San Onofre Bluff
Lake Matthews
Lake Elsinore
Lake Skinner
Vail Lake
Diamond Valley Lake
Lake Perris
Lake Hemet
Lake Cahuilla
Lake Cleveland
Lake Evans
Lake Mathews
Lake Fulmor
Lake Norconian
Lake Vail
Lake Temecula
Lake Elsinore
Lake Skinner

EXISTING CONDITION 10-YEAR OVERALL HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:700EXISTING.out

BEAUMONT SUMMIT STATION EXISTING CONDITION
700 SERIES 10-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 700.000 to Point/Station 701.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 940.000(Ft.)
Top (of initial area) elevation = 2581.200(Ft.)
Bottom (of initial area) elevation = 2547.600(Ft.)
Difference in elevation = 33.600(Ft.)
Slope = 0.03574 s(percent)= 3.57
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 21.373 min.
Rainfall intensity = 1.778(In/Hr) for a 10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.673
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 7.303(CFS)
Total initial stream area = 6.100(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 701.000 to Point/Station 702.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.600(Ft.)
End of natural channel elevation = 2528.000(Ft.)
Length of natural channel = 555.000(Ft.)
Estimated mean flow rate at midpoint of channel = 14.127(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   2.53(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0353
Corrected/adjusted channel slope =  0.0353
Travel time =    3.65 min.     TC =   25.02  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.659
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.636(In/Hr) for a    10.0 year storm
Subarea runoff =     12.285(CFS) for     11.400(Ac.)
Total runoff =     19.588(CFS)       Total area =      17.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      702.000 to Point/Station      703.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2528.000(Ft.)
End of natural channel elevation =   2503.000(Ft.)
Length of natural channel  =   715.000(Ft.)
Estimated mean flow rate at midpoint of channel =     31.844(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.30(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0350
Corrected/adjusted channel slope =  0.0350
Travel time =    3.61 min.     TC =   28.64  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.646
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.523(In/Hr) for a    10.0 year storm
Subarea runoff =     21.543(CFS) for     21.900(Ac.)
Total runoff =     41.131(CFS)       Total area =      39.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      703.000 to Point/Station      704.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2503.000(Ft.)
End of natural channel elevation =   2481.000(Ft.)
Length of natural channel  =   745.000(Ft.)
Estimated mean flow rate at midpoint of channel =     59.034(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.72(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
```

```
       Normal channel slope =  0.0295
Corrected/adjusted channel slope =  0.0295
Travel time =    3.34 min.     TC =   31.97  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.648
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  70.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.437(In/Hr) for a    10.0 year storm
Subarea runoff =     31.940(CFS) for     34.300(Ac.)
Total runoff =     73.071(CFS)       Total area =      73.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      704.000 to Point/Station      705.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2481.000(Ft.)
End of natural channel elevation =   2419.000(Ft.)
Length of natural channel  =  1000.000(Ft.)
Estimated mean flow rate at midpoint of channel =     89.281(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.42(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0620
Corrected/adjusted channel slope =  0.0620
Travel time =    1.46 min.     TC =   33.43  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.697
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  76.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.403(In/Hr) for a    10.0 year storm
Subarea runoff =     31.958(CFS) for     32.700(Ac.)
Total runoff =    105.029(CFS)       Total area =     106.400(Ac.)
End of computations, total study area =          106.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  71.8
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:800EXISTING.out

BEAUMONT SUMMIT STATION 800 SERIES
EXISTING CONDITION 10-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 800.000 to Point/Station 801.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 815.000(Ft.)
Top (of initial area) elevation = 2574.100(Ft.)
Bottom (of initial area) elevation = 2547.000(Ft.)
Difference in elevation = 27.100(Ft.)
Slope = 0.03325 s(percent)= 3.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 20.481 min.
Rainfall intensity = 1.819(In/Hr) for a 10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.677
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 12.069(CFS)
Total initial stream area = 9.800(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 801.000 to Point/Station 802.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.000(Ft.)
End of natural channel elevation = 2527.700(Ft.)
Length of natural channel = 670.000(Ft.)
Estimated mean flow rate at midpoint of channel = 21.982(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   2.65(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0288
Corrected/adjusted channel slope =  0.0288
Travel time =    4.21 min.     TC =   24.69  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.660
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.647(In/Hr) for a    10.0 year storm
Subarea runoff =     17.506(CFS) for     16.100(Ac.)
Total runoff =     29.574(CFS)       Total area =      25.900(Ac.)


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Process from Point/Station      802.000 to Point/Station      803.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2527.700(Ft.)
End of natural channel elevation =   2488.000(Ft.)
Length of natural channel  =   775.000(Ft.)
Estimated mean flow rate at midpoint of channel =     43.448(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.41(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0512
Corrected/adjusted channel slope =  0.0512
Travel time =    2.93 min.     TC =   27.62  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.681
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  72.75
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.552(In/Hr) for a    10.0 year storm
Subarea runoff =     25.687(CFS) for     24.300(Ac.)
Total runoff =     55.261(CFS)       Total area =      50.200(Ac.)
End of computations, total study area =           50.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  70.8
```

EXISTING CONDITION 100-YEAR OVERALL HYDROLOGY (RATIONAL METHOD)

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                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
        Rational Hydrology Study        Date: 02/22/22  File:700EXISTING.out
------------------------------------------------------------------------
BEAUMONT SUMMIT STATION EXISTING CONDITION
700 SERIES 100-YR STORM EVENT
21-0044
2022-02-22 EP
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 4010

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.581(In.)
100 year, 1 hour precipitation =  1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.670(In/Hr)
Slope of intensity duration curve = 0.5300




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      700.000 to Point/Station      701.000
**** INITIAL AREA EVALUATION ****
____________________________________________________________________________
Initial area flow distance =   940.000(Ft.)
Top (of initial area) elevation =  2581.200(Ft.)
Bottom (of initial area) elevation =  2547.600(Ft.)
Difference in elevation =    33.600(Ft.)
Slope =    0.03574  s(percent)=       3.57
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   21.373 min.
Rainfall intensity =      2.886(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.745
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     13.121(CFS)
Total initial stream area =        6.100(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      701.000 to Point/Station      702.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
____________________________________________________________________________
Top of natural channel elevation =   2547.600(Ft.)
End of natural channel elevation =   2528.000(Ft.)
Length of natural channel  =   555.000(Ft.)
Estimated mean flow rate at midpoint of channel =     25.382(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
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```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.08(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0353
Corrected/adjusted channel slope =  0.0353
Travel time =    3.01 min.     TC =   24.38  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.736
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.692(In/Hr) for a   100.0 year storm
Subarea runoff =     22.588(CFS) for     11.400(Ac.)
Total runoff =     35.709(CFS)       Total area =      17.500(Ac.)


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Process from Point/Station      702.000 to Point/Station      703.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2528.000(Ft.)
End of natural channel elevation =   2503.000(Ft.)
Length of natural channel  =   715.000(Ft.)
Estimated mean flow rate at midpoint of channel =     58.053(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.02(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0350
Corrected/adjusted channel slope =  0.0350
Travel time =    2.96 min.     TC =   27.34  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.728
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.533(In/Hr) for a   100.0 year storm
Subarea runoff =     40.372(CFS) for     21.900(Ac.)
Total runoff =     76.081(CFS)       Total area =      39.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      703.000 to Point/Station      704.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2503.000(Ft.)
End of natural channel elevation =   2481.000(Ft.)
Length of natural channel  =   745.000(Ft.)
Estimated mean flow rate at midpoint of channel =    109.197(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.56(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
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       Normal channel slope =  0.0295
Corrected/adjusted channel slope =  0.0295
Travel time =    2.72 min.     TC =   30.07  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.731
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  70.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.408(In/Hr) for a   100.0 year storm
Subarea runoff =     60.364(CFS) for     34.300(Ac.)
Total runoff =    136.445(CFS)       Total area =      73.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      704.000 to Point/Station      705.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2481.000(Ft.)
End of natural channel elevation =   2419.000(Ft.)
Length of natural channel  =  1000.000(Ft.)
Estimated mean flow rate at midpoint of channel =    166.715(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.81(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0620
Corrected/adjusted channel slope =  0.0620
Travel time =    1.21 min.     TC =   31.28  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.767
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  76.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.359(In/Hr) for a   100.0 year storm
Subarea runoff =     59.146(CFS) for     32.700(Ac.)
Total runoff =    195.591(CFS)       Total area =     106.400(Ac.)
End of computations, total study area =          106.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  71.8
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:800EXISTING.out

BEAUMONT SUMMIT STATION 800 SERIES
EXISTING CONDITION 100-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 800.000 to Point/Station 801.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 815.000(Ft.)
Top (of initial area) elevation = 2574.100(Ft.)
Bottom (of initial area) elevation = 2547.000(Ft.)
Difference in elevation = 27.100(Ft.)
Slope = 0.03325 s(percent)= 3.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 20.481 min.
Rainfall intensity = 2.952(In/Hr) for a 100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.748
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 21.644(CFS)
Total initial stream area = 9.800(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 801.000 to Point/Station 802.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.000(Ft.)
End of natural channel elevation = 2527.700(Ft.)
Length of natural channel = 670.000(Ft.)
Estimated mean flow rate at midpoint of channel = 39.424(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.22(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0288
Corrected/adjusted channel slope =  0.0288
Travel time =    3.47 min.     TC =   23.95  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.737
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.717(In/Hr) for a   100.0 year storm
Subarea runoff =     32.257(CFS) for     16.100(Ac.)
Total runoff =     53.901(CFS)       Total area =      25.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      802.000 to Point/Station      803.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2527.700(Ft.)
End of natural channel elevation =   2488.000(Ft.)
Length of natural channel  =   775.000(Ft.)
Estimated mean flow rate at midpoint of channel =     79.187(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.38(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0512
Corrected/adjusted channel slope =  0.0512
Travel time =    2.40 min.     TC =   26.36  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.754
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  72.75
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.583(In/Hr) for a   100.0 year storm
Subarea runoff =     47.331(CFS) for     24.300(Ac.)
Total runoff =    101.232(CFS)       Total area =      50.200(Ac.)
End of computations, total study area =           50.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  70.8
```

DEVELOPED CONDITION 10-YEAR ONSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 12/17/21 File:300.out

EXETER INDUSTRIAL BLDG 2 DEVELOPED CONDITION
10-YEAR STORM EVENT 300 SERIES
21-0044
2021-12-17 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 300.000 to Point/Station 301.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 630.000(Ft.)
Top (of initial area) elevation = 2506.200(Ft.)
Bottom (of initial area) elevation = 2499.400(Ft.)
Difference in elevation = 6.800(Ft.)
Slope = 0.01079 s(percent)= 1.08
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 9.777 min.
Rainfall intensity = 2.692(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.875
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 17.660(CFS)
Total initial stream area = 7.500(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 301.000 to Point/Station 302.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 2495.400(Ft.)
Downstream point/station elevation = 2487.900(Ft.)
Pipe length = 455.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 17.660(CFS)
Nearest computed pipe diameter = 21.00(In.)
Calculated individual pipe flow = 17.660(CFS)
Normal flow depth in pipe = 15.12(In.)

```
Flow top width inside pipe =   18.86(In.)
Critical Depth =   18.39(In.)
Pipe flow velocity =      9.52(Ft/s)
Travel time through pipe =    0.80 min.
Time of concentration (TC) =    10.57 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      302.000 to Point/Station      302.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      7.500(Ac.)
Runoff from this stream =     17.660(CFS)
Time of concentration =   10.57 min.
Rainfall intensity =     2.582(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      303.000 to Point/Station      304.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   645.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2499.400(Ft.)
Difference in elevation =     6.800(Ft.)
Slope =    0.01054  s(percent)=       1.05
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.916 min.
Rainfall intensity =      2.672(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.875
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     13.553(CFS)
Total initial stream area =        5.800(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      304.000 to Point/Station      302.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2495.400(Ft.)
Downstream point/station elevation =  2487.900(Ft.)
Pipe length  =    34.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.553(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    13.553(CFS)
Normal flow depth in pipe =    8.19(In.)
Flow top width inside pipe =   11.17(In.)
Critical depth could not be calculated.
Pipe flow velocity =     23.72(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =     9.94 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      302.000 to Point/Station      302.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.800(Ac.)
Runoff from this stream =     13.553(CFS)
Time of concentration =    9.94 min.
Rainfall intensity =     2.668(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)
```

```
1       17.660     10.57                 2.582
2       13.553      9.94                 2.668
Largest stream flow has longer time of concentration
Qp =     17.660 + sum of
          Qb         Ia/Ib
          13.553 *    0.968 =     13.117
Qp =     30.777

Total of 2 streams to confluence:
Flow rates before confluence point:
      17.660      13.553
Area of streams before confluence:
        7.500        5.800
Results of confluence:
Total flow rate =     30.777(CFS)
Time of concentration =    10.574 min.
Effective stream area after confluence =     13.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      302.000 to Point/Station      305.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2487.900(Ft.)
Downstream point/station elevation =  2480.800(Ft.)
Pipe length  =   430.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    30.777(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    30.777(CFS)
Normal flow depth in pipe =   17.84(In.)
Flow top width inside pipe =   25.57(In.)
Critical Depth =   23.01(In.)
Pipe flow velocity =     11.05(Ft/s)
Travel time through pipe =    0.65 min.
Time of concentration (TC) =    11.22 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      305.000 to Point/Station      305.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     13.300(Ac.)
Runoff from this stream =     30.777(CFS)
Time of concentration =   11.22 min.
Rainfall intensity =     2.502(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      306.000 to Point/Station      307.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   660.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2499.400(Ft.)
Difference in elevation =     6.800(Ft.)
Slope =    0.01030  s(percent)=       1.03
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.054 min.
Rainfall intensity =      2.652(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.875
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     12.757(CFS)
Total initial stream area =        5.500(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

```
Process from Point/Station      307.000 to Point/Station      305.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2495.400(Ft.)
Downstream point/station elevation =  2480.800(Ft.)
Pipe length  =    35.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.757(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    12.757(CFS)
Normal flow depth in pipe =    6.38(In.)
Flow top width inside pipe =   11.98(In.)
Critical depth could not be calculated.
Pipe flow velocity =     30.05(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =    10.07 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      305.000 to Point/Station      305.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.500(Ac.)
Runoff from this stream =     12.757(CFS)
Time of concentration =   10.07 min.
Rainfall intensity =     2.649(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       30.777     11.22                 2.502
2       12.757     10.07                 2.649
Largest stream flow has longer time of concentration
Qp =     30.777 + sum of
          Qb         Ia/Ib
          12.757 *    0.944 =     12.047
Qp =     42.824

Total of 2 streams to confluence:
Flow rates before confluence point:
      30.777      12.757
Area of streams before confluence:
       13.300        5.500
Results of confluence:
Total flow rate =     42.824(CFS)
Time of concentration =    11.222 min.
Effective stream area after confluence =     18.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      305.000 to Point/Station      308.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2480.800(Ft.)
Downstream point/station elevation =  2473.700(Ft.)
Pipe length  =   430.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    42.824(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    42.824(CFS)
Normal flow depth in pipe =   20.53(In.)
Flow top width inside pipe =   27.89(In.)
Critical Depth =   26.23(In.)
Pipe flow velocity =     11.96(Ft/s)
Travel time through pipe =    0.60 min.
Time of concentration (TC) =    11.82 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      308.000 to Point/Station      308.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     18.800(Ac.)
```

```
Runoff from this stream =     42.824(CFS)
Time of concentration =   11.82 min.
Rainfall intensity =     2.434(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      309.000 to Point/Station      310.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   665.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2499.400(Ft.)
Difference in elevation =     6.800(Ft.)
Slope =    0.01023  s(percent)=       1.02
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.100 min.
Rainfall intensity =      2.646(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.874
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     13.651(CFS)
Total initial stream area =        5.900(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      310.000 to Point/Station      308.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2495.400(Ft.)
Downstream point/station elevation =  2473.700(Ft.)
Pipe length  =    40.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.651(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    13.651(CFS)
Normal flow depth in pipe =    6.14(In.)
Flow top width inside pipe =   12.00(In.)
Critical depth could not be calculated.
Pipe flow velocity =     33.74(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =    10.12 min.


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Process from Point/Station      308.000 to Point/Station      308.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.900(Ac.)
Runoff from this stream =     13.651(CFS)
Time of concentration =   10.12 min.
Rainfall intensity =     2.643(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       42.824     11.82                 2.434
2       13.651     10.12                 2.643
Largest stream flow has longer time of concentration
Qp =     42.824 + sum of
          Qb         Ia/Ib
          13.651 *    0.921 =     12.571
Qp =     55.395

Total of 2 streams to confluence:
Flow rates before confluence point:
      42.824      13.651
Area of streams before confluence:
```

```
       18.800        5.900
Results of confluence:
Total flow rate =     55.395(CFS)
Time of concentration =    11.821 min.
Effective stream area after confluence =     24.700(Ac.)


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Process from Point/Station      308.000 to Point/Station      311.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2473.700(Ft.)
Downstream point/station elevation =  2458.900(Ft.)
Pipe length  =   905.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    55.395(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    55.395(CFS)
Normal flow depth in pipe =   26.44(In.)
Flow top width inside pipe =   19.41(In.)
Critical Depth =   28.29(In.)
Pipe flow velocity =     12.08(Ft/s)
Travel time through pipe =    1.25 min.
Time of concentration (TC) =    13.07 min.


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Process from Point/Station      311.000 to Point/Station      311.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     24.700(Ac.)
Runoff from this stream =     55.395(CFS)
Time of concentration =   13.07 min.
Rainfall intensity =     2.308(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      312.000 to Point/Station      313.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   740.000(Ft.)
Top (of initial area) elevation =  2503.800(Ft.)
Bottom (of initial area) elevation =  2494.200(Ft.)
Difference in elevation =     9.600(Ft.)
Slope =    0.01297  s(percent)=       1.30
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.051 min.
Rainfall intensity =      2.653(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.877
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.800
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.200
RI index for soil(AMC 2)  =  59.80
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      9.076(CFS)
Total initial stream area =        3.900(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      313.000 to Point/Station      311.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2490.200(Ft.)
Downstream point/station elevation =  2458.900(Ft.)
Pipe length  =   170.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     9.076(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     9.076(CFS)
Normal flow depth in pipe =    6.66(In.)
Flow top width inside pipe =   11.93(In.)
Critical depth could not be calculated.
Pipe flow velocity =     20.30(Ft/s)
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Travel time through pipe =    0.14 min.
Time of concentration (TC) =    10.19 min.


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Process from Point/Station      311.000 to Point/Station      311.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.900(Ac.)
Runoff from this stream =      9.076(CFS)
Time of concentration =   10.19 min.
Rainfall intensity =     2.633(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       55.395     13.07                 2.308
2        9.076     10.19                 2.633
Largest stream flow has longer time of concentration
Qp =     55.395 + sum of
          Qb         Ia/Ib
           9.076 *    0.876 =      7.954
Qp =     63.349

Total of 2 streams to confluence:
Flow rates before confluence point:
      55.395       9.076
Area of streams before confluence:
       24.700        3.900
Results of confluence:
Total flow rate =     63.349(CFS)
Time of concentration =    13.070 min.
Effective stream area after confluence =     28.600(Ac.)


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Process from Point/Station      311.000 to Point/Station      314.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2458.900(Ft.)
Downstream point/station elevation =  2455.000(Ft.)
Pipe length  =   235.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    63.349(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    63.349(CFS)
Normal flow depth in pipe =   25.17(In.)
Flow top width inside pipe =   28.07(In.)
Critical Depth =   30.34(In.)
Pipe flow velocity =     13.03(Ft/s)
Travel time through pipe =    0.30 min.
Time of concentration (TC) =    13.37 min.


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Process from Point/Station      314.000 to Point/Station      314.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     28.600(Ac.)
Runoff from this stream =     63.349(CFS)
Time of concentration =   13.37 min.
Rainfall intensity =     2.280(In/Hr)


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Process from Point/Station      315.000 to Point/Station      316.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =   330.000(Ft.)
Top (of initial area) elevation =  2500.700(Ft.)
Bottom (of initial area) elevation =  2490.900(Ft.)
Difference in elevation =     9.800(Ft.)
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```
Slope =    0.02970  s(percent)=       2.97
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.166 min.
Rainfall intensity =      3.437(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.886
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.340
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.660
RI index for soil(AMC 2)  =  68.54
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      3.960(CFS)
Total initial stream area =        1.300(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      316.000 to Point/Station      314.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2486.900(Ft.)
Downstream point/station elevation =  2455.000(Ft.)
Pipe length  =   170.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.960(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     3.960(CFS)
Normal flow depth in pipe =    4.78(In.)
Flow top width inside pipe =    8.98(In.)
Critical depth could not be calculated.
Pipe flow velocity =     16.62(Ft/s)
Travel time through pipe =    0.17 min.
Time of concentration (TC) =     6.34 min.


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Process from Point/Station      314.000 to Point/Station      314.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.300(Ac.)
Runoff from this stream =      3.960(CFS)
Time of concentration =    6.34 min.
Rainfall intensity =     3.387(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       63.349     13.37                2.280
2        3.960      6.34                3.387
Largest stream flow has longer time of concentration
Qp =     63.349 + sum of
          Qb         Ia/Ib
           3.960 *    0.673 =      2.666
Qp =     66.015

Total of 2 streams to confluence:
Flow rates before confluence point:
      63.349       3.960
Area of streams before confluence:
       28.600        1.300
Results of confluence:
Total flow rate =     66.015(CFS)
Time of concentration =    13.370 min.
Effective stream area after confluence =     29.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      314.000 to Point/Station      317.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2455.000(Ft.)
Downstream point/station elevation =  2451.800(Ft.)
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```
Pipe length  =   200.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    66.015(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    66.015(CFS)
Normal flow depth in pipe =   26.67(In.)
Flow top width inside pipe =   25.98(In.)
Critical Depth =   30.65(In.)
Pipe flow velocity =     12.84(Ft/s)
Travel time through pipe =    0.26 min.
Time of concentration (TC) =    13.63 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      317.000 to Point/Station      317.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     29.900(Ac.)
Runoff from this stream =     66.015(CFS)
Time of concentration =   13.63 min.
Rainfall intensity =     2.257(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      318.000 to Point/Station      319.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   310.000(Ft.)
Top (of initial area) elevation =  2499.900(Ft.)
Bottom (of initial area) elevation =  2488.200(Ft.)
Difference in elevation =    11.700(Ft.)
Slope =    0.03774  s(percent)=       3.77
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.732 min.
Rainfall intensity =      3.572(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.886
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.400
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.600
RI index for soil(AMC 2)  =  67.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      3.482(CFS)
Total initial stream area =        1.100(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      319.000 to Point/Station      317.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2484.200(Ft.)
Downstream point/station elevation =  2451.800(Ft.)
Pipe length  =   165.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.482(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     3.482(CFS)
Normal flow depth in pipe =    4.37(In.)
Flow top width inside pipe =    9.00(In.)
Critical depth could not be calculated.
Pipe flow velocity =     16.38(Ft/s)
Travel time through pipe =    0.17 min.
Time of concentration (TC) =     5.90 min.


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Process from Point/Station      317.000 to Point/Station      317.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.100(Ac.)
Runoff from this stream =      3.482(CFS)
Time of concentration =    5.90 min.
Rainfall intensity =     3.518(In/Hr)
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Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       66.015     13.63                 2.257
2        3.482      5.90                 3.518
Largest stream flow has longer time of concentration
Qp =     66.015 + sum of
          Qb         Ia/Ib
           3.482 *    0.642 =      2.234
Qp =     68.249

Total of 2 streams to confluence:
Flow rates before confluence point:
      66.015       3.482
Area of streams before confluence:
       29.900        1.100
Results of confluence:
Total flow rate =     68.249(CFS)
Time of concentration =    13.630 min.
Effective stream area after confluence =     31.000(Ac.)


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Process from Point/Station      317.000 to Point/Station      320.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2451.800(Ft.)
Downstream point/station elevation =  2450.000(Ft.)
Pipe length  =   110.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    68.249(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    68.249(CFS)
Normal flow depth in pipe =   27.33(In.)
Flow top width inside pipe =   24.90(In.)
Critical Depth =   30.91(In.)
Pipe flow velocity =     12.98(Ft/s)
Travel time through pipe =    0.14 min.
Time of concentration (TC) =    13.77 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      320.000 to Point/Station      320.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.877
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.600
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.400
RI index for soil(AMC 2)  =  63.60
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    13.77 min.
Rainfall intensity =      2.245(In/Hr) for a    10.0 year storm
Subarea runoff =     11.027(CFS) for      5.600(Ac.)
Total runoff =     79.277(CFS)       Total area =      36.600(Ac.)
End of computations, total study area =           36.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  58.4
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Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 12/17/21 File:400.out

EXETER INDUSTRIAL BLDG 2 DEVELOPED CONDITION
10-YEAR STORM EVENT 400 SERIES
21-0044
2021-12-17 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 400.000 to Point/Station 401.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 150.000(Ft.)
Top (of initial area) elevation = 2554.500(Ft.)
Bottom (of initial area) elevation = 2501.600(Ft.)
Difference in elevation = 52.900(Ft.)
Slope = 0.35267 s(percent)= 35.27
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Warning: TC computed to be less than 5 min.; program is assuming the
time of concentration is 5 minutes.
Initial area time of concentration = 5.000 min.
Rainfall intensity = 3.841(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.881
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 9.809(CFS)
Total initial stream area = 2.900(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 401.000 to Point/Station 402.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 2497.600(Ft.)
Downstream point/station elevation = 2492.900(Ft.)
Pipe length = 1005.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 9.809(CFS)
Nearest computed pipe diameter = 21.00(In.)

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Calculated individual pipe flow  =     9.809(CFS)
Normal flow depth in pipe =   15.66(In.)
Flow top width inside pipe =   18.29(In.)
Critical Depth =   13.99(In.)
Pipe flow velocity =      5.10(Ft/s)
Travel time through pipe =    3.28 min.
Time of concentration (TC) =     8.28 min.


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Process from Point/Station      402.000 to Point/Station      402.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      2.900(Ac.)
Runoff from this stream =      9.809(CFS)
Time of concentration =    8.28 min.
Rainfall intensity =     2.939(In/Hr)


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Process from Point/Station      403.000 to Point/Station      404.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   725.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2497.000(Ft.)
Difference in elevation =     9.200(Ft.)
Slope =    0.01269  s(percent)=       1.27
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.013 min.
Rainfall intensity =      2.658(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.875
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     13.715(CFS)
Total initial stream area =        5.900(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      404.000 to Point/Station      402.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2493.000(Ft.)
Downstream point/station elevation =  2492.900(Ft.)
Pipe length  =    24.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.715(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    13.715(CFS)
Normal flow depth in pipe =   18.47(In.)
Flow top width inside pipe =   20.21(In.)
Critical Depth =   15.99(In.)
Pipe flow velocity =      5.28(Ft/s)
Travel time through pipe =    0.08 min.
Time of concentration (TC) =    10.09 min.


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Process from Point/Station      402.000 to Point/Station      402.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.900(Ac.)
Runoff from this stream =     13.715(CFS)
Time of concentration =   10.09 min.
Rainfall intensity =     2.647(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
```

```
 No.       (CFS)       (min)                 (In/Hr)


1        9.809      8.28                 2.939
2       13.715     10.09                 2.647
Largest stream flow has longer time of concentration
Qp =     13.715 + sum of
          Qb          Ia/Ib
           9.809 *    0.901 =      8.835
Qp =     22.550

Total of 2 streams to confluence:
Flow rates before confluence point:
       9.809      13.715
Area of streams before confluence:
        2.900        5.900
Results of confluence:
Total flow rate =     22.550(CFS)
Time of concentration =    10.089 min.
Effective stream area after confluence =      8.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      405.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2492.900(Ft.)
Downstream point/station elevation =  2491.100(Ft.)
Pipe length  =   365.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    22.550(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    22.550(CFS)
Normal flow depth in pipe =   23.16(In.)
Flow top width inside pipe =   18.87(In.)
Critical Depth =   19.93(In.)
Pipe flow velocity =      6.21(Ft/s)
Travel time through pipe =    0.98 min.
Time of concentration (TC) =    11.07 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      405.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      8.800(Ac.)
Runoff from this stream =     22.550(CFS)
Time of concentration =   11.07 min.
Rainfall intensity =     2.521(In/Hr)


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Process from Point/Station      406.000 to Point/Station      407.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   710.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2497.000(Ft.)
Difference in elevation =     9.200(Ft.)
Slope =    0.01296  s(percent)=       1.30
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.888 min.
Rainfall intensity =      2.676(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.881
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  65.50
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     12.969(CFS)
Total initial stream area =        5.500(Ac.)
Pervious area fraction = 0.100
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      407.000 to Point/Station      405.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2493.000(Ft.)
Downstream point/station elevation =  2491.100(Ft.)
Pipe length  =    24.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.969(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    12.969(CFS)
Normal flow depth in pipe =    9.36(In.)
Flow top width inside pipe =   14.53(In.)
Critical depth could not be calculated.
Pipe flow velocity =     16.09(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =     9.91 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      405.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.500(Ac.)
Runoff from this stream =     12.969(CFS)
Time of concentration =    9.91 min.
Rainfall intensity =     2.672(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       22.550     11.07                2.521
2       12.969      9.91                2.672
Largest stream flow has longer time of concentration
Qp =     22.550 + sum of
          Qb         Ia/Ib
          12.969 *    0.943 =     12.234
Qp =     34.784

Total of 2 streams to confluence:
Flow rates before confluence point:
      22.550      12.969
Area of streams before confluence:
       8.800       5.500
Results of confluence:
Total flow rate =     34.784(CFS)
Time of concentration =    11.068 min.
Effective stream area after confluence =     14.300(Ac.)


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Process from Point/Station      405.000 to Point/Station      408.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2491.100(Ft.)
Downstream point/station elevation =  2488.900(Ft.)
Pipe length  =   430.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    34.784(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    34.784(CFS)
Normal flow depth in pipe =   24.94(In.)
Flow top width inside pipe =   28.36(In.)
Critical Depth =   23.56(In.)
Pipe flow velocity =      7.23(Ft/s)
Travel time through pipe =    0.99 min.
Time of concentration (TC) =    12.06 min.


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Process from Point/Station      408.000 to Point/Station      408.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
```

```
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     14.300(Ac.)
Runoff from this stream =     34.784(CFS)
Time of concentration =   12.06 min.
Rainfall intensity =     2.408(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      409.000 to Point/Station      410.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   765.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2497.200(Ft.)
Difference in elevation =     9.000(Ft.)
Slope =    0.01176  s(percent)=       1.18
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.387 min.
Rainfall intensity =      2.607(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.874
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     19.143(CFS)
Total initial stream area =        8.400(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      410.000 to Point/Station      408.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2493.200(Ft.)
Downstream point/station elevation =  2488.900(Ft.)
Pipe length  =    12.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    19.143(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    19.143(CFS)
Normal flow depth in pipe =    8.88(In.)
Flow top width inside pipe =   10.52(In.)
Critical depth could not be calculated.
Pipe flow velocity =     30.72(Ft/s)
Travel time through pipe =    0.01 min.
Time of concentration (TC) =    10.39 min.


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Process from Point/Station      408.000 to Point/Station      408.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      8.400(Ac.)
Runoff from this stream =     19.143(CFS)
Time of concentration =   10.39 min.
Rainfall intensity =     2.606(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       34.784     12.06                2.408
2       19.143     10.39                2.606
Largest stream flow has longer time of concentration
Qp =     34.784 + sum of
          Qb         Ia/Ib
          19.143 *    0.924 =     17.692
Qp =     52.476

Total of 2 streams to confluence:
Flow rates before confluence point:
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```
      34.784      19.143
Area of streams before confluence:
       14.300        8.400
Results of confluence:
Total flow rate =     52.476(CFS)
Time of concentration =    12.059 min.
Effective stream area after confluence =     22.700(Ac.)


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Process from Point/Station      408.000 to Point/Station      411.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2488.900(Ft.)
Downstream point/station elevation =  2486.900(Ft.)
Pipe length  =   410.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    52.476(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    52.476(CFS)
Normal flow depth in pipe =   29.20(In.)
Flow top width inside pipe =   33.83(In.)
Critical Depth =   27.76(In.)
Pipe flow velocity =      7.88(Ft/s)
Travel time through pipe =    0.87 min.
Time of concentration (TC) =    12.93 min.


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Process from Point/Station      411.000 to Point/Station      411.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     22.700(Ac.)
Runoff from this stream =     52.476(CFS)
Time of concentration =   12.93 min.
Rainfall intensity =     2.321(In/Hr)


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Process from Point/Station      412.000 to Point/Station      413.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   790.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2497.200(Ft.)
Difference in elevation =     9.000(Ft.)
Slope =    0.01139  s(percent)=       1.14
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.589 min.
Rainfall intensity =      2.580(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.881
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  65.50
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     16.590(CFS)
Total initial stream area =        7.300(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      413.000 to Point/Station      411.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2493.200(Ft.)
Downstream point/station elevation =  2486.900(Ft.)
Pipe length  =   125.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    16.590(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    16.590(CFS)
Normal flow depth in pipe =   11.13(In.)
Flow top width inside pipe =   17.49(In.)
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Critical depth could not be calculated.
Pipe flow velocity =     14.45(Ft/s)
Travel time through pipe =    0.14 min.
Time of concentration (TC) =    10.73 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      411.000 to Point/Station      411.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      7.300(Ac.)
Runoff from this stream =     16.590(CFS)
Time of concentration =   10.73 min.
Rainfall intensity =     2.562(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       52.476     12.93                2.321
2       16.590     10.73                2.562
Largest stream flow has longer time of concentration
Qp =     52.476 + sum of
          Qb         Ia/Ib
          16.590 *    0.906 =     15.033
Qp =     67.509

Total of 2 streams to confluence:
Flow rates before confluence point:
      52.476      16.590
Area of streams before confluence:
       22.700        7.300
Results of confluence:
Total flow rate =     67.509(CFS)
Time of concentration =    12.927 min.
Effective stream area after confluence =     30.000(Ac.)


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Process from Point/Station      411.000 to Point/Station      414.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2486.900(Ft.)
Downstream point/station elevation =  2450.000(Ft.)
Pipe length  =   138.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    67.509(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    67.509(CFS)
Normal flow depth in pipe =   14.53(In.)
Flow top width inside pipe =   19.39(In.)
Critical depth could not be calculated.
Pipe flow velocity =     38.05(Ft/s)
Travel time through pipe =    0.06 min.
Time of concentration (TC) =    12.99 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      414.000 to Point/Station      414.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.873
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  57.90
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    12.99 min.
Rainfall intensity =      2.316(In/Hr) for a    10.0 year storm
Subarea runoff =     11.529(CFS) for      5.700(Ac.)
Total runoff =     79.038(CFS)       Total area =      35.700(Ac.)
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Process from Point/Station      414.000 to Point/Station      414.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     35.700(Ac.)
Runoff from this stream =     79.038(CFS)
Time of concentration =   12.99 min.
Rainfall intensity =     2.316(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      320.000 to Point/Station      320.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
----------------------------------------------------------------------------
Rainfall intensity =      2.245(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.873
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  57.90
Pervious area fraction =  0.100; Impervious fraction =  0.900
User specified values are as follows:
TC =  13.77 min.  Rain intensity =       2.24(In/Hr)
Total area =        36.60(Ac.)  Total runoff =     79.30(CFS)


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Process from Point/Station      414.000 to Point/Station      414.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     36.600(Ac.)
Runoff from this stream =     79.300(CFS)
Time of concentration =   13.77 min.
Rainfall intensity =     2.245(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       79.038     12.99                 2.316
2       79.300     13.77                 2.245
Largest stream flow has longer time of concentration
Qp =     79.300 + sum of
          Qb          Ia/Ib
          79.038 *    0.969 =     76.624
Qp =    155.924

Total of 2 streams to confluence:
Flow rates before confluence point:
      79.038      79.300
Area of streams before confluence:
       35.700       36.600
Results of confluence:
Total flow rate =    155.924(CFS)
Time of concentration =    13.770 min.
Effective stream area after confluence =     72.300(Ac.)
End of computations, total study area =           72.30 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  58.8
```

TOTAL 300 SERIES FLOWS

DEVELOPED CONDITION 100-YEAR ONSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 12/17/21 File:300.out

EXETER INDUSTRIAL BLDG 2 DEVELOPED CONDITION
100-YEAR STORM EVENT 300 SERIES
21-0044
2021-12-20 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 300.000 to Point/Station 301.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 630.000(Ft.)
Top (of initial area) elevation = 2506.200(Ft.)
Bottom (of initial area) elevation = 2499.400(Ft.)
Difference in elevation = 6.800(Ft.)
Slope = 0.01079 s(percent)= 1.08
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 9.777 min.
Rainfall intensity = 4.368(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.883
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 28.916(CFS)
Total initial stream area = 7.500(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 301.000 to Point/Station 302.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 2495.400(Ft.)
Downstream point/station elevation = 2487.900(Ft.)
Pipe length = 455.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 28.916(CFS)
Nearest computed pipe diameter = 24.00(In.)
Calculated individual pipe flow = 28.916(CFS)
Normal flow depth in pipe = 19.59(In.)

```
Flow top width inside pipe =   18.58(In.)
Critical Depth =   22.14(In.)
Pipe flow velocity =     10.54(Ft/s)
Travel time through pipe =    0.72 min.
Time of concentration (TC) =    10.50 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      302.000 to Point/Station      302.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      7.500(Ac.)
Runoff from this stream =     28.916(CFS)
Time of concentration =   10.50 min.
Rainfall intensity =     4.207(In/Hr)


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Process from Point/Station      303.000 to Point/Station      304.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   645.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2499.400(Ft.)
Difference in elevation =     6.800(Ft.)
Slope =    0.01054  s(percent)=       1.05
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.916 min.
Rainfall intensity =      4.336(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     22.192(CFS)
Total initial stream area =        5.800(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      304.000 to Point/Station      302.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2495.400(Ft.)
Downstream point/station elevation =  2487.900(Ft.)
Pipe length  =    34.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    22.192(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    22.192(CFS)
Normal flow depth in pipe =    9.53(In.)
Flow top width inside pipe =   14.44(In.)
Critical depth could not be calculated.
Pipe flow velocity =     27.00(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =     9.94 min.


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Process from Point/Station      302.000 to Point/Station      302.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.800(Ac.)
Runoff from this stream =     22.192(CFS)
Time of concentration =    9.94 min.
Rainfall intensity =     4.331(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)
```

```
1       28.916     10.50                 4.207
2       22.192      9.94                 4.331
Largest stream flow has longer time of concentration
Qp =     28.916 + sum of
          Qb         Ia/Ib
          22.192 *    0.971 =     21.557
Qp =     50.473

Total of 2 streams to confluence:
Flow rates before confluence point:
      28.916      22.192
Area of streams before confluence:
        7.500        5.800
Results of confluence:
Total flow rate =     50.473(CFS)
Time of concentration =    10.497 min.
Effective stream area after confluence =     13.300(Ac.)


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Process from Point/Station      302.000 to Point/Station      305.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2487.900(Ft.)
Downstream point/station elevation =  2480.800(Ft.)
Pipe length  =   430.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    50.473(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    50.473(CFS)
Normal flow depth in pipe =   23.53(In.)
Flow top width inside pipe =   24.68(In.)
Critical Depth =   27.67(In.)
Pipe flow velocity =     12.23(Ft/s)
Travel time through pipe =    0.59 min.
Time of concentration (TC) =    11.08 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      305.000 to Point/Station      305.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     13.300(Ac.)
Runoff from this stream =     50.473(CFS)
Time of concentration =   11.08 min.
Rainfall intensity =     4.088(In/Hr)


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Process from Point/Station      306.000 to Point/Station      307.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   660.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2499.400(Ft.)
Difference in elevation =     6.800(Ft.)
Slope =    0.01030  s(percent)=       1.03
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.054 min.
Rainfall intensity =      4.304(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     20.889(CFS)
Total initial stream area =        5.500(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      307.000 to Point/Station      305.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2495.400(Ft.)
Downstream point/station elevation =  2480.800(Ft.)
Pipe length  =    35.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    20.889(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    20.889(CFS)
Normal flow depth in pipe =    8.96(In.)
Flow top width inside pipe =   10.43(In.)
Critical depth could not be calculated.
Pipe flow velocity =     33.19(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =    10.07 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      305.000 to Point/Station      305.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.500(Ac.)
Runoff from this stream =     20.889(CFS)
Time of concentration =   10.07 min.
Rainfall intensity =     4.300(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       50.473     11.08                 4.088
2       20.889     10.07                 4.300
Largest stream flow has longer time of concentration
Qp =     50.473 + sum of
          Qb         Ia/Ib
          20.889 *    0.951 =     19.856
Qp =     70.329

Total of 2 streams to confluence:
Flow rates before confluence point:
      50.473      20.889
Area of streams before confluence:
       13.300        5.500
Results of confluence:
Total flow rate =     70.329(CFS)
Time of concentration =    11.083 min.
Effective stream area after confluence =     18.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      305.000 to Point/Station      308.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2480.800(Ft.)
Downstream point/station elevation =  2473.700(Ft.)
Pipe length  =   430.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    70.329(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    70.329(CFS)
Normal flow depth in pipe =   28.22(In.)
Flow top width inside pipe =   23.23(In.)
Critical Depth =   31.12(In.)
Pipe flow velocity =     13.00(Ft/s)
Travel time through pipe =    0.55 min.
Time of concentration (TC) =    11.63 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      308.000 to Point/Station      308.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     18.800(Ac.)
```

```
Runoff from this stream =     70.329(CFS)
Time of concentration =   11.63 min.
Rainfall intensity =     3.984(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      309.000 to Point/Station      310.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   665.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2499.400(Ft.)
Difference in elevation =     6.800(Ft.)
Slope =    0.01023  s(percent)=       1.02
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.100 min.
Rainfall intensity =      4.294(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     22.353(CFS)
Total initial stream area =        5.900(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      310.000 to Point/Station      308.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2495.400(Ft.)
Downstream point/station elevation =  2473.700(Ft.)
Pipe length  =    40.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    22.353(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    22.353(CFS)
Normal flow depth in pipe =    8.51(In.)
Flow top width inside pipe =   10.90(In.)
Critical depth could not be calculated.
Pipe flow velocity =     37.51(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =    10.12 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      308.000 to Point/Station      308.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.900(Ac.)
Runoff from this stream =     22.353(CFS)
Time of concentration =   10.12 min.
Rainfall intensity =     4.290(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       70.329     11.63                 3.984
2       22.353     10.12                 4.290
Largest stream flow has longer time of concentration
Qp =     70.329 + sum of
          Qb         Ia/Ib
          22.353 *    0.929 =     20.758
Qp =     91.088

Total of 2 streams to confluence:
Flow rates before confluence point:
      70.329      22.353
Area of streams before confluence:
```

```
       18.800        5.900
Results of confluence:
Total flow rate =     91.088(CFS)
Time of concentration =    11.634 min.
Effective stream area after confluence =     24.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      308.000 to Point/Station      311.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2473.700(Ft.)
Downstream point/station elevation =  2458.900(Ft.)
Pipe length  =   905.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    91.088(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    91.088(CFS)
Normal flow depth in pipe =   27.94(In.)
Flow top width inside pipe =   35.16(In.)
Critical Depth =   35.28(In.)
Pipe flow velocity =     14.32(Ft/s)
Travel time through pipe =    1.05 min.
Time of concentration (TC) =    12.69 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      311.000 to Point/Station      311.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     24.700(Ac.)
Runoff from this stream =     91.088(CFS)
Time of concentration =   12.69 min.
Rainfall intensity =     3.805(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      312.000 to Point/Station      313.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   740.000(Ft.)
Top (of initial area) elevation =  2503.800(Ft.)
Bottom (of initial area) elevation =  2494.200(Ft.)
Difference in elevation =     9.600(Ft.)
Slope =    0.01297  s(percent)=       1.30
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.051 min.
Rainfall intensity =      4.305(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.884
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.800
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.200
RI index for soil(AMC 2)  =  59.80
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     14.850(CFS)
Total initial stream area =        3.900(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      313.000 to Point/Station      311.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2490.200(Ft.)
Downstream point/station elevation =  2458.900(Ft.)
Pipe length  =   170.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    14.850(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    14.850(CFS)
Normal flow depth in pipe =    9.54(In.)
Flow top width inside pipe =    9.69(In.)
Critical depth could not be calculated.
Pipe flow velocity =     22.18(Ft/s)
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Travel time through pipe =    0.13 min.
Time of concentration (TC) =    10.18 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      311.000 to Point/Station      311.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.900(Ac.)
Runoff from this stream =     14.850(CFS)
Time of concentration =   10.18 min.
Rainfall intensity =     4.276(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       91.088     12.69                  3.805
2       14.850     10.18                  4.276
Largest stream flow has longer time of concentration
Qp =     91.088 + sum of
          Qb         Ia/Ib
          14.850 *    0.890 =     13.213
Qp =    104.301

Total of 2 streams to confluence:
Flow rates before confluence point:
      91.088      14.850
Area of streams before confluence:
       24.700        3.900
Results of confluence:
Total flow rate =    104.301(CFS)
Time of concentration =    12.688 min.
Effective stream area after confluence =     28.600(Ac.)


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Process from Point/Station      311.000 to Point/Station      314.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2458.900(Ft.)
Downstream point/station elevation =  2455.000(Ft.)
Pipe length  =   235.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   104.301(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =   104.301(CFS)
Normal flow depth in pipe =   31.31(In.)
Flow top width inside pipe =   31.03(In.)
Critical Depth =   36.59(In.)
Pipe flow velocity =     14.62(Ft/s)
Travel time through pipe =    0.27 min.
Time of concentration (TC) =    12.96 min.


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Process from Point/Station      314.000 to Point/Station      314.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     28.600(Ac.)
Runoff from this stream =    104.301(CFS)
Time of concentration =   12.96 min.
Rainfall intensity =     3.763(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      315.000 to Point/Station      316.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =   330.000(Ft.)
Top (of initial area) elevation =  2500.700(Ft.)
Bottom (of initial area) elevation =  2490.900(Ft.)
Difference in elevation =     9.800(Ft.)
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```
Slope =    0.02970  s(percent)=       2.97
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.166 min.
Rainfall intensity =      5.578(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.340
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.660
RI index for soil(AMC 2)  =  68.54
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      6.461(CFS)
Total initial stream area =        1.300(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      316.000 to Point/Station      314.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2486.900(Ft.)
Downstream point/station elevation =  2455.000(Ft.)
Pipe length  =   170.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     6.461(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     6.461(CFS)
Normal flow depth in pipe =    6.68(In.)
Flow top width inside pipe =    7.87(In.)
Critical depth could not be calculated.
Pipe flow velocity =     18.36(Ft/s)
Travel time through pipe =    0.15 min.
Time of concentration (TC) =     6.32 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      314.000 to Point/Station      314.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.300(Ac.)
Runoff from this stream =      6.461(CFS)
Time of concentration =    6.32 min.
Rainfall intensity =     5.505(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1      104.301     12.96                3.763
2        6.461      6.32                5.505
Largest stream flow has longer time of concentration
Qp =    104.301 + sum of
          Qb         Ia/Ib
          6.461 *    0.684 =      4.417
Qp =    108.718

Total of 2 streams to confluence:
Flow rates before confluence point:
     104.301       6.461
Area of streams before confluence:
       28.600        1.300
Results of confluence:
Total flow rate =    108.718(CFS)
Time of concentration =    12.956 min.
Effective stream area after confluence =     29.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      314.000 to Point/Station      317.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2455.000(Ft.)
Downstream point/station elevation =  2451.800(Ft.)
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Pipe length  =   200.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   108.718(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =   108.718(CFS)
Normal flow depth in pipe =   33.66(In.)
Flow top width inside pipe =   26.82(In.)
Critical Depth =   36.90(In.)
Pipe flow velocity =     14.29(Ft/s)
Travel time through pipe =    0.23 min.
Time of concentration (TC) =    13.19 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      317.000 to Point/Station      317.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     29.900(Ac.)
Runoff from this stream =    108.718(CFS)
Time of concentration =   13.19 min.
Rainfall intensity =     3.728(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      318.000 to Point/Station      319.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   310.000(Ft.)
Top (of initial area) elevation =  2499.900(Ft.)
Bottom (of initial area) elevation =  2488.200(Ft.)
Difference in elevation =    11.700(Ft.)
Slope =    0.03774  s(percent)=       3.77
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    5.732 min.
Rainfall intensity =      5.797(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.891
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.400
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.600
RI index for soil(AMC 2)  =  67.40
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      5.682(CFS)
Total initial stream area =        1.100(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      319.000 to Point/Station      317.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2484.200(Ft.)
Downstream point/station elevation =  2451.800(Ft.)
Pipe length  =   165.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     5.682(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     5.682(CFS)
Normal flow depth in pipe =    5.95(In.)
Flow top width inside pipe =    8.52(In.)
Critical depth could not be calculated.
Pipe flow velocity =     18.33(Ft/s)
Travel time through pipe =    0.15 min.
Time of concentration (TC) =     5.88 min.


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Process from Point/Station      317.000 to Point/Station      317.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.100(Ac.)
Runoff from this stream =      5.682(CFS)
Time of concentration =    5.88 min.
Rainfall intensity =     5.719(In/Hr)
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Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1      108.718     13.19                  3.728
2        5.682      5.88                  5.719
Largest stream flow has longer time of concentration
Qp =    108.718 + sum of
          Qb         Ia/Ib
           5.682 *    0.652 =      3.704
Qp =    112.421

Total of 2 streams to confluence:
Flow rates before confluence point:
     108.718       5.682
Area of streams before confluence:
       29.900        1.100
Results of confluence:
Total flow rate =    112.421(CFS)
Time of concentration =    13.189 min.
Effective stream area after confluence =     31.000(Ac.)


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Process from Point/Station      317.000 to Point/Station      320.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2451.800(Ft.)
Downstream point/station elevation =  2450.000(Ft.)
Pipe length  =   110.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   112.421(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =   112.421(CFS)
Normal flow depth in pipe =   35.06(In.)
Flow top width inside pipe =   23.50(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.32(Ft/s)
Travel time through pipe =    0.13 min.
Time of concentration (TC) =    13.32 min.


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Process from Point/Station      320.000 to Point/Station      320.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
COMMERCIAL subarea type
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.600
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.400
RI index for soil(AMC 2)  =  63.60
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    13.32 min.
Rainfall intensity =      3.709(In/Hr) for a   100.0 year storm
Subarea runoff =     18.372(CFS) for      5.600(Ac.)
Total runoff =    130.793(CFS)       Total area =      36.600(Ac.)
End of computations, total study area =           36.60 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  58.4
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 12/17/21 File:400.out

EXETER INDUSTRIAL BLDG 2 DEVELOPED CONDITION
100-YEAR STORM EVENT 400 SERIES
21-0044
2021-12-20 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 400.000 to Point/Station 401.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 150.000(Ft.)
Top (of initial area) elevation = 2554.500(Ft.)
Bottom (of initial area) elevation = 2501.600(Ft.)
Difference in elevation = 52.900(Ft.)
Slope = 0.35267 s(percent)= 35.27
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Warning: TC computed to be less than 5 min.; program is assuming the
time of concentration is 5 minutes.
Initial area time of concentration = 5.000 min.
Rainfall intensity = 6.233(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.887
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 16.033(CFS)
Total initial stream area = 2.900(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 401.000 to Point/Station 402.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****

Upstream point/station elevation = 2497.600(Ft.)
Downstream point/station elevation = 2492.900(Ft.)
Pipe length = 1005.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 16.033(CFS)
Nearest computed pipe diameter = 24.00(In.)

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Calculated individual pipe flow  =    16.033(CFS)
Normal flow depth in pipe =   20.58(In.)
Flow top width inside pipe =   16.78(In.)
Critical Depth =   17.33(In.)
Pipe flow velocity =      5.60(Ft/s)
Travel time through pipe =    2.99 min.
Time of concentration (TC) =     7.99 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      402.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      2.900(Ac.)
Runoff from this stream =     16.033(CFS)
Time of concentration =    7.99 min.
Rainfall intensity =     4.861(In/Hr)


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Process from Point/Station      403.000 to Point/Station      404.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   725.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2497.000(Ft.)
Difference in elevation =     9.200(Ft.)
Slope =    0.01269  s(percent)=       1.27
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.013 min.
Rainfall intensity =      4.314(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     22.457(CFS)
Total initial stream area =        5.900(Ac.)
Pervious area fraction = 0.100


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Process from Point/Station      404.000 to Point/Station      402.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2493.000(Ft.)
Downstream point/station elevation =  2492.900(Ft.)
Pipe length  =    24.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    22.457(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    22.457(CFS)
Normal flow depth in pipe =   21.21(In.)
Flow top width inside pipe =   27.31(In.)
Critical Depth =   19.34(In.)
Pipe flow velocity =      6.05(Ft/s)
Travel time through pipe =    0.07 min.
Time of concentration (TC) =    10.08 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      402.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.900(Ac.)
Runoff from this stream =     22.457(CFS)
Time of concentration =   10.08 min.
Rainfall intensity =     4.299(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
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```
 No.       (CFS)       (min)                 (In/Hr)


1       16.033      7.99                 4.861
2       22.457     10.08                 4.299
Largest stream flow has longer time of concentration
Qp =     22.457 + sum of
          Qb         Ia/Ib
          16.033 *    0.884 =     14.180
Qp =     36.637

Total of 2 streams to confluence:
Flow rates before confluence point:
      16.033      22.457
Area of streams before confluence:
       2.900        5.900
Results of confluence:
Total flow rate =     36.637(CFS)
Time of concentration =    10.079 min.
Effective stream area after confluence =      8.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      405.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2492.900(Ft.)
Downstream point/station elevation =  2491.100(Ft.)
Pipe length  =   365.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    36.637(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    36.637(CFS)
Normal flow depth in pipe =   26.63(In.)
Flow top width inside pipe =   26.06(In.)
Critical Depth =   24.18(In.)
Pipe flow velocity =      7.13(Ft/s)
Travel time through pipe =    0.85 min.
Time of concentration (TC) =    10.93 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      405.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      8.800(Ac.)
Runoff from this stream =     36.637(CFS)
Time of concentration =   10.93 min.
Rainfall intensity =     4.117(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      406.000 to Point/Station      407.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   710.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2497.000(Ft.)
Difference in elevation =     9.200(Ft.)
Slope =    0.01296  s(percent)=       1.30
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.888 min.
Rainfall intensity =      4.342(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.887
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  65.50
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     21.195(CFS)
Total initial stream area =        5.500(Ac.)
Pervious area fraction = 0.100
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      407.000 to Point/Station      405.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2493.000(Ft.)
Downstream point/station elevation =  2491.100(Ft.)
Pipe length  =    24.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    21.195(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    21.195(CFS)
Normal flow depth in pipe =   11.27(In.)
Flow top width inside pipe =   17.42(In.)
Critical depth could not be calculated.
Pipe flow velocity =     18.19(Ft/s)
Travel time through pipe =    0.02 min.
Time of concentration (TC) =     9.91 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      405.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.500(Ac.)
Runoff from this stream =     21.195(CFS)
Time of concentration =    9.91 min.
Rainfall intensity =     4.337(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       36.637     10.93                4.117
2       21.195      9.91                4.337
Largest stream flow has longer time of concentration
Qp =     36.637 + sum of
          Qb         Ia/Ib
          21.195 *    0.949 =     20.121
Qp =     56.758

Total of 2 streams to confluence:
Flow rates before confluence point:
      36.637      21.195
Area of streams before confluence:
       8.800       5.500
Results of confluence:
Total flow rate =     56.758(CFS)
Time of concentration =    10.933 min.
Effective stream area after confluence =     14.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      405.000 to Point/Station      408.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2491.100(Ft.)
Downstream point/station elevation =  2488.900(Ft.)
Pipe length  =   430.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    56.758(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    56.758(CFS)
Normal flow depth in pipe =   30.66(In.)
Flow top width inside pipe =   31.99(In.)
Critical Depth =   28.85(In.)
Pipe flow velocity =      8.11(Ft/s)
Travel time through pipe =    0.88 min.
Time of concentration (TC) =    11.82 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      408.000 to Point/Station      408.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
```

```
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     14.300(Ac.)
Runoff from this stream =     56.758(CFS)
Time of concentration =   11.82 min.
Rainfall intensity =     3.951(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      409.000 to Point/Station      410.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   765.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2497.200(Ft.)
Difference in elevation =     9.000(Ft.)
Slope =    0.01176  s(percent)=       1.18
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.387 min.
Rainfall intensity =      4.231(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     31.349(CFS)
Total initial stream area =        8.400(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      410.000 to Point/Station      408.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2493.200(Ft.)
Downstream point/station elevation =  2488.900(Ft.)
Pipe length  =    12.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    31.349(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    31.349(CFS)
Normal flow depth in pipe =   10.24(In.)
Flow top width inside pipe =   13.96(In.)
Critical depth could not be calculated.
Pipe flow velocity =     35.09(Ft/s)
Travel time through pipe =    0.01 min.
Time of concentration (TC) =    10.39 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      408.000 to Point/Station      408.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      8.400(Ac.)
Runoff from this stream =     31.349(CFS)
Time of concentration =   10.39 min.
Rainfall intensity =     4.229(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       56.758     11.82                 3.951
2       31.349     10.39                 4.229
Largest stream flow has longer time of concentration
Qp =     56.758 + sum of
          Qb         Ia/Ib
          31.349 *    0.934 =     29.286
Qp =     86.044

Total of 2 streams to confluence:
Flow rates before confluence point:
```

```
      56.758      31.349
Area of streams before confluence:
       14.300        8.400
Results of confluence:
Total flow rate =     86.044(CFS)
Time of concentration =    11.817 min.
Effective stream area after confluence =     22.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      408.000 to Point/Station      411.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2488.900(Ft.)
Downstream point/station elevation =  2486.900(Ft.)
Pipe length  =   410.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    86.044(CFS)
Nearest computed pipe diameter  =     45.00(In.)
Calculated individual pipe flow  =    86.044(CFS)
Normal flow depth in pipe =   37.69(In.)
Flow top width inside pipe =   33.20(In.)
Critical Depth =   34.28(In.)
Pipe flow velocity =      8.71(Ft/s)
Travel time through pipe =    0.78 min.
Time of concentration (TC) =    12.60 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      411.000 to Point/Station      411.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     22.700(Ac.)
Runoff from this stream =     86.044(CFS)
Time of concentration =   12.60 min.
Rainfall intensity =     3.819(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      412.000 to Point/Station      413.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   790.000(Ft.)
Top (of initial area) elevation =  2506.200(Ft.)
Bottom (of initial area) elevation =  2497.200(Ft.)
Difference in elevation =     9.000(Ft.)
Slope =    0.01139  s(percent)=       1.14
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.589 min.
Rainfall intensity =      4.188(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.887
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  65.50
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     27.117(CFS)
Total initial stream area =        7.300(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      413.000 to Point/Station      411.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2493.200(Ft.)
Downstream point/station elevation =  2486.900(Ft.)
Pipe length  =   125.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    27.117(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    27.117(CFS)
Normal flow depth in pipe =   13.73(In.)
Flow top width inside pipe =   19.98(In.)
```

```
Critical depth could not be calculated.
Pipe flow velocity =     16.29(Ft/s)
Travel time through pipe =    0.13 min.
Time of concentration (TC) =    10.72 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      411.000 to Point/Station      411.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      7.300(Ac.)
Runoff from this stream =     27.117(CFS)
Time of concentration =   10.72 min.
Rainfall intensity =     4.161(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       86.044     12.60                 3.819
2       27.117     10.72                 4.161
Largest stream flow has longer time of concentration
Qp =     86.044 + sum of
          Qb         Ia/Ib
          27.117 *    0.918 =     24.887
Qp =    110.930

Total of 2 streams to confluence:
Flow rates before confluence point:
      86.044      27.117
Area of streams before confluence:
       22.700        7.300
Results of confluence:
Total flow rate =    110.930(CFS)
Time of concentration =    12.601 min.
Effective stream area after confluence =     30.000(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      411.000 to Point/Station      414.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2486.900(Ft.)
Downstream point/station elevation =  2450.000(Ft.)
Pipe length  =   138.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   110.930(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =   110.930(CFS)
Normal flow depth in pipe =   18.66(In.)
Flow top width inside pipe =   19.97(In.)
Critical depth could not be calculated.
Pipe flow velocity =     42.37(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    12.66 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      414.000 to Point/Station      414.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  57.90
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =    12.66 min.
Rainfall intensity =      3.810(In/Hr) for a   100.0 year storm
Subarea runoff =     19.149(CFS) for      5.700(Ac.)
Total runoff =    130.079(CFS)       Total area =      35.700(Ac.)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      414.000 to Point/Station      414.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     35.700(Ac.)
Runoff from this stream =    130.079(CFS)
Time of concentration =   12.66 min.
Rainfall intensity =     3.810(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      320.000 to Point/Station      320.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
----------------------------------------------------------------------------
Rainfall intensity =      3.708(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.881
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  57.90
Pervious area fraction =  0.100; Impervious fraction =  0.900
User specified values are as follows:
TC =  13.32 min.  Rain intensity =       3.71(In/Hr)
Total area =        36.60(Ac.)  Total runoff =    130.80(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      414.000 to Point/Station      414.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =     36.600(Ac.)
Runoff from this stream =    130.800(CFS)
Time of concentration =   13.32 min.
Rainfall intensity =     3.708(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1      130.079     12.66                 3.810
2      130.800     13.32                 3.708
Largest stream flow has longer time of concentration
Qp =    130.800 + sum of
          Qb          Ia/Ib
         130.079 *    0.973 =    126.598
Qp =    257.398

Total of 2 streams to confluence:
Flow rates before confluence point:
     130.079     130.800
Area of streams before confluence:
       35.700       36.600
Results of confluence:
Total flow rate =    257.398(CFS)
Time of concentration =    13.320 min.
Effective stream area after confluence =     72.300(Ac.)
End of computations, total study area =           72.30 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  58.8
```

TOTAL 300 SERIES FLOWS

DEVELOPED CONDITION 10-YEAR OFFSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/23/22 File:OFF.out

21-0044: EXETER INDUSTRIAL
OFFSITE RUN-ON DEVELOPED CONDITION
10-YEAR STORM EVENT
TSW

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 1.000 to Point/Station 2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 990.000(Ft.)
Top (of initial area) elevation = 2603.100(Ft.)
Bottom (of initial area) elevation = 2560.000(Ft.)
Difference in elevation = 43.100(Ft.)
Slope = 0.04354 s(percent)= 4.35
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 14.182 min.
Rainfall intensity = 2.210(In/Hr) for a 10.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.668
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 8.569(CFS)
Total initial stream area = 5.800(Ac.)
Pervious area fraction = 0.800

++
Process from Point/Station 2.000 to Point/Station 3.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2560.000(Ft.)
Downstream point elevation = 2535.000(Ft.)
Channel length thru subarea = 1175.000(Ft.)
Channel base width = 6.000(Ft.)
Slope or 'Z' of left channel bank = 2.000
Slope or 'Z' of right channel bank = 2.000
Estimated mean flow rate at midpoint of channel = 32.737(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.500(Ft.)
Flow(q) thru subarea =     32.737(CFS)
Depth of flow =   0.541(Ft.), Average velocity =   8.548(Ft/s)
Channel flow top width =    8.163(Ft.)
Flow Velocity =    8.55(Ft/s)
Travel time  =    2.29 min.
Time of concentration =   16.47 min.

Sub-Channel No. 1 Critical depth =      0.875(Ft.)
  '     '       '     Critical flow top width =      9.500(Ft.)
  '     '       '     Critical flow velocity=    4.828(Ft/s)
  '     '       '     Critical flow area =      6.781(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.703
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.970
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.030
RI index for soil(AMC 2)  =  67.70
Pervious area fraction =  0.920; Impervious fraction =  0.080
Rainfall intensity =      2.042(In/Hr) for a    10.0 year storm
Subarea runoff =     48.243(CFS) for     33.600(Ac.)
Total runoff =     56.812(CFS)       Total area =      39.400(Ac.)
Depth of flow =   0.742(Ft.), Average velocity =  10.232(Ft/s)

Sub-Channel No. 1 Critical depth =      1.219(Ft.)
  '     '       '     Critical flow top width =     10.875(Ft.)
  '     '       '     Critical flow velocity=    5.525(Ft/s)
  '     '       '     Critical flow area =     10.283(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2535.000(Ft.)
End of natural channel elevation =   2495.040(Ft.)
Length of natural channel  =   800.000(Ft.)
Estimated mean flow rate at midpoint of channel =     60.201(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.85(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0500
Corrected/adjusted channel slope =  0.0500
Travel time =    2.75 min.     TC =   19.22  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.772
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.800
RI index for soil(AMC 2)  =  81.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.881(In/Hr) for a    10.0 year storm
Subarea runoff =      6.823(CFS) for      4.700(Ac.)
Total runoff =     63.635(CFS)       Total area =      44.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2495.040(Ft.)
```

Downstream point/station elevation = 2490.000(Ft.)
Pipe length = 80.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 63.635(CFS)
Nearest computed pipe diameter = 27.00(In.)
Calculated individual pipe flow = 63.635(CFS)
Normal flow depth in pipe = 18.59(In.)
Flow top width inside pipe = 25.01(In.)
Critical depth could not be calculated.
Pipe flow velocity = 21.81(Ft/s)
Travel time through pipe = 0.06 min.
Time of concentration (TC) = 19.28 min.
End of computations, total study area = 44.10 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.913
Area averaged RI index number = 67.6

DEVELOPED CONDITION 100-YEAR OFFSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/23/22 File:off.out

21-0044: EXETER INDUSTRIAL
OFFSITE RUN-ON DEVELOPED CONDITION
100-YEAR STORM EVENT
TSW

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 1.000 to Point/Station 2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 990.000(Ft.)
Top (of initial area) elevation = 2603.100(Ft.)
Bottom (of initial area) elevation = 2560.000(Ft.)
Difference in elevation = 43.100(Ft.)
Slope = 0.04354 s(percent)= 4.35
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 14.182 min.
Rainfall intensity = 3.587(In/Hr) for a 100.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.737
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 15.338(CFS)
Total initial stream area = 5.800(Ac.)
Pervious area fraction = 0.800

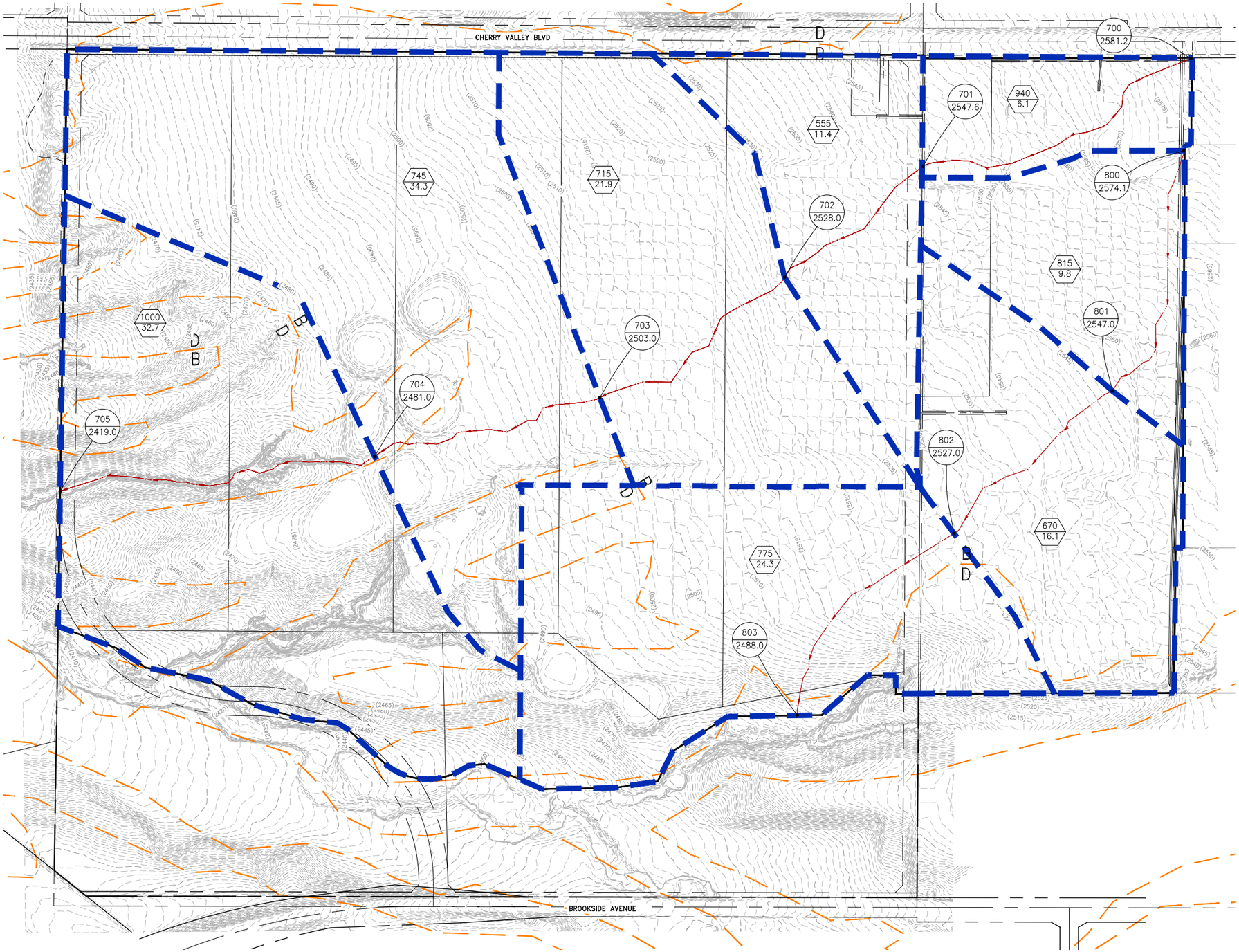
++
Process from Point/Station 2.000 to Point/Station 3.000
**** IMPROVED CHANNEL TRAVEL TIME ****

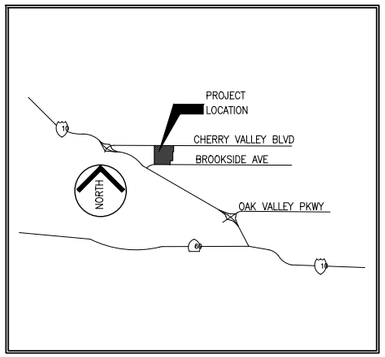
Upstream point elevation = 2560.000(Ft.)
Downstream point elevation = 2535.000(Ft.)
Channel length thru subarea = 1175.000(Ft.)
Channel base width = 6.000(Ft.)
Slope or 'Z' of left channel bank = 2.000
Slope or 'Z' of right channel bank = 2.000
Estimated mean flow rate at midpoint of channel = 58.684(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.500(Ft.)
Flow(q) thru subarea =     58.684(CFS)
Depth of flow =   0.756(Ft.), Average velocity =  10.339(Ft/s)
Channel flow top width =    9.023(Ft.)
Flow Velocity =   10.34(Ft/s)
Travel time  =    1.89 min.
Time of concentration =   16.08 min.

Sub-Channel No. 1 Critical depth =      1.250(Ft.)
  '     '       '     Critical flow top width =     11.000(Ft.)
  '     '       '     Critical flow velocity=    5.523(Ft/s)
  '     '       '     Critical flow area =     10.625(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.768
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.970
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.030
RI index for soil(AMC 2)  =  67.70
Pervious area fraction =  0.920; Impervious fraction =  0.080
Rainfall intensity =      3.356(In/Hr) for a   100.0 year storm
Subarea runoff =     86.617(CFS) for     33.600(Ac.)
Total runoff =    101.955(CFS)       Total area =      39.400(Ac.)
Depth of flow =   1.030(Ft.), Average velocity =  12.275(Ft/s)

Sub-Channel No. 1 Critical depth =      1.703(Ft.)
  '     '       '     Critical flow top width =     12.813(Ft.)
  '     '       '     Critical flow velocity=    6.364(Ft/s)
  '     '       '     Critical flow area =     16.020(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2535.000(Ft.)
End of natural channel elevation =   2495.040(Ft.)
Length of natural channel  =   800.000(Ft.)
Estimated mean flow rate at midpoint of channel =    108.036(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.88(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0500
Corrected/adjusted channel slope =  0.0500
Travel time =    2.27 min.     TC =   18.34  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.800
RI index for soil(AMC 2)  =  81.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.130(In/Hr) for a   100.0 year storm
Subarea runoff =     12.036(CFS) for      4.700(Ac.)
Total runoff =    113.991(CFS)       Total area =      44.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2495.040(Ft.)
```

```
Downstream point/station elevation =  2490.000(Ft.)
Pipe length  =    80.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   113.991(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =   113.991(CFS)
Normal flow depth in pipe =   23.55(In.)
Flow top width inside pipe =   29.83(In.)
Critical depth could not be calculated.
Pipe flow velocity =     25.13(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    18.40 min.
End of computations, total study area =           44.10 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.913
Area averaged RI index number =  67.6
```

RATIONAL METHOD HYDROLOGY MAPS





VICINITY MAP
NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- FT / AC – LENGTH (FT) / AREA (AC)
- DRAINAGE AREA BOUNDARY
- FLOWLINE (PROPOSED)
- PROJECT BOUNDARY
- NRCS SOIL BOUNDARY

N W E S

1" = 150'
150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 1. OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 150'	W.O.	21-0044
DATE:	8/2/2021	SHEET	1
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV	DWG. NO.	
PLN CK REF:			
F.B.			

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

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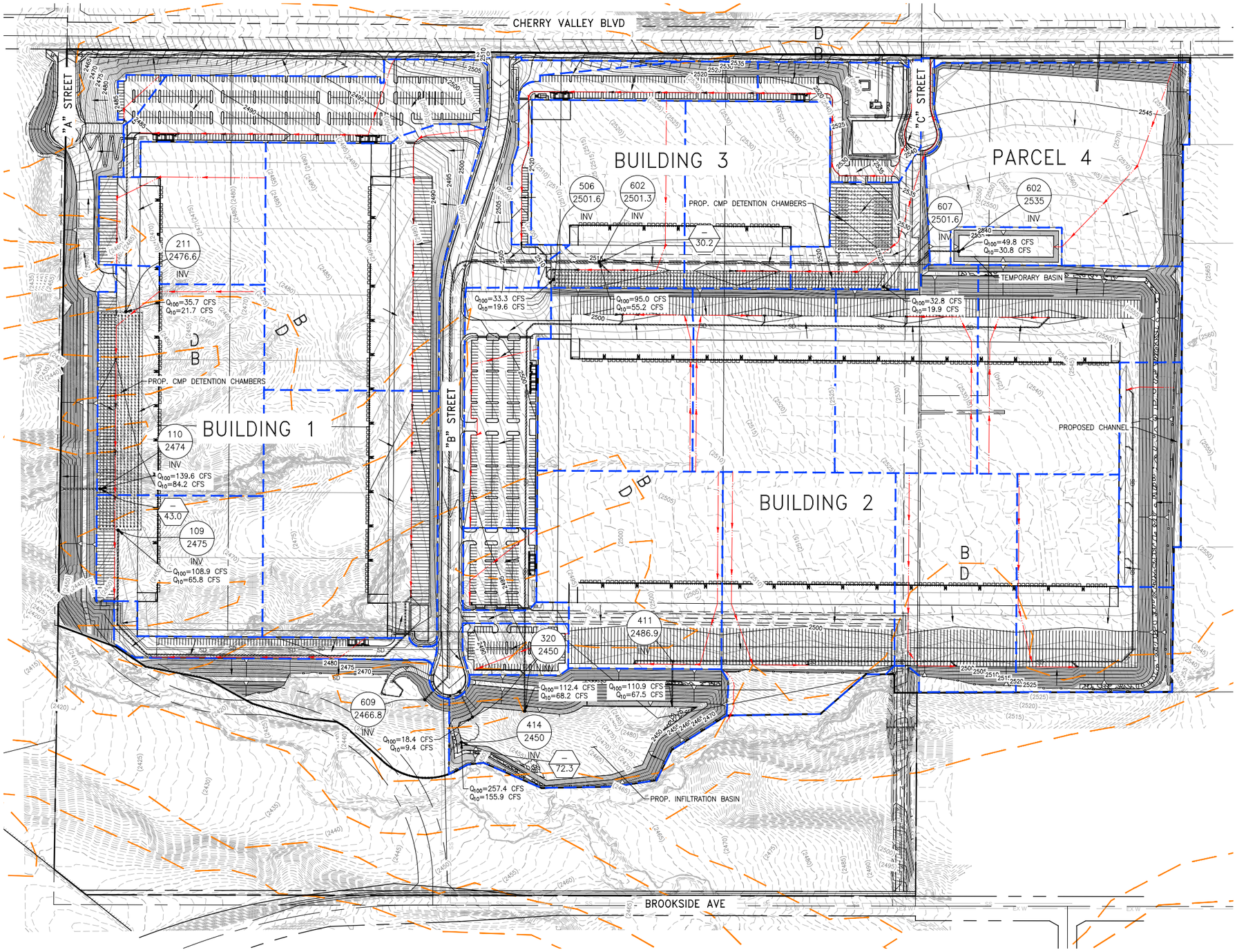

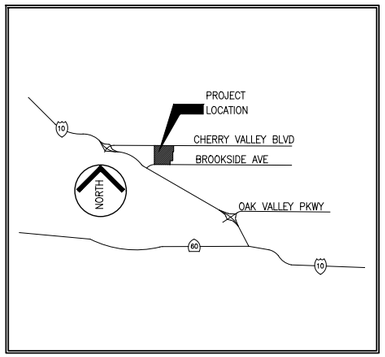

VICINITY MAP
NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- FT / AC – LENGTH (FT) / AREA (AC)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- PROJECT BOUNDARY
- NRCS SOIL BOUNDARY
- FLOW DIRECTION

N W E S WEBB

1" = 150'
150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 2. OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 150'	W.O.	21-0044
DATE:	8/2/2021	SHEET	2
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV	DWG. NO.	
PLN CK REF:			
F.B.			

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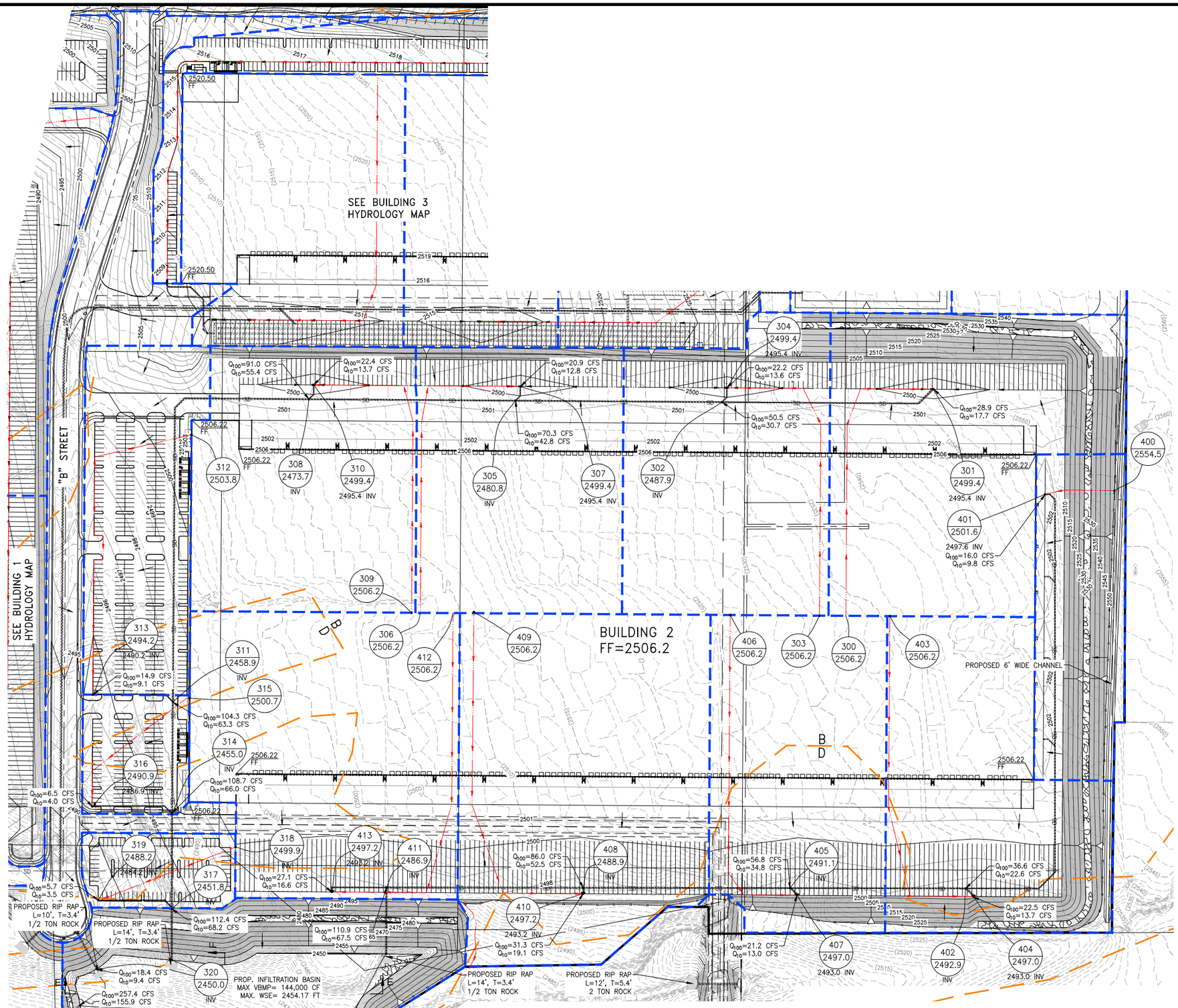

LEGEND

- NODE / ELEV — NODE NUMBER / ELEVATION (FT)
- FT / AC — LENGTH (FT) / AREA (AC)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- PROJECT BOUNDARY
- NRCS SOIL BOUNDARY
- FLOW DIRECTION

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 3. ON-SITE BUILDING 2
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 100'	W.O.	21-0044
DATE:	8/2/2021	SHEET	3
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV	DWG. NO.	
PLN CK REF:			
F.B.			

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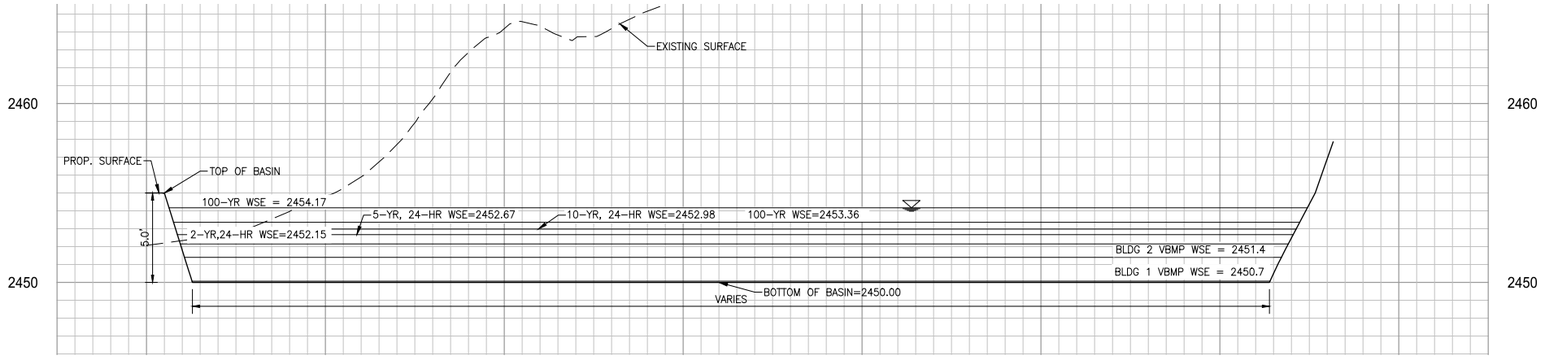
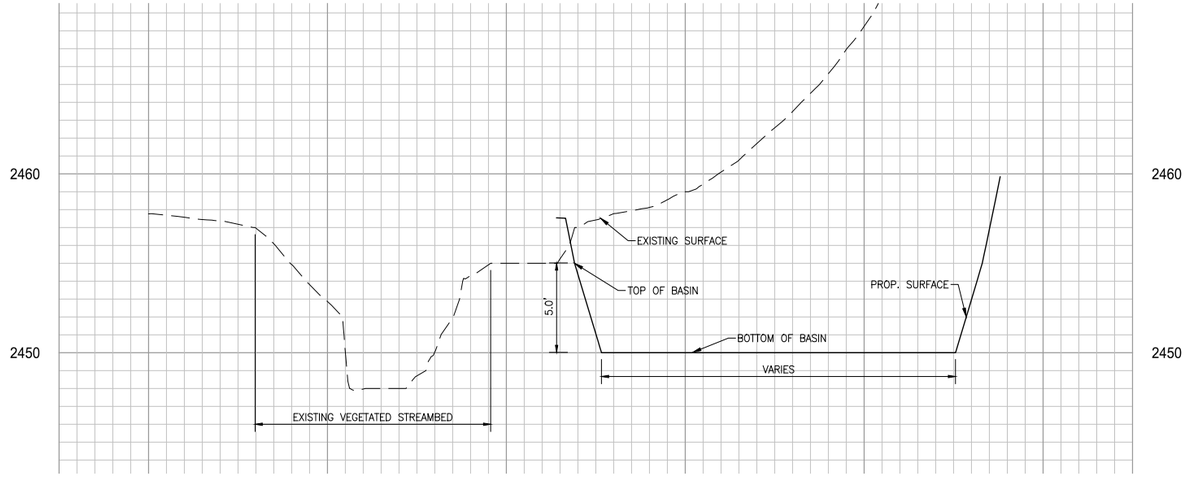


E-E
HORIZ: 1"=40'
VERT: 1"=4'



F-F
HORIZ: 1"=40'
VERT: 1"=4'

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE BEAUMONT SUMMIT STATION	
EXHIBIT 4. BUILDING 2 DETAILS INDUSTRIAL DEVELOPMENT DEVELOPED CONDITION BASIN DETAILS	
SCALE: 1"=40'	W.O. 21-0044
DATE: 8/2/2021	SHEET 4
DESIGNED: EP	OF 5 SHEETS
CHECKED: BJV	
PLN CK REF:	DWG. NO.
F.B.	

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PARCEL 4

BUILDING 2

ORO GRAND

FABIAN LANE

GOODIE LANE

TROUBLE COURT

EXISTING SINGLE FAMILY
19.3 ACRES

OFF-1
2603.1

OFF-2
2560.0
Q_{100}=15.3 CFS
Q_{10}=8.6 CFS

OFF-3
2535.0
Q_{100}=102.0 CFS
Q_{10}=56.8 CFS

OFF-4
2495.0
Q_{100}=114.0 CFS
Q_{10}=63.6 CFS

OFF-5
2490.0

990
5.8

1,175
33.6

800
4.7

B
D

N
W WEBB E
S

1" = 100'
100 0 100 200 300

LEGEND

NODE / ELEV – NODE NUMBER / ELEVATION (FT)

FT / AC – LENGTH (FT) / AREA (AC)

– DRAINAGE AREA BOUNDARY (OFFSITE)

– FLOWLINE (OFFSITE)

– NRCS SOIL BOUNDARY

– EXISTING SINGLE FAMILY (1 AC LOTS)

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 5. OFFSITE RUN-ON
INDUSTRIAL DEVELOPMENT
EASTERLY BOUNDARY
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 100'	W.O.	21-0044
DATE:	2/17/2022	SHEET	5
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV		
PLN CK REF:		DWG. NO.	
F.B.			

ALBERT A. WEBB ASSOCIATES
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FAX (951) 788-1256

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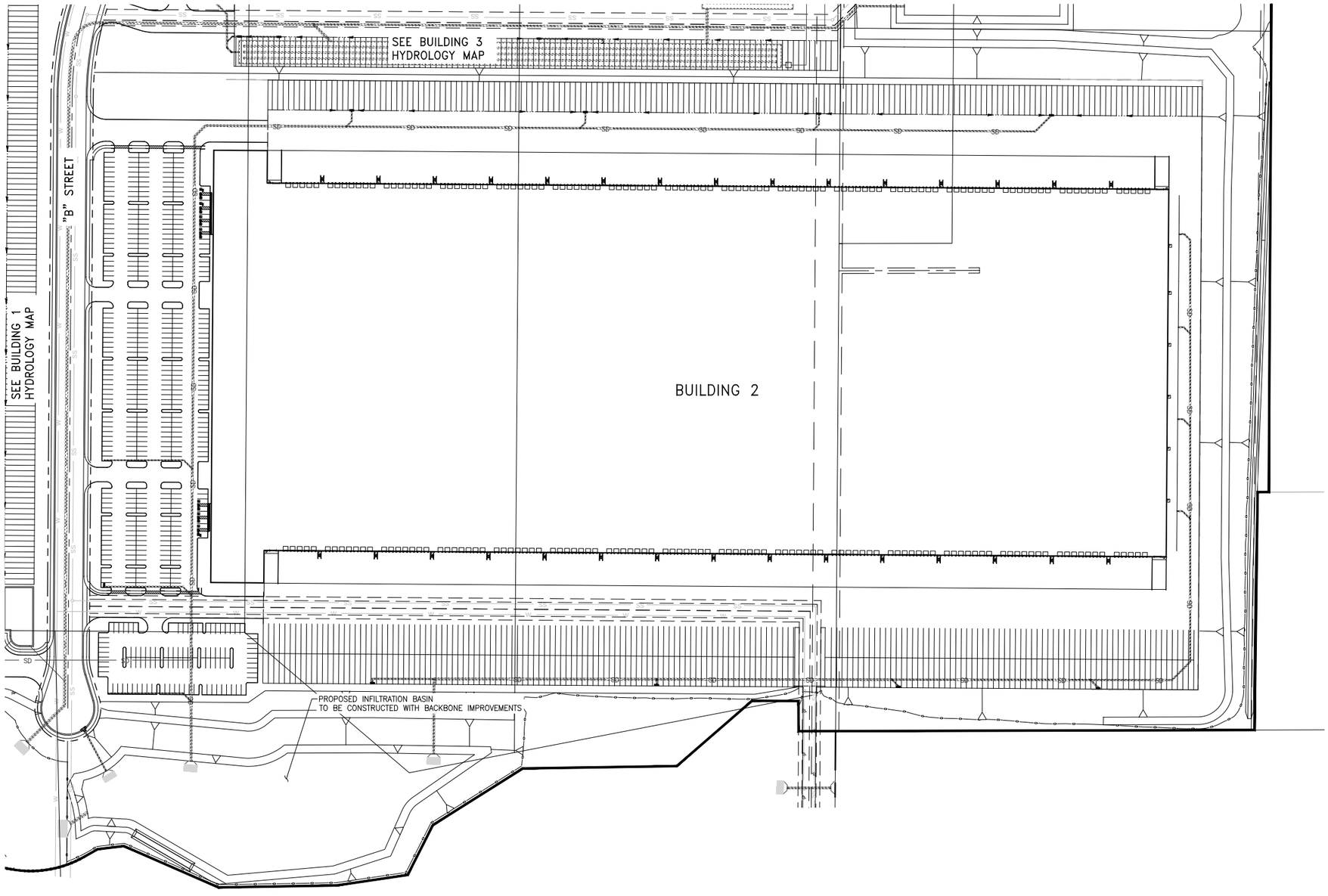

LEGEND

— PROJECT BOUNDARY

SD — PROPOSED STORM DRAIN

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 6. BUILDING 2 BMP MAP
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION

SCALE: 1" = 100'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/2/2021			SHEET 6
DESIGNED: EP			OF 5 SHEETS
CHECKED: BJV			DWG. NO.
PLN CK REF:			
F.B.			

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APPENDIX B – HYDRAULIC ANALYSIS

WSPG CALCULATIONS

Hydraulic calculations to be performed with the Final Drainage Study

CHANNEL ANALYSIS

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Thursday, February 17, 2022

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Cutoff Channel

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 6.0000 ft

Longitudinal Slope: 0.0150 ft/ft

Manning's n: 0.0150

Flow: 102.0000 cfs

Result Parameters

Depth: 1.1354 ft

Area of Flow: 9.3909 ft^2

Wetted Perimeter: 11.0778 ft

Hydraulic Radius: 0.8477 ft

Average Velocity: 10.8616 ft/s

Top Width: 10.5417 ft

Froude Number: 2.0280

Critical Depth: 1.7062 ft

Critical Velocity: 6.3512 ft/s

Critical Slope: 0.0033 ft/ft

Critical Top Width: 12.82 ft

Calculated Max Shear Stress: 1.0628 lb/ft^2

Calculated Avg Shear Stress: 0.7935 lb/ft^2

CULVERT ANALYSIS

```
_____
_____

**********************************************************************
******
                  HYDRAULIC ELEMENTS - I  PROGRAM PACKAGE
          (C) Copyright 1982-2013 Advanced Engineering Software (aes)
              Ver. 20.0  Release Date: 06/01/2013  License ID 1238

                              Analysis prepared by:




 ----------------------------------------------------------------------
-------
   TIME/DATE OF STUDY: 14:27 02/23/2022

======================================================================
======
  Problem Descriptions:
   21-0044 BSS
   EMERGENCY ROAD CULVERT
   2022-02-23 EP

**********************************************************************
******
 >>>>PIPEFLOW HYDRAULIC INPUT INFORMATION<<<<
 ----------------------------------------------------------------------
-------
     PIPE SLOPE(FEET/FEET) =  0.0630
     PIPEFLOW(CFS) =       114.00
     MANNINGS FRICTION FACTOR = 0.013000
     >>>>>SOFFIT-FLOW PIPE DIAMETER(FEET) =   2.597

======================================================================
======
```

3' DIAMETER PROPOSED

BASIN EMERGENCY SPILLWAY

BUILDING 2 BASIN EMERGENCY SPILLWAY
Q100=257.4CFS

WEIR CALCULATIONS

EQUATIONS

Q=CL(h)^(3/2)
where
L= 118 ft
C= 3

WEIR	Q (WEIR)
HIGH	
Ft	CFS
1.00	354.0
2.00	1001.3
0.81	258.1

APPENDIX C – BASIN ANALYSIS

EXISTING CONDITION UNIT HYDROGRAPHS

EXISTING CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (AC)**	**Impervious Area (SF)**
Undeveloped	Poor	B	GRASS	78	Existing	0	1132876	26.0	0
Undeveloped	Good	B	RESIDENTIAL OR COMMERCIAL	56	Existing	0.9	698385	16.0	628547
Undeveloped	Poor	D	GRASS	89	Existing	0	253999	5.8	0
Undeveloped	Good	D	RESIDENTIAL OR COMMERCIAL	75	Existing	0.9	109566	2.5	98609
			AVERAGE WEIGHTED RI VALUE	**72.1**		**TOTAL**	2194826	50.4	
						TOTAL % IMPERVIOUS		**33%**	
						LOW LOSS RATE		**0.63**	

EXISTING CONDITION
2-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: EX2YRB12.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	0.55	27.72

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	1.25	63.00

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
72.1  53.5      0.536     0.330        0.377       1.000      0.377
                                                  Sum (F) =   0.377
Area averaged mean soil loss (F) (In/Hr) =  0.377
Minimum soil loss rate ((In/Hr)) =  0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.630
------------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5300
------------------------------------------------------------------------

              U n i t  H y d r o g r a p h
                     FOOTHILL S-Curve
------------------------------------------------------------------------
              Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %           (CFS)
------------------------------------------------------------------------
    1   0.083         99.192         14.132             7.178
    2   0.167        198.384         55.642            28.263
    3   0.250        297.576         18.582             9.439
    4   0.333        396.768          7.530             3.825
    5   0.417        495.961          2.548             1.294
    6   0.500        595.153          0.859             0.436
    7   0.583        694.345          0.565             0.287
    8   0.667        793.537          0.141             0.072
                              Sum = 100.000   Sum=      50.794
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

 Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
      (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
  1   0.08     3.40      0.224       (  0.377)       0.141        0.083
  2   0.17     4.70      0.310       (  0.377)       0.195        0.115
  3   0.25     4.70      0.310       (  0.377)       0.195        0.115
  4   0.33     5.10      0.336       (  0.377)       0.212        0.124
  5   0.42     5.80      0.383       (  0.377)       0.241        0.142
  6   0.50     5.90      0.389       (  0.377)       0.245        0.144
  7   0.58     7.10      0.468       (  0.377)       0.295        0.173
  8   0.67     8.70      0.574       (  0.377)       0.362        0.212
  9   0.75    13.20      0.871          0.377    (  0.549)        0.494
 10   0.83    29.70      1.959          0.377    (  1.234)        1.582
 11   0.92     7.70      0.508       (  0.377)       0.320        0.188
 12   1.00     4.00      0.264       (  0.377)       0.166        0.098
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     3.5
      Flood volume = Effective rainfall      0.29(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =       1.2(Ac.Ft)
      Total soil loss =      0.26(In)
      Total soil loss =     1.094(Ac.Ft)
      Total rainfall =      0.55(In)
      Flood volume =       52905.2 Cubic Feet
      Total soil loss =       47672.5 Cubic Feet
      ------------------------------------------------------------------
       Peak flow rate of this hydrograph =     51.911(CFS)
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                         1 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
 ------------------------------------------------------------------------
   0+ 5       0.0041      0.60  Q         |         |         |         |
   0+10       0.0259      3.17  V Q       |         |         |         |
   0+15       0.0594      4.85  |V Q      |         |         |         |
   0+20       0.0975      5.54  |  Q      |         |         |         |
   0+25       0.1400      6.17  |   Q     |         |         |         |
   0+30       0.1871      6.84  |   Q V   |         |         |         |
   0+35       0.2377      7.35  |   Q  V  |         |         |         |
```

```
    0+40       0.2968      8.58  |    Q   V|         |         |         |
    0+45       0.3795     12.02  |       Q | V       |         |         |
    0+50       0.5744     28.29  |         |       Q |         |         |
    0+55       0.9319     51.91  |         |         |         V   Q     |
    1+ 0       1.0920     23.25  |         |    Q    |         |    V    |
    1+ 5       1.1704     11.38  |       Q |         |         |       V |
    1+10       1.1979      3.98  | Q       |         |         |         V|
    1+15       1.2079      1.47  Q         |         |         |         V|
    1+20       1.2128      0.70  Q         |         |         |         V|
    1+25       1.2142      0.21  Q         |         |         |         V|
    1+30       1.2145      0.04  Q         |         |         |         V|
    1+35       1.2145      0.01  Q         |         |         |          V
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX2YRB32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	0.95	47.88

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.05	103.32

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 0.950(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 0.950(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	53.5	0.536	0.330	0.377	1.000	0.377
					Sum (F) =	0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.148	(0.377)	0.093	0.055
2	0.17	1.30	0.148	(0.377)	0.093	0.055
3	0.25	1.10	0.125	(0.377)	0.079	0.046
4	0.33	1.50	0.171	(0.377)	0.108	0.063
5	0.42	1.50	0.171	(0.377)	0.108	0.063
6	0.50	1.80	0.205	(0.377)	0.129	0.076
7	0.58	1.50	0.171	(0.377)	0.108	0.063
8	0.67	1.80	0.205	(0.377)	0.129	0.076
9	0.75	1.80	0.205	(0.377)	0.129	0.076
10	0.83	1.50	0.171	(0.377)	0.108	0.063
11	0.92	1.60	0.182	(0.377)	0.115	0.067
12	1.00	1.80	0.205	(0.377)	0.129	0.076
13	1.08	2.20	0.251	(0.377)	0.158	0.093
14	1.17	2.20	0.251	(0.377)	0.158	0.093
15	1.25	2.20	0.251	(0.377)	0.158	0.093
16	1.33	2.00	0.228	(0.377)	0.144	0.084
17	1.42	2.60	0.296	(0.377)	0.187	0.110
18	1.50	2.70	0.308	(0.377)	0.194	0.114
19	1.58	2.40	0.274	(0.377)	0.172	0.101
20	1.67	2.70	0.308	(0.377)	0.194	0.114
21	1.75	3.30	0.376	(0.377)	0.237	0.139
22	1.83	3.10	0.353	(0.377)	0.223	0.131
23	1.92	2.90	0.331	(0.377)	0.208	0.122
24	2.00	3.00	0.342	(0.377)	0.215	0.127
25	2.08	3.10	0.353	(0.377)	0.223	0.131
26	2.17	4.20	0.479	(0.377)	0.302	0.177
27	2.25	5.00	0.570	(0.377)	0.359	0.211
28	2.33	3.50	0.399	(0.377)	0.251	0.148
29	2.42	6.80	0.775	0.377	(0.488)	0.398
30	2.50	7.30	0.832	0.377	(0.524)	0.455
31	2.58	8.20	0.935	0.377	(0.589)	0.558
32	2.67	5.90	0.672	0.377	(0.424)	0.296
33	2.75	2.00	0.228	(0.377)	0.144	0.084
34	2.83	1.80	0.205	(0.377)	0.129	0.076
35	2.92	1.80	0.205	(0.377)	0.129	0.076
36	3.00	0.60	0.068	(0.377)	0.043	0.025
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	4.7

Flood volume = Effective rainfall 0.39(In)
times area 50.4(Ac.)/[(In)/(Ft.)] = 1.7(Ac.Ft)
Total soil loss = 0.56(In)
Total soil loss = 2.332(Ac.Ft)

Total rainfall = 0.95(In)
Flood volume = 72181.4 Cubic Feet
Total soil loss = 101584.7 Cubic Feet

Peak flow rate of this hydrograph = 24.059(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 7.5 15.0 22.5 30.0
0+ 5	0.0027	0.39	Q | | | |
0+10	0.0161	1.94	V Q | | | |
0+15	0.0326	2.40	V Q | | | |
0+20	0.0498	2.49	|V Q | | | |
0+25	0.0702	2.96	|V Q | | | |
0+30	0.0923	3.20	| V Q | | | |
0+35	0.1167	3.54	| V Q | | | |
0+40	0.1402	3.41	| VQ | | | |
0+45	0.1657	3.71	| VQ | | | |
0+50	0.1912	3.71	| Q | | | |
0+55	0.2148	3.42	| QV | | | |
1+ 0	0.2388	3.49	| QV | | | |
1+ 5	0.2653	3.85	| QV | | | |
1+10	0.2957	4.41	| Q V | | | |
1+15	0.3273	4.60	| QV | | | |
1+20	0.3591	4.61	| Q V | | | |
1+25	0.3906	4.58	| Q V| | | |
1+30	0.4268	5.26	| Q V | | |
1+35	0.4647	5.50	| Q |V | | |
1+40	0.5016	5.36	| Q | V | | |
1+45	0.5417	5.82	| Q | V | | |
1+50	0.5869	6.56	| Q | V | | |
1+55	0.6320	6.54	| Q | V | | |
2+ 0	0.6758	6.37	| Q | V | | |
2+ 5	0.7202	6.44	| Q | V | | |
2+10	0.7677	6.90	| Q| V | | |
2+15	0.8263	8.50	| |Q V| | |
2+20	0.8914	9.46	| | Q |V | |
2+25	0.9601	9.97	| | Q | V | |
2+30	1.0776	17.06	| | | Q V | |
2+35	1.2263	21.60	| | | QV| |
2+40	1.3920	24.06	| | | | QV |
2+45	1.5065	16.63	| | | Q | V |
2+50	1.5663	8.68	| |Q | | V |
2+55	1.6053	5.67	| Q | | | V |
3+ 0	1.6339	4.15	| Q | | | | V|
3+ 5	1.6487	2.15	| Q | | | | V|
3+10	1.6542	0.79	|Q | | | | V|
3+15	1.6560	0.27	Q | | | | V|
3+20	1.6567	0.09	Q | | | | V|
3+25	1.6570	0.04	Q | | | | V|
3+30	1.6570	0.01	Q | | | | V|
3+35	1.6571	0.00	Q | | | | V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX2YRB62.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

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English Rainfall Data (Inches) Input Values Used

English Units used in output format

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2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

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Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
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Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	1.40	70.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	3.00	151.20

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.400(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.400(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1 53.5 0.536 0.330 0.377 1.000 0.377
Sum (F) = 0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.084	(0.377)	0.053	0.031
2	0.17	0.60	0.101	(0.377)	0.063	0.037
3	0.25	0.60	0.101	(0.377)	0.063	0.037
4	0.33	0.60	0.101	(0.377)	0.063	0.037
5	0.42	0.60	0.101	(0.377)	0.063	0.037
6	0.50	0.70	0.118	(0.377)	0.074	0.044
7	0.58	0.70	0.118	(0.377)	0.074	0.044
8	0.67	0.70	0.118	(0.377)	0.074	0.044
9	0.75	0.70	0.118	(0.377)	0.074	0.044
10	0.83	0.70	0.118	(0.377)	0.074	0.044
11	0.92	0.70	0.118	(0.377)	0.074	0.044
12	1.00	0.80	0.134	(0.377)	0.085	0.050
13	1.08	0.80	0.134	(0.377)	0.085	0.050
14	1.17	0.80	0.134	(0.377)	0.085	0.050
15	1.25	0.80	0.134	(0.377)	0.085	0.050
16	1.33	0.80	0.134	(0.377)	0.085	0.050
17	1.42	0.80	0.134	(0.377)	0.085	0.050
18	1.50	0.80	0.134	(0.377)	0.085	0.050
19	1.58	0.80	0.134	(0.377)	0.085	0.050
20	1.67	0.80	0.134	(0.377)	0.085	0.050
21	1.75	0.80	0.134	(0.377)	0.085	0.050
22	1.83	0.80	0.134	(0.377)	0.085	0.050
23	1.92	0.80	0.134	(0.377)	0.085	0.050
24	2.00	0.90	0.151	(0.377)	0.095	0.056
25	2.08	0.80	0.134	(0.377)	0.085	0.050
26	2.17	0.90	0.151	(0.377)	0.095	0.056
27	2.25	0.90	0.151	(0.377)	0.095	0.056
28	2.33	0.90	0.151	(0.377)	0.095	0.056
29	2.42	0.90	0.151	(0.377)	0.095	0.056
30	2.50	0.90	0.151	(0.377)	0.095	0.056
31	2.58	0.90	0.151	(0.377)	0.095	0.056
32	2.67	0.90	0.151	(0.377)	0.095	0.056
33	2.75	1.00	0.168	(0.377)	0.106	0.062
34	2.83	1.00	0.168	(0.377)	0.106	0.062
35	2.92	1.00	0.168	(0.377)	0.106	0.062
36	3.00	1.00	0.168	(0.377)	0.106	0.062
37	3.08	1.00	0.168	(0.377)	0.106	0.062
38	3.17	1.10	0.185	(0.377)	0.116	0.068
39	3.25	1.10	0.185	(0.377)	0.116	0.068
40	3.33	1.10	0.185	(0.377)	0.116	0.068
41	3.42	1.20	0.202	(0.377)	0.127	0.075
42	3.50	1.30	0.218	(0.377)	0.138	0.081

```
43   3.58     1.40      0.235       (  0.377)       0.148        0.087
44   3.67     1.40      0.235       (  0.377)       0.148        0.087
45   3.75     1.50      0.252       (  0.377)       0.159        0.093
46   3.83     1.50      0.252       (  0.377)       0.159        0.093
47   3.92     1.60      0.269       (  0.377)       0.169        0.099
48   4.00     1.60      0.269       (  0.377)       0.169        0.099
49   4.08     1.70      0.286       (  0.377)       0.180        0.106
50   4.17     1.80      0.302       (  0.377)       0.190        0.112
51   4.25     1.90      0.319       (  0.377)       0.201        0.118
52   4.33     2.00      0.336       (  0.377)       0.212        0.124
53   4.42     2.10      0.353       (  0.377)       0.222        0.131
54   4.50     2.10      0.353       (  0.377)       0.222        0.131
55   4.58     2.20      0.370       (  0.377)       0.233        0.137
56   4.67     2.30      0.386       (  0.377)       0.243        0.143
57   4.75     2.40      0.403       (  0.377)       0.254        0.149
58   4.83     2.40      0.403       (  0.377)       0.254        0.149
59   4.92     2.50      0.420       (  0.377)       0.265        0.155
60   5.00     2.60      0.437       (  0.377)       0.275        0.162
61   5.08     3.10      0.521       (  0.377)       0.328        0.193
62   5.17     3.60      0.605          0.377    (  0.381)       0.228
63   5.25     3.90      0.655          0.377    (  0.413)       0.278
64   5.33     4.20      0.705          0.377    (  0.444)       0.329
65   5.42     4.70      0.789          0.377    (  0.497)       0.413
66   5.50     5.60      0.941          0.377    (  0.593)       0.564
67   5.58     1.90      0.319       (  0.377)       0.201        0.118
68   5.67     0.90      0.151       (  0.377)       0.095        0.056
69   5.75     0.60      0.101       (  0.377)       0.063        0.037
70   5.83     0.50      0.084       (  0.377)       0.053        0.031
71   5.92     0.30      0.050       (  0.377)       0.032        0.019
72   6.00     0.20      0.034       (  0.377)       0.021        0.012
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     6.7
      Flood volume = Effective rainfall      0.55(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =       2.3(Ac.Ft)
      Total soil loss =      0.84(In)
      Total soil loss =     3.548(Ac.Ft)
      Total rainfall =      1.40(In)
      Flood volume =      101517.4 Cubic Feet
      Total soil loss =      154571.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     22.470(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0015      0.22  Q         |         |         |         |
  0+10       0.0094      1.15  VQ        |         |         |         |
  0+15       0.0206      1.62  V Q       |         |         |         |
  0+20       0.0329      1.79  V Q       |         |         |         |
  0+25       0.0457      1.86  V Q       |         |         |         |
  0+30       0.0590      1.92  |VQ       |         |         |         |
  0+35       0.0735      2.11  |VQ       |         |         |         |
  0+40       0.0885      2.17  |VQ       |         |         |         |
  0+45       0.1036      2.20  |VQ       |         |         |         |
  0+50       0.1188      2.21  | Q       |         |         |         |
  0+55       0.1340      2.21  | Q       |         |         |         |
  1+ 0       0.1495      2.26  | VQ      |         |         |         |
  1+ 5       0.1663      2.43  | VQ      |         |         |         |
  1+10       0.1834      2.49  |  Q      |         |         |         |
  1+15       0.2007      2.51  |  Q      |         |         |         |
  1+20       0.2181      2.52  |  Q      |         |         |         |
  1+25       0.2355      2.52  |  QV     |         |         |         |
  1+30       0.2529      2.53  |  QV     |         |         |         |
  1+35       0.2703      2.53  |  QV     |         |         |         |
  1+40       0.2877      2.53  |  QV     |         |         |         |
  1+45       0.3051      2.53  |  Q V    |         |         |         |
  1+50       0.3225      2.53  |  Q V    |         |         |         |
  1+55       0.3399      2.53  |  Q V    |         |         |         |
  2+ 0       0.3576      2.57  |  Q  V   |         |         |         |
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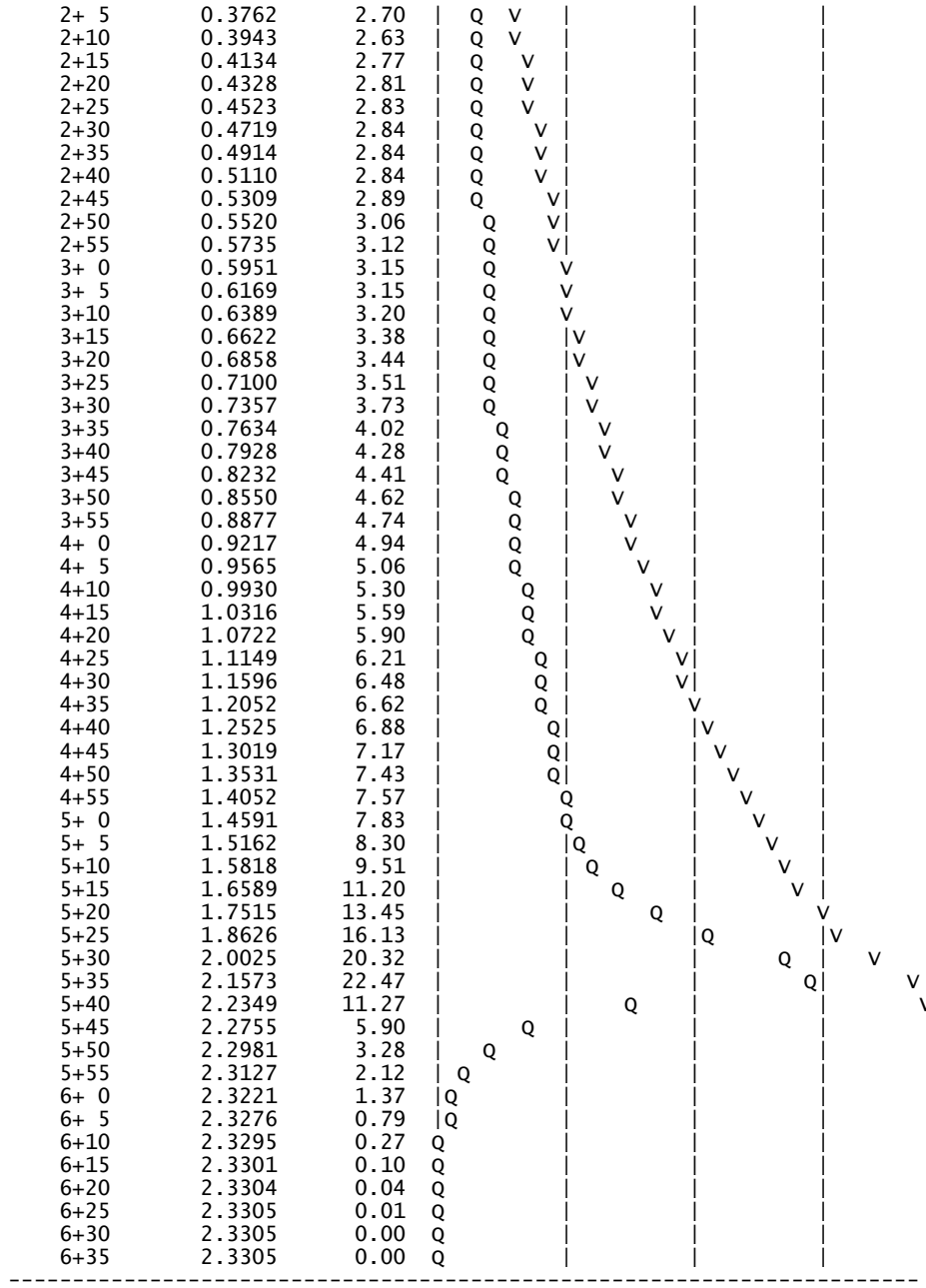

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX2YRB242.out

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Riverside County Synthetic Unit Hydrology Method
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Length along longest watercourse measured to centroid = 0.116 Mi.
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Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.50	126.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	6.50	327.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	53.5	0.536	0.330	0.377	1.000	0.377
					Sum (F) =	0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.668)	0.013	0.007
2	0.17	0.07	0.020	(0.666)	0.013	0.007
3	0.25	0.07	0.020	(0.663)	0.013	0.007
4	0.33	0.10	0.030	(0.660)	0.019	0.011
5	0.42	0.10	0.030	(0.658)	0.019	0.011
6	0.50	0.10	0.030	(0.655)	0.019	0.011
7	0.58	0.10	0.030	(0.653)	0.019	0.011
8	0.67	0.10	0.030	(0.650)	0.019	0.011
9	0.75	0.10	0.030	(0.648)	0.019	0.011
10	0.83	0.13	0.040	(0.645)	0.025	0.015
11	0.92	0.13	0.040	(0.642)	0.025	0.015
12	1.00	0.13	0.040	(0.640)	0.025	0.015
13	1.08	0.10	0.030	(0.637)	0.019	0.011
14	1.17	0.10	0.030	(0.635)	0.019	0.011
15	1.25	0.10	0.030	(0.632)	0.019	0.011
16	1.33	0.10	0.030	(0.630)	0.019	0.011
17	1.42	0.10	0.030	(0.627)	0.019	0.011
18	1.50	0.10	0.030	(0.625)	0.019	0.011
19	1.58	0.10	0.030	(0.622)	0.019	0.011
20	1.67	0.10	0.030	(0.620)	0.019	0.011
21	1.75	0.10	0.030	(0.617)	0.019	0.011
22	1.83	0.13	0.040	(0.615)	0.025	0.015
23	1.92	0.13	0.040	(0.612)	0.025	0.015
24	2.00	0.13	0.040	(0.610)	0.025	0.015
25	2.08	0.13	0.040	(0.607)	0.025	0.015
26	2.17	0.13	0.040	(0.605)	0.025	0.015
27	2.25	0.13	0.040	(0.603)	0.025	0.015
28	2.33	0.13	0.040	(0.600)	0.025	0.015
29	2.42	0.13	0.040	(0.598)	0.025	0.015
30	2.50	0.13	0.040	(0.595)	0.025	0.015
31	2.58	0.17	0.050	(0.593)	0.031	0.018
32	2.67	0.17	0.050	(0.590)	0.031	0.018
33	2.75	0.17	0.050	(0.588)	0.031	0.018
34	2.83	0.17	0.050	(0.586)	0.031	0.018
35	2.92	0.17	0.050	(0.583)	0.031	0.018
36	3.00	0.17	0.050	(0.581)	0.031	0.018
37	3.08	0.17	0.050	(0.578)	0.031	0.018
38	3.17	0.17	0.050	(0.576)	0.031	0.018
39	3.25	0.17	0.050	(0.573)	0.031	0.018
40	3.33	0.17	0.050	(0.571)	0.031	0.018
41	3.42	0.17	0.050	(0.569)	0.031	0.018
42	3.50	0.17	0.050	(0.566)	0.031	0.018

43	3.58	0.17	0.050	(0.564)	0.031	0.018
44	3.67	0.17	0.050	(0.562)	0.031	0.018
45	3.75	0.17	0.050	(0.559)	0.031	0.018
46	3.83	0.20	0.060	(0.557)	0.038	0.022
47	3.92	0.20	0.060	(0.555)	0.038	0.022
48	4.00	0.20	0.060	(0.552)	0.038	0.022
49	4.08	0.20	0.060	(0.550)	0.038	0.022
50	4.17	0.20	0.060	(0.547)	0.038	0.022
51	4.25	0.20	0.060	(0.545)	0.038	0.022
52	4.33	0.23	0.070	(0.543)	0.044	0.026
53	4.42	0.23	0.070	(0.541)	0.044	0.026
54	4.50	0.23	0.070	(0.538)	0.044	0.026
55	4.58	0.23	0.070	(0.536)	0.044	0.026
56	4.67	0.23	0.070	(0.534)	0.044	0.026
57	4.75	0.23	0.070	(0.531)	0.044	0.026
58	4.83	0.27	0.080	(0.529)	0.050	0.030
59	4.92	0.27	0.080	(0.527)	0.050	0.030
60	5.00	0.27	0.080	(0.524)	0.050	0.030
61	5.08	0.20	0.060	(0.522)	0.038	0.022
62	5.17	0.20	0.060	(0.520)	0.038	0.022
63	5.25	0.20	0.060	(0.518)	0.038	0.022
64	5.33	0.23	0.070	(0.515)	0.044	0.026
65	5.42	0.23	0.070	(0.513)	0.044	0.026
66	5.50	0.23	0.070	(0.511)	0.044	0.026
67	5.58	0.27	0.080	(0.509)	0.050	0.030
68	5.67	0.27	0.080	(0.506)	0.050	0.030
69	5.75	0.27	0.080	(0.504)	0.050	0.030
70	5.83	0.27	0.080	(0.502)	0.050	0.030
71	5.92	0.27	0.080	(0.500)	0.050	0.030
72	6.00	0.27	0.080	(0.497)	0.050	0.030
73	6.08	0.30	0.090	(0.495)	0.057	0.033
74	6.17	0.30	0.090	(0.493)	0.057	0.033
75	6.25	0.30	0.090	(0.491)	0.057	0.033
76	6.33	0.30	0.090	(0.489)	0.057	0.033
77	6.42	0.30	0.090	(0.486)	0.057	0.033
78	6.50	0.30	0.090	(0.484)	0.057	0.033
79	6.58	0.33	0.100	(0.482)	0.063	0.037
80	6.67	0.33	0.100	(0.480)	0.063	0.037
81	6.75	0.33	0.100	(0.478)	0.063	0.037
82	6.83	0.33	0.100	(0.476)	0.063	0.037
83	6.92	0.33	0.100	(0.473)	0.063	0.037
84	7.00	0.33	0.100	(0.471)	0.063	0.037
85	7.08	0.33	0.100	(0.469)	0.063	0.037
86	7.17	0.33	0.100	(0.467)	0.063	0.037
87	7.25	0.33	0.100	(0.465)	0.063	0.037
88	7.33	0.37	0.110	(0.463)	0.069	0.041
89	7.42	0.37	0.110	(0.461)	0.069	0.041
90	7.50	0.37	0.110	(0.459)	0.069	0.041
91	7.58	0.40	0.120	(0.456)	0.076	0.044
92	7.67	0.40	0.120	(0.454)	0.076	0.044
93	7.75	0.40	0.120	(0.452)	0.076	0.044
94	7.83	0.43	0.130	(0.450)	0.082	0.048
95	7.92	0.43	0.130	(0.448)	0.082	0.048
96	8.00	0.43	0.130	(0.446)	0.082	0.048
97	8.08	0.50	0.150	(0.444)	0.094	0.055
98	8.17	0.50	0.150	(0.442)	0.094	0.055
99	8.25	0.50	0.150	(0.440)	0.094	0.055
100	8.33	0.50	0.150	(0.438)	0.094	0.055
101	8.42	0.50	0.150	(0.436)	0.094	0.055
102	8.50	0.50	0.150	(0.434)	0.094	0.055
103	8.58	0.53	0.160	(0.432)	0.101	0.059
104	8.67	0.53	0.160	(0.430)	0.101	0.059
105	8.75	0.53	0.160	(0.428)	0.101	0.059
106	8.83	0.57	0.170	(0.426)	0.107	0.063
107	8.92	0.57	0.170	(0.424)	0.107	0.063
108	9.00	0.57	0.170	(0.422)	0.107	0.063
109	9.08	0.63	0.190	(0.420)	0.120	0.070
110	9.17	0.63	0.190	(0.418)	0.120	0.070
111	9.25	0.63	0.190	(0.416)	0.120	0.070
112	9.33	0.67	0.200	(0.414)	0.126	0.074
113	9.42	0.67	0.200	(0.412)	0.126	0.074
114	9.50	0.67	0.200	(0.410)	0.126	0.074
115	9.58	0.70	0.210	(0.408)	0.132	0.078
116	9.67	0.70	0.210	(0.406)	0.132	0.078
117	9.75	0.70	0.210	(0.404)	0.132	0.078

118	9.83	0.73	0.220	(0.402)	0.139	0.081
119	9.92	0.73	0.220	(0.400)	0.139	0.081
120	10.00	0.73	0.220	(0.398)	0.139	0.081
121	10.08	0.50	0.150	(0.396)	0.094	0.055
122	10.17	0.50	0.150	(0.394)	0.094	0.055
123	10.25	0.50	0.150	(0.392)	0.094	0.055
124	10.33	0.50	0.150	(0.390)	0.094	0.055
125	10.42	0.50	0.150	(0.388)	0.094	0.055
126	10.50	0.50	0.150	(0.387)	0.094	0.055
127	10.58	0.67	0.200	(0.385)	0.126	0.074
128	10.67	0.67	0.200	(0.383)	0.126	0.074
129	10.75	0.67	0.200	(0.381)	0.126	0.074
130	10.83	0.67	0.200	(0.379)	0.126	0.074
131	10.92	0.67	0.200	(0.377)	0.126	0.074
132	11.00	0.67	0.200	(0.375)	0.126	0.074
133	11.08	0.63	0.190	(0.373)	0.120	0.070
134	11.17	0.63	0.190	(0.372)	0.120	0.070
135	11.25	0.63	0.190	(0.370)	0.120	0.070
136	11.33	0.63	0.190	(0.368)	0.120	0.070
137	11.42	0.63	0.190	(0.366)	0.120	0.070
138	11.50	0.63	0.190	(0.364)	0.120	0.070
139	11.58	0.57	0.170	(0.363)	0.107	0.063
140	11.67	0.57	0.170	(0.361)	0.107	0.063
141	11.75	0.57	0.170	(0.359)	0.107	0.063
142	11.83	0.60	0.180	(0.357)	0.113	0.067
143	11.92	0.60	0.180	(0.355)	0.113	0.067
144	12.00	0.60	0.180	(0.354)	0.113	0.067
145	12.08	0.83	0.250	(0.352)	0.157	0.092
146	12.17	0.83	0.250	(0.350)	0.157	0.092
147	12.25	0.83	0.250	(0.348)	0.157	0.092
148	12.33	0.87	0.260	(0.347)	0.164	0.096
149	12.42	0.87	0.260	(0.345)	0.164	0.096
150	12.50	0.87	0.260	(0.343)	0.164	0.096
151	12.58	0.93	0.280	(0.341)	0.176	0.104
152	12.67	0.93	0.280	(0.340)	0.176	0.104
153	12.75	0.93	0.280	(0.338)	0.176	0.104
154	12.83	0.97	0.290	(0.336)	0.183	0.107
155	12.92	0.97	0.290	(0.335)	0.183	0.107
156	13.00	0.97	0.290	(0.333)	0.183	0.107
157	13.08	1.13	0.340	(0.331)	0.214	0.126
158	13.17	1.13	0.340	(0.329)	0.214	0.126
159	13.25	1.13	0.340	(0.328)	0.214	0.126
160	13.33	1.13	0.340	(0.326)	0.214	0.126
161	13.42	1.13	0.340	(0.324)	0.214	0.126
162	13.50	1.13	0.340	(0.323)	0.214	0.126
163	13.58	0.77	0.230	(0.321)	0.145	0.085
164	13.67	0.77	0.230	(0.320)	0.145	0.085
165	13.75	0.77	0.230	(0.318)	0.145	0.085
166	13.83	0.77	0.230	(0.316)	0.145	0.085
167	13.92	0.77	0.230	(0.315)	0.145	0.085
168	14.00	0.77	0.230	(0.313)	0.145	0.085
169	14.08	0.90	0.270	(0.311)	0.170	0.100
170	14.17	0.90	0.270	(0.310)	0.170	0.100
171	14.25	0.90	0.270	(0.308)	0.170	0.100
172	14.33	0.87	0.260	(0.307)	0.164	0.096
173	14.42	0.87	0.260	(0.305)	0.164	0.096
174	14.50	0.87	0.260	(0.304)	0.164	0.096
175	14.58	0.87	0.260	(0.302)	0.164	0.096
176	14.67	0.87	0.260	(0.300)	0.164	0.096
177	14.75	0.87	0.260	(0.299)	0.164	0.096
178	14.83	0.83	0.250	(0.297)	0.157	0.092
179	14.92	0.83	0.250	(0.296)	0.157	0.092
180	15.00	0.83	0.250	(0.294)	0.157	0.092
181	15.08	0.80	0.240	(0.293)	0.151	0.089
182	15.17	0.80	0.240	(0.291)	0.151	0.089
183	15.25	0.80	0.240	(0.290)	0.151	0.089
184	15.33	0.77	0.230	(0.288)	0.145	0.085
185	15.42	0.77	0.230	(0.287)	0.145	0.085
186	15.50	0.77	0.230	(0.285)	0.145	0.085
187	15.58	0.63	0.190	(0.284)	0.120	0.070
188	15.67	0.63	0.190	(0.282)	0.120	0.070
189	15.75	0.63	0.190	(0.281)	0.120	0.070
190	15.83	0.63	0.190	(0.280)	0.120	0.070
191	15.92	0.63	0.190	(0.278)	0.120	0.070
192	16.00	0.63	0.190	(0.277)	0.120	0.070

193	16.08	0.13	0.040	(0.275)	0.025	0.015
194	16.17	0.13	0.040	(0.274)	0.025	0.015
195	16.25	0.13	0.040	(0.273)	0.025	0.015
196	16.33	0.13	0.040	(0.271)	0.025	0.015
197	16.42	0.13	0.040	(0.270)	0.025	0.015
198	16.50	0.13	0.040	(0.268)	0.025	0.015
199	16.58	0.10	0.030	(0.267)	0.019	0.011
200	16.67	0.10	0.030	(0.266)	0.019	0.011
201	16.75	0.10	0.030	(0.264)	0.019	0.011
202	16.83	0.10	0.030	(0.263)	0.019	0.011
203	16.92	0.10	0.030	(0.262)	0.019	0.011
204	17.00	0.10	0.030	(0.260)	0.019	0.011
205	17.08	0.17	0.050	(0.259)	0.031	0.018
206	17.17	0.17	0.050	(0.258)	0.031	0.018
207	17.25	0.17	0.050	(0.256)	0.031	0.018
208	17.33	0.17	0.050	(0.255)	0.031	0.018
209	17.42	0.17	0.050	(0.254)	0.031	0.018
210	17.50	0.17	0.050	(0.253)	0.031	0.018
211	17.58	0.17	0.050	(0.251)	0.031	0.018
212	17.67	0.17	0.050	(0.250)	0.031	0.018
213	17.75	0.17	0.050	(0.249)	0.031	0.018
214	17.83	0.13	0.040	(0.248)	0.025	0.015
215	17.92	0.13	0.040	(0.246)	0.025	0.015
216	18.00	0.13	0.040	(0.245)	0.025	0.015
217	18.08	0.13	0.040	(0.244)	0.025	0.015
218	18.17	0.13	0.040	(0.243)	0.025	0.015
219	18.25	0.13	0.040	(0.242)	0.025	0.015
220	18.33	0.13	0.040	(0.240)	0.025	0.015
221	18.42	0.13	0.040	(0.239)	0.025	0.015
222	18.50	0.13	0.040	(0.238)	0.025	0.015
223	18.58	0.10	0.030	(0.237)	0.019	0.011
224	18.67	0.10	0.030	(0.236)	0.019	0.011
225	18.75	0.10	0.030	(0.235)	0.019	0.011
226	18.83	0.07	0.020	(0.233)	0.013	0.007
227	18.92	0.07	0.020	(0.232)	0.013	0.007
228	19.00	0.07	0.020	(0.231)	0.013	0.007
229	19.08	0.10	0.030	(0.230)	0.019	0.011
230	19.17	0.10	0.030	(0.229)	0.019	0.011
231	19.25	0.10	0.030	(0.228)	0.019	0.011
232	19.33	0.13	0.040	(0.227)	0.025	0.015
233	19.42	0.13	0.040	(0.226)	0.025	0.015
234	19.50	0.13	0.040	(0.225)	0.025	0.015
235	19.58	0.10	0.030	(0.224)	0.019	0.011
236	19.67	0.10	0.030	(0.223)	0.019	0.011
237	19.75	0.10	0.030	(0.222)	0.019	0.011
238	19.83	0.07	0.020	(0.221)	0.013	0.007
239	19.92	0.07	0.020	(0.220)	0.013	0.007
240	20.00	0.07	0.020	(0.219)	0.013	0.007
241	20.08	0.10	0.030	(0.218)	0.019	0.011
242	20.17	0.10	0.030	(0.217)	0.019	0.011
243	20.25	0.10	0.030	(0.216)	0.019	0.011
244	20.33	0.10	0.030	(0.215)	0.019	0.011
245	20.42	0.10	0.030	(0.214)	0.019	0.011
246	20.50	0.10	0.030	(0.213)	0.019	0.011
247	20.58	0.10	0.030	(0.212)	0.019	0.011
248	20.67	0.10	0.030	(0.211)	0.019	0.011
249	20.75	0.10	0.030	(0.211)	0.019	0.011
250	20.83	0.07	0.020	(0.210)	0.013	0.007
251	20.92	0.07	0.020	(0.209)	0.013	0.007
252	21.00	0.07	0.020	(0.208)	0.013	0.007
253	21.08	0.10	0.030	(0.207)	0.019	0.011
254	21.17	0.10	0.030	(0.206)	0.019	0.011
255	21.25	0.10	0.030	(0.206)	0.019	0.011
256	21.33	0.07	0.020	(0.205)	0.013	0.007
257	21.42	0.07	0.020	(0.204)	0.013	0.007
258	21.50	0.07	0.020	(0.203)	0.013	0.007
259	21.58	0.10	0.030	(0.203)	0.019	0.011
260	21.67	0.10	0.030	(0.202)	0.019	0.011
261	21.75	0.10	0.030	(0.201)	0.019	0.011
262	21.83	0.07	0.020	(0.200)	0.013	0.007
263	21.92	0.07	0.020	(0.200)	0.013	0.007
264	22.00	0.07	0.020	(0.199)	0.013	0.007
265	22.08	0.10	0.030	(0.198)	0.019	0.011
266	22.17	0.10	0.030	(0.198)	0.019	0.011
267	22.25	0.10	0.030	(0.197)	0.019	0.011

268	22.33	0.07	0.020	(0.196)	0.013	0.007
269	22.42	0.07	0.020	(0.196)	0.013	0.007
270	22.50	0.07	0.020	(0.195)	0.013	0.007
271	22.58	0.07	0.020	(0.195)	0.013	0.007
272	22.67	0.07	0.020	(0.194)	0.013	0.007
273	22.75	0.07	0.020	(0.194)	0.013	0.007
274	22.83	0.07	0.020	(0.193)	0.013	0.007
275	22.92	0.07	0.020	(0.193)	0.013	0.007
276	23.00	0.07	0.020	(0.192)	0.013	0.007
277	23.08	0.07	0.020	(0.192)	0.013	0.007
278	23.17	0.07	0.020	(0.191)	0.013	0.007
279	23.25	0.07	0.020	(0.191)	0.013	0.007
280	23.33	0.07	0.020	(0.190)	0.013	0.007
281	23.42	0.07	0.020	(0.190)	0.013	0.007
282	23.50	0.07	0.020	(0.190)	0.013	0.007
283	23.58	0.07	0.020	(0.189)	0.013	0.007
284	23.67	0.07	0.020	(0.189)	0.013	0.007
285	23.75	0.07	0.020	(0.189)	0.013	0.007
286	23.83	0.07	0.020	(0.189)	0.013	0.007
287	23.92	0.07	0.020	(0.189)	0.013	0.007
288	24.00	0.07	0.020	(0.188)	0.013	0.007

(Loss Rate Not Used)

Sum = 100.0 Sum = 11.1

Flood volume = Effective rainfall 0.92(In)
times area 50.4(Ac.)/[(In)/(Ft.)] = 3.9(Ac.Ft)
Total soil loss = 1.57(In)
Total soil loss = 6.614(Ac.Ft)
Total rainfall = 2.50(In)
Flood volume = 169213.9 Cubic Feet
Total soil loss = 288121.0 Cubic Feet

Peak flow rate of this hydrograph = 6.386(CFS)

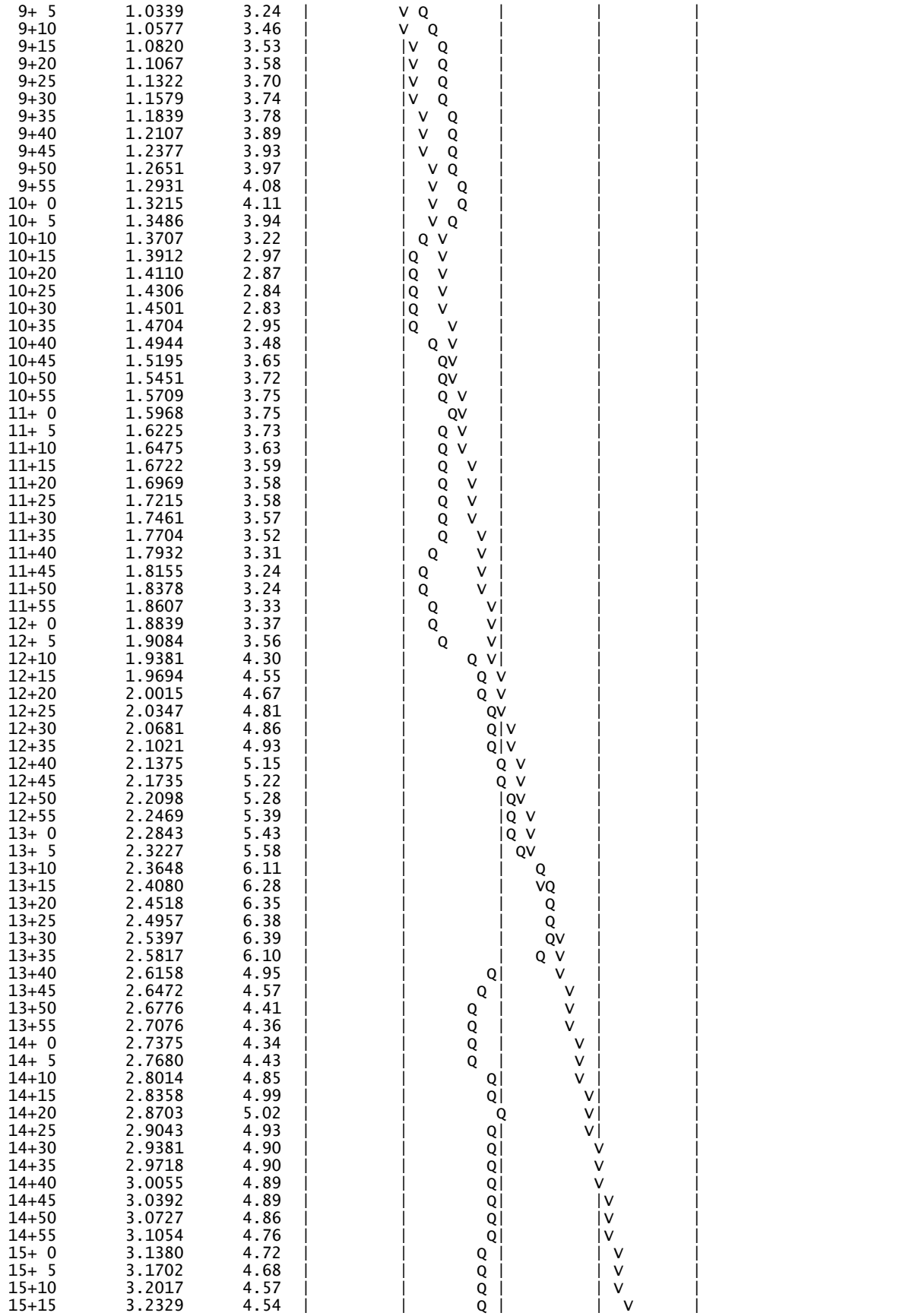
++

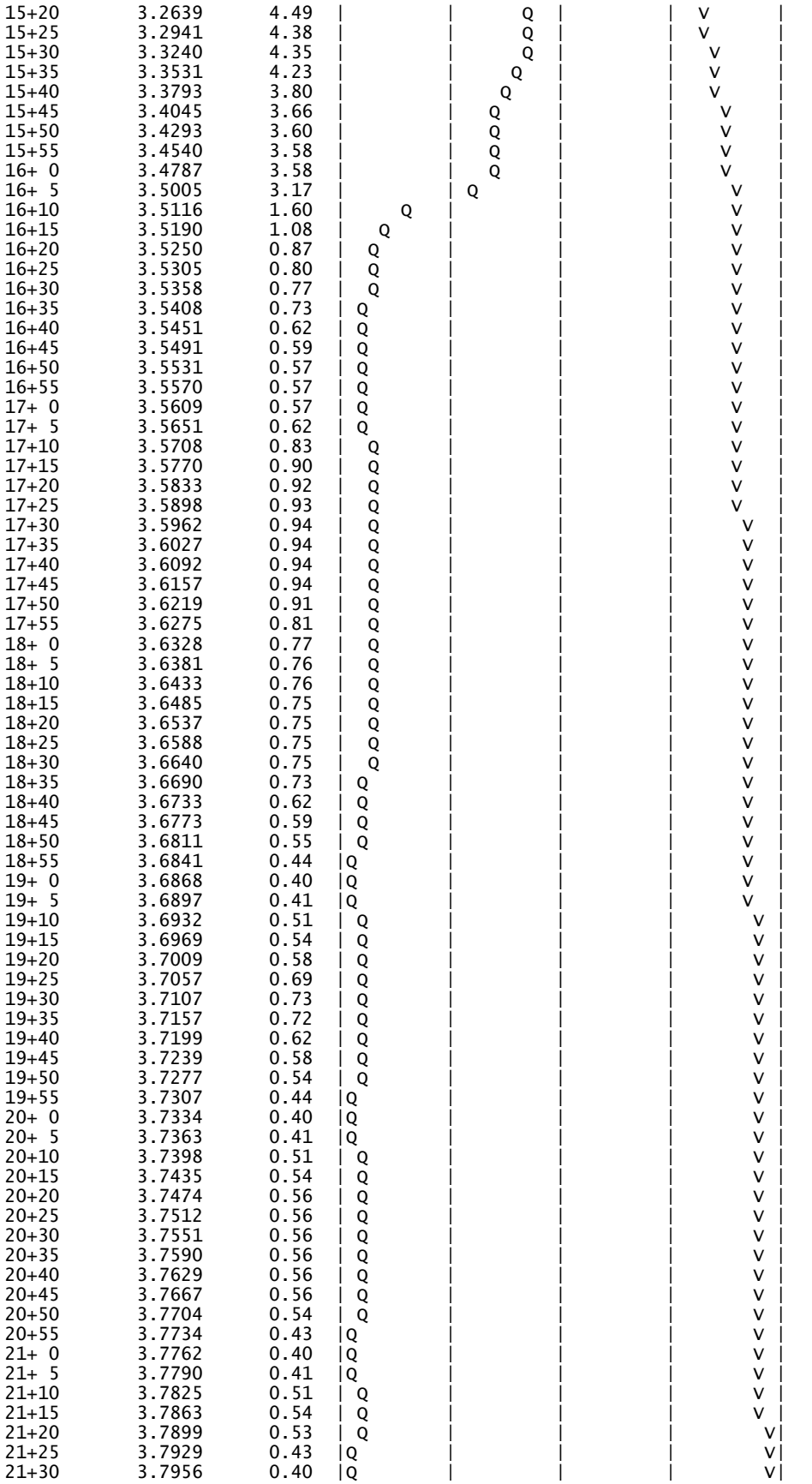
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.05	Q	|	|	|	|
0+10	0.0022	0.26	VQ	|	|	|	|
0+15	0.0045	0.33	VQ	|	|	|	|
0+20	0.0071	0.39	VQ	|	|	|	|
0+25	0.0106	0.50	V Q	|	|	|	|
0+30	0.0143	0.54	V Q	|	|	|	|
0+35	0.0181	0.56	V Q	|	|	|	|
0+40	0.0220	0.56	V Q	|	|	|	|
0+45	0.0259	0.56	V Q	|	|	|	|
0+50	0.0299	0.59	V Q	|	|	|	|
0+55	0.0347	0.70	V Q	|	|	|	|
1+ 0	0.0397	0.73	V Q	|	|	|	|
1+ 5	0.0447	0.72	V Q	|	|	|	|
1+10	0.0489	0.62	V Q	|	|	|	|
1+15	0.0530	0.58	V Q	|	|	|	|
1+20	0.0569	0.57	V Q	|	|	|	|
1+25	0.0608	0.57	V Q	|	|	|	|
1+30	0.0647	0.57	V Q	|	|	|	|
1+35	0.0686	0.56	V Q	|	|	|	|
1+40	0.0725	0.56	V Q	|	|	|	|
1+45	0.0764	0.56	V Q	|	|	|	|
1+50	0.0804	0.59	V Q	|	|	|	|
1+55	0.0852	0.70	V Q	|	|	|	|
2+ 0	0.0902	0.73	V Q	|	|	|	|
2+ 5	0.0954	0.74	V Q	|	|	|	|
2+10	0.1005	0.75	|VQ	|	|	|	|
2+15	0.1057	0.75	|V Q	|	|	|	|
2+20	0.1109	0.75	|V Q	|	|	|	|
2+25	0.1161	0.75	|V Q	|	|	|	|
2+30	0.1212	0.75	|V Q	|	|	|	|
2+35	0.1266	0.78	|V Q	|	|	|	|
2+40	0.1327	0.88	|V Q	|	|	|	|
2+45	0.1390	0.92	|V Q	|	|	|	|

```
2+50       0.1454      0.93  |V Q      |         |         |         |
2+55       0.1519      0.94  |V Q      |         |         |         |
3+ 0       0.1583      0.94  |V Q      |         |         |         |
3+ 5       0.1648      0.94  |V Q      |         |         |         |
3+10       0.1713      0.94  |V Q      |         |         |         |
3+15       0.1778      0.94  |V Q      |         |         |         |
3+20       0.1842      0.94  |V Q      |         |         |         |
3+25       0.1907      0.94  |V Q      |         |         |         |
3+30       0.1972      0.94  | VQ      |         |         |         |
3+35       0.2037      0.94  | VQ      |         |         |         |
3+40       0.2101      0.94  | VQ      |         |         |         |
3+45       0.2166      0.94  | VQ      |         |         |         |
3+50       0.2233      0.97  | VQ      |         |         |         |
3+55       0.2307      1.07  | V Q     |         |         |         |
4+ 0       0.2383      1.11  | V Q     |         |         |         |
4+ 5       0.2460      1.12  | V Q     |         |         |         |
4+10       0.2537      1.13  | V Q     |         |         |         |
4+15       0.2615      1.13  | V Q     |         |         |         |
4+20       0.2694      1.15  | V Q     |         |         |         |
4+25       0.2781      1.26  | V  Q    |         |         |         |
4+30       0.2870      1.29  | V  Q    |         |         |         |
4+35       0.2960      1.31  |  V Q    |         |         |         |
4+40       0.3051      1.31  |  V Q    |         |         |         |
4+45       0.3141      1.31  |  V Q    |         |         |         |
4+50       0.3234      1.34  |  V Q    |         |         |         |
4+55       0.3334      1.45  |  V Q    |         |         |         |
5+ 0       0.3436      1.48  |  V Q    |         |         |         |
5+ 5       0.3535      1.44  |  V Q    |         |         |         |
5+10       0.3620      1.24  |  VQ     |         |         |         |
5+15       0.3701      1.17  |  VQ     |         |         |         |
5+20       0.3782      1.17  |  VQ     |         |         |         |
5+25       0.3869      1.27  |  V Q    |         |         |         |
5+30       0.3958      1.30  |   VQ    |         |         |         |
5+35       0.4050      1.34  |   VQ    |         |         |         |
5+40       0.4149      1.44  |   VQ    |         |         |         |
5+45       0.4251      1.48  |   VQ    |         |         |         |
5+50       0.4354      1.50  |   VQ    |         |         |         |
5+55       0.4458      1.50  |   V Q   |         |         |         |
6+ 0       0.4561      1.50  |   V Q   |         |         |         |
6+ 5       0.4667      1.53  |   V Q   |         |         |         |
6+10       0.4779      1.64  |   V Q   |         |         |         |
6+15       0.4894      1.67  |    VQ   |         |         |         |
6+20       0.5010      1.68  |    VQ   |         |         |         |
6+25       0.5127      1.69  |    VQ   |         |         |         |
6+30       0.5243      1.69  |    VQ   |         |         |         |
6+35       0.5362      1.72  |    VQ   |         |         |         |
6+40       0.5487      1.82  |    V Q  |         |         |         |
6+45       0.5615      1.86  |    V Q  |         |         |         |
6+50       0.5744      1.87  |    V Q  |         |         |         |
6+55       0.5873      1.88  |     VQ  |         |         |         |
7+ 0       0.6003      1.88  |     VQ  |         |         |         |
7+ 5       0.6132      1.88  |     VQ  |         |         |         |
7+10       0.6262      1.88  |     VQ  |         |         |         |
7+15       0.6391      1.88  |     VQ  |         |         |         |
7+20       0.6522      1.91  |     VQ  |         |         |         |
7+25       0.6661      2.01  |     V Q |         |         |         |
7+30       0.6802      2.05  |      VQ |         |         |         |
7+35       0.6946      2.09  |      VQ |         |         |         |
7+40       0.7097      2.20  |      VQ |         |         |         |
7+45       0.7251      2.23  |      VQ |         |         |         |
7+50       0.7407      2.27  |      V Q|         |         |         |
7+55       0.7572      2.38  |      V Q|         |         |         |
8+ 0       0.7738      2.42  |      V Q|         |         |         |
8+ 5       0.7910      2.49  |       VQ|         |         |         |
8+10       0.8096      2.70  |       V Q         |         |         |
8+15       0.8287      2.78  |       V  |Q       |         |         |
8+20       0.8480      2.80  |       V  |Q       |         |         |
8+25       0.8674      2.81  |       V  |Q       |         |         |
8+30       0.8868      2.82  |        V |Q       |         |         |
8+35       0.9064      2.85  |        V |Q       |         |         |
8+40       0.9267      2.95  |        V |Q       |         |         |
8+45       0.9473      2.99  |        V |Q       |         |         |
8+50       0.9682      3.03  |        V|  Q      |         |         |
8+55       0.9898      3.14  |         V Q       |         |         |
9+ 0       1.0116      3.17  |         V Q       |         |         |
```





```
   21+35       3.7984      0.41  |Q        |         |         |        v|
   21+40       3.8019      0.51  | Q       |         |         |        v|
   21+45       3.8057      0.54  | Q       |         |         |        v|
   21+50       3.8093      0.53  | Q       |         |         |        v|
   21+55       3.8123      0.43  |Q        |         |         |        v|
   22+ 0       3.8150      0.40  |Q        |         |         |        v|
   22+ 5       3.8178      0.41  |Q        |         |         |        v|
   22+10       3.8214      0.51  | Q       |         |         |        v|
   22+15       3.8251      0.54  | Q       |         |         |        v|
   22+20       3.8288      0.53  | Q       |         |         |        v|
   22+25       3.8317      0.43  |Q        |         |         |        v|
   22+30       3.8344      0.40  |Q        |         |         |        v|
   22+35       3.8371      0.38  |Q        |         |         |        v|
   22+40       3.8397      0.38  |Q        |         |         |        v|
   22+45       3.8423      0.38  |Q        |         |         |        v|
   22+50       3.8449      0.38  |Q        |         |         |        v|
   22+55       3.8475      0.38  |Q        |         |         |        v|
   23+ 0       3.8501      0.38  |Q        |         |         |        v|
   23+ 5       3.8527      0.38  |Q        |         |         |        v|
   23+10       3.8552      0.38  |Q        |         |         |        v|
   23+15       3.8578      0.38  |Q        |         |         |        v|
   23+20       3.8604      0.38  |Q        |         |         |        v|
   23+25       3.8630      0.38  |Q        |         |         |        v|
   23+30       3.8656      0.38  |Q        |         |         |        v|
   23+35       3.8682      0.38  |Q        |         |         |        v|
   23+40       3.8708      0.38  |Q        |         |         |        v|
   23+45       3.8734      0.38  |Q        |         |         |        v|
   23+50       3.8760      0.38  |Q        |         |         |        v|
   23+55       3.8786      0.38  |Q        |         |         |        v|
   24+ 0       3.8811      0.38  |Q        |         |         |        v|
   24+ 5       3.8834      0.32  |Q        |         |         |        v|
   24+10       3.8841      0.11  Q         |         |         |        v|
   24+15       3.8844      0.04  Q         |         |         |        v|
   24+20       3.8846      0.02  Q         |         |         |        v|
   24+25       3.8846      0.01  Q         |         |         |        v|
   24+30       3.8846      0.00  Q         |         |         |        v|
   24+35       3.8846      0.00  Q         |         |         |        v|
-------------------------------------------------------------------------
```

EXISTING CONDITION
5-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX5YRB15.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	0.55	27.72

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	1.25	63.00

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.714(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.714(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
72.1  53.5      0.536     0.330        0.377       1.000      0.377
                                                  Sum (F) =   0.377
Area averaged mean soil loss (F) (In/Hr) =  0.377
Minimum soil loss rate ((In/Hr)) =  0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.630
------------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5300
------------------------------------------------------------------------

              U n i t  H y d r o g r a p h
                     FOOTHILL S-Curve
------------------------------------------------------------------------
              Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %           (CFS)
------------------------------------------------------------------------
    1   0.083         99.192         14.132             7.178
    2   0.167        198.384         55.642            28.263
    3   0.250        297.576         18.582             9.439
    4   0.333        396.768          7.530             3.825
    5   0.417        495.961          2.548             1.294
    6   0.500        595.153          0.859             0.436
    7   0.583        694.345          0.565             0.287
    8   0.667        793.537          0.141             0.072
                              Sum = 100.000   Sum=      50.794
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

 Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
      (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
  1   0.08     3.40      0.291       (  0.377)       0.183        0.108
  2   0.17     4.70      0.402       (  0.377)       0.254        0.149
  3   0.25     4.70      0.402       (  0.377)       0.254        0.149
  4   0.33     5.10      0.437       (  0.377)       0.275        0.162
  5   0.42     5.80      0.497       (  0.377)       0.313        0.184
  6   0.50     5.90      0.505       (  0.377)       0.318        0.187
  7   0.58     7.10      0.608          0.377    (  0.383)        0.231
  8   0.67     8.70      0.745          0.377    (  0.469)        0.368
  9   0.75    13.20      1.130          0.377    (  0.712)        0.754
 10   0.83    29.70      2.543          0.377    (  1.602)        2.167
 11   0.92     7.70      0.659          0.377    (  0.415)        0.283
 12   1.00     4.00      0.343       (  0.377)       0.216        0.127
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     4.9
      Flood volume = Effective rainfall      0.41(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =       1.7(Ac.Ft)
      Total soil loss =      0.31(In)
      Total soil loss =     1.294(Ac.Ft)
      Total rainfall =      0.71(In)
      Flood volume =       74194.0 Cubic Feet
      Total soil loss =       56366.2 Cubic Feet
      ------------------------------------------------------------------
       Peak flow rate of this hydrograph =     72.262(CFS)
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                         1 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.0      40.0      60.0      80.0
 ------------------------------------------------------------------------
   0+ 5       0.0053      0.77  Q         |         |         |         |
   0+10       0.0337      4.12  V Q       |         |         |         |
   0+15       0.0770      6.30  |V Q      |         |         |         |
   0+20       0.1266      7.19  | VQ      |         |         |         |
   0+25       0.1817      8.01  |   Q     |         |         |         |
   0+30       0.2428      8.88  |   QV    |         |         |         |
   0+35       0.3089      9.59  |   Q  V  |         |         |         |
```

```
    0+40       0.3913     11.97  |    Q   V|         |         |         |
    0+45       0.5227     19.08  |         Q| V       |         |         |
    0+50       0.8093     41.61  |          |        VQ         |         |
    0+55       1.3070     72.26  |          |          |        V     Q    |
    1+ 0       1.5335     32.89  |          |     Q    |         |     V    |
    1+ 5       1.6420     15.76  |       Q  |          |         |       V  |
    1+10       1.6801      5.53  | Q        |          |         |         V|
    1+15       1.6942      2.04  |Q         |          |         |         V|
    1+20       1.7008      0.96  Q          |          |         |         V|
    1+25       1.7028      0.29  Q          |          |         |         V|
    1+30       1.7032      0.06  Q          |          |         |         V|
    1+35       1.7033      0.01  Q          |          |         |          V
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX5YRB35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	0.95	47.88

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.05	103.32

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.208(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.207(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	53.5	0.536	0.330	0.377	1.000	0.377
					Sum (F) =	0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.188	(0.377)	0.119	0.070
2	0.17	1.30	0.188	(0.377)	0.119	0.070
3	0.25	1.10	0.159	(0.377)	0.100	0.059
4	0.33	1.50	0.217	(0.377)	0.137	0.080
5	0.42	1.50	0.217	(0.377)	0.137	0.080
6	0.50	1.80	0.261	(0.377)	0.164	0.096
7	0.58	1.50	0.217	(0.377)	0.137	0.080
8	0.67	1.80	0.261	(0.377)	0.164	0.096
9	0.75	1.80	0.261	(0.377)	0.164	0.096
10	0.83	1.50	0.217	(0.377)	0.137	0.080
11	0.92	1.60	0.232	(0.377)	0.146	0.086
12	1.00	1.80	0.261	(0.377)	0.164	0.096
13	1.08	2.20	0.319	(0.377)	0.201	0.118
14	1.17	2.20	0.319	(0.377)	0.201	0.118
15	1.25	2.20	0.319	(0.377)	0.201	0.118
16	1.33	2.00	0.290	(0.377)	0.183	0.107
17	1.42	2.60	0.377	(0.377)	0.237	0.139
18	1.50	2.70	0.391	(0.377)	0.246	0.145
19	1.58	2.40	0.348	(0.377)	0.219	0.129
20	1.67	2.70	0.391	(0.377)	0.246	0.145
21	1.75	3.30	0.478	(0.377)	0.301	0.177
22	1.83	3.10	0.449	(0.377)	0.283	0.166
23	1.92	2.90	0.420	(0.377)	0.265	0.155
24	2.00	3.00	0.435	(0.377)	0.274	0.161
25	2.08	3.10	0.449	(0.377)	0.283	0.166
26	2.17	4.20	0.609	0.377	(0.383)	0.232
27	2.25	5.00	0.724	0.377	(0.456)	0.348
28	2.33	3.50	0.507	(0.377)	0.319	0.188
29	2.42	6.80	0.985	0.377	(0.621)	0.608
30	2.50	7.30	1.058	0.377	(0.666)	0.681
31	2.58	8.20	1.188	0.377	(0.748)	0.811
32	2.67	5.90	0.855	0.377	(0.539)	0.478
33	2.75	2.00	0.290	(0.377)	0.183	0.107
34	2.83	1.80	0.261	(0.377)	0.164	0.096
35	2.92	1.80	0.261	(0.377)	0.164	0.096
36	3.00	0.60	0.087	(0.377)	0.055	0.032
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	6.5

Flood volume = Effective rainfall 0.54(In)
times area 50.4(Ac.)/[(In)/(Ft.)] = 2.3(Ac.Ft)
Total soil loss = 0.66(In)
Total soil loss = 2.791(Ac.Ft)

Total rainfall = 1.21(In)
Flood volume = 99302.0 Cubic Feet
Total soil loss = 121590.7 Cubic Feet

Peak flow rate of this hydrograph = 35.601(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 10.0 20.0 30.0 40.0
0+ 5	0.0034	0.50	Q
0+10	0.0205	2.47	V Q
0+15	0.0415	3.05	V Q
0+20	0.0633	3.17	V Q
0+25	0.0892	3.77	V Q
0+30	0.1173	4.07	V Q
0+35	0.1483	4.50	V Q
0+40	0.1782	4.34	VQ
0+45	0.2106	4.71	VQ
0+50	0.2431	4.71	Q
0+55	0.2730	4.35	Q
1+ 0	0.3036	4.44	QV
1+ 5	0.3373	4.89	QV
1+10	0.3759	5.60	QV
1+15	0.4161	5.85	Q V
1+20	0.4565	5.86	Q V
1+25	0.4966	5.82	Q V
1+30	0.5426	6.68	Q V
1+35	0.5907	6.99	Q V
1+40	0.6376	6.81	Q V
1+45	0.6886	7.40	Q V
1+50	0.7461	8.34	Q V
1+55	0.8034	8.32	Q V
2+ 0	0.8591	8.09	Q V
2+ 5	0.9155	8.18	Q V
2+10	0.9762	8.82	Q V
2+15	1.0559	11.57	Q V
2+20	1.1546	14.34	Q V
2+25	1.2523	14.19	Q V
2+30	1.4288	25.62	Q
2+35	1.6502	32.15	V Q
2+40	1.8954	35.60	V Q
2+45	2.0712	25.54	Q V
2+50	2.1578	12.57	Q V
2+55	2.2115	7.80	Q V
3+ 0	2.2493	5.49	Q V
3+ 5	2.2688	2.82	Q V
3+10	2.2759	1.04	Q V
3+15	2.2784	0.36	Q V
3+20	2.2792	0.12	Q V
3+25	2.2795	0.05	Q V
3+30	2.2796	0.02	Q V
3+35	2.2797	0.00	Q V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX5YRB65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	1.40	70.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	3.00	151.20

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.775(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.774(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	53.5	0.536	0.330	0.377	1.000	0.377
					Sum (F) =	0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

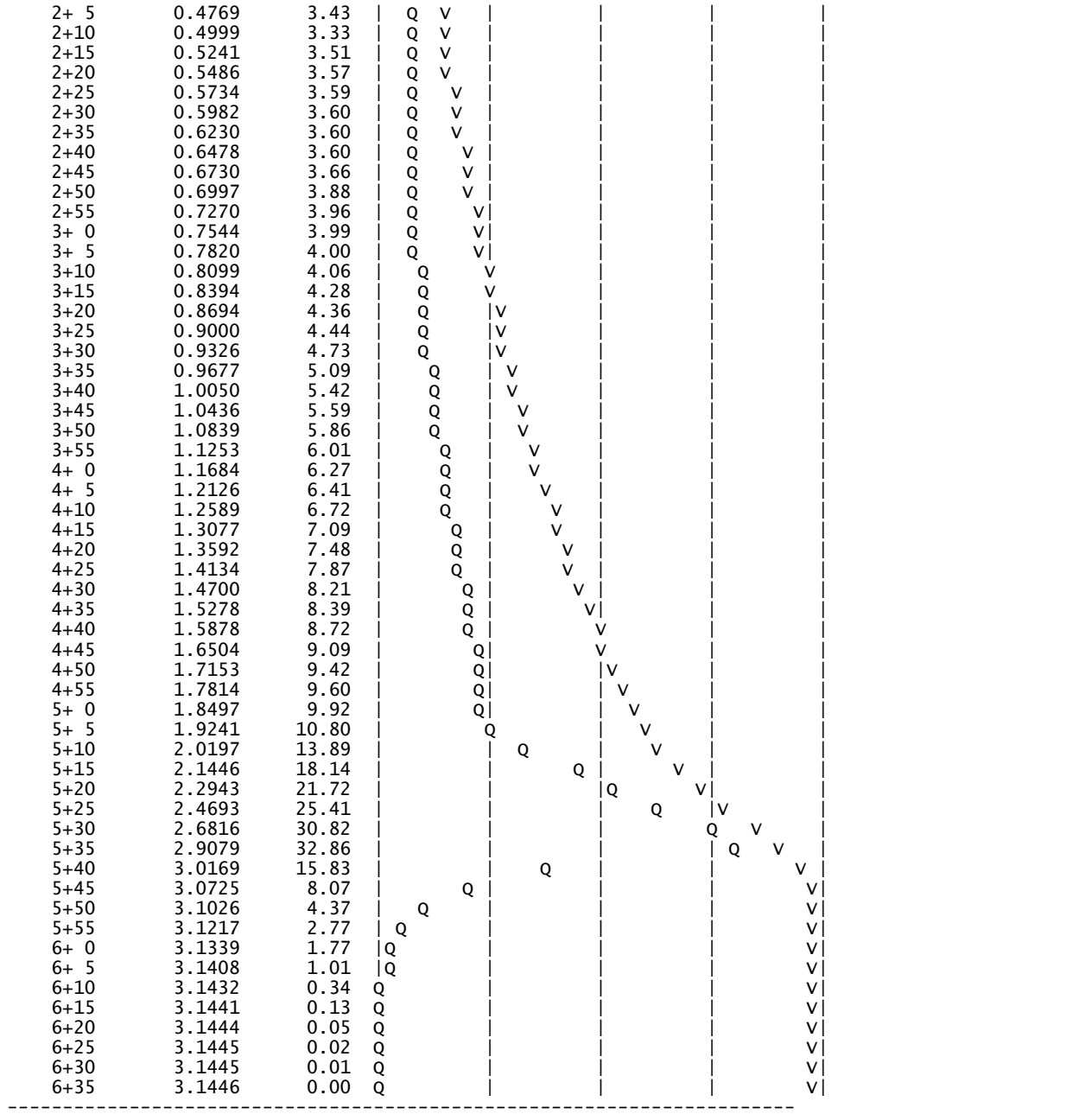
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.106	(0.377)	0.067	0.039
2	0.17	0.60	0.128	(0.377)	0.080	0.047
3	0.25	0.60	0.128	(0.377)	0.080	0.047
4	0.33	0.60	0.128	(0.377)	0.080	0.047
5	0.42	0.60	0.128	(0.377)	0.080	0.047
6	0.50	0.70	0.149	(0.377)	0.094	0.055
7	0.58	0.70	0.149	(0.377)	0.094	0.055
8	0.67	0.70	0.149	(0.377)	0.094	0.055
9	0.75	0.70	0.149	(0.377)	0.094	0.055
10	0.83	0.70	0.149	(0.377)	0.094	0.055
11	0.92	0.70	0.149	(0.377)	0.094	0.055
12	1.00	0.80	0.170	(0.377)	0.107	0.063
13	1.08	0.80	0.170	(0.377)	0.107	0.063
14	1.17	0.80	0.170	(0.377)	0.107	0.063
15	1.25	0.80	0.170	(0.377)	0.107	0.063
16	1.33	0.80	0.170	(0.377)	0.107	0.063
17	1.42	0.80	0.170	(0.377)	0.107	0.063
18	1.50	0.80	0.170	(0.377)	0.107	0.063
19	1.58	0.80	0.170	(0.377)	0.107	0.063
20	1.67	0.80	0.170	(0.377)	0.107	0.063
21	1.75	0.80	0.170	(0.377)	0.107	0.063
22	1.83	0.80	0.170	(0.377)	0.107	0.063
23	1.92	0.80	0.170	(0.377)	0.107	0.063
24	2.00	0.90	0.192	(0.377)	0.121	0.071
25	2.08	0.80	0.170	(0.377)	0.107	0.063
26	2.17	0.90	0.192	(0.377)	0.121	0.071
27	2.25	0.90	0.192	(0.377)	0.121	0.071
28	2.33	0.90	0.192	(0.377)	0.121	0.071
29	2.42	0.90	0.192	(0.377)	0.121	0.071
30	2.50	0.90	0.192	(0.377)	0.121	0.071
31	2.58	0.90	0.192	(0.377)	0.121	0.071
32	2.67	0.90	0.192	(0.377)	0.121	0.071
33	2.75	1.00	0.213	(0.377)	0.134	0.079
34	2.83	1.00	0.213	(0.377)	0.134	0.079
35	2.92	1.00	0.213	(0.377)	0.134	0.079
36	3.00	1.00	0.213	(0.377)	0.134	0.079
37	3.08	1.00	0.213	(0.377)	0.134	0.079
38	3.17	1.10	0.234	(0.377)	0.148	0.087
39	3.25	1.10	0.234	(0.377)	0.148	0.087
40	3.33	1.10	0.234	(0.377)	0.148	0.087
41	3.42	1.20	0.256	(0.377)	0.161	0.095
42	3.50	1.30	0.277	(0.377)	0.174	0.102

```
43   3.58     1.40      0.298       (  0.377)       0.188        0.110
44   3.67     1.40      0.298       (  0.377)       0.188        0.110
45   3.75     1.50      0.319       (  0.377)       0.201        0.118
46   3.83     1.50      0.319       (  0.377)       0.201        0.118
47   3.92     1.60      0.341       (  0.377)       0.215        0.126
48   4.00     1.60      0.341       (  0.377)       0.215        0.126
49   4.08     1.70      0.362       (  0.377)       0.228        0.134
50   4.17     1.80      0.383       (  0.377)       0.241        0.142
51   4.25     1.90      0.405       (  0.377)       0.255        0.150
52   4.33     2.00      0.426       (  0.377)       0.268        0.158
53   4.42     2.10      0.447       (  0.377)       0.282        0.165
54   4.50     2.10      0.447       (  0.377)       0.282        0.165
55   4.58     2.20      0.468       (  0.377)       0.295        0.173
56   4.67     2.30      0.490       (  0.377)       0.309        0.181
57   4.75     2.40      0.511       (  0.377)       0.322        0.189
58   4.83     2.40      0.511       (  0.377)       0.322        0.189
59   4.92     2.50      0.532       (  0.377)       0.335        0.197
60   5.00     2.60      0.554       (  0.377)       0.349        0.205
61   5.08     3.10      0.660          0.377    (  0.416)       0.283
62   5.17     3.60      0.767          0.377    (  0.483)       0.390
63   5.25     3.90      0.830          0.377    (  0.523)       0.454
64   5.33     4.20      0.894          0.377    (  0.563)       0.517
65   5.42     4.70      1.001          0.377    (  0.630)       0.624
66   5.50     5.60      1.192          0.377    (  0.751)       0.816
67   5.58     1.90      0.405       (  0.377)       0.255        0.150
68   5.67     0.90      0.192       (  0.377)       0.121        0.071
69   5.75     0.60      0.128       (  0.377)       0.080        0.047
70   5.83     0.50      0.106       (  0.377)       0.067        0.039
71   5.92     0.30      0.064       (  0.377)       0.040        0.024
72   6.00     0.20      0.043       (  0.377)       0.027        0.016
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     9.0
      Flood volume = Effective rainfall      0.75(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =       3.1(Ac.Ft)
      Total soil loss =      1.03(In)
      Total soil loss =     4.308(Ac.Ft)
      Total rainfall =      1.77(In)
      Flood volume =      136976.8 Cubic Feet
      Total soil loss =      187662.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     32.862(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        10.0       20.0       30.0       40.0
-------------------------------------------------------------------------
  0+ 5       0.0019      0.28  Q          |          |          |          |
  0+10       0.0120      1.45  VQ         |          |          |          |
  0+15       0.0261      2.05  V Q        |          |          |          |
  0+20       0.0417      2.27  V Q        |          |          |          |
  0+25       0.0579      2.35  V Q        |          |          |          |
  0+30       0.0747      2.44  V Q        |          |          |          |
  0+35       0.0932      2.68  |VQ        |          |          |          |
  0+40       0.1121      2.76  |VQ        |          |          |          |
  0+45       0.1313      2.79  |VQ        |          |          |          |
  0+50       0.1506      2.80  |VQ        |          |          |          |
  0+55       0.1699      2.80  | Q        |          |          |          |
  1+ 0       0.1896      2.86  | Q        |          |          |          |
  1+ 5       0.2108      3.08  | VQ       |          |          |          |
  1+10       0.2325      3.16  | VQ       |          |          |          |
  1+15       0.2545      3.19  |  Q       |          |          |          |
  1+20       0.2765      3.20  |  Q       |          |          |          |
  1+25       0.2985      3.20  |  Q       |          |          |          |
  1+30       0.3206      3.20  |  QV      |          |          |          |
  1+35       0.3426      3.20  |  QV      |          |          |          |
  1+40       0.3647      3.20  |  QV      |          |          |          |
  1+45       0.3868      3.20  |  QV      |          |          |          |
  1+50       0.4088      3.20  |  Q V     |          |          |          |
  1+55       0.4309      3.20  |  Q V     |          |          |          |
  2+ 0       0.4533      3.26  |  Q V     |          |          |          |
```



U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX5YRB245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.50	126.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	6.50	327.60

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 3.437(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.437(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	53.5	0.536	0.330	0.377	1.000	0.377
					Sum (F) =	0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	(0.668)	0.017	0.010
2	0.17	0.07	0.027	(0.666)	0.017	0.010
3	0.25	0.07	0.027	(0.663)	0.017	0.010
4	0.33	0.10	0.041	(0.660)	0.026	0.015
5	0.42	0.10	0.041	(0.658)	0.026	0.015
6	0.50	0.10	0.041	(0.655)	0.026	0.015
7	0.58	0.10	0.041	(0.653)	0.026	0.015
8	0.67	0.10	0.041	(0.650)	0.026	0.015
9	0.75	0.10	0.041	(0.648)	0.026	0.015
10	0.83	0.13	0.055	(0.645)	0.035	0.020
11	0.92	0.13	0.055	(0.642)	0.035	0.020
12	1.00	0.13	0.055	(0.640)	0.035	0.020
13	1.08	0.10	0.041	(0.637)	0.026	0.015
14	1.17	0.10	0.041	(0.635)	0.026	0.015
15	1.25	0.10	0.041	(0.632)	0.026	0.015
16	1.33	0.10	0.041	(0.630)	0.026	0.015
17	1.42	0.10	0.041	(0.627)	0.026	0.015
18	1.50	0.10	0.041	(0.625)	0.026	0.015
19	1.58	0.10	0.041	(0.622)	0.026	0.015
20	1.67	0.10	0.041	(0.620)	0.026	0.015
21	1.75	0.10	0.041	(0.617)	0.026	0.015
22	1.83	0.13	0.055	(0.615)	0.035	0.020
23	1.92	0.13	0.055	(0.612)	0.035	0.020
24	2.00	0.13	0.055	(0.610)	0.035	0.020
25	2.08	0.13	0.055	(0.607)	0.035	0.020
26	2.17	0.13	0.055	(0.605)	0.035	0.020
27	2.25	0.13	0.055	(0.603)	0.035	0.020
28	2.33	0.13	0.055	(0.600)	0.035	0.020
29	2.42	0.13	0.055	(0.598)	0.035	0.020
30	2.50	0.13	0.055	(0.595)	0.035	0.020
31	2.58	0.17	0.069	(0.593)	0.043	0.025
32	2.67	0.17	0.069	(0.590)	0.043	0.025
33	2.75	0.17	0.069	(0.588)	0.043	0.025
34	2.83	0.17	0.069	(0.586)	0.043	0.025
35	2.92	0.17	0.069	(0.583)	0.043	0.025
36	3.00	0.17	0.069	(0.581)	0.043	0.025
37	3.08	0.17	0.069	(0.578)	0.043	0.025
38	3.17	0.17	0.069	(0.576)	0.043	0.025
39	3.25	0.17	0.069	(0.573)	0.043	0.025
40	3.33	0.17	0.069	(0.571)	0.043	0.025
41	3.42	0.17	0.069	(0.569)	0.043	0.025
42	3.50	0.17	0.069	(0.566)	0.043	0.025

43	3.58	0.17	0.069	(0.564)	0.043	0.025
44	3.67	0.17	0.069	(0.562)	0.043	0.025
45	3.75	0.17	0.069	(0.559)	0.043	0.025
46	3.83	0.20	0.082	(0.557)	0.052	0.031
47	3.92	0.20	0.082	(0.555)	0.052	0.031
48	4.00	0.20	0.082	(0.552)	0.052	0.031
49	4.08	0.20	0.082	(0.550)	0.052	0.031
50	4.17	0.20	0.082	(0.547)	0.052	0.031
51	4.25	0.20	0.082	(0.545)	0.052	0.031
52	4.33	0.23	0.096	(0.543)	0.061	0.036
53	4.42	0.23	0.096	(0.541)	0.061	0.036
54	4.50	0.23	0.096	(0.538)	0.061	0.036
55	4.58	0.23	0.096	(0.536)	0.061	0.036
56	4.67	0.23	0.096	(0.534)	0.061	0.036
57	4.75	0.23	0.096	(0.531)	0.061	0.036
58	4.83	0.27	0.110	(0.529)	0.069	0.041
59	4.92	0.27	0.110	(0.527)	0.069	0.041
60	5.00	0.27	0.110	(0.524)	0.069	0.041
61	5.08	0.20	0.082	(0.522)	0.052	0.031
62	5.17	0.20	0.082	(0.520)	0.052	0.031
63	5.25	0.20	0.082	(0.518)	0.052	0.031
64	5.33	0.23	0.096	(0.515)	0.061	0.036
65	5.42	0.23	0.096	(0.513)	0.061	0.036
66	5.50	0.23	0.096	(0.511)	0.061	0.036
67	5.58	0.27	0.110	(0.509)	0.069	0.041
68	5.67	0.27	0.110	(0.506)	0.069	0.041
69	5.75	0.27	0.110	(0.504)	0.069	0.041
70	5.83	0.27	0.110	(0.502)	0.069	0.041
71	5.92	0.27	0.110	(0.500)	0.069	0.041
72	6.00	0.27	0.110	(0.497)	0.069	0.041
73	6.08	0.30	0.124	(0.495)	0.078	0.046
74	6.17	0.30	0.124	(0.493)	0.078	0.046
75	6.25	0.30	0.124	(0.491)	0.078	0.046
76	6.33	0.30	0.124	(0.489)	0.078	0.046
77	6.42	0.30	0.124	(0.486)	0.078	0.046
78	6.50	0.30	0.124	(0.484)	0.078	0.046
79	6.58	0.33	0.137	(0.482)	0.087	0.051
80	6.67	0.33	0.137	(0.480)	0.087	0.051
81	6.75	0.33	0.137	(0.478)	0.087	0.051
82	6.83	0.33	0.137	(0.476)	0.087	0.051
83	6.92	0.33	0.137	(0.473)	0.087	0.051
84	7.00	0.33	0.137	(0.471)	0.087	0.051
85	7.08	0.33	0.137	(0.469)	0.087	0.051
86	7.17	0.33	0.137	(0.467)	0.087	0.051
87	7.25	0.33	0.137	(0.465)	0.087	0.051
88	7.33	0.37	0.151	(0.463)	0.095	0.056
89	7.42	0.37	0.151	(0.461)	0.095	0.056
90	7.50	0.37	0.151	(0.459)	0.095	0.056
91	7.58	0.40	0.165	(0.456)	0.104	0.061
92	7.67	0.40	0.165	(0.454)	0.104	0.061
93	7.75	0.40	0.165	(0.452)	0.104	0.061
94	7.83	0.43	0.179	(0.450)	0.113	0.066
95	7.92	0.43	0.179	(0.448)	0.113	0.066
96	8.00	0.43	0.179	(0.446)	0.113	0.066
97	8.08	0.50	0.206	(0.444)	0.130	0.076
98	8.17	0.50	0.206	(0.442)	0.130	0.076
99	8.25	0.50	0.206	(0.440)	0.130	0.076
100	8.33	0.50	0.206	(0.438)	0.130	0.076
101	8.42	0.50	0.206	(0.436)	0.130	0.076
102	8.50	0.50	0.206	(0.434)	0.130	0.076
103	8.58	0.53	0.220	(0.432)	0.139	0.081
104	8.67	0.53	0.220	(0.430)	0.139	0.081
105	8.75	0.53	0.220	(0.428)	0.139	0.081
106	8.83	0.57	0.234	(0.426)	0.147	0.086
107	8.92	0.57	0.234	(0.424)	0.147	0.086
108	9.00	0.57	0.234	(0.422)	0.147	0.086
109	9.08	0.63	0.261	(0.420)	0.165	0.097
110	9.17	0.63	0.261	(0.418)	0.165	0.097
111	9.25	0.63	0.261	(0.416)	0.165	0.097
112	9.33	0.67	0.275	(0.414)	0.173	0.102
113	9.42	0.67	0.275	(0.412)	0.173	0.102
114	9.50	0.67	0.275	(0.410)	0.173	0.102
115	9.58	0.70	0.289	(0.408)	0.182	0.107
116	9.67	0.70	0.289	(0.406)	0.182	0.107
117	9.75	0.70	0.289	(0.404)	0.182	0.107

118	9.83	0.73	0.302	(0.402)	0.191	0.112
119	9.92	0.73	0.302	(0.400)	0.191	0.112
120	10.00	0.73	0.302	(0.398)	0.191	0.112
121	10.08	0.50	0.206	(0.396)	0.130	0.076
122	10.17	0.50	0.206	(0.394)	0.130	0.076
123	10.25	0.50	0.206	(0.392)	0.130	0.076
124	10.33	0.50	0.206	(0.390)	0.130	0.076
125	10.42	0.50	0.206	(0.388)	0.130	0.076
126	10.50	0.50	0.206	(0.387)	0.130	0.076
127	10.58	0.67	0.275	(0.385)	0.173	0.102
128	10.67	0.67	0.275	(0.383)	0.173	0.102
129	10.75	0.67	0.275	(0.381)	0.173	0.102
130	10.83	0.67	0.275	(0.379)	0.173	0.102
131	10.92	0.67	0.275	(0.377)	0.173	0.102
132	11.00	0.67	0.275	(0.375)	0.173	0.102
133	11.08	0.63	0.261	(0.373)	0.165	0.097
134	11.17	0.63	0.261	(0.372)	0.165	0.097
135	11.25	0.63	0.261	(0.370)	0.165	0.097
136	11.33	0.63	0.261	(0.368)	0.165	0.097
137	11.42	0.63	0.261	(0.366)	0.165	0.097
138	11.50	0.63	0.261	(0.364)	0.165	0.097
139	11.58	0.57	0.234	(0.363)	0.147	0.086
140	11.67	0.57	0.234	(0.361)	0.147	0.086
141	11.75	0.57	0.234	(0.359)	0.147	0.086
142	11.83	0.60	0.247	(0.357)	0.156	0.092
143	11.92	0.60	0.247	(0.355)	0.156	0.092
144	12.00	0.60	0.247	(0.354)	0.156	0.092
145	12.08	0.83	0.344	(0.352)	0.217	0.127
146	12.17	0.83	0.344	(0.350)	0.217	0.127
147	12.25	0.83	0.344	(0.348)	0.217	0.127
148	12.33	0.87	0.357	(0.347)	0.225	0.132
149	12.42	0.87	0.357	(0.345)	0.225	0.132
150	12.50	0.87	0.357	(0.343)	0.225	0.132
151	12.58	0.93	0.385	(0.341)	0.242	0.142
152	12.67	0.93	0.385	(0.340)	0.242	0.142
153	12.75	0.93	0.385	(0.338)	0.242	0.142
154	12.83	0.97	0.399	(0.336)	0.251	0.147
155	12.92	0.97	0.399	(0.335)	0.251	0.147
156	13.00	0.97	0.399	(0.333)	0.251	0.147
157	13.08	1.13	0.467	(0.331)	0.294	0.173
158	13.17	1.13	0.467	(0.329)	0.294	0.173
159	13.25	1.13	0.467	(0.328)	0.294	0.173
160	13.33	1.13	0.467	(0.326)	0.294	0.173
161	13.42	1.13	0.467	(0.324)	0.294	0.173
162	13.50	1.13	0.467	(0.323)	0.294	0.173
163	13.58	0.77	0.316	(0.321)	0.199	0.117
164	13.67	0.77	0.316	(0.320)	0.199	0.117
165	13.75	0.77	0.316	(0.318)	0.199	0.117
166	13.83	0.77	0.316	(0.316)	0.199	0.117
167	13.92	0.77	0.316	(0.315)	0.199	0.117
168	14.00	0.77	0.316	(0.313)	0.199	0.117
169	14.08	0.90	0.371	(0.311)	0.234	0.137
170	14.17	0.90	0.371	(0.310)	0.234	0.137
171	14.25	0.90	0.371	(0.308)	0.234	0.137
172	14.33	0.87	0.357	(0.307)	0.225	0.132
173	14.42	0.87	0.357	(0.305)	0.225	0.132
174	14.50	0.87	0.357	(0.304)	0.225	0.132
175	14.58	0.87	0.357	(0.302)	0.225	0.132
176	14.67	0.87	0.357	(0.300)	0.225	0.132
177	14.75	0.87	0.357	(0.299)	0.225	0.132
178	14.83	0.83	0.344	(0.297)	0.217	0.127
179	14.92	0.83	0.344	(0.296)	0.217	0.127
180	15.00	0.83	0.344	(0.294)	0.217	0.127
181	15.08	0.80	0.330	(0.293)	0.208	0.122
182	15.17	0.80	0.330	(0.291)	0.208	0.122
183	15.25	0.80	0.330	(0.290)	0.208	0.122
184	15.33	0.77	0.316	(0.288)	0.199	0.117
185	15.42	0.77	0.316	(0.287)	0.199	0.117
186	15.50	0.77	0.316	(0.285)	0.199	0.117
187	15.58	0.63	0.261	(0.284)	0.165	0.097
188	15.67	0.63	0.261	(0.282)	0.165	0.097
189	15.75	0.63	0.261	(0.281)	0.165	0.097
190	15.83	0.63	0.261	(0.280)	0.165	0.097
191	15.92	0.63	0.261	(0.278)	0.165	0.097
192	16.00	0.63	0.261	(0.277)	0.165	0.097

193	16.08	0.13	0.055	(0.275)	0.035	0.020
194	16.17	0.13	0.055	(0.274)	0.035	0.020
195	16.25	0.13	0.055	(0.273)	0.035	0.020
196	16.33	0.13	0.055	(0.271)	0.035	0.020
197	16.42	0.13	0.055	(0.270)	0.035	0.020
198	16.50	0.13	0.055	(0.268)	0.035	0.020
199	16.58	0.10	0.041	(0.267)	0.026	0.015
200	16.67	0.10	0.041	(0.266)	0.026	0.015
201	16.75	0.10	0.041	(0.264)	0.026	0.015
202	16.83	0.10	0.041	(0.263)	0.026	0.015
203	16.92	0.10	0.041	(0.262)	0.026	0.015
204	17.00	0.10	0.041	(0.260)	0.026	0.015
205	17.08	0.17	0.069	(0.259)	0.043	0.025
206	17.17	0.17	0.069	(0.258)	0.043	0.025
207	17.25	0.17	0.069	(0.256)	0.043	0.025
208	17.33	0.17	0.069	(0.255)	0.043	0.025
209	17.42	0.17	0.069	(0.254)	0.043	0.025
210	17.50	0.17	0.069	(0.253)	0.043	0.025
211	17.58	0.17	0.069	(0.251)	0.043	0.025
212	17.67	0.17	0.069	(0.250)	0.043	0.025
213	17.75	0.17	0.069	(0.249)	0.043	0.025
214	17.83	0.13	0.055	(0.248)	0.035	0.020
215	17.92	0.13	0.055	(0.246)	0.035	0.020
216	18.00	0.13	0.055	(0.245)	0.035	0.020
217	18.08	0.13	0.055	(0.244)	0.035	0.020
218	18.17	0.13	0.055	(0.243)	0.035	0.020
219	18.25	0.13	0.055	(0.242)	0.035	0.020
220	18.33	0.13	0.055	(0.240)	0.035	0.020
221	18.42	0.13	0.055	(0.239)	0.035	0.020
222	18.50	0.13	0.055	(0.238)	0.035	0.020
223	18.58	0.10	0.041	(0.237)	0.026	0.015
224	18.67	0.10	0.041	(0.236)	0.026	0.015
225	18.75	0.10	0.041	(0.235)	0.026	0.015
226	18.83	0.07	0.027	(0.233)	0.017	0.010
227	18.92	0.07	0.027	(0.232)	0.017	0.010
228	19.00	0.07	0.027	(0.231)	0.017	0.010
229	19.08	0.10	0.041	(0.230)	0.026	0.015
230	19.17	0.10	0.041	(0.229)	0.026	0.015
231	19.25	0.10	0.041	(0.228)	0.026	0.015
232	19.33	0.13	0.055	(0.227)	0.035	0.020
233	19.42	0.13	0.055	(0.226)	0.035	0.020
234	19.50	0.13	0.055	(0.225)	0.035	0.020
235	19.58	0.10	0.041	(0.224)	0.026	0.015
236	19.67	0.10	0.041	(0.223)	0.026	0.015
237	19.75	0.10	0.041	(0.222)	0.026	0.015
238	19.83	0.07	0.027	(0.221)	0.017	0.010
239	19.92	0.07	0.027	(0.220)	0.017	0.010
240	20.00	0.07	0.027	(0.219)	0.017	0.010
241	20.08	0.10	0.041	(0.218)	0.026	0.015
242	20.17	0.10	0.041	(0.217)	0.026	0.015
243	20.25	0.10	0.041	(0.216)	0.026	0.015
244	20.33	0.10	0.041	(0.215)	0.026	0.015
245	20.42	0.10	0.041	(0.214)	0.026	0.015
246	20.50	0.10	0.041	(0.213)	0.026	0.015
247	20.58	0.10	0.041	(0.212)	0.026	0.015
248	20.67	0.10	0.041	(0.211)	0.026	0.015
249	20.75	0.10	0.041	(0.211)	0.026	0.015
250	20.83	0.07	0.027	(0.210)	0.017	0.010
251	20.92	0.07	0.027	(0.209)	0.017	0.010
252	21.00	0.07	0.027	(0.208)	0.017	0.010
253	21.08	0.10	0.041	(0.207)	0.026	0.015
254	21.17	0.10	0.041	(0.206)	0.026	0.015
255	21.25	0.10	0.041	(0.206)	0.026	0.015
256	21.33	0.07	0.027	(0.205)	0.017	0.010
257	21.42	0.07	0.027	(0.204)	0.017	0.010
258	21.50	0.07	0.027	(0.203)	0.017	0.010
259	21.58	0.10	0.041	(0.203)	0.026	0.015
260	21.67	0.10	0.041	(0.202)	0.026	0.015
261	21.75	0.10	0.041	(0.201)	0.026	0.015
262	21.83	0.07	0.027	(0.200)	0.017	0.010
263	21.92	0.07	0.027	(0.200)	0.017	0.010
264	22.00	0.07	0.027	(0.199)	0.017	0.010
265	22.08	0.10	0.041	(0.198)	0.026	0.015
266	22.17	0.10	0.041	(0.198)	0.026	0.015
267	22.25	0.10	0.041	(0.197)	0.026	0.015

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268  22.33     0.07      0.027       (  0.196)       0.017        0.010
269  22.42     0.07      0.027       (  0.196)       0.017        0.010
270  22.50     0.07      0.027       (  0.195)       0.017        0.010
271  22.58     0.07      0.027       (  0.195)       0.017        0.010
272  22.67     0.07      0.027       (  0.194)       0.017        0.010
273  22.75     0.07      0.027       (  0.194)       0.017        0.010
274  22.83     0.07      0.027       (  0.193)       0.017        0.010
275  22.92     0.07      0.027       (  0.193)       0.017        0.010
276  23.00     0.07      0.027       (  0.192)       0.017        0.010
277  23.08     0.07      0.027       (  0.192)       0.017        0.010
278  23.17     0.07      0.027       (  0.191)       0.017        0.010
279  23.25     0.07      0.027       (  0.191)       0.017        0.010
280  23.33     0.07      0.027       (  0.190)       0.017        0.010
281  23.42     0.07      0.027       (  0.190)       0.017        0.010
282  23.50     0.07      0.027       (  0.190)       0.017        0.010
283  23.58     0.07      0.027       (  0.189)       0.017        0.010
284  23.67     0.07      0.027       (  0.189)       0.017        0.010
285  23.75     0.07      0.027       (  0.189)       0.017        0.010
286  23.83     0.07      0.027       (  0.189)       0.017        0.010
287  23.92     0.07      0.027       (  0.189)       0.017        0.010
288  24.00     0.07      0.027       (  0.188)       0.017        0.010
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    15.3
      Flood volume = Effective rainfall      1.27(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =       5.3(Ac.Ft)
      Total soil loss =      2.17(In)
      Total soil loss =     9.093(Ac.Ft)
      Total rainfall =      3.44(In)
      Flood volume =      232628.4 Cubic Feet
      Total soil loss =      396096.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      8.779(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0005      0.07  Q         |         |         |         |
   0+10       0.0030      0.36  VQ        |         |         |         |
   0+15       0.0061      0.46  VQ        |         |         |         |
   0+20       0.0098      0.53  V Q       |         |         |         |
   0+25       0.0145      0.69  V Q       |         |         |         |
   0+30       0.0197      0.74  V Q       |         |         |         |
   0+35       0.0249      0.76  V  Q      |         |         |         |
   0+40       0.0302      0.77  V  Q      |         |         |         |
   0+45       0.0356      0.77  V  Q      |         |         |         |
   0+50       0.0411      0.81  V  Q      |         |         |         |
   0+55       0.0477      0.96  V  Q      |         |         |         |
   1+ 0       0.0546      1.00  V   Q     |         |         |         |
   1+ 5       0.0614      0.99  V  Q      |         |         |         |
   1+10       0.0673      0.85  V  Q      |         |         |         |
   1+15       0.0728      0.80  V  Q      |         |         |         |
   1+20       0.0782      0.79  V  Q      |         |         |         |
   1+25       0.0836      0.78  V  Q      |         |         |         |
   1+30       0.0890      0.78  V  Q      |         |         |         |
   1+35       0.0943      0.78  V  Q      |         |         |         |
   1+40       0.0996      0.78  V  Q      |         |         |         |
   1+45       0.1050      0.78  V  Q      |         |         |         |
   1+50       0.1106      0.81  V  Q      |         |         |         |
   1+55       0.1172      0.96  V  Q      |         |         |         |
   2+ 0       0.1241      1.00  V   Q     |         |         |         |
   2+ 5       0.1311      1.02  V   Q     |         |         |         |
   2+10       0.1382      1.03  |V  Q     |         |         |         |
   2+15       0.1453      1.03  |V  Q     |         |         |         |
   2+20       0.1524      1.03  |V  Q     |         |         |         |
   2+25       0.1596      1.03  |V  Q     |         |         |         |
   2+30       0.1667      1.03  |V  Q     |         |         |         |
   2+35       0.1740      1.07  |V  Q     |         |         |         |
   2+40       0.1824      1.21  |V  Q     |         |         |         |
   2+45       0.1911      1.26  |V   Q    |         |         |         |
```

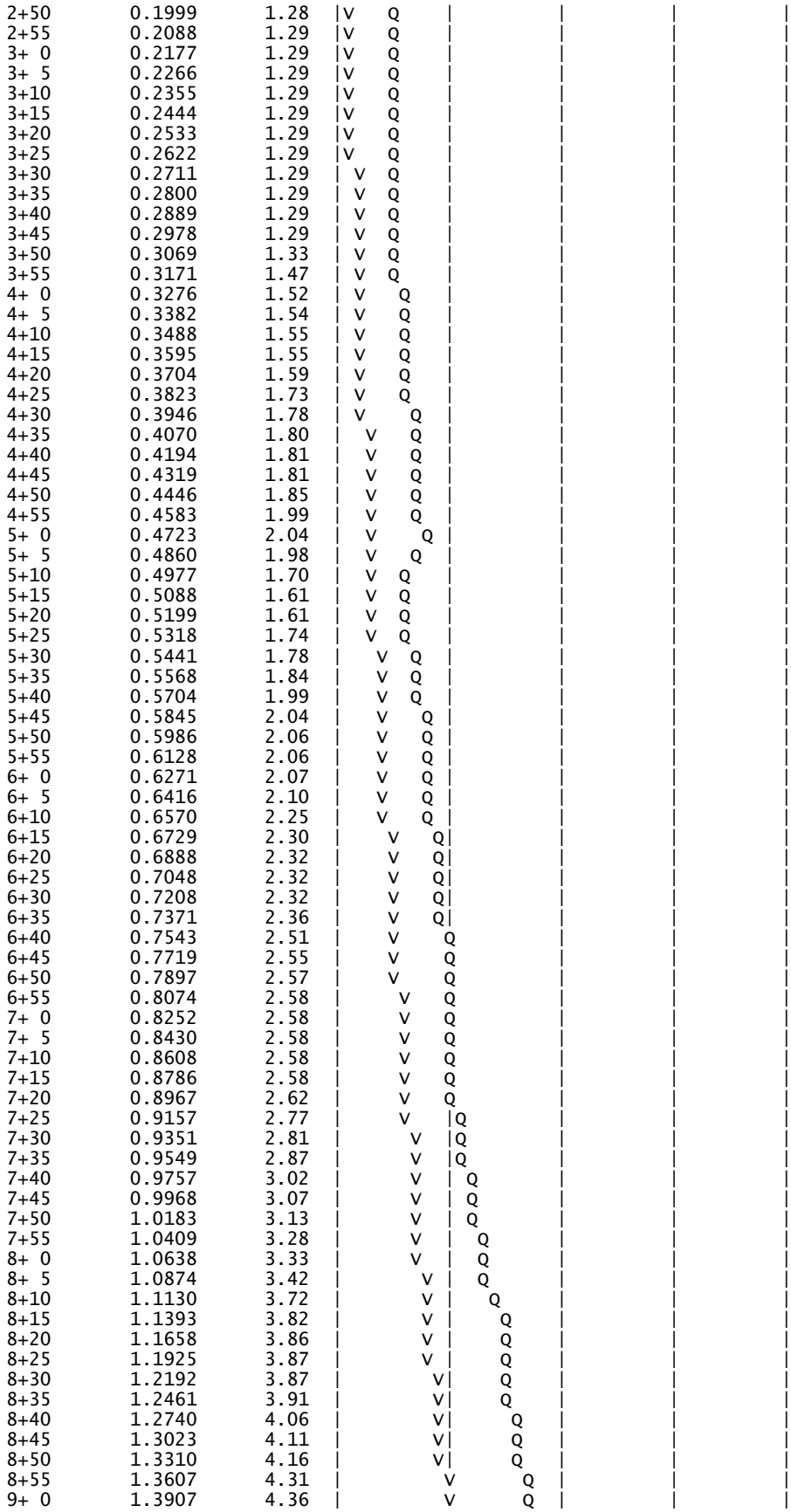
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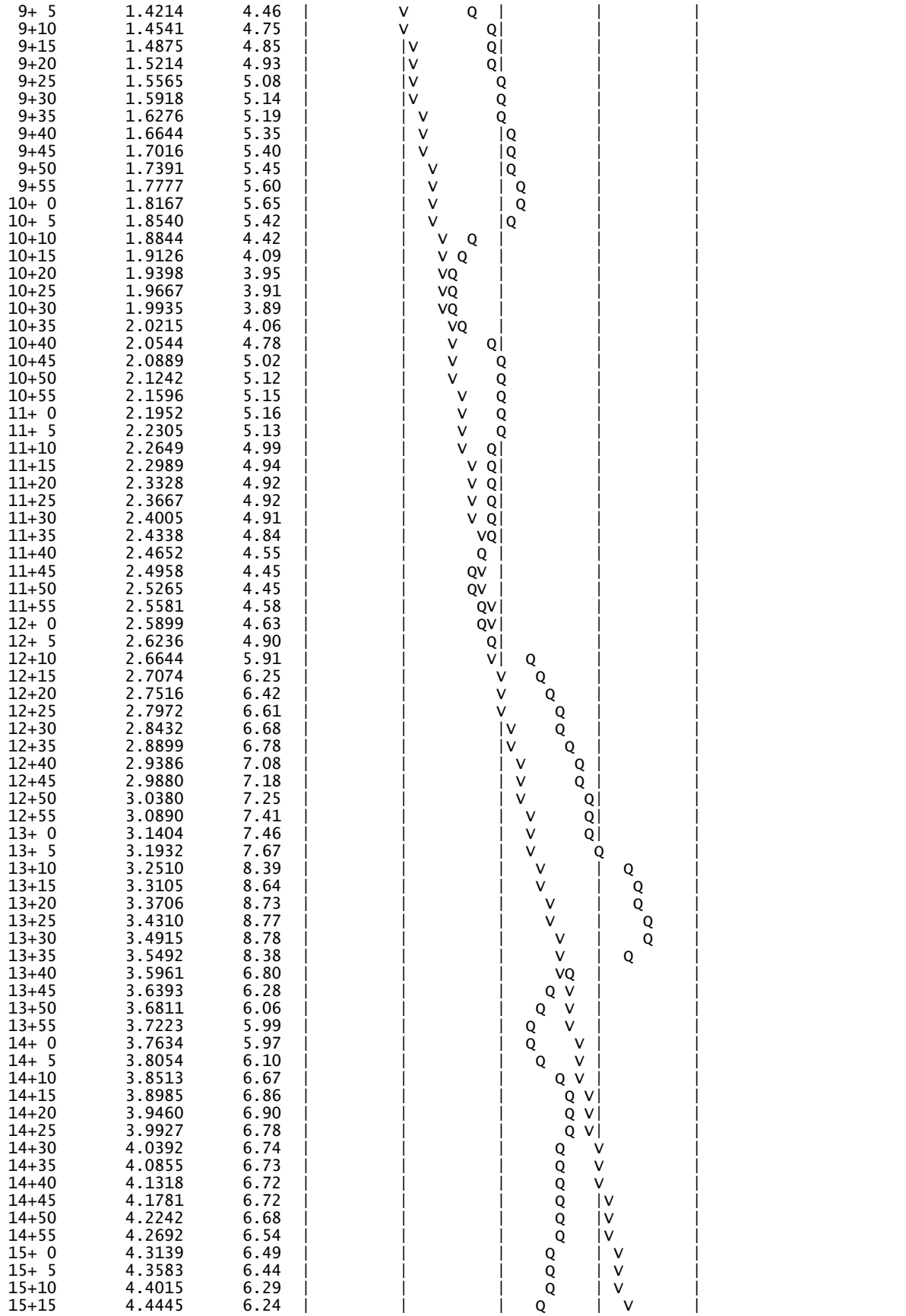
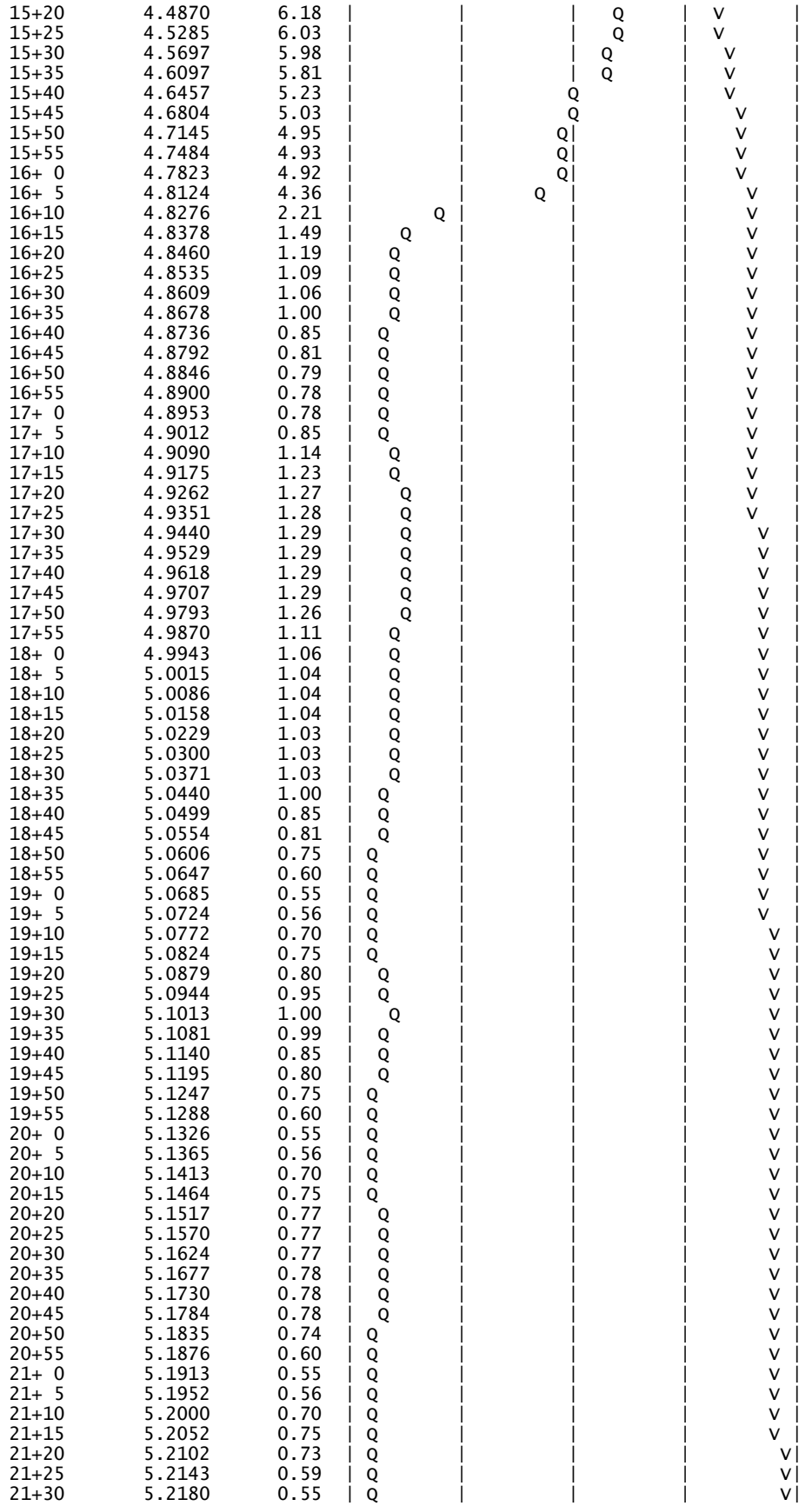
2+55 0.2088 1.29
3+ 0 0.2177 1.29
3+ 5 0.2266 1.29
3+10 0.2355 1.29
3+15 0.2444 1.29
3+20 0.2533 1.29
3+25 0.2622 1.29
3+30 0.2711 1.29
3+35 0.2800 1.29
3+40 0.2889 1.29
3+45 0.2978 1.29
3+50 0.3069 1.33
3+55 0.3171 1.47
4+ 0 0.3276 1.52
4+ 5 0.3382 1.54
4+10 0.3488 1.55
4+15 0.3595 1.55
4+20 0.3704 1.59
4+25 0.3823 1.73
4+30 0.3946 1.78
4+35 0.4070 1.80
4+40 0.4194 1.81
4+45 0.4319 1.81
4+50 0.4446 1.85
4+55 0.4583 1.99
5+ 0 0.4723 2.04
5+ 5 0.4860 1.98
5+10 0.4977 1.70
5+15 0.5088 1.61
5+20 0.5199 1.61
5+25 0.5318 1.74
5+30 0.5441 1.78
5+35 0.5568 1.84
5+40 0.5704 1.99
5+45 0.5845 2.04
5+50 0.5986 2.06
5+55 0.6128 2.06
6+ 0 0.6271 2.07
6+ 5 0.6416 2.10
6+10 0.6570 2.25
6+15 0.6729 2.30
6+20 0.6888 2.32
6+25 0.7048 2.32
6+30 0.7208 2.32
6+35 0.7371 2.36
6+40 0.7543 2.51
6+45 0.7719 2.55
6+50 0.7897 2.57
6+55 0.8074 2.58
7+ 0 0.8252 2.58
7+ 5 0.8430 2.58
7+10 0.8608 2.58
7+15 0.8786 2.58
7+20 0.8967 2.62
7+25 0.9157 2.77
7+30 0.9351 2.81
7+35 0.9549 2.87
7+40 0.9757 3.02
7+45 0.9968 3.07
7+50 1.0183 3.13
7+55 1.0409 3.28
8+ 0 1.0638 3.33
8+ 5 1.0874 3.42
8+10 1.1130 3.72
8+15 1.1393 3.82
8+20 1.1658 3.86
8+25 1.1925 3.87
8+30 1.2192 3.87
8+35 1.2461 3.91
8+40 1.2740 4.06
8+45 1.3023 4.11
8+50 1.3310 4.16
8+55 1.3607 4.31
9+ 0 1.3907 4.36





```
   21+35       5.2219      0.56  | Q       |         |         |        V|
   21+40       5.2267      0.70  | Q       |         |         |        V|
   21+45       5.2319      0.75  | Q       |         |         |        V|
   21+50       5.2369      0.73  | Q       |         |         |        V|
   21+55       5.2410      0.59  | Q       |         |         |        V|
   22+ 0       5.2447      0.55  | Q       |         |         |        V|
   22+ 5       5.2486      0.56  | Q       |         |         |        V|
   22+10       5.2534      0.70  | Q       |         |         |        V|
   22+15       5.2586      0.75  | Q       |         |         |        V|
   22+20       5.2636      0.73  | Q       |         |         |        V|
   22+25       5.2677      0.59  | Q       |         |         |        V|
   22+30       5.2714      0.55  | Q       |         |         |        V|
   22+35       5.2751      0.53  | Q       |         |         |        V|
   22+40       5.2787      0.52  | Q       |         |         |        V|
   22+45       5.2822      0.52  | Q       |         |         |        V|
   22+50       5.2858      0.52  | Q       |         |         |        V|
   22+55       5.2893      0.52  | Q       |         |         |        V|
   23+ 0       5.2929      0.52  | Q       |         |         |        V|
   23+ 5       5.2965      0.52  | Q       |         |         |        V|
   23+10       5.3000      0.52  | Q       |         |         |        V|
   23+15       5.3036      0.52  | Q       |         |         |        V|
   23+20       5.3071      0.52  | Q       |         |         |        V|
   23+25       5.3107      0.52  | Q       |         |         |        V|
   23+30       5.3143      0.52  | Q       |         |         |        V|
   23+35       5.3178      0.52  | Q       |         |         |        V|
   23+40       5.3214      0.52  | Q       |         |         |        V|
   23+45       5.3250      0.52  | Q       |         |         |        V|
   23+50       5.3285      0.52  | Q       |         |         |        V|
   23+55       5.3321      0.52  | Q       |         |         |        V|
   24+ 0       5.3356      0.52  | Q       |         |         |        V|
   24+ 5       5.3387      0.44  |Q        |         |         |        V|
   24+10       5.3398      0.16  Q         |         |         |        V|
   24+15       5.3402      0.06  Q         |         |         |        V|
   24+20       5.3403      0.02  Q         |         |         |        V|
   24+25       5.3404      0.01  Q         |         |         |        V|
   24+30       5.3404      0.00  Q         |         |         |        V|
   24+35       5.3404      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

EXISTING CONDITION
10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRB110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	0.55	27.72

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	1.25	63.00

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.838(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.838(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

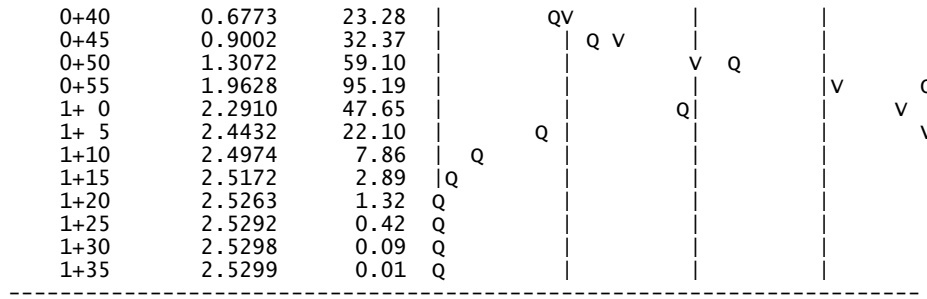
```
72.1  72.1      0.337     0.330        0.237       1.000      0.237
                                                  Sum (F) =   0.237
Area averaged mean soil loss (F) (In/Hr) =  0.237
Minimum soil loss rate ((In/Hr)) =  0.119
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.630
------------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.5300
------------------------------------------------------------------------

              U n i t  H y d r o g r a p h
                     FOOTHILL S-Curve
------------------------------------------------------------------------
              Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %           (CFS)
------------------------------------------------------------------------
    1   0.083         99.192         14.132             7.178
    2   0.167        198.384         55.642            28.263
    3   0.250        297.576         18.582             9.439
    4   0.333        396.768          7.530             3.825
    5   0.417        495.961          2.548             1.294
    6   0.500        595.153          0.859             0.436
    7   0.583        694.345          0.565             0.287
    8   0.667        793.537          0.141             0.072
                              Sum = 100.000   Sum=      50.794
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

 Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
      (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
  1   0.08     3.40      0.342       (  0.237)      0.215        0.126
  2   0.17     4.70      0.472          0.237    (  0.298)        0.235
  3   0.25     4.70      0.472          0.237    (  0.298)        0.235
  4   0.33     5.10      0.513          0.237    (  0.323)        0.276
  5   0.42     5.80      0.583          0.237    (  0.367)        0.346
  6   0.50     5.90      0.593          0.237    (  0.374)        0.356
  7   0.58     7.10      0.714          0.237    (  0.450)        0.477
  8   0.67     8.70      0.874          0.237    (  0.551)        0.637
  9   0.75    13.20      1.327          0.237    (  0.836)        1.090
 10   0.83    29.70      2.985          0.237    (  1.881)        2.748
 11   0.92     7.70      0.774          0.237    (  0.488)        0.537
 12   1.00     4.00      0.402          0.237    (  0.253)        0.165
              (Loss Rate Not Used)
    Sum =     100.0                                 Sum =     7.2
       Flood volume = Effective rainfall      0.60(In)
        times area      50.4(Ac.)/[(In)/(Ft.)] =       2.5(Ac.Ft)
       Total soil loss =      0.24(In)
       Total soil loss =     0.988(Ac.Ft)
       Total rainfall =      0.84(In)
       Flood volume =      110201.4 Cubic Feet
       Total soil loss =       43039.8 Cubic Feet
       ---------------------------------------------------------------------
        Peak flow rate of this hydrograph =     95.188(CFS)
       ---------------------------------------------------------------------
       +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
       ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       25.0      50.0      75.0     100.0
 ------------------------------------------------------------------------
   0+ 5       0.0063      0.91  Q         |         |         |         |
   0+10       0.0425      5.27  V Q       |         |         |         |
   0+15       0.1082      9.54  |V Q      |         |         |         |
   0+20       0.1863     11.34  | V Q     |         |         |         |
   0+25       0.2797     13.56  |   VQ    |         |         |         |
   0+30       0.3913     16.20  |     Q   |         |         |         |
   0+35       0.5170     18.25  |      QV |         |         |         |
```


0+40 0.6773 23.28
0+45 0.9002 32.37
0+50 1.3072 59.10
0+55 1.9628 95.19
1+ 0 2.2910 47.65
1+ 5 2.4432 22.10
1+10 2.4974 7.86
1+15 2.5172 2.89
1+20 2.5263 1.32
1+25 2.5292 0.42
1+30 2.5298 0.09
1+35 2.5299 0.01

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: EX10YRB310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	0.95	47.88

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.05	103.32

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.403(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1 72.1 0.337 0.330 0.237 1.000 0.237
Sum (F) = 0.237

Area averaged mean soil loss (F) (In/Hr) = 0.237
Minimum soil loss rate ((In/Hr)) = 0.119
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)		Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.219	(0.237)	0.138	0.081
2	0.17	1.30	0.219	(0.237)	0.138	0.081
3	0.25	1.10	0.185	(0.237)	0.117	0.068
4	0.33	1.50	0.252	(0.237)	0.159	0.093
5	0.42	1.50	0.252	(0.237)	0.159	0.093
6	0.50	1.80	0.303	(0.237)	0.191	0.112
7	0.58	1.50	0.252	(0.237)	0.159	0.093
8	0.67	1.80	0.303	(0.237)	0.191	0.112
9	0.75	1.80	0.303	(0.237)	0.191	0.112
10	0.83	1.50	0.252	(0.237)	0.159	0.093
11	0.92	1.60	0.269	(0.237)	0.170	0.100
12	1.00	1.80	0.303	(0.237)	0.191	0.112
13	1.08	2.20	0.370	(0.237)	0.233	0.137
14	1.17	2.20	0.370	(0.237)	0.233	0.137
15	1.25	2.20	0.370	(0.237)	0.233	0.137
16	1.33	2.00	0.337	(0.237)	0.212	0.125
17	1.42	2.60	0.437	0.237	(0.276)	0.200
18	1.50	2.70	0.454	0.237	(0.286)	0.217
19	1.58	2.40	0.404	0.237	(0.254)	0.167
20	1.67	2.70	0.454	0.237	(0.286)	0.217
21	1.75	3.30	0.555	0.237	(0.350)	0.318
22	1.83	3.10	0.522	0.237	(0.329)	0.285
23	1.92	2.90	0.488	0.237	(0.307)	0.251
24	2.00	3.00	0.505	0.237	(0.318)	0.268
25	2.08	3.10	0.522	0.237	(0.329)	0.285
26	2.17	4.20	0.707	0.237	(0.445)	0.470
27	2.25	5.00	0.841	0.237	(0.530)	0.604
28	2.33	3.50	0.589	0.237	(0.371)	0.352
29	2.42	6.80	1.144	0.237	(0.721)	0.907
30	2.50	7.30	1.228	0.237	(0.774)	0.991
31	2.58	8.20	1.380	0.237	(0.869)	1.143
32	2.67	5.90	0.993	0.237	(0.625)	0.756
33	2.75	2.00	0.337	(0.237)	0.212	0.125
34	2.83	1.80	0.303	(0.237)	0.191	0.112
35	2.92	1.80	0.303	(0.237)	0.191	0.112
36	3.00	0.60	0.101	(0.237)	0.064	0.037
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	9.5

Flood volume = Effective rainfall 0.79(In)
times area 50.4(Ac.)/[(In)/(Ft.)] = 3.3(Ac.Ft)
Total soil loss = 0.61(In)
Total soil loss = 2.563(Ac.Ft)

Total rainfall = 1.40(In)
Flood volume = 144893.6 Cubic Feet
Total soil loss = 111648.9 Cubic Feet

Peak flow rate of this hydrograph = 51.449(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 15.0 30.0 45.0 60.0
0+ 5	0.0040	0.58	Q | | | |
0+10	0.0238	2.87	VQ | | | |
0+15	0.0482	3.54	V Q | | | |
0+20	0.0735	3.68	V Q | | | |
0+25	0.1037	4.37	|VQ | | | |
0+30	0.1362	4.73	|V Q | | | |
0+35	0.1722	5.23	| VQ | | | |
0+40	0.2069	5.04	| VQ | | | |
0+45	0.2446	5.47	| VQ | | | |
0+50	0.2823	5.47	| Q | | | |
0+55	0.3171	5.05	| Q | | | |
1+ 0	0.3526	5.16	| QV | | | |
1+ 5	0.3917	5.68	| QV | | | |
1+10	0.4365	6.51	| QV | | | |
1+15	0.4833	6.79	| QV | | | |
1+20	0.5302	6.81	| Q V | | | |
1+25	0.5786	7.04	| Q V | | | |
1+30	0.6420	9.20	| QV | | | |
1+35	0.7109	10.00	| Q V | | | |
1+40	0.7754	9.37	| Q V| | | |
1+45	0.8525	11.20	| Q V | | |
1+50	0.9499	14.15	| Q|V | | |
1+55	1.0468	14.06	| Q| V | | |
2+ 0	1.1387	13.35	| Q | V | | |
2+ 5	1.2327	13.64	| Q| V | | |
2+10	1.3394	15.49	| Q V | | |
2+15	1.4901	21.89	| | Q V | | |
2+20	1.6671	25.70	| | Q V | |
2+25	1.8362	24.55	| | Q | V | |
2+30	2.1064	39.23	| | | VQ | |
2+35	2.4317	47.24	| | | V|Q |
2+40	2.7861	51.45	| | | | VQ |
2+45	3.0504	38.38	| | | Q | V |
2+50	3.1720	17.66	| |Q | | V |
2+55	3.2426	10.24	| Q | | | V |
3+ 0	3.2894	6.80	| Q | | | V|
3+ 5	3.3131	3.43	| Q | | | V|
3+10	3.3219	1.28	Q | | | V|
3+15	3.3248	0.43	Q | | | V|
3+20	3.3258	0.14	Q | | | V|
3+25	3.3262	0.06	Q | | | V|
3+30	3.3263	0.02	Q | | | V|
3+35	3.3263	0.00	Q | | | V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRB610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	1.40	70.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	3.00	151.20

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 2.058(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.058(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	72.1	0.337	0.330	0.237	1.000	0.237
					Sum (F) =	0.237

Area averaged mean soil loss (F) (In/Hr) = 0.237
Minimum soil loss rate ((In/Hr)) = 0.119
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

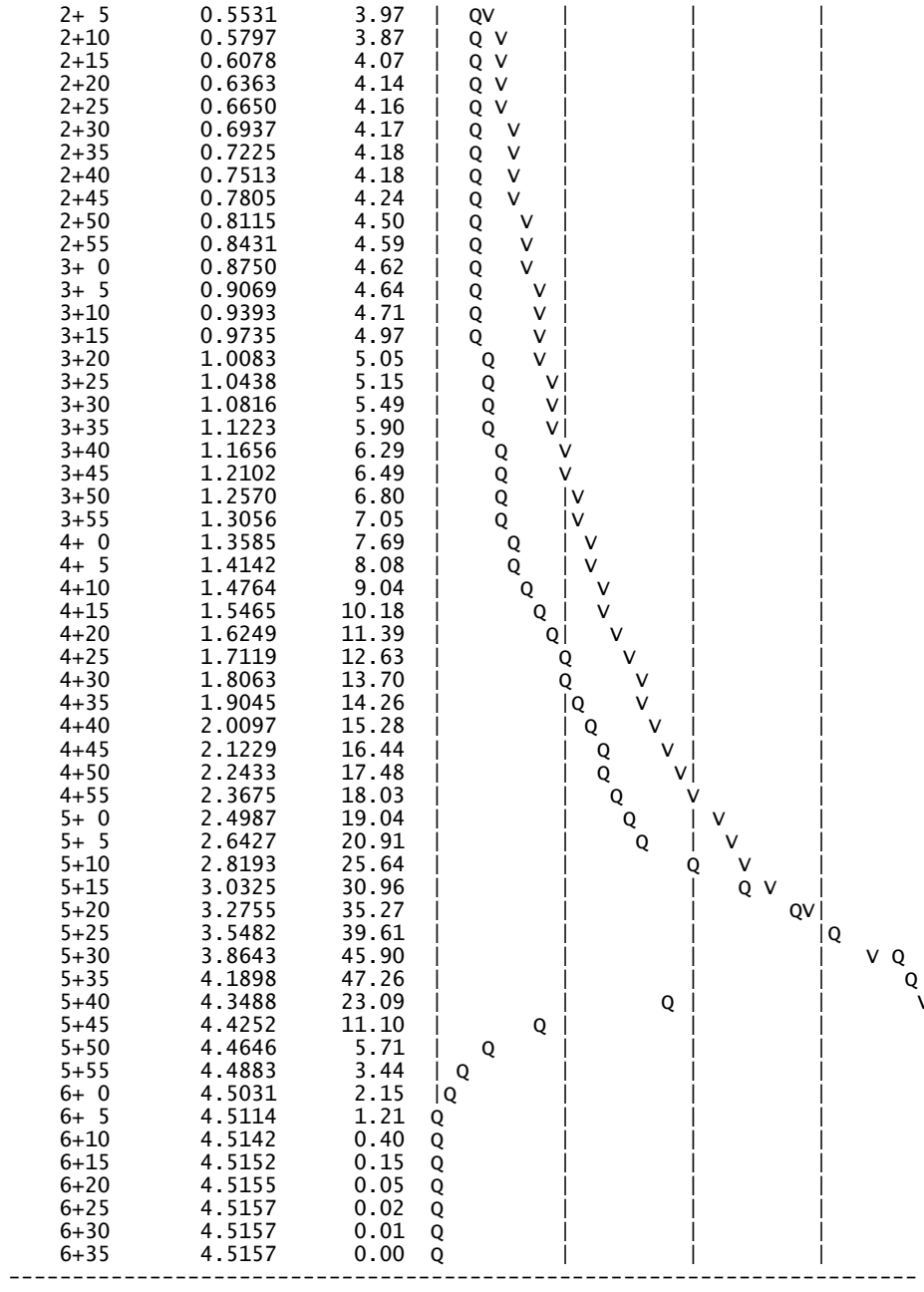
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.123	(0.237)	0.078	0.046
2	0.17	0.60	0.148	(0.237)	0.093	0.055
3	0.25	0.60	0.148	(0.237)	0.093	0.055
4	0.33	0.60	0.148	(0.237)	0.093	0.055
5	0.42	0.60	0.148	(0.237)	0.093	0.055
6	0.50	0.70	0.173	(0.237)	0.109	0.064
7	0.58	0.70	0.173	(0.237)	0.109	0.064
8	0.67	0.70	0.173	(0.237)	0.109	0.064
9	0.75	0.70	0.173	(0.237)	0.109	0.064
10	0.83	0.70	0.173	(0.237)	0.109	0.064
11	0.92	0.70	0.173	(0.237)	0.109	0.064
12	1.00	0.80	0.198	(0.237)	0.124	0.073
13	1.08	0.80	0.198	(0.237)	0.124	0.073
14	1.17	0.80	0.198	(0.237)	0.124	0.073
15	1.25	0.80	0.198	(0.237)	0.124	0.073
16	1.33	0.80	0.198	(0.237)	0.124	0.073
17	1.42	0.80	0.198	(0.237)	0.124	0.073
18	1.50	0.80	0.198	(0.237)	0.124	0.073
19	1.58	0.80	0.198	(0.237)	0.124	0.073
20	1.67	0.80	0.198	(0.237)	0.124	0.073
21	1.75	0.80	0.198	(0.237)	0.124	0.073
22	1.83	0.80	0.198	(0.237)	0.124	0.073
23	1.92	0.80	0.198	(0.237)	0.124	0.073
24	2.00	0.90	0.222	(0.237)	0.140	0.082
25	2.08	0.80	0.198	(0.237)	0.124	0.073
26	2.17	0.90	0.222	(0.237)	0.140	0.082
27	2.25	0.90	0.222	(0.237)	0.140	0.082
28	2.33	0.90	0.222	(0.237)	0.140	0.082
29	2.42	0.90	0.222	(0.237)	0.140	0.082
30	2.50	0.90	0.222	(0.237)	0.140	0.082
31	2.58	0.90	0.222	(0.237)	0.140	0.082
32	2.67	0.90	0.222	(0.237)	0.140	0.082
33	2.75	1.00	0.247	(0.237)	0.156	0.091
34	2.83	1.00	0.247	(0.237)	0.156	0.091
35	2.92	1.00	0.247	(0.237)	0.156	0.091
36	3.00	1.00	0.247	(0.237)	0.156	0.091
37	3.08	1.00	0.247	(0.237)	0.156	0.091
38	3.17	1.10	0.272	(0.237)	0.171	0.101
39	3.25	1.10	0.272	(0.237)	0.171	0.101
40	3.33	1.10	0.272	(0.237)	0.171	0.101
41	3.42	1.20	0.296	(0.237)	0.187	0.110
42	3.50	1.30	0.321	(0.237)	0.202	0.119

```
43   3.58     1.40      0.346       (  0.237)       0.218        0.128
44   3.67     1.40      0.346       (  0.237)       0.218        0.128
45   3.75     1.50      0.370       (  0.237)       0.233        0.137
46   3.83     1.50      0.370       (  0.237)       0.233        0.137
47   3.92     1.60      0.395          0.237    (  0.249)        0.158
48   4.00     1.60      0.395          0.237    (  0.249)        0.158
49   4.08     1.70      0.420          0.237    (  0.264)        0.183
50   4.17     1.80      0.445          0.237    (  0.280)        0.207
51   4.25     1.90      0.469          0.237    (  0.296)        0.232
52   4.33     2.00      0.494          0.237    (  0.311)        0.257
53   4.42     2.10      0.519          0.237    (  0.327)        0.282
54   4.50     2.10      0.519          0.237    (  0.327)        0.282
55   4.58     2.20      0.543          0.237    (  0.342)        0.306
56   4.67     2.30      0.568          0.237    (  0.358)        0.331
57   4.75     2.40      0.593          0.237    (  0.373)        0.356
58   4.83     2.40      0.593          0.237    (  0.373)        0.356
59   4.92     2.50      0.617          0.237    (  0.389)        0.380
60   5.00     2.60      0.642          0.237    (  0.405)        0.405
61   5.08     3.10      0.766          0.237    (  0.482)        0.528
62   5.17     3.60      0.889          0.237    (  0.560)        0.652
63   5.25     3.90      0.963          0.237    (  0.607)        0.726
64   5.33     4.20      1.037          0.237    (  0.653)        0.800
65   5.42     4.70      1.161          0.237    (  0.731)        0.924
66   5.50     5.60      1.383          0.237    (  0.871)        1.146
67   5.58     1.90      0.469          0.237    (  0.296)        0.232
68   5.67     0.90      0.222       (  0.237)       0.140        0.082
69   5.75     0.60      0.148       (  0.237)       0.093        0.055
70   5.83     0.50      0.123       (  0.237)       0.078        0.046
71   5.92     0.30      0.074       (  0.237)       0.047        0.027
72   6.00     0.20      0.049       (  0.237)       0.031        0.018
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    12.9
      Flood volume = Effective rainfall      1.08(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =       4.5(Ac.Ft)
      Total soil loss =      0.98(In)
      Total soil loss =     4.127(Ac.Ft)
      Total rainfall =      2.06(In)
      Flood volume =      196705.5 Cubic Feet
      Total soil loss =      179790.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     47.258(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
-------------------------------------------------------------------------
  0+ 5       0.0023      0.33  Q          |         |         |         |
  0+10       0.0139      1.69  VQ         |         |         |         |
  0+15       0.0302      2.38  VQ         |         |         |         |
  0+20       0.0484      2.64  V Q        |         |         |         |
  0+25       0.0672      2.73  V Q        |         |         |         |
  0+30       0.0867      2.83  V Q        |         |         |         |
  0+35       0.1080      3.10  V Q        |         |         |         |
  0+40       0.1301      3.20  |VQ        |         |         |         |
  0+45       0.1523      3.23  |VQ        |         |         |         |
  0+50       0.1746      3.24  |VQ        |         |         |         |
  0+55       0.1970      3.25  |VQ        |         |         |         |
  1+ 0       0.2198      3.32  |VQ        |         |         |         |
  1+ 5       0.2445      3.57  | Q        |         |         |         |
  1+10       0.2697      3.66  | Q        |         |         |         |
  1+15       0.2951      3.70  | Q        |         |         |         |
  1+20       0.3207      3.71  | Q        |         |         |         |
  1+25       0.3462      3.71  | QV       |         |         |         |
  1+30       0.3718      3.71  | QV       |         |         |         |
  1+35       0.3974      3.71  | QV       |         |         |         |
  1+40       0.4230      3.71  | QV       |         |         |         |
  1+45       0.4485      3.71  | QV       |         |         |         |
  1+50       0.4741      3.71  | Q V      |         |         |         |
  1+55       0.4997      3.71  | Q V      |         |         |         |
  2+ 0       0.5257      3.78  |  QV      |         |         |         |
```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2+10 0.5797 3.87
2+15 0.6078 4.07
2+20 0.6363 4.14
2+25 0.6650 4.16
2+30 0.6937 4.17
2+35 0.7225 4.18
2+40 0.7513 4.18
2+45 0.7805 4.24
2+50 0.8115 4.50
2+55 0.8431 4.59
3+ 0 0.8750 4.62
3+ 5 0.9069 4.64
3+10 0.9393 4.71
3+15 0.9735 4.97
3+20 1.0083 5.05
3+25 1.0438 5.15
3+30 1.0816 5.49
3+35 1.1223 5.90
3+40 1.1656 6.29
3+45 1.2102 6.49
3+50 1.2570 6.80
3+55 1.3056 7.05
4+ 0 1.3585 7.69
4+ 5 1.4142 8.08
4+10 1.4764 9.04
4+15 1.5465 10.18
4+20 1.6249 11.39
4+25 1.7119 12.63
4+30 1.8063 13.70
4+35 1.9045 14.26
4+40 2.0097 15.28
4+45 2.1229 16.44
4+50 2.2433 17.48
4+55 2.3675 18.03
5+ 0 2.4987 19.04
5+ 5 2.6427 20.91
5+10 2.8193 25.64
5+15 3.0325 30.96
5+20 3.2755 35.27
5+25 3.5482 39.61
5+30 3.8643 45.90
5+35 4.1898 47.26
5+40 4.3488 23.09
5+45 4.4252 11.10
5+50 4.4646 5.71
5+55 4.4883 3.44
6+ 0 4.5031 2.15
6+ 5 4.5114 1.21
6+10 4.5142 0.40
6+15 4.5152 0.15
6+20 4.5155 0.05
6+25 4.5157 0.02
6+30 4.5157 0.01
6+35 4.5157 0.00

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRB2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.50	126.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	6.50	327.60

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.145(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	72.1	0.337	0.330	0.237	1.000	0.237
					Sum (F) =	0.237

Area averaged mean soil loss (F) (In/Hr) = 0.237
Minimum soil loss rate ((In/Hr)) = 0.119
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	(0.420)	0.021	0.012
2	0.17	0.07	0.033	(0.419)	0.021	0.012
3	0.25	0.07	0.033	(0.417)	0.021	0.012
4	0.33	0.10	0.050	(0.415)	0.031	0.018
5	0.42	0.10	0.050	(0.414)	0.031	0.018
6	0.50	0.10	0.050	(0.412)	0.031	0.018
7	0.58	0.10	0.050	(0.411)	0.031	0.018
8	0.67	0.10	0.050	(0.409)	0.031	0.018
9	0.75	0.10	0.050	(0.407)	0.031	0.018
10	0.83	0.13	0.066	(0.406)	0.042	0.025
11	0.92	0.13	0.066	(0.404)	0.042	0.025
12	1.00	0.13	0.066	(0.403)	0.042	0.025
13	1.08	0.10	0.050	(0.401)	0.031	0.018
14	1.17	0.10	0.050	(0.399)	0.031	0.018
15	1.25	0.10	0.050	(0.398)	0.031	0.018
16	1.33	0.10	0.050	(0.396)	0.031	0.018
17	1.42	0.10	0.050	(0.395)	0.031	0.018
18	1.50	0.10	0.050	(0.393)	0.031	0.018
19	1.58	0.10	0.050	(0.391)	0.031	0.018
20	1.67	0.10	0.050	(0.390)	0.031	0.018
21	1.75	0.10	0.050	(0.388)	0.031	0.018
22	1.83	0.13	0.066	(0.387)	0.042	0.025
23	1.92	0.13	0.066	(0.385)	0.042	0.025
24	2.00	0.13	0.066	(0.384)	0.042	0.025
25	2.08	0.13	0.066	(0.382)	0.042	0.025
26	2.17	0.13	0.066	(0.381)	0.042	0.025
27	2.25	0.13	0.066	(0.379)	0.042	0.025
28	2.33	0.13	0.066	(0.377)	0.042	0.025
29	2.42	0.13	0.066	(0.376)	0.042	0.025
30	2.50	0.13	0.066	(0.374)	0.042	0.025
31	2.58	0.17	0.083	(0.373)	0.052	0.031
32	2.67	0.17	0.083	(0.371)	0.052	0.031
33	2.75	0.17	0.083	(0.370)	0.052	0.031
34	2.83	0.17	0.083	(0.368)	0.052	0.031
35	2.92	0.17	0.083	(0.367)	0.052	0.031
36	3.00	0.17	0.083	(0.365)	0.052	0.031
37	3.08	0.17	0.083	(0.364)	0.052	0.031
38	3.17	0.17	0.083	(0.362)	0.052	0.031
39	3.25	0.17	0.083	(0.361)	0.052	0.031
40	3.33	0.17	0.083	(0.359)	0.052	0.031
41	3.42	0.17	0.083	(0.358)	0.052	0.031
42	3.50	0.17	0.083	(0.356)	0.052	0.031

43	3.58	0.17	0.083	(0.355)	0.052	0.031
44	3.67	0.17	0.083	(0.353)	0.052	0.031
45	3.75	0.17	0.083	(0.352)	0.052	0.031
46	3.83	0.20	0.099	(0.350)	0.063	0.037
47	3.92	0.20	0.099	(0.349)	0.063	0.037
48	4.00	0.20	0.099	(0.347)	0.063	0.037
49	4.08	0.20	0.099	(0.346)	0.063	0.037
50	4.17	0.20	0.099	(0.344)	0.063	0.037
51	4.25	0.20	0.099	(0.343)	0.063	0.037
52	4.33	0.23	0.116	(0.341)	0.073	0.043
53	4.42	0.23	0.116	(0.340)	0.073	0.043
54	4.50	0.23	0.116	(0.339)	0.073	0.043
55	4.58	0.23	0.116	(0.337)	0.073	0.043
56	4.67	0.23	0.116	(0.336)	0.073	0.043
57	4.75	0.23	0.116	(0.334)	0.073	0.043
58	4.83	0.27	0.133	(0.333)	0.084	0.049
59	4.92	0.27	0.133	(0.331)	0.084	0.049
60	5.00	0.27	0.133	(0.330)	0.084	0.049
61	5.08	0.20	0.099	(0.328)	0.063	0.037
62	5.17	0.20	0.099	(0.327)	0.063	0.037
63	5.25	0.20	0.099	(0.326)	0.063	0.037
64	5.33	0.23	0.116	(0.324)	0.073	0.043
65	5.42	0.23	0.116	(0.323)	0.073	0.043
66	5.50	0.23	0.116	(0.321)	0.073	0.043
67	5.58	0.27	0.133	(0.320)	0.084	0.049
68	5.67	0.27	0.133	(0.319)	0.084	0.049
69	5.75	0.27	0.133	(0.317)	0.084	0.049
70	5.83	0.27	0.133	(0.316)	0.084	0.049
71	5.92	0.27	0.133	(0.314)	0.084	0.049
72	6.00	0.27	0.133	(0.313)	0.084	0.049
73	6.08	0.30	0.149	(0.312)	0.094	0.055
74	6.17	0.30	0.149	(0.310)	0.094	0.055
75	6.25	0.30	0.149	(0.309)	0.094	0.055
76	6.33	0.30	0.149	(0.307)	0.094	0.055
77	6.42	0.30	0.149	(0.306)	0.094	0.055
78	6.50	0.30	0.149	(0.305)	0.094	0.055
79	6.58	0.33	0.166	(0.303)	0.104	0.061
80	6.67	0.33	0.166	(0.302)	0.104	0.061
81	6.75	0.33	0.166	(0.301)	0.104	0.061
82	6.83	0.33	0.166	(0.299)	0.104	0.061
83	6.92	0.33	0.166	(0.298)	0.104	0.061
84	7.00	0.33	0.166	(0.296)	0.104	0.061
85	7.08	0.33	0.166	(0.295)	0.104	0.061
86	7.17	0.33	0.166	(0.294)	0.104	0.061
87	7.25	0.33	0.166	(0.292)	0.104	0.061
88	7.33	0.37	0.182	(0.291)	0.115	0.067
89	7.42	0.37	0.182	(0.290)	0.115	0.067
90	7.50	0.37	0.182	(0.288)	0.115	0.067
91	7.58	0.40	0.199	(0.287)	0.125	0.074
92	7.67	0.40	0.199	(0.286)	0.125	0.074
93	7.75	0.40	0.199	(0.284)	0.125	0.074
94	7.83	0.43	0.216	(0.283)	0.136	0.080
95	7.92	0.43	0.216	(0.282)	0.136	0.080
96	8.00	0.43	0.216	(0.281)	0.136	0.080
97	8.08	0.50	0.249	(0.279)	0.157	0.092
98	8.17	0.50	0.249	(0.278)	0.157	0.092
99	8.25	0.50	0.249	(0.277)	0.157	0.092
100	8.33	0.50	0.249	(0.275)	0.157	0.092
101	8.42	0.50	0.249	(0.274)	0.157	0.092
102	8.50	0.50	0.249	(0.273)	0.157	0.092
103	8.58	0.53	0.265	(0.272)	0.167	0.098
104	8.67	0.53	0.265	(0.270)	0.167	0.098
105	8.75	0.53	0.265	(0.269)	0.167	0.098
106	8.83	0.57	0.282	(0.268)	0.178	0.104
107	8.92	0.57	0.282	(0.266)	0.178	0.104
108	9.00	0.57	0.282	(0.265)	0.178	0.104
109	9.08	0.63	0.315	(0.264)	0.198	0.117
110	9.17	0.63	0.315	(0.263)	0.198	0.117
111	9.25	0.63	0.315	(0.261)	0.198	0.117
112	9.33	0.67	0.332	(0.260)	0.209	0.123
113	9.42	0.67	0.332	(0.259)	0.209	0.123
114	9.50	0.67	0.332	(0.258)	0.209	0.123
115	9.58	0.70	0.348	(0.256)	0.219	0.129
116	9.67	0.70	0.348	(0.255)	0.219	0.129
117	9.75	0.70	0.348	(0.254)	0.219	0.129

118	9.83	0.73	0.365	(	0.253)	0.230		0.135
119	9.92	0.73	0.365	(	0.252)	0.230		0.135
120	10.00	0.73	0.365	(	0.250)	0.230		0.135
121	10.08	0.50	0.249	(	0.249)	0.157		0.092
122	10.17	0.50	0.249	(	0.248)	0.157		0.092
123	10.25	0.50	0.249	(	0.247)	0.157		0.092
124	10.33	0.50	0.249	(	0.246)	0.157		0.092
125	10.42	0.50	0.249	(	0.244)	0.157		0.092
126	10.50	0.50	0.249	(	0.243)	0.157		0.092
127	10.58	0.67	0.332	(	0.242)	0.209		0.123
128	10.67	0.67	0.332	(	0.241)	0.209		0.123
129	10.75	0.67	0.332	(	0.240)	0.209		0.123
130	10.83	0.67	0.332	(	0.238)	0.209		0.123
131	10.92	0.67	0.332	(	0.237)	0.209		0.123
132	11.00	0.67	0.332	(	0.236)	0.209		0.123
133	11.08	0.63	0.315	(	0.235)	0.198		0.117
134	11.17	0.63	0.315	(	0.234)	0.198		0.117
135	11.25	0.63	0.315	(	0.233)	0.198		0.117
136	11.33	0.63	0.315	(	0.231)	0.198		0.117
137	11.42	0.63	0.315	(	0.230)	0.198		0.117
138	11.50	0.63	0.315	(	0.229)	0.198		0.117
139	11.58	0.57	0.282	(	0.228)	0.178		0.104
140	11.67	0.57	0.282	(	0.227)	0.178		0.104
141	11.75	0.57	0.282	(	0.226)	0.178		0.104
142	11.83	0.60	0.298	(	0.225)	0.188		0.110
143	11.92	0.60	0.298	(	0.224)	0.188		0.110
144	12.00	0.60	0.298	(	0.222)	0.188		0.110
145	12.08	0.83	0.415		0.221	(	0.261)	0.193
146	12.17	0.83	0.415		0.220	(	0.261)	0.194
147	12.25	0.83	0.415		0.219	(	0.261)	0.195
148	12.33	0.87	0.431		0.218	(	0.272)	0.213
149	12.42	0.87	0.431		0.217	(	0.272)	0.214
150	12.50	0.87	0.431		0.216	(	0.272)	0.215
151	12.58	0.93	0.464		0.215	(	0.292)	0.250
152	12.67	0.93	0.464		0.214	(	0.292)	0.251
153	12.75	0.93	0.464		0.213	(	0.292)	0.252
154	12.83	0.97	0.481		0.211	(	0.303)	0.269
155	12.92	0.97	0.481		0.210	(	0.303)	0.270
156	13.00	0.97	0.481		0.209	(	0.303)	0.272
157	13.08	1.13	0.564		0.208	(	0.355)	0.355
158	13.17	1.13	0.564		0.207	(	0.355)	0.357
159	13.25	1.13	0.564		0.206	(	0.355)	0.358
160	13.33	1.13	0.564		0.205	(	0.355)	0.359
161	13.42	1.13	0.564		0.204	(	0.355)	0.360
162	13.50	1.13	0.564		0.203	(	0.355)	0.361
163	13.58	0.77	0.381		0.202	(	0.240)	0.179
164	13.67	0.77	0.381		0.201	(	0.240)	0.180
165	13.75	0.77	0.381		0.200	(	0.240)	0.181
166	13.83	0.77	0.381		0.199	(	0.240)	0.182
167	13.92	0.77	0.381		0.198	(	0.240)	0.183
168	14.00	0.77	0.381		0.197	(	0.240)	0.184
169	14.08	0.90	0.448		0.196	(	0.282)	0.252
170	14.17	0.90	0.448		0.195	(	0.282)	0.253
171	14.25	0.90	0.448		0.194	(	0.282)	0.254
172	14.33	0.87	0.431		0.193	(	0.272)	0.238
173	14.42	0.87	0.431		0.192	(	0.272)	0.239
174	14.50	0.87	0.431		0.191	(	0.272)	0.240
175	14.58	0.87	0.431		0.190	(	0.272)	0.241
176	14.67	0.87	0.431		0.189	(	0.272)	0.242
177	14.75	0.87	0.431		0.188	(	0.272)	0.243
178	14.83	0.83	0.415		0.187	(	0.261)	0.227
179	14.92	0.83	0.415		0.186	(	0.261)	0.228
180	15.00	0.83	0.415		0.185	(	0.261)	0.229
181	15.08	0.80	0.398		0.184	(	0.251)	0.214
182	15.17	0.80	0.398		0.183	(	0.251)	0.215
183	15.25	0.80	0.398		0.182	(	0.251)	0.216
184	15.33	0.77	0.381		0.181	(	0.240)	0.200
185	15.42	0.77	0.381		0.180	(	0.240)	0.201
186	15.50	0.77	0.381		0.180	(	0.240)	0.202
187	15.58	0.63	0.315		0.179	(	0.198)	0.136
188	15.67	0.63	0.315		0.178	(	0.198)	0.137
189	15.75	0.63	0.315		0.177	(	0.198)	0.138
190	15.83	0.63	0.315		0.176	(	0.198)	0.139
191	15.92	0.63	0.315		0.175	(	0.198)	0.140
192	16.00	0.63	0.315		0.174	(	0.198)	0.141

193	16.08	0.13	0.066	(0.173)	0.042	0.025
194	16.17	0.13	0.066	(0.172)	0.042	0.025
195	16.25	0.13	0.066	(0.171)	0.042	0.025
196	16.33	0.13	0.066	(0.171)	0.042	0.025
197	16.42	0.13	0.066	(0.170)	0.042	0.025
198	16.50	0.13	0.066	(0.169)	0.042	0.025
199	16.58	0.10	0.050	(0.168)	0.031	0.018
200	16.67	0.10	0.050	(0.167)	0.031	0.018
201	16.75	0.10	0.050	(0.166)	0.031	0.018
202	16.83	0.10	0.050	(0.165)	0.031	0.018
203	16.92	0.10	0.050	(0.165)	0.031	0.018
204	17.00	0.10	0.050	(0.164)	0.031	0.018
205	17.08	0.17	0.083	(0.163)	0.052	0.031
206	17.17	0.17	0.083	(0.162)	0.052	0.031
207	17.25	0.17	0.083	(0.161)	0.052	0.031
208	17.33	0.17	0.083	(0.160)	0.052	0.031
209	17.42	0.17	0.083	(0.160)	0.052	0.031
210	17.50	0.17	0.083	(0.159)	0.052	0.031
211	17.58	0.17	0.083	(0.158)	0.052	0.031
212	17.67	0.17	0.083	(0.157)	0.052	0.031
213	17.75	0.17	0.083	(0.157)	0.052	0.031
214	17.83	0.13	0.066	(0.156)	0.042	0.025
215	17.92	0.13	0.066	(0.155)	0.042	0.025
216	18.00	0.13	0.066	(0.154)	0.042	0.025
217	18.08	0.13	0.066	(0.153)	0.042	0.025
218	18.17	0.13	0.066	(0.153)	0.042	0.025
219	18.25	0.13	0.066	(0.152)	0.042	0.025
220	18.33	0.13	0.066	(0.151)	0.042	0.025
221	18.42	0.13	0.066	(0.150)	0.042	0.025
222	18.50	0.13	0.066	(0.150)	0.042	0.025
223	18.58	0.10	0.050	(0.149)	0.031	0.018
224	18.67	0.10	0.050	(0.148)	0.031	0.018
225	18.75	0.10	0.050	(0.148)	0.031	0.018
226	18.83	0.07	0.033	(0.147)	0.021	0.012
227	18.92	0.07	0.033	(0.146)	0.021	0.012
228	19.00	0.07	0.033	(0.145)	0.021	0.012
229	19.08	0.10	0.050	(0.145)	0.031	0.018
230	19.17	0.10	0.050	(0.144)	0.031	0.018
231	19.25	0.10	0.050	(0.143)	0.031	0.018
232	19.33	0.13	0.066	(0.143)	0.042	0.025
233	19.42	0.13	0.066	(0.142)	0.042	0.025
234	19.50	0.13	0.066	(0.141)	0.042	0.025
235	19.58	0.10	0.050	(0.141)	0.031	0.018
236	19.67	0.10	0.050	(0.140)	0.031	0.018
237	19.75	0.10	0.050	(0.140)	0.031	0.018
238	19.83	0.07	0.033	(0.139)	0.021	0.012
239	19.92	0.07	0.033	(0.138)	0.021	0.012
240	20.00	0.07	0.033	(0.138)	0.021	0.012
241	20.08	0.10	0.050	(0.137)	0.031	0.018
242	20.17	0.10	0.050	(0.136)	0.031	0.018
243	20.25	0.10	0.050	(0.136)	0.031	0.018
244	20.33	0.10	0.050	(0.135)	0.031	0.018
245	20.42	0.10	0.050	(0.135)	0.031	0.018
246	20.50	0.10	0.050	(0.134)	0.031	0.018
247	20.58	0.10	0.050	(0.134)	0.031	0.018
248	20.67	0.10	0.050	(0.133)	0.031	0.018
249	20.75	0.10	0.050	(0.132)	0.031	0.018
250	20.83	0.07	0.033	(0.132)	0.021	0.012
251	20.92	0.07	0.033	(0.131)	0.021	0.012
252	21.00	0.07	0.033	(0.131)	0.021	0.012
253	21.08	0.10	0.050	(0.130)	0.031	0.018
254	21.17	0.10	0.050	(0.130)	0.031	0.018
255	21.25	0.10	0.050	(0.129)	0.031	0.018
256	21.33	0.07	0.033	(0.129)	0.021	0.012
257	21.42	0.07	0.033	(0.128)	0.021	0.012
258	21.50	0.07	0.033	(0.128)	0.021	0.012
259	21.58	0.10	0.050	(0.127)	0.031	0.018
260	21.67	0.10	0.050	(0.127)	0.031	0.018
261	21.75	0.10	0.050	(0.126)	0.031	0.018
262	21.83	0.07	0.033	(0.126)	0.021	0.012
263	21.92	0.07	0.033	(0.126)	0.021	0.012
264	22.00	0.07	0.033	(0.125)	0.021	0.012
265	22.08	0.10	0.050	(0.125)	0.031	0.018
266	22.17	0.10	0.050	(0.124)	0.031	0.018
267	22.25	0.10	0.050	(0.124)	0.031	0.018

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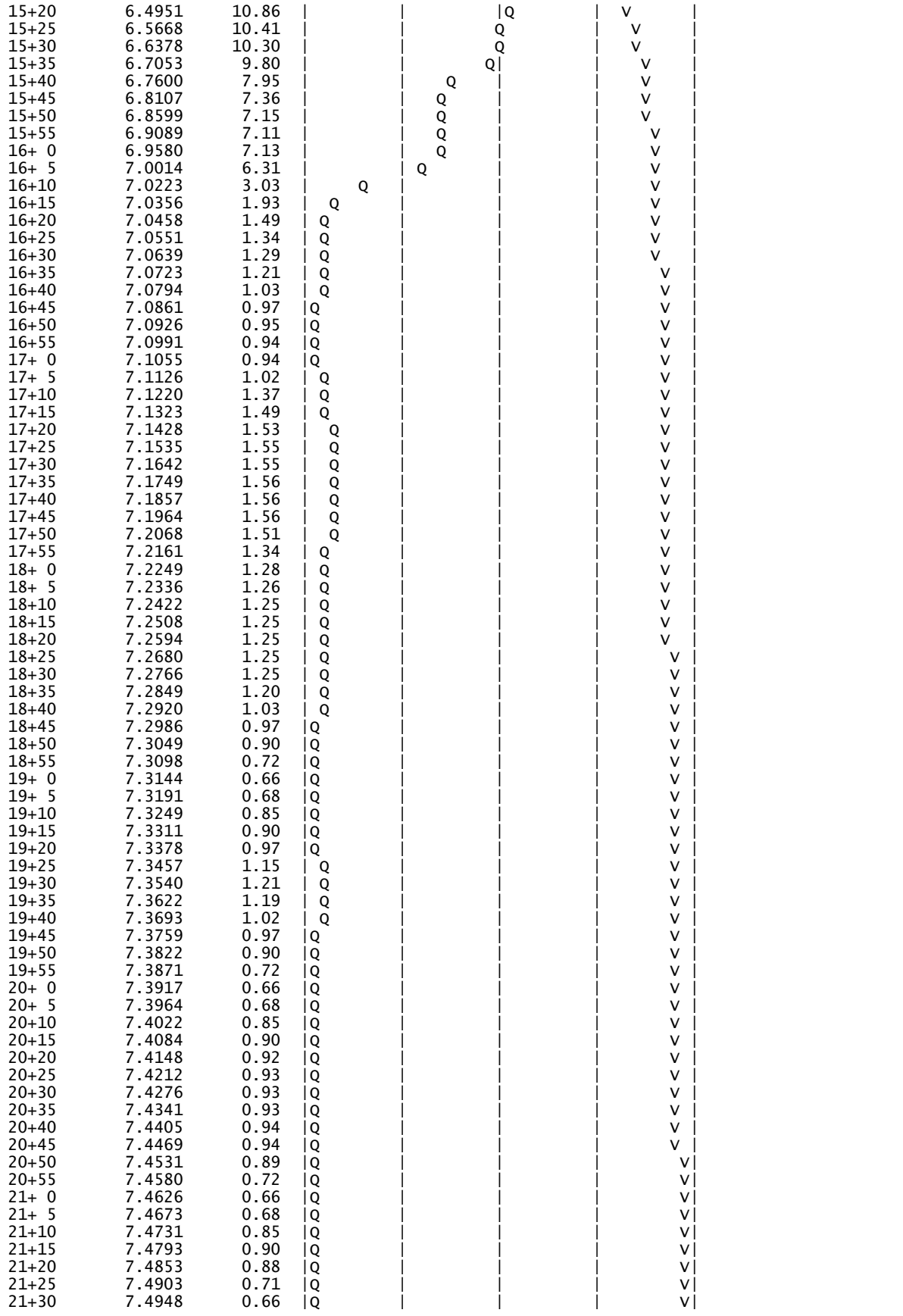
268  22.33     0.07      0.033       (  0.124)       0.021        0.012
269  22.42     0.07      0.033       (  0.123)       0.021        0.012
270  22.50     0.07      0.033       (  0.123)       0.021        0.012
271  22.58     0.07      0.033       (  0.122)       0.021        0.012
272  22.67     0.07      0.033       (  0.122)       0.021        0.012
273  22.75     0.07      0.033       (  0.122)       0.021        0.012
274  22.83     0.07      0.033       (  0.121)       0.021        0.012
275  22.92     0.07      0.033       (  0.121)       0.021        0.012
276  23.00     0.07      0.033       (  0.121)       0.021        0.012
277  23.08     0.07      0.033       (  0.121)       0.021        0.012
278  23.17     0.07      0.033       (  0.120)       0.021        0.012
279  23.25     0.07      0.033       (  0.120)       0.021        0.012
280  23.33     0.07      0.033       (  0.120)       0.021        0.012
281  23.42     0.07      0.033       (  0.120)       0.021        0.012
282  23.50     0.07      0.033       (  0.119)       0.021        0.012
283  23.58     0.07      0.033       (  0.119)       0.021        0.012
284  23.67     0.07      0.033       (  0.119)       0.021        0.012
285  23.75     0.07      0.033       (  0.119)       0.021        0.012
286  23.83     0.07      0.033       (  0.119)       0.021        0.012
287  23.92     0.07      0.033       (  0.119)       0.021        0.012
288  24.00     0.07      0.033       (  0.119)       0.021        0.012
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    21.8
      Flood volume = Effective rainfall      1.82(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =       7.6(Ac.Ft)
      Total soil loss =      2.33(In)
      Total soil loss =     9.768(Ac.Ft)
      Total rainfall =      4.15(In)
      Flood volume =      332902.9 Cubic Feet
      Total soil loss =      425474.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     18.230(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0006      0.09  Q         |          |          |          |
   0+10       0.0036      0.44  Q         |          |          |          |
   0+15       0.0074      0.55  VQ        |          |          |          |
   0+20       0.0118      0.64  VQ        |          |          |          |
   0+25       0.0175      0.83  VQ        |          |          |          |
   0+30       0.0237      0.89  VQ        |          |          |          |
   0+35       0.0301      0.92  VQ        |          |          |          |
   0+40       0.0365      0.93  VQ        |          |          |          |
   0+45       0.0429      0.93  VQ        |          |          |          |
   0+50       0.0496      0.98  VQ        |          |          |          |
   0+55       0.0576      1.15  V Q       |          |          |          |
   1+ 0       0.0659      1.21  V Q       |          |          |          |
   1+ 5       0.0741      1.19  V Q       |          |          |          |
   1+10       0.0812      1.02  V Q       |          |          |          |
   1+15       0.0878      0.97  VQ        |          |          |          |
   1+20       0.0944      0.95  VQ        |          |          |          |
   1+25       0.1008      0.94  VQ        |          |          |          |
   1+30       0.1073      0.94  VQ        |          |          |          |
   1+35       0.1137      0.94  VQ        |          |          |          |
   1+40       0.1202      0.94  VQ        |          |          |          |
   1+45       0.1266      0.94  VQ        |          |          |          |
   1+50       0.1334      0.98  VQ        |          |          |          |
   1+55       0.1413      1.15  V Q       |          |          |          |
   2+ 0       0.1497      1.21  V Q       |          |          |          |
   2+ 5       0.1582      1.23  V Q       |          |          |          |
   2+10       0.1667      1.24  V Q       |          |          |          |
   2+15       0.1753      1.24  V Q       |          |          |          |
   2+20       0.1839      1.25  V Q       |          |          |          |
   2+25       0.1925      1.25  |VQ       |          |          |          |
   2+30       0.2010      1.25  |VQ       |          |          |          |
   2+35       0.2099      1.29  |VQ       |          |          |          |
   2+40       0.2200      1.46  |VQ       |          |          |          |
   2+45       0.2305      1.52  |V Q      |          |          |          |
```

2+50	0.2412	1.55	V Q			
2+55	0.2519	1.55	V Q			
3+ 0	0.2626	1.56	V Q			
3+ 5	0.2733	1.56	V Q			
3+10	0.2840	1.56	V Q			
3+15	0.2948	1.56	V Q			
3+20	0.3055	1.56	V Q			
3+25	0.3163	1.56	V Q			
3+30	0.3270	1.56	V Q			
3+35	0.3377	1.56	V Q			
3+40	0.3485	1.56	V Q			
3+45	0.3592	1.56	V Q			
3+50	0.3702	1.60	V Q			
3+55	0.3825	1.78	VQ			
4+ 0	0.3951	1.83	VQ			
4+ 5	0.4079	1.86	VQ			
4+10	0.4208	1.87	VQ			
4+15	0.4336	1.87	VQ			
4+20	0.4468	1.91	VQ			
4+25	0.4612	2.09	V Q			
4+30	0.4760	2.15	V Q			
4+35	0.4909	2.17	V Q			
4+40	0.5059	2.18	V Q			
4+45	0.5209	2.18	V Q			
4+50	0.5363	2.23	V Q			
4+55	0.5528	2.40	V Q			
5+ 0	0.5697	2.46	V Q			
5+ 5	0.5862	2.39	VQ			
5+10	0.6003	2.05	VQ			
5+15	0.6137	1.94	Q			
5+20	0.6271	1.94	Q			
5+25	0.6415	2.10	VQ			
5+30	0.6563	2.15	VQ			
5+35	0.6716	2.21	VQ			
5+40	0.6881	2.40	VQ			
5+45	0.7050	2.46	VQ			
5+50	0.7221	2.48	VQ			
5+55	0.7392	2.49	VQ			
6+ 0	0.7564	2.49	VQ			
6+ 5	0.7739	2.54	VQ			
6+10	0.7925	2.71	VQ			
6+15	0.8116	2.77	VQ			
6+20	0.8308	2.79	VQ			
6+25	0.8501	2.80	VQ			
6+30	0.8694	2.80	VQ			
6+35	0.8891	2.85	VQ			
6+40	0.9099	3.02	V Q			
6+45	0.9311	3.08	V Q			
6+50	0.9525	3.10	V Q			
6+55	0.9739	3.11	VQ			
7+ 0	0.9954	3.12	VQ			
7+ 5	1.0169	3.12	VQ			
7+10	1.0383	3.12	VQ			
7+15	1.0598	3.12	VQ			
7+20	1.0816	3.16	VQ			
7+25	1.1046	3.34	VQ			
7+30	1.1279	3.39	VQ			
7+35	1.1518	3.46	Q			
7+40	1.1768	3.64	VQ			
7+45	1.2023	3.70	VQ			
7+50	1.2283	3.77	VQ			
7+55	1.2556	3.95	VQ			
8+ 0	1.2832	4.01	V Q			
8+ 5	1.3116	4.13	V Q			
8+10	1.3425	4.48	VQ			
8+15	1.3742	4.60	V Q			
8+20	1.4062	4.65	V Q			
8+25	1.4384	4.67	V Q			
8+30	1.4706	4.67	V Q			
8+35	1.5031	4.72	V Q			
8+40	1.5368	4.89	VQ			
8+45	1.5709	4.95	VQ			
8+50	1.6054	5.02	V Q			
8+55	1.6413	5.20	V Q			
9+ 0	1.6775	5.26	V Q			

9+ 5	1.7145	5.38	V Q			
9+10	1.7540	5.73	V|Q			
9+15	1.7943	5.85	V|Q			
9+20	1.8352	5.94	V|Q			
9+25	1.8774	6.13	V| Q			
9+30	1.9201	6.19	V Q			
9+35	1.9632	6.27	V Q			
9+40	2.0076	6.45	V Q			
9+45	2.0525	6.51	V Q			
9+50	2.0978	6.58	V Q			
9+55	2.1443	6.76	|V Q			
10+ 0	2.1913	6.82	|V Q			
10+ 5	2.2363	6.54	|V Q			
10+10	2.2730	5.33	QV			
10+15	2.3070	4.93	Q| V			
10+20	2.3398	4.77	Q| V			
10+25	2.3723	4.71	Q| V			
10+30	2.4046	4.69	Q| V			
10+35	2.4383	4.90	Q| V			
10+40	2.4780	5.76	|QV			
10+45	2.5197	6.05	| QV			
10+50	2.5622	6.17	| QV			
10+55	2.6050	6.21	| QV			
11+ 0	2.6479	6.22	| QV			
11+ 5	2.6905	6.19	| Q V			
11+10	2.7319	6.02	| Q V			
11+15	2.7730	5.96	|Q V			
11+20	2.8139	5.94	|Q V			
11+25	2.8547	5.93	|Q V			
11+30	2.8955	5.93	|Q V			
11+35	2.9357	5.84	|Q V			
11+40	2.9735	5.49	Q V			
11+45	3.0105	5.37	Q V			
11+50	3.0475	5.37	Q V			
11+55	3.0856	5.53	|Q V			
12+ 0	3.1240	5.58	|Q V			
12+ 5	3.1667	6.19	| Q V			
12+10	3.2255	8.55	| VQ			
12+15	3.2901	9.37	| VQ			
12+20	3.3580	9.86	| V Q|			
12+25	3.4303	10.49	| V Q			
12+30	3.5043	10.74	| V |Q			
12+35	3.5808	11.12	| V | Q			
12+40	3.6645	12.14	| V| Q			
12+45	3.7507	12.52	| V| Q			
12+50	3.8390	12.82	| V Q			
12+55	3.9312	13.39	| V Q			
13+ 0	4.0249	13.61	| |V Q			
13+ 5	4.1237	14.34	| |V Q			
13+10	4.2391	16.76	| | V | Q			
13+15	4.3603	17.60	| | V | Q			
13+20	4.4842	17.98	| | V | Q			
13+25	4.6091	18.14	| | V | Q			
13+30	4.7346	18.23	| | V | Q			
13+35	4.8517	17.00	| | V | Q			
13+40	4.9336	11.90	| | Q V			
13+45	5.0041	10.23	| Q V			
13+50	5.0701	9.58	| Q| V			
13+55	5.1348	9.40	| Q | V			
14+ 0	5.1993	9.37	| Q | V			
14+ 5	5.2671	9.85	| Q| V			
14+10	5.3481	11.76	| | Q V			
14+15	5.4338	12.44	| | Q V			
14+20	5.5207	12.62	| | Q V			
14+25	5.6053	12.29	| | Q V|			
14+30	5.6894	12.21	| | Q V|			
14+35	5.7736	12.22	| | Q V			
14+40	5.8579	12.25	| | Q V			
14+45	5.9426	12.29	| | Q |V			
14+50	6.0267	12.22	| | Q |V			
14+55	6.1080	11.80	| | Q |V			
15+ 0	6.1885	11.69	| | Q | V			
15+ 5	6.2681	11.56	| | Q | V			
15+10	6.3446	11.11	| Q | V			
15+15	6.4203	11.00	|Q | V			



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   21+35       7.4995      0.68  |Q        |         |         |        v|
   21+40       7.5053      0.85  |Q        |         |         |        v|
   21+45       7.5115      0.90  |Q        |         |         |        v|
   21+50       7.5175      0.88  |Q        |         |         |        v|
   21+55       7.5225      0.71  |Q        |         |         |        v|
   22+ 0       7.5270      0.66  |Q        |         |         |        v|
   22+ 5       7.5317      0.68  |Q        |         |         |        v|
   22+10       7.5375      0.85  |Q        |         |         |        v|
   22+15       7.5437      0.90  |Q        |         |         |        v|
   22+20       7.5498      0.88  |Q        |         |         |        v|
   22+25       7.5547      0.71  |Q        |         |         |        v|
   22+30       7.5592      0.66  |Q        |         |         |        v|
   22+35       7.5636      0.64  |Q        |         |         |        v|
   22+40       7.5679      0.63  |Q        |         |         |        v|
   22+45       7.5722      0.63  |Q        |         |         |        v|
   22+50       7.5765      0.62  |Q        |         |         |        v|
   22+55       7.5808      0.62  |Q        |         |         |        v|
   23+ 0       7.5851      0.62  |Q        |         |         |        v|
   23+ 5       7.5894      0.62  |Q        |         |         |        v|
   23+10       7.5937      0.62  |Q        |         |         |        v|
   23+15       7.5980      0.62  |Q        |         |         |        v|
   23+20       7.6023      0.62  |Q        |         |         |        v|
   23+25       7.6066      0.62  |Q        |         |         |        v|
   23+30       7.6109      0.62  |Q        |         |         |        v|
   23+35       7.6152      0.62  |Q        |         |         |        v|
   23+40       7.6195      0.62  |Q        |         |         |        v|
   23+45       7.6238      0.62  |Q        |         |         |        v|
   23+50       7.6280      0.62  |Q        |         |         |        v|
   23+55       7.6323      0.62  |Q        |         |         |        v|
   24+ 0       7.6366      0.62  |Q        |         |         |        v|
   24+ 5       7.6403      0.54  |Q        |         |         |        v|
   24+10       7.6416      0.19  Q        |         |         |        v|
   24+15       7.6421      0.07  Q        |         |         |        v|
   24+20       7.6423      0.03  Q        |         |         |        v|
   24+25       7.6424      0.01  Q        |         |         |        v|
   24+30       7.6424      0.00  Q        |         |         |        v|
   24+35       7.6424      0.00  Q        |         |         |        v|
-------------------------------------------------------------------------
```

EXISTING CONDITION
100-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: B1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
02-10-2022 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	0.55	27.72

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	1.25	63.00

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 1.250(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 1.249(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.00	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

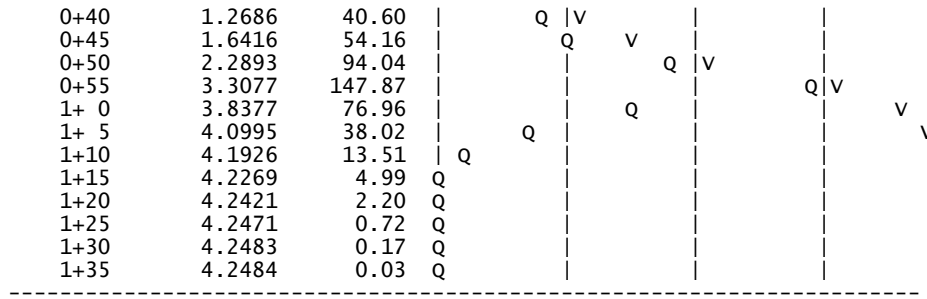
```
      72.0  72.0      0.338     0.330        0.238       1.000      0.238
                                                        Sum (F) =   0.238
      Area averaged mean soil loss (F) (In/Hr) =  0.238
      Minimum soil loss rate ((In/Hr)) =  0.119
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.630
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         99.192         14.132             7.178
          2   0.167        198.384         55.642            28.263
          3   0.250        297.576         18.582             9.439
          4   0.333        396.768          7.530             3.825
          5   0.417        495.961          2.548             1.294
          6   0.500        595.153          0.859             0.436
          7   0.583        694.345          0.565             0.287
          8   0.667        793.537          0.141             0.072
                                   Sum = 100.000   Sum=      50.794
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)      Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.510          0.238    (  0.321)        0.272
   2   0.17     4.70      0.705          0.238    (  0.444)        0.467
   3   0.25     4.70      0.705          0.238    (  0.444)        0.467
   4   0.33     5.10      0.765          0.238    (  0.482)        0.527
   5   0.42     5.80      0.870          0.238    (  0.548)        0.632
   6   0.50     5.90      0.885          0.238    (  0.557)        0.647
   7   0.58     7.10      1.065          0.238    (  0.671)        0.827
   8   0.67     8.70      1.304          0.238    (  0.822)        1.067
   9   0.75    13.20      1.979          0.238    (  1.247)        1.741
  10   0.83    29.70      4.453          0.238    (  2.805)        4.215
  11   0.92     7.70      1.154          0.238    (  0.727)        0.917
  12   1.00     4.00      0.600          0.238    (  0.378)        0.362
               (Loss Rate Not Used)
     Sum =     100.0                                 Sum =    12.1
        Flood volume = Effective rainfall      1.01(In)
         times area      50.4(Ac.)/[(In)/(Ft.)] =       4.2(Ac.Ft)
        Total soil loss =      0.24(In)
        Total soil loss =     0.999(Ac.Ft)
        Total rainfall =      1.25(In)
        Flood volume =      185062.1 Cubic Feet
        Total soil loss =       43523.4 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =    147.870(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f     H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ------------------------------------------------------------------------
    0+ 5       0.0134      1.95  Q         |         |         |         |
    0+10       0.0895     11.04  V Q       |         |         |         |
    0+15       0.2212     19.12  | VQ      |         |         |         |
    0+20       0.3756     22.43  |  VQ     |         |         |         |
    0+25       0.5546     25.98  |    Q    |         |         |         |
    0+30       0.7611     29.99  |    Q V  |         |         |         |
    0+35       0.9890     33.09  |     Q  V|         |         |         |
```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0+45 1.6416 54.16
0+50 2.2893 94.04
0+55 3.3077 147.87
1+ 0 3.8377 76.96
1+ 5 4.0995 38.02
1+10 4.1926 13.51
1+15 4.2269 4.99
1+20 4.2421 2.20
1+25 4.2471 0.72
1+30 4.2483 0.17
1+35 4.2484 0.03

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: B3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
02-10-2022 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	0.95	47.88

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.05	103.32

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 2.050(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.050(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.00	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.0 72.0 0.338 0.330 0.238 1.000 0.238
Sum (F) = 0.238

Area averaged mean soil loss (F) (In/Hr) = 0.238
Minimum soil loss rate ((In/Hr)) = 0.119
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.320	(0.238)	0.201	0.118
2	0.17	1.30	0.320	(0.238)	0.201	0.118
3	0.25	1.10	0.271	(0.238)	0.170	0.100
4	0.33	1.50	0.369	(0.238)	0.232	0.136
5	0.42	1.50	0.369	(0.238)	0.232	0.136
6	0.50	1.80	0.443	0.238	(0.279)	0.205
7	0.58	1.50	0.369	(0.238)	0.232	0.136
8	0.67	1.80	0.443	0.238	(0.279)	0.205
9	0.75	1.80	0.443	0.238	(0.279)	0.205
10	0.83	1.50	0.369	(0.238)	0.232	0.136
11	0.92	1.60	0.394	0.238	(0.248)	0.156
12	1.00	1.80	0.443	0.238	(0.279)	0.205
13	1.08	2.20	0.541	0.238	(0.341)	0.303
14	1.17	2.20	0.541	0.238	(0.341)	0.303
15	1.25	2.20	0.541	0.238	(0.341)	0.303
16	1.33	2.00	0.492	0.238	(0.310)	0.254
17	1.42	2.60	0.639	0.238	(0.403)	0.402
18	1.50	2.70	0.664	0.238	(0.418)	0.426
19	1.58	2.40	0.590	0.238	(0.372)	0.352
20	1.67	2.70	0.664	0.238	(0.418)	0.426
21	1.75	3.30	0.812	0.238	(0.511)	0.574
22	1.83	3.10	0.762	0.238	(0.480)	0.525
23	1.92	2.90	0.713	0.238	(0.449)	0.475
24	2.00	3.00	0.738	0.238	(0.465)	0.500
25	2.08	3.10	0.762	0.238	(0.480)	0.525
26	2.17	4.20	1.033	0.238	(0.651)	0.795
27	2.25	5.00	1.230	0.238	(0.775)	0.992
28	2.33	3.50	0.861	0.238	(0.542)	0.623
29	2.42	6.80	1.672	0.238	(1.054)	1.435
30	2.50	7.30	1.795	0.238	(1.131)	1.558
31	2.58	8.20	2.017	0.238	(1.271)	1.779
32	2.67	5.90	1.451	0.238	(0.914)	1.213
33	2.75	2.00	0.492	0.238	(0.310)	0.254
34	2.83	1.80	0.443	0.238	(0.279)	0.205
35	2.92	1.80	0.443	0.238	(0.279)	0.205
36	3.00	0.60	0.148	(0.238)	0.093	0.055
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	16.3

Flood volume = Effective rainfall 1.36(In)
times area 50.4(Ac.)/[(In)/(Ft.)] = 5.7(Ac.Ft)
Total soil loss = 0.69(In)
Total soil loss = 2.890(Ac.Ft)

Total rainfall = 2.05(In)
Flood volume = 249082.6 Cubic Feet
Total soil loss = 125886.3 Cubic Feet

Peak flow rate of this hydrograph = 80.718(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 22.5 45.0 67.5 90.0
0+ 5	0.0059	0.85	Q | | | |
0+10	0.0347	4.19	VQ | | | |
0+15	0.0704	5.18	V Q | | | |
0+20	0.1075	5.38	V Q | | | |
0+25	0.1515	6.39	|VQ | | | |
0+30	0.2011	7.21	|V Q | | | |
0+35	0.2617	8.80	|V Q | | | |
0+40	0.3172	8.05	| VQ | | | |
0+45	0.3834	9.61	| V Q | | | |
0+50	0.4495	9.60	| VQ | | | |
0+55	0.5046	8.01	| Q | | | |
1+ 0	0.5621	8.34	| Q | | | |
1+ 5	0.6335	10.37	| Q | | | |
1+10	0.7272	13.62	| VQ | | | |
1+15	0.8287	14.73	| VQ | | | |
1+20	0.9307	14.81	| Q | | | |
1+25	1.0314	14.63	| QV | | | |
1+30	1.1593	18.57	| Q | | | |
1+35	1.2969	19.97	| QV| | | |
1+40	1.4288	19.16	| QV| | | |
1+45	1.5794	21.87	| Q|V | | |
1+50	1.7597	26.19	| |QV | | |
1+55	1.9393	26.07	| |Q V | | |
2+ 0	2.1117	25.04	| |Q V | | |
2+ 5	2.2871	25.46	| |Q V | | |
2+10	2.4810	28.16	| | Q V | | |
2+15	2.7394	37.51	| | Q V| | |
2+20	3.0361	43.08	| | Q|V | |
2+25	3.3212	41.40	| | Q | V | |
2+30	3.7541	62.86	| | | VQ | |
2+35	4.2677	74.57	| | | V| Q |
2+40	4.8236	80.72	| | | | V Q |
2+45	5.2462	61.36	| | | Q | V |
2+50	5.4515	29.81	| | Q | | V |
2+55	5.5737	17.74	| Q | | | V |
3+ 0	5.6563	11.99	| Q | | | V|
3+ 5	5.6958	5.74	| Q | | | V|
3+10	5.7106	2.15	Q | | | V|
3+15	5.7156	0.72	Q | | | V|
3+20	5.7172	0.24	Q | | | V|
3+25	5.7179	0.10	Q | | | V|
3+30	5.7181	0.03	Q | | | V|
3+35	5.7181	0.00	Q | | | V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: B6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
02-10-2022 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	1.40	70.56

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	3.00	151.20

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.00	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.0	72.0	0.338	0.330	0.238	1.000	0.238
					Sum (F) =	0.238

Area averaged mean soil loss (F) (In/Hr) = 0.238
Minimum soil loss rate ((In/Hr)) = 0.119
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time	(Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.180	(0.238)	0.113	0.067
2	0.17	0.60	0.216	(0.238)	0.136	0.080
3	0.25	0.60	0.216	(0.238)	0.136	0.080
4	0.33	0.60	0.216	(0.238)	0.136	0.080
5	0.42	0.60	0.216	(0.238)	0.136	0.080
6	0.50	0.70	0.252	(0.238)	0.159	0.093
7	0.58	0.70	0.252	(0.238)	0.159	0.093
8	0.67	0.70	0.252	(0.238)	0.159	0.093
9	0.75	0.70	0.252	(0.238)	0.159	0.093
10	0.83	0.70	0.252	(0.238)	0.159	0.093
11	0.92	0.70	0.252	(0.238)	0.159	0.093
12	1.00	0.80	0.288	(0.238)	0.181	0.107
13	1.08	0.80	0.288	(0.238)	0.181	0.107
14	1.17	0.80	0.288	(0.238)	0.181	0.107
15	1.25	0.80	0.288	(0.238)	0.181	0.107
16	1.33	0.80	0.288	(0.238)	0.181	0.107
17	1.42	0.80	0.288	(0.238)	0.181	0.107
18	1.50	0.80	0.288	(0.238)	0.181	0.107
19	1.58	0.80	0.288	(0.238)	0.181	0.107
20	1.67	0.80	0.288	(0.238)	0.181	0.107
21	1.75	0.80	0.288	(0.238)	0.181	0.107
22	1.83	0.80	0.288	(0.238)	0.181	0.107
23	1.92	0.80	0.288	(0.238)	0.181	0.107
24	2.00	0.90	0.324	(0.238)	0.204	0.120
25	2.08	0.80	0.288	(0.238)	0.181	0.107
26	2.17	0.90	0.324	(0.238)	0.204	0.120
27	2.25	0.90	0.324	(0.238)	0.204	0.120
28	2.33	0.90	0.324	(0.238)	0.204	0.120
29	2.42	0.90	0.324	(0.238)	0.204	0.120
30	2.50	0.90	0.324	(0.238)	0.204	0.120
31	2.58	0.90	0.324	(0.238)	0.204	0.120
32	2.67	0.90	0.324	(0.238)	0.204	0.120
33	2.75	1.00	0.360	(0.238)	0.227	0.133
34	2.83	1.00	0.360	(0.238)	0.227	0.133
35	2.92	1.00	0.360	(0.238)	0.227	0.133
36	3.00	1.00	0.360	(0.238)	0.227	0.133
37	3.08	1.00	0.360	(0.238)	0.227	0.133
38	3.17	1.10	0.396	0.238	(0.249)	0.158
39	3.25	1.10	0.396	0.238	(0.249)	0.158
40	3.33	1.10	0.396	0.238	(0.249)	0.158
41	3.42	1.20	0.432	0.238	(0.272)	0.194
42	3.50	1.30	0.468	0.238	(0.295)	0.230

```
43   3.58     1.40      0.504          0.238    (  0.317)        0.266
44   3.67     1.40      0.504          0.238    (  0.317)        0.266
45   3.75     1.50      0.540          0.238    (  0.340)        0.302
46   3.83     1.50      0.540          0.238    (  0.340)        0.302
47   3.92     1.60      0.576          0.238    (  0.363)        0.338
48   4.00     1.60      0.576          0.238    (  0.363)        0.338
49   4.08     1.70      0.612          0.238    (  0.385)        0.374
50   4.17     1.80      0.648          0.238    (  0.408)        0.410
51   4.25     1.90      0.684          0.238    (  0.431)        0.446
52   4.33     2.00      0.720          0.238    (  0.454)        0.482
53   4.42     2.10      0.756          0.238    (  0.476)        0.518
54   4.50     2.10      0.756          0.238    (  0.476)        0.518
55   4.58     2.20      0.792          0.238    (  0.499)        0.554
56   4.67     2.30      0.828          0.238    (  0.522)        0.590
57   4.75     2.40      0.864          0.238    (  0.544)        0.626
58   4.83     2.40      0.864          0.238    (  0.544)        0.626
59   4.92     2.50      0.900          0.238    (  0.567)        0.662
60   5.00     2.60      0.936          0.238    (  0.590)        0.698
61   5.08     3.10      1.116          0.238    (  0.703)        0.878
62   5.17     3.60      1.296          0.238    (  0.816)        1.058
63   5.25     3.90      1.404          0.238    (  0.884)        1.166
64   5.33     4.20      1.512          0.238    (  0.952)        1.274
65   5.42     4.70      1.692          0.238    (  1.066)        1.454
66   5.50     5.60      2.016          0.238    (  1.270)        1.778
67   5.58     1.90      0.684          0.238    (  0.431)        0.446
68   5.67     0.90      0.324       (  0.238)       0.204        0.120
69   5.75     0.60      0.216       (  0.238)       0.136        0.080
70   5.83     0.50      0.180       (  0.238)       0.113        0.067
71   5.92     0.30      0.108       (  0.238)       0.068        0.040
72   6.00     0.20      0.072       (  0.238)       0.045        0.027
              (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    21.6
      Flood volume = Effective rainfall      1.80(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =       7.5(Ac.Ft)
      Total soil loss =      1.20(In)
      Total soil loss =     5.053(Ac.Ft)
      Total rainfall =      3.00(In)
      Flood volume =      328630.8 Cubic Feet
      Total soil loss =      220130.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     74.351(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.0      40.0      60.0      80.0
-------------------------------------------------------------------------
  0+ 5       0.0033      0.48  Q        |         |         |         |
  0+10       0.0202      2.46  VQ       |         |         |         |
  0+15       0.0441      3.46  VQ       |         |         |         |
  0+20       0.0705      3.84  VQ       |         |         |         |
  0+25       0.0979      3.98  VQ       |         |         |         |
  0+30       0.1263      4.12  V Q      |         |         |         |
  0+35       0.1575      4.52  V Q      |         |         |         |
  0+40       0.1896      4.66  |VQ      |         |         |         |
  0+45       0.2220      4.71  |VQ      |         |         |         |
  0+50       0.2545      4.73  |VQ      |         |         |         |
  0+55       0.2871      4.73  |VQ      |         |         |         |
  1+ 0       0.3204      4.83  |VQ      |         |         |         |
  1+ 5       0.3563      5.21  |VQ      |         |         |         |
  1+10       0.3931      5.34  | Q      |         |         |         |
  1+15       0.4301      5.39  | Q      |         |         |         |
  1+20       0.4674      5.40  | Q      |         |         |         |
  1+25       0.5046      5.41  | Q      |         |         |         |
  1+30       0.5419      5.41  | Q      |         |         |         |
  1+35       0.5792      5.41  | QV     |         |         |         |
  1+40       0.6165      5.41  | QV     |         |         |         |
  1+45       0.6538      5.41  | QV     |         |         |         |
  1+50       0.6911      5.41  | QV     |         |         |         |
  1+55       0.7284      5.41  | QV     |         |         |         |
  2+ 0       0.7663      5.51  | Q V    |         |         |         |
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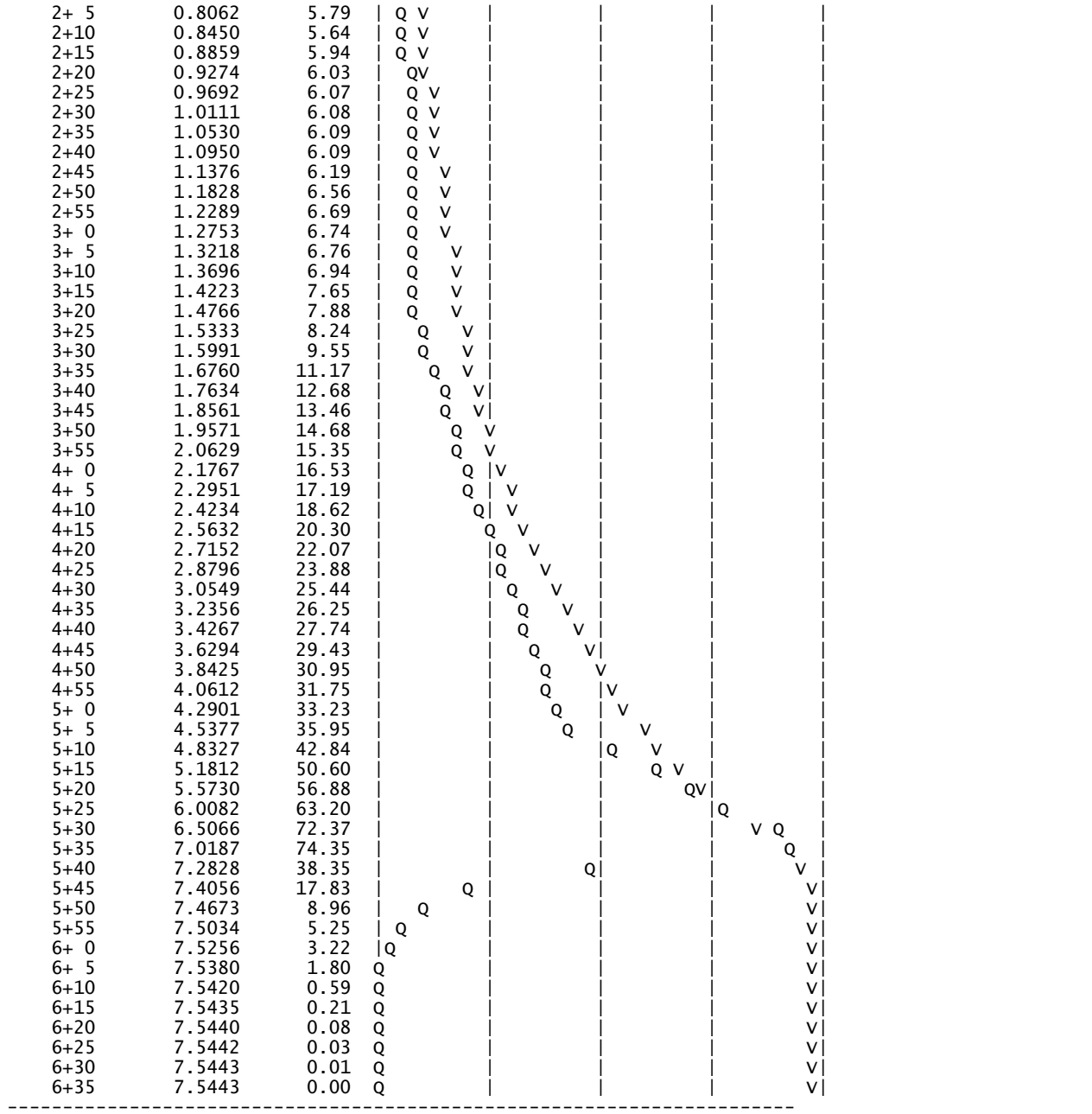
2+ 5 0.8062 5.79
2+10 0.8450 5.64
2+15 0.8859 5.94
2+20 0.9274 6.03
2+25 0.9692 6.07
2+30 1.0111 6.08
2+35 1.0530 6.09
2+40 1.0950 6.09
2+45 1.1376 6.19
2+50 1.1828 6.56
2+55 1.2289 6.69
3+ 0 1.2753 6.74
3+ 5 1.3218 6.76
3+10 1.3696 6.94
3+15 1.4223 7.65
3+20 1.4766 7.88
3+25 1.5333 8.24
3+30 1.5991 9.55
3+35 1.6760 11.17
3+40 1.7634 12.68
3+45 1.8561 13.46
3+50 1.9571 14.68
3+55 2.0629 15.35
4+ 0 2.1767 16.53
4+ 5 2.2951 17.19
4+10 2.4234 18.62
4+15 2.5632 20.30
4+20 2.7152 22.07
4+25 2.8796 23.88
4+30 3.0549 25.44
4+35 3.2356 26.25
4+40 3.4267 27.74
4+45 3.6294 29.43
4+50 3.8425 30.95
4+55 4.0612 31.75
5+ 0 4.2901 33.23
5+ 5 4.5377 35.95
5+10 4.8327 42.84
5+15 5.1812 50.60
5+20 5.5730 56.88
5+25 6.0082 63.20
5+30 6.5066 72.37
5+35 7.0187 74.35
5+40 7.2828 38.35
5+45 7.4056 17.83
5+50 7.4673 8.96
5+55 7.5034 5.25
6+ 0 7.5256 3.22
6+ 5 7.5380 1.80
6+10 7.5420 0.59
6+15 7.5435 0.21
6+20 7.5440 0.08
6+25 7.5442 0.03
6+30 7.5443 0.01
6+35 7.5443 0.00

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: B24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
02-10-2022 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.50	126.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	6.50	327.60

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 6.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 6.499(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.00	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.0	72.0	0.338	0.330	0.238	1.000	0.238
					Sum (F) =	0.238

Area averaged mean soil loss (F) (In/Hr) = 0.238
Minimum soil loss rate ((In/Hr)) = 0.119
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.052	(0.422)	0.033	0.019
2	0.17	0.07	0.052	(0.420)	0.033	0.019
3	0.25	0.07	0.052	(0.418)	0.033	0.019
4	0.33	0.10	0.078	(0.417)	0.049	0.029
5	0.42	0.10	0.078	(0.415)	0.049	0.029
6	0.50	0.10	0.078	(0.414)	0.049	0.029
7	0.58	0.10	0.078	(0.412)	0.049	0.029
8	0.67	0.10	0.078	(0.410)	0.049	0.029
9	0.75	0.10	0.078	(0.409)	0.049	0.029
10	0.83	0.13	0.104	(0.407)	0.066	0.038
11	0.92	0.13	0.104	(0.406)	0.066	0.038
12	1.00	0.13	0.104	(0.404)	0.066	0.038
13	1.08	0.10	0.078	(0.402)	0.049	0.029
14	1.17	0.10	0.078	(0.401)	0.049	0.029
15	1.25	0.10	0.078	(0.399)	0.049	0.029
16	1.33	0.10	0.078	(0.398)	0.049	0.029
17	1.42	0.10	0.078	(0.396)	0.049	0.029
18	1.50	0.10	0.078	(0.394)	0.049	0.029
19	1.58	0.10	0.078	(0.393)	0.049	0.029
20	1.67	0.10	0.078	(0.391)	0.049	0.029
21	1.75	0.10	0.078	(0.390)	0.049	0.029
22	1.83	0.13	0.104	(0.388)	0.066	0.038
23	1.92	0.13	0.104	(0.387)	0.066	0.038
24	2.00	0.13	0.104	(0.385)	0.066	0.038
25	2.08	0.13	0.104	(0.383)	0.066	0.038
26	2.17	0.13	0.104	(0.382)	0.066	0.038
27	2.25	0.13	0.104	(0.380)	0.066	0.038
28	2.33	0.13	0.104	(0.379)	0.066	0.038
29	2.42	0.13	0.104	(0.377)	0.066	0.038
30	2.50	0.13	0.104	(0.376)	0.066	0.038
31	2.58	0.17	0.130	(0.374)	0.082	0.048
32	2.67	0.17	0.130	(0.373)	0.082	0.048
33	2.75	0.17	0.130	(0.371)	0.082	0.048
34	2.83	0.17	0.130	(0.370)	0.082	0.048
35	2.92	0.17	0.130	(0.368)	0.082	0.048
36	3.00	0.17	0.130	(0.367)	0.082	0.048
37	3.08	0.17	0.130	(0.365)	0.082	0.048
38	3.17	0.17	0.130	(0.364)	0.082	0.048
39	3.25	0.17	0.130	(0.362)	0.082	0.048
40	3.33	0.17	0.130	(0.360)	0.082	0.048
41	3.42	0.17	0.130	(0.359)	0.082	0.048
42	3.50	0.17	0.130	(0.357)	0.082	0.048

43	3.58	0.17	0.130	(0.356)	0.082	0.048
44	3.67	0.17	0.130	(0.354)	0.082	0.048
45	3.75	0.17	0.130	(0.353)	0.082	0.048
46	3.83	0.20	0.156	(0.352)	0.098	0.058
47	3.92	0.20	0.156	(0.350)	0.098	0.058
48	4.00	0.20	0.156	(0.349)	0.098	0.058
49	4.08	0.20	0.156	(0.347)	0.098	0.058
50	4.17	0.20	0.156	(0.346)	0.098	0.058
51	4.25	0.20	0.156	(0.344)	0.098	0.058
52	4.33	0.23	0.182	(0.343)	0.115	0.067
53	4.42	0.23	0.182	(0.341)	0.115	0.067
54	4.50	0.23	0.182	(0.340)	0.115	0.067
55	4.58	0.23	0.182	(0.338)	0.115	0.067
56	4.67	0.23	0.182	(0.337)	0.115	0.067
57	4.75	0.23	0.182	(0.335)	0.115	0.067
58	4.83	0.27	0.208	(0.334)	0.131	0.077
59	4.92	0.27	0.208	(0.332)	0.131	0.077
60	5.00	0.27	0.208	(0.331)	0.131	0.077
61	5.08	0.20	0.156	(0.330)	0.098	0.058
62	5.17	0.20	0.156	(0.328)	0.098	0.058
63	5.25	0.20	0.156	(0.327)	0.098	0.058
64	5.33	0.23	0.182	(0.325)	0.115	0.067
65	5.42	0.23	0.182	(0.324)	0.115	0.067
66	5.50	0.23	0.182	(0.322)	0.115	0.067
67	5.58	0.27	0.208	(0.321)	0.131	0.077
68	5.67	0.27	0.208	(0.320)	0.131	0.077
69	5.75	0.27	0.208	(0.318)	0.131	0.077
70	5.83	0.27	0.208	(0.317)	0.131	0.077
71	5.92	0.27	0.208	(0.315)	0.131	0.077
72	6.00	0.27	0.208	(0.314)	0.131	0.077
73	6.08	0.30	0.234	(0.313)	0.147	0.087
74	6.17	0.30	0.234	(0.311)	0.147	0.087
75	6.25	0.30	0.234	(0.310)	0.147	0.087
76	6.33	0.30	0.234	(0.308)	0.147	0.087
77	6.42	0.30	0.234	(0.307)	0.147	0.087
78	6.50	0.30	0.234	(0.306)	0.147	0.087
79	6.58	0.33	0.260	(0.304)	0.164	0.096
80	6.67	0.33	0.260	(0.303)	0.164	0.096
81	6.75	0.33	0.260	(0.302)	0.164	0.096
82	6.83	0.33	0.260	(0.300)	0.164	0.096
83	6.92	0.33	0.260	(0.299)	0.164	0.096
84	7.00	0.33	0.260	(0.298)	0.164	0.096
85	7.08	0.33	0.260	(0.296)	0.164	0.096
86	7.17	0.33	0.260	(0.295)	0.164	0.096
87	7.25	0.33	0.260	(0.293)	0.164	0.096
88	7.33	0.37	0.286	(0.292)	0.180	0.106
89	7.42	0.37	0.286	(0.291)	0.180	0.106
90	7.50	0.37	0.286	(0.289)	0.180	0.106
91	7.58	0.40	0.312	(0.288)	0.197	0.115
92	7.67	0.40	0.312	(0.287)	0.197	0.115
93	7.75	0.40	0.312	(0.285)	0.197	0.115
94	7.83	0.43	0.338	(0.284)	0.213	0.125
95	7.92	0.43	0.338	(0.283)	0.213	0.125
96	8.00	0.43	0.338	(0.282)	0.213	0.125
97	8.08	0.50	0.390	(0.280)	0.246	0.144
98	8.17	0.50	0.390	(0.279)	0.246	0.144
99	8.25	0.50	0.390	(0.278)	0.246	0.144
100	8.33	0.50	0.390	(0.276)	0.246	0.144
101	8.42	0.50	0.390	(0.275)	0.246	0.144
102	8.50	0.50	0.390	(0.274)	0.246	0.144
103	8.58	0.53	0.416	(0.272)	0.262	0.154
104	8.67	0.53	0.416	(0.271)	0.262	0.154
105	8.75	0.53	0.416	(0.270)	0.262	0.154
106	8.83	0.57	0.442	0.269	(0.278)	0.173
107	8.92	0.57	0.442	0.267	(0.278)	0.175
108	9.00	0.57	0.442	0.266	(0.278)	0.176
109	9.08	0.63	0.494	0.265	(0.311)	0.229
110	9.17	0.63	0.494	0.264	(0.311)	0.230
111	9.25	0.63	0.494	0.262	(0.311)	0.232
112	9.33	0.67	0.520	0.261	(0.328)	0.259
113	9.42	0.67	0.520	0.260	(0.328)	0.260
114	9.50	0.67	0.520	0.259	(0.328)	0.261
115	9.58	0.70	0.546	0.257	(0.344)	0.289
116	9.67	0.70	0.546	0.256	(0.344)	0.290
117	9.75	0.70	0.546	0.255	(0.344)	0.291

118	9.83	0.73	0.572		0.254	(0.360)	0.318
119	9.92	0.73	0.572		0.252	(0.360)	0.320
120	10.00	0.73	0.572		0.251	(0.360)	0.321
121	10.08	0.50	0.390	(	0.250)	0.246	0.144
122	10.17	0.50	0.390	(	0.249)	0.246	0.144
123	10.25	0.50	0.390	(	0.248)	0.246	0.144
124	10.33	0.50	0.390	(	0.246)	0.246	0.144
125	10.42	0.50	0.390		0.245	(0.246)	0.145
126	10.50	0.50	0.390		0.244	(0.246)	0.146
127	10.58	0.67	0.520		0.243	(0.328)	0.277
128	10.67	0.67	0.520		0.242	(0.328)	0.278
129	10.75	0.67	0.520		0.240	(0.328)	0.280
130	10.83	0.67	0.520		0.239	(0.328)	0.281
131	10.92	0.67	0.520		0.238	(0.328)	0.282
132	11.00	0.67	0.520		0.237	(0.328)	0.283
133	11.08	0.63	0.494		0.236	(0.311)	0.258
134	11.17	0.63	0.494		0.235	(0.311)	0.259
135	11.25	0.63	0.494		0.233	(0.311)	0.261
136	11.33	0.63	0.494		0.232	(0.311)	0.262
137	11.42	0.63	0.494		0.231	(0.311)	0.263
138	11.50	0.63	0.494		0.230	(0.311)	0.264
139	11.58	0.57	0.442		0.229	(0.278)	0.213
140	11.67	0.57	0.442		0.228	(0.278)	0.214
141	11.75	0.57	0.442		0.227	(0.278)	0.215
142	11.83	0.60	0.468		0.225	(0.295)	0.243
143	11.92	0.60	0.468		0.224	(0.295)	0.244
144	12.00	0.60	0.468		0.223	(0.295)	0.245
145	12.08	0.83	0.650		0.222	(0.409)	0.428
146	12.17	0.83	0.650		0.221	(0.409)	0.429
147	12.25	0.83	0.650		0.220	(0.409)	0.430
148	12.33	0.87	0.676		0.219	(0.426)	0.457
149	12.42	0.87	0.676		0.218	(0.426)	0.458
150	12.50	0.87	0.676		0.217	(0.426)	0.459
151	12.58	0.93	0.728		0.215	(0.459)	0.512
152	12.67	0.93	0.728		0.214	(0.459)	0.514
153	12.75	0.93	0.728		0.213	(0.459)	0.515
154	12.83	0.97	0.754		0.212	(0.475)	0.542
155	12.92	0.97	0.754		0.211	(0.475)	0.543
156	13.00	0.97	0.754		0.210	(0.475)	0.544
157	13.08	1.13	0.884		0.209	(0.557)	0.675
158	13.17	1.13	0.884		0.208	(0.557)	0.676
159	13.25	1.13	0.884		0.207	(0.557)	0.677
160	13.33	1.13	0.884		0.206	(0.557)	0.678
161	13.42	1.13	0.884		0.205	(0.557)	0.679
162	13.50	1.13	0.884		0.204	(0.557)	0.680
163	13.58	0.77	0.598		0.203	(0.377)	0.395
164	13.67	0.77	0.598		0.202	(0.377)	0.396
165	13.75	0.77	0.598		0.201	(0.377)	0.397
166	13.83	0.77	0.598		0.200	(0.377)	0.398
167	13.92	0.77	0.598		0.199	(0.377)	0.399
168	14.00	0.77	0.598		0.198	(0.377)	0.400
169	14.08	0.90	0.702		0.197	(0.442)	0.505
170	14.17	0.90	0.702		0.196	(0.442)	0.506
171	14.25	0.90	0.702		0.195	(0.442)	0.507
172	14.33	0.87	0.676		0.194	(0.426)	0.482
173	14.42	0.87	0.676		0.193	(0.426)	0.483
174	14.50	0.87	0.676		0.192	(0.426)	0.484
175	14.58	0.87	0.676		0.191	(0.426)	0.485
176	14.67	0.87	0.676		0.190	(0.426)	0.486
177	14.75	0.87	0.676		0.189	(0.426)	0.487
178	14.83	0.83	0.650		0.188	(0.409)	0.462
179	14.92	0.83	0.650		0.187	(0.409)	0.463
180	15.00	0.83	0.650		0.186	(0.409)	0.464
181	15.08	0.80	0.624		0.185	(0.393)	0.439
182	15.17	0.80	0.624		0.184	(0.393)	0.440
183	15.25	0.80	0.624		0.183	(0.393)	0.441
184	15.33	0.77	0.598		0.182	(0.377)	0.416
185	15.42	0.77	0.598		0.181	(0.377)	0.417
186	15.50	0.77	0.598		0.180	(0.377)	0.418
187	15.58	0.63	0.494		0.179	(0.311)	0.315
188	15.67	0.63	0.494		0.178	(0.311)	0.316
189	15.75	0.63	0.494		0.177	(0.311)	0.317
190	15.83	0.63	0.494		0.176	(0.311)	0.317
191	15.92	0.63	0.494		0.176	(0.311)	0.318
192	16.00	0.63	0.494		0.175	(0.311)	0.319

193	16.08	0.13	0.104	(0.174)	0.066	0.038
194	16.17	0.13	0.104	(0.173)	0.066	0.038
195	16.25	0.13	0.104	(0.172)	0.066	0.038
196	16.33	0.13	0.104	(0.171)	0.066	0.038
197	16.42	0.13	0.104	(0.170)	0.066	0.038
198	16.50	0.13	0.104	(0.169)	0.066	0.038
199	16.58	0.10	0.078	(0.169)	0.049	0.029
200	16.67	0.10	0.078	(0.168)	0.049	0.029
201	16.75	0.10	0.078	(0.167)	0.049	0.029
202	16.83	0.10	0.078	(0.166)	0.049	0.029
203	16.92	0.10	0.078	(0.165)	0.049	0.029
204	17.00	0.10	0.078	(0.164)	0.049	0.029
205	17.08	0.17	0.130	(0.163)	0.082	0.048
206	17.17	0.17	0.130	(0.163)	0.082	0.048
207	17.25	0.17	0.130	(0.162)	0.082	0.048
208	17.33	0.17	0.130	(0.161)	0.082	0.048
209	17.42	0.17	0.130	(0.160)	0.082	0.048
210	17.50	0.17	0.130	(0.159)	0.082	0.048
211	17.58	0.17	0.130	(0.159)	0.082	0.048
212	17.67	0.17	0.130	(0.158)	0.082	0.048
213	17.75	0.17	0.130	(0.157)	0.082	0.048
214	17.83	0.13	0.104	(0.156)	0.066	0.038
215	17.92	0.13	0.104	(0.156)	0.066	0.038
216	18.00	0.13	0.104	(0.155)	0.066	0.038
217	18.08	0.13	0.104	(0.154)	0.066	0.038
218	18.17	0.13	0.104	(0.153)	0.066	0.038
219	18.25	0.13	0.104	(0.152)	0.066	0.038
220	18.33	0.13	0.104	(0.152)	0.066	0.038
221	18.42	0.13	0.104	(0.151)	0.066	0.038
222	18.50	0.13	0.104	(0.150)	0.066	0.038
223	18.58	0.10	0.078	(0.150)	0.049	0.029
224	18.67	0.10	0.078	(0.149)	0.049	0.029
225	18.75	0.10	0.078	(0.148)	0.049	0.029
226	18.83	0.07	0.052	(0.147)	0.033	0.019
227	18.92	0.07	0.052	(0.147)	0.033	0.019
228	19.00	0.07	0.052	(0.146)	0.033	0.019
229	19.08	0.10	0.078	(0.145)	0.049	0.029
230	19.17	0.10	0.078	(0.145)	0.049	0.029
231	19.25	0.10	0.078	(0.144)	0.049	0.029
232	19.33	0.13	0.104	(0.143)	0.066	0.038
233	19.42	0.13	0.104	(0.143)	0.066	0.038
234	19.50	0.13	0.104	(0.142)	0.066	0.038
235	19.58	0.10	0.078	(0.141)	0.049	0.029
236	19.67	0.10	0.078	(0.141)	0.049	0.029
237	19.75	0.10	0.078	(0.140)	0.049	0.029
238	19.83	0.07	0.052	(0.139)	0.033	0.019
239	19.92	0.07	0.052	(0.139)	0.033	0.019
240	20.00	0.07	0.052	(0.138)	0.033	0.019
241	20.08	0.10	0.078	(0.138)	0.049	0.029
242	20.17	0.10	0.078	(0.137)	0.049	0.029
243	20.25	0.10	0.078	(0.136)	0.049	0.029
244	20.33	0.10	0.078	(0.136)	0.049	0.029
245	20.42	0.10	0.078	(0.135)	0.049	0.029
246	20.50	0.10	0.078	(0.135)	0.049	0.029
247	20.58	0.10	0.078	(0.134)	0.049	0.029
248	20.67	0.10	0.078	(0.133)	0.049	0.029
249	20.75	0.10	0.078	(0.133)	0.049	0.029
250	20.83	0.07	0.052	(0.132)	0.033	0.019
251	20.92	0.07	0.052	(0.132)	0.033	0.019
252	21.00	0.07	0.052	(0.131)	0.033	0.019
253	21.08	0.10	0.078	(0.131)	0.049	0.029
254	21.17	0.10	0.078	(0.130)	0.049	0.029
255	21.25	0.10	0.078	(0.130)	0.049	0.029
256	21.33	0.07	0.052	(0.129)	0.033	0.019
257	21.42	0.07	0.052	(0.129)	0.033	0.019
258	21.50	0.07	0.052	(0.128)	0.033	0.019
259	21.58	0.10	0.078	(0.128)	0.049	0.029
260	21.67	0.10	0.078	(0.127)	0.049	0.029
261	21.75	0.10	0.078	(0.127)	0.049	0.029
262	21.83	0.07	0.052	(0.126)	0.033	0.019
263	21.92	0.07	0.052	(0.126)	0.033	0.019
264	22.00	0.07	0.052	(0.126)	0.033	0.019
265	22.08	0.10	0.078	(0.125)	0.049	0.029
266	22.17	0.10	0.078	(0.125)	0.049	0.029
267	22.25	0.10	0.078	(0.124)	0.049	0.029

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268  22.33     0.07      0.052       (  0.124)       0.033        0.019
269  22.42     0.07      0.052       (  0.124)       0.033        0.019
270  22.50     0.07      0.052       (  0.123)       0.033        0.019
271  22.58     0.07      0.052       (  0.123)       0.033        0.019
272  22.67     0.07      0.052       (  0.123)       0.033        0.019
273  22.75     0.07      0.052       (  0.122)       0.033        0.019
274  22.83     0.07      0.052       (  0.122)       0.033        0.019
275  22.92     0.07      0.052       (  0.122)       0.033        0.019
276  23.00     0.07      0.052       (  0.121)       0.033        0.019
277  23.08     0.07      0.052       (  0.121)       0.033        0.019
278  23.17     0.07      0.052       (  0.121)       0.033        0.019
279  23.25     0.07      0.052       (  0.120)       0.033        0.019
280  23.33     0.07      0.052       (  0.120)       0.033        0.019
281  23.42     0.07      0.052       (  0.120)       0.033        0.019
282  23.50     0.07      0.052       (  0.120)       0.033        0.019
283  23.58     0.07      0.052       (  0.120)       0.033        0.019
284  23.67     0.07      0.052       (  0.119)       0.033        0.019
285  23.75     0.07      0.052       (  0.119)       0.033        0.019
286  23.83     0.07      0.052       (  0.119)       0.033        0.019
287  23.92     0.07      0.052       (  0.119)       0.033        0.019
288  24.00     0.07      0.052       (  0.119)       0.033        0.019
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    41.9
      Flood volume = Effective rainfall      3.49(In)
       times area      50.4(Ac.)/[(In)/(Ft.)] =      14.7(Ac.Ft)
      Total soil loss =      3.01(In)
      Total soil loss =    12.633(Ac.Ft)
      Total rainfall =      6.50(In)
      Flood volume =      638777.8 Cubic Feet
      Total soil loss =      550293.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     34.447(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
 ---------------------------------------------------------------------------
   0+ 5       0.0010      0.14  Q         |         |         |         |
   0+10       0.0056      0.68  Q         |         |         |         |
   0+15       0.0116      0.86  Q         |         |         |         |
   0+20       0.0185      1.01  VQ        |         |         |         |
   0+25       0.0275      1.30  VQ        |         |         |         |
   0+30       0.0372      1.40  VQ        |         |         |         |
   0+35       0.0471      1.45  VQ        |         |         |         |
   0+40       0.0572      1.46  VQ        |         |         |         |
   0+45       0.0672      1.46  VQ        |         |         |         |
   0+50       0.0778      1.53  VQ        |         |         |         |
   0+55       0.0903      1.81  VQ        |         |         |         |
   1+ 0       0.1033      1.90  VQ        |         |         |         |
   1+ 5       0.1162      1.87  VQ        |         |         |         |
   1+10       0.1273      1.61  VQ        |         |         |         |
   1+15       0.1377      1.52  VQ        |         |         |         |
   1+20       0.1480      1.49  VQ        |         |         |         |
   1+25       0.1581      1.47  VQ        |         |         |         |
   1+30       0.1682      1.47  VQ        |         |         |         |
   1+35       0.1783      1.47  VQ        |         |         |         |
   1+40       0.1884      1.47  VQ        |         |         |         |
   1+45       0.1985      1.47  VQ        |         |         |         |
   1+50       0.2091      1.54  VQ        |         |         |         |
   1+55       0.2216      1.81  VQ        |         |         |         |
   2+ 0       0.2346      1.90  VQ        |         |         |         |
   2+ 5       0.2480      1.94  VQ        |         |         |         |
   2+10       0.2614      1.95  VQ        |         |         |         |
   2+15       0.2748      1.95  VQ        |         |         |         |
   2+20       0.2883      1.95  VQ        |         |         |         |
   2+25       0.3018      1.96  VQ        |         |         |         |
   2+30       0.3152      1.96  VQ        |         |         |         |
   2+35       0.3292      2.02  V Q       |         |         |         |
   2+40       0.3450      2.30  V Q       |         |         |         |
   2+45       0.3614      2.39  V Q       |         |         |         |
```
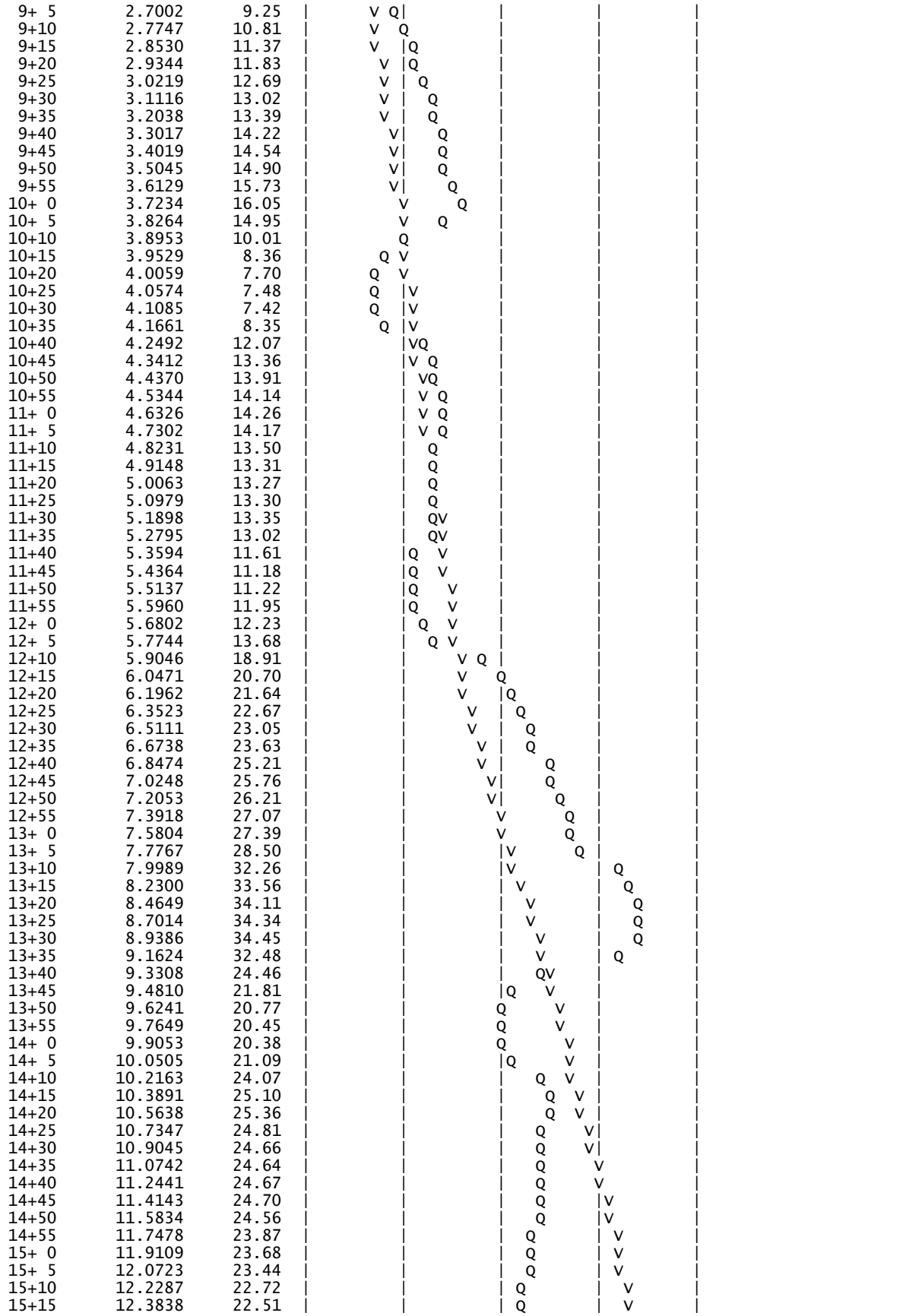
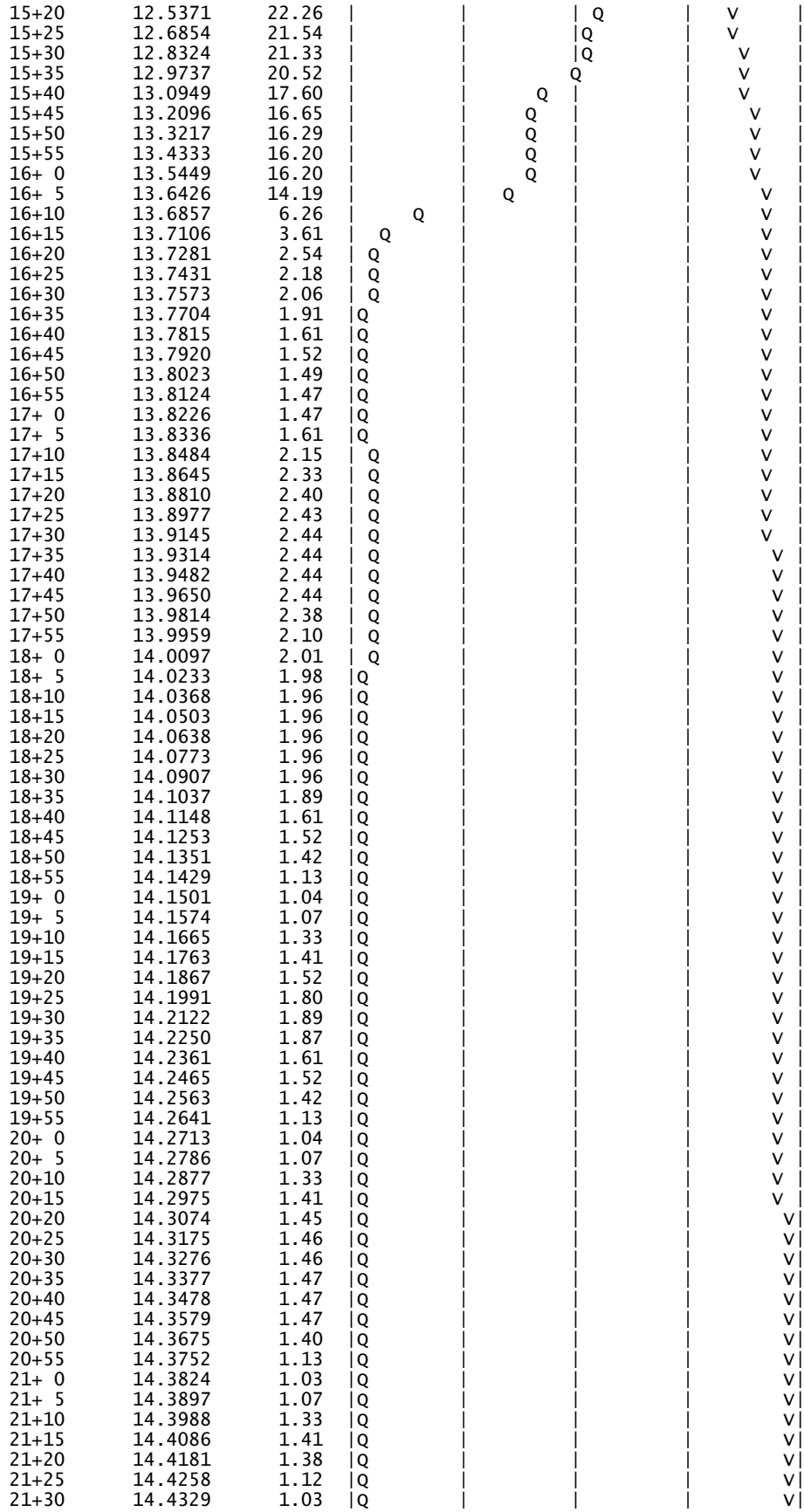

2+50	0.3781	2.42	VQ			
2+55	0.3949	2.44	VQ			
3+ 0	0.4117	2.44	VQ			
3+ 5	0.4285	2.44	VQ			
3+10	0.4454	2.44	VQ			
3+15	0.4622	2.44	VQ			
3+20	0.4790	2.44	VQ			
3+25	0.4959	2.44	VQ			
3+30	0.5127	2.44	VQ			
3+35	0.5295	2.44	VQ			
3+40	0.5464	2.44	VQ			
3+45	0.5632	2.44	VQ			
3+50	0.5805	2.51	VQ			
3+55	0.5997	2.79	VQ			
4+ 0	0.6195	2.88	VQ			
4+ 5	0.6396	2.91	VQ			
4+10	0.6597	2.93	VQ			
4+15	0.6799	2.93	VQ			
4+20	0.7006	3.00	V Q			
4+25	0.7231	3.27	V Q			
4+30	0.7463	3.36	VQ			
4+35	0.7697	3.40	VQ			
4+40	0.7932	3.41	VQ			
4+45	0.8168	3.42	VQ			
4+50	0.8408	3.49	VQ			
4+55	0.8667	3.76	VQ			
5+ 0	0.8933	3.85	VQ			
5+ 5	0.9191	3.75	VQ			
5+10	0.9413	3.22	VQ			
5+15	0.9622	3.04	VQ			
5+20	0.9832	3.04	VQ			
5+25	1.0058	3.29	VQ			
5+30	1.0291	3.37	VQ			
5+35	1.0530	3.47	VQ			
5+40	1.0788	3.76	VQ			
5+45	1.1054	3.85	Q			
5+50	1.1322	3.89	Q			
5+55	1.1590	3.90	Q			
6+ 0	1.1859	3.91	Q			
6+ 5	1.2133	3.98	Q			
6+10	1.2426	4.25	VQ			
6+15	1.2725	4.34	VQ			
6+20	1.3027	4.38	VQ			
6+25	1.3329	4.39	VQ			
6+30	1.3632	4.40	VQ			
6+35	1.3940	4.47	VQ			
6+40	1.4266	4.74	VQ			
6+45	1.4599	4.83	VQ			
6+50	1.4934	4.87	Q			
6+55	1.5271	4.88	Q			
7+ 0	1.5607	4.88	Q			
7+ 5	1.5944	4.89	Q			
7+10	1.6280	4.89	Q			
7+15	1.6617	4.89	Q			
7+20	1.6958	4.96	Q			
7+25	1.7319	5.23	VQ			
7+30	1.7685	5.32	VQ			
7+35	1.8059	5.43	VQ			
7+40	1.8452	5.71	Q			
7+45	1.8852	5.81	Q			
7+50	1.9259	5.91	Q			
7+55	1.9686	6.20	VQ			
8+ 0	2.0120	6.29	VQ			
8+ 5	2.0565	6.47	VQ			
8+10	2.1049	7.03	V Q			
8+15	2.1546	7.22	V Q			
8+20	2.2049	7.29	VQ			
8+25	2.2553	7.32	VQ			
8+30	2.3057	7.33	VQ			
8+35	2.3567	7.40	VQ			
8+40	2.4095	7.67	VQ			
8+45	2.4630	7.76	VQ			
8+50	2.5177	7.94	VQ			
8+55	2.5763	8.51	VQ			
9+ 0	2.6365	8.74	VQ			





```
   21+35      14.4402      1.07  |Q        |         |         |        v|
   21+40      14.4493      1.33  |Q        |         |         |        v|
   21+45      14.4591      1.41  |Q        |         |         |        v|
   21+50      14.4686      1.38  |Q        |         |         |        v|
   21+55      14.4763      1.12  |Q        |         |         |        v|
   22+ 0      14.4834      1.03  |Q        |         |         |        v|
   22+ 5      14.4907      1.07  |Q        |         |         |        v|
   22+10      14.4998      1.33  |Q        |         |         |        v|
   22+15      14.5096      1.41  |Q        |         |         |        v|
   22+20      14.5191      1.38  |Q        |         |         |        v|
   22+25      14.5268      1.12  |Q        |         |         |        v|
   22+30      14.5339      1.03  |Q        |         |         |        v|
   22+35      14.5407      1.00  Q         |         |         |        v|
   22+40      14.5475      0.99  Q         |         |         |        v|
   22+45      14.5543      0.98  Q         |         |         |        v|
   22+50      14.5610      0.98  Q         |         |         |        v|
   22+55      14.5677      0.98  Q         |         |         |        v|
   23+ 0      14.5745      0.98  Q         |         |         |        v|
   23+ 5      14.5812      0.98  Q         |         |         |        v|
   23+10      14.5879      0.98  Q         |         |         |        v|
   23+15      14.5947      0.98  Q         |         |         |        v|
   23+20      14.6014      0.98  Q         |         |         |        v|
   23+25      14.6081      0.98  Q         |         |         |        v|
   23+30      14.6149      0.98  Q         |         |         |        v|
   23+35      14.6216      0.98  Q         |         |         |        v|
   23+40      14.6283      0.98  Q         |         |         |        v|
   23+45      14.6351      0.98  Q         |         |         |        v|
   23+50      14.6418      0.98  Q         |         |         |        v|
   23+55      14.6485      0.98  Q         |         |         |        v|
   24+ 0      14.6553      0.98  Q         |         |         |        v|
   24+ 5      14.6611      0.84  Q         |         |         |        v|
   24+10      14.6631      0.30  Q         |         |         |        v|
   24+15      14.6639      0.11  Q         |         |         |        v|
   24+20      14.6642      0.04  Q         |         |         |        v|
   24+25      14.6643      0.02  Q         |         |         |        v|
   24+30      14.6643      0.01  Q         |         |         |        v|
   24+35      14.6643      0.00  Q         |         |         |        v|
-------------------------------------------------------------------------
```

PROPOSED CONDITION UNIT HYDROGRAPHS

BUILDING 2 AREA (ONSITE) - DEVELOPED CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (AC)**	**Impervious Area (SF)**
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Streets/Conc	0.9	792773	18.20	713496
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Landscape	0	424995	9.76	0
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Roof	0.9	1117250	25.65	1005525
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Basin	1	117136	2.69	117136
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Streets/Conc	0.9	264538	6.07	238084
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Landscape	0	127199	2.92	0
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Roof	0.9	95560	2.19	86004
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Basin	1	15294	0.35	15294
			AVERAGE WEIGHTED RI VALUE	**59.2**		**TOTAL**	2954745	67.8	
						TOTAL % IMPERVIOUS		**73.6%**	
						LOW LOSS RATE		**0.311**	

PROPOSED CONDITION
2-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH2YR12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	0.55	37.29

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	1.25	84.75

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.94 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

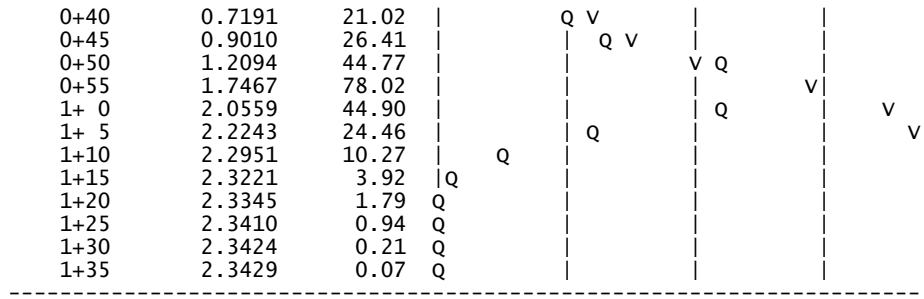
```
      59.2  39.2      0.677     0.740        0.226       1.000      0.226
                                                        Sum (F) =   0.226
      Area averaged mean soil loss (F) (In/Hr) =  0.226
      Minimum soil loss rate ((In/Hr)) =  0.113
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.310
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         87.776         10.723              7.327
          2   0.167        175.552         52.562             35.916
          3   0.250        263.328         21.552             14.727
          4   0.333        351.104          8.827              6.031
          5   0.417        438.880          3.918              2.677
          6   0.500        526.656          1.227              0.838
          7   0.583        614.432          0.656              0.448
          8   0.667        702.208          0.534              0.365
                                   Sum = 100.000    Sum=      68.330
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)      Effective
       (Hr.)  Percent   (In/Hr)         Max   |    Low         (In/Hr)
   1   0.08     3.40      0.224       (  0.226)       0.070        0.155
   2   0.17     4.70      0.310       (  0.226)       0.096        0.214
   3   0.25     4.70      0.310       (  0.226)       0.096        0.214
   4   0.33     5.10      0.336       (  0.226)       0.104        0.232
   5   0.42     5.80      0.383       (  0.226)       0.119        0.264
   6   0.50     5.90      0.389       (  0.226)       0.121        0.269
   7   0.58     7.10      0.468       (  0.226)       0.145        0.323
   8   0.67     8.70      0.574       (  0.226)       0.178        0.396
   9   0.75    13.20      0.871          0.226    (  0.270)        0.644
  10   0.83    29.70      1.959          0.226    (  0.607)        1.733
  11   0.92     7.70      0.508       (  0.226)       0.157        0.350
  12   1.00     4.00      0.264       (  0.226)       0.082        0.182
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     5.0
        Flood volume = Effective rainfall      0.41(In)
         times area      67.8(Ac.)/[(In)/(Ft.)] =       2.3(Ac.Ft)
        Total soil loss =      0.13(In)
        Total soil loss =     0.763(Ac.Ft)
        Total rainfall =      0.55(In)
        Flood volume =      102055.8 Cubic Feet
        Total soil loss =       33223.7 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =     78.015(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f     H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.0      40.0      60.0      80.0
  ------------------------------------------------------------------------
    0+ 5       0.0078      1.13  Q         |         |         |         |
    0+10       0.0569      7.13  V  Q      |         |         |         |
    0+15       0.1363     11.53  | V  Q    |         |         |         |
    0+20       0.2291     13.47  |  V  Q   |         |         |         |
    0+25       0.3334     15.13  |    V Q  |         |         |         |
    0+30       0.4495     16.87  |      VQ |         |         |         |
    0+35       0.5744     18.13  |        Q|         |         |         |
```


0+40 0.7191 21.02
0+45 0.9010 26.41
0+50 1.2094 44.77
0+55 1.7467 78.02
1+ 0 2.0559 44.90
1+ 5 2.2243 24.46
1+10 2.2951 10.27
1+15 2.3221 3.92
1+20 2.3345 1.79
1+25 2.3410 0.94
1+30 2.3424 0.21
1+35 2.3429 0.07

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH2YR32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	0.95	64.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.05	138.99

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 0.950(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 0.950(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 39.2 0.677 0.740 0.226 1.000 0.226
Sum (F) = 0.226

Area averaged mean soil loss (F) (In/Hr) = 0.226
Minimum soil loss rate ((In/Hr)) = 0.113
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.148	(0.226)	0.046	0.102
2	0.17	1.30	0.148	(0.226)	0.046	0.102
3	0.25	1.10	0.125	(0.226)	0.039	0.087
4	0.33	1.50	0.171	(0.226)	0.053	0.118
5	0.42	1.50	0.171	(0.226)	0.053	0.118
6	0.50	1.80	0.205	(0.226)	0.064	0.142
7	0.58	1.50	0.171	(0.226)	0.053	0.118
8	0.67	1.80	0.205	(0.226)	0.064	0.142
9	0.75	1.80	0.205	(0.226)	0.064	0.142
10	0.83	1.50	0.171	(0.226)	0.053	0.118
11	0.92	1.60	0.182	(0.226)	0.057	0.126
12	1.00	1.80	0.205	(0.226)	0.064	0.142
13	1.08	2.20	0.251	(0.226)	0.078	0.173
14	1.17	2.20	0.251	(0.226)	0.078	0.173
15	1.25	2.20	0.251	(0.226)	0.078	0.173
16	1.33	2.00	0.228	(0.226)	0.071	0.157
17	1.42	2.60	0.296	(0.226)	0.092	0.204
18	1.50	2.70	0.308	(0.226)	0.095	0.212
19	1.58	2.40	0.274	(0.226)	0.085	0.189
20	1.67	2.70	0.308	(0.226)	0.095	0.212
21	1.75	3.30	0.376	(0.226)	0.117	0.260
22	1.83	3.10	0.353	(0.226)	0.110	0.244
23	1.92	2.90	0.331	(0.226)	0.102	0.228
24	2.00	3.00	0.342	(0.226)	0.106	0.236
25	2.08	3.10	0.353	(0.226)	0.110	0.244
26	2.17	4.20	0.479	(0.226)	0.148	0.330
27	2.25	5.00	0.570	(0.226)	0.177	0.393
28	2.33	3.50	0.399	(0.226)	0.124	0.275
29	2.42	6.80	0.775	0.226	(0.240)	0.549
30	2.50	7.30	0.832	0.226	(0.258)	0.606
31	2.58	8.20	0.935	0.226	(0.290)	0.708
32	2.67	5.90	0.672	(0.226)	0.208	0.464
33	2.75	2.00	0.228	(0.226)	0.071	0.157
34	2.83	1.80	0.205	(0.226)	0.064	0.142
35	2.92	1.80	0.205	(0.226)	0.064	0.142
36	3.00	0.60	0.068	(0.226)	0.021	0.047
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	8.0

Flood volume = Effective rainfall 0.66(In)
times area 67.8(Ac.)/[(In)/(Ft.)] = 3.8(Ac.Ft)
Total soil loss = 0.29(In)
Total soil loss = 1.612(Ac.Ft)

Total rainfall = 0.95(In)
Flood volume = 163521.4 Cubic Feet
Total soil loss = 70217.5 Cubic Feet

Peak flow rate of this hydrograph = 42.396(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	12.5	25.0	37.5	50.0
0+ 5	0.0052	0.75	Q				
0+10	0.0356	4.42	V Q				
0+15	0.0757	5.81	V Q				
0+20	0.1176	6.10	V Q				
0+25	0.1677	7.27	V Q				
0+30	0.2221	7.90	V Q				
0+35	0.2824	8.76	V Q				
0+40	0.3413	8.55	V Q				
0+45	0.4047	9.21	V Q				
0+50	0.4688	9.31	V Q				
0+55	0.5283	8.63	VQ				
1+ 0	0.5884	8.74	Q				
1+ 5	0.6540	9.52	VQ				
1+10	0.7289	10.87	VQ				
1+15	0.8077	11.44	VQ				
1+20	0.8872	11.55	Q				
1+25	0.9659	11.42	QV				
1+30	1.0553	12.98	QV				
1+35	1.1498	13.71	Q V				
1+40	1.2421	13.41	Q V				
1+45	1.3414	14.41	Q V				
1+50	1.4533	16.25	Q V				
1+55	1.5661	16.37	Q V				
2+ 0	1.6761	15.98	Q V				
2+ 5	1.7872	16.13	Q V				
2+10	1.9047	17.07	Q V				
2+15	2.0478	20.78	Q V				
2+20	2.2097	23.51	Q V				
2+25	2.3664	22.74	Q V				
2+30	2.5858	31.87	Q V				
2+35	2.8492	38.23	Q				
2+40	3.1411	42.40	Q				
2+45	3.3747	33.91	Q V				
2+50	3.5135	20.15	Q V				
2+55	3.6099	13.99	Q V				
3+ 0	3.6841	10.78	Q V				
3+ 5	3.7253	5.98	Q V				
3+10	3.7427	2.53	Q V				
3+15	3.7497	1.02	Q V				
3+20	3.7522	0.37	Q V				
3+25	3.7533	0.15	Q V				
3+30	3.7538	0.07	Q V				
3+35	3.7539	0.02	Q V				

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH2YR62.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	1.40	94.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	3.00	203.40

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.400(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.400(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 39.2 0.677 0.740 0.226 1.000 0.226
Sum (F) = 0.226

Area averaged mean soil loss (F) (In/Hr) = 0.226
Minimum soil loss rate ((In/Hr)) = 0.113
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

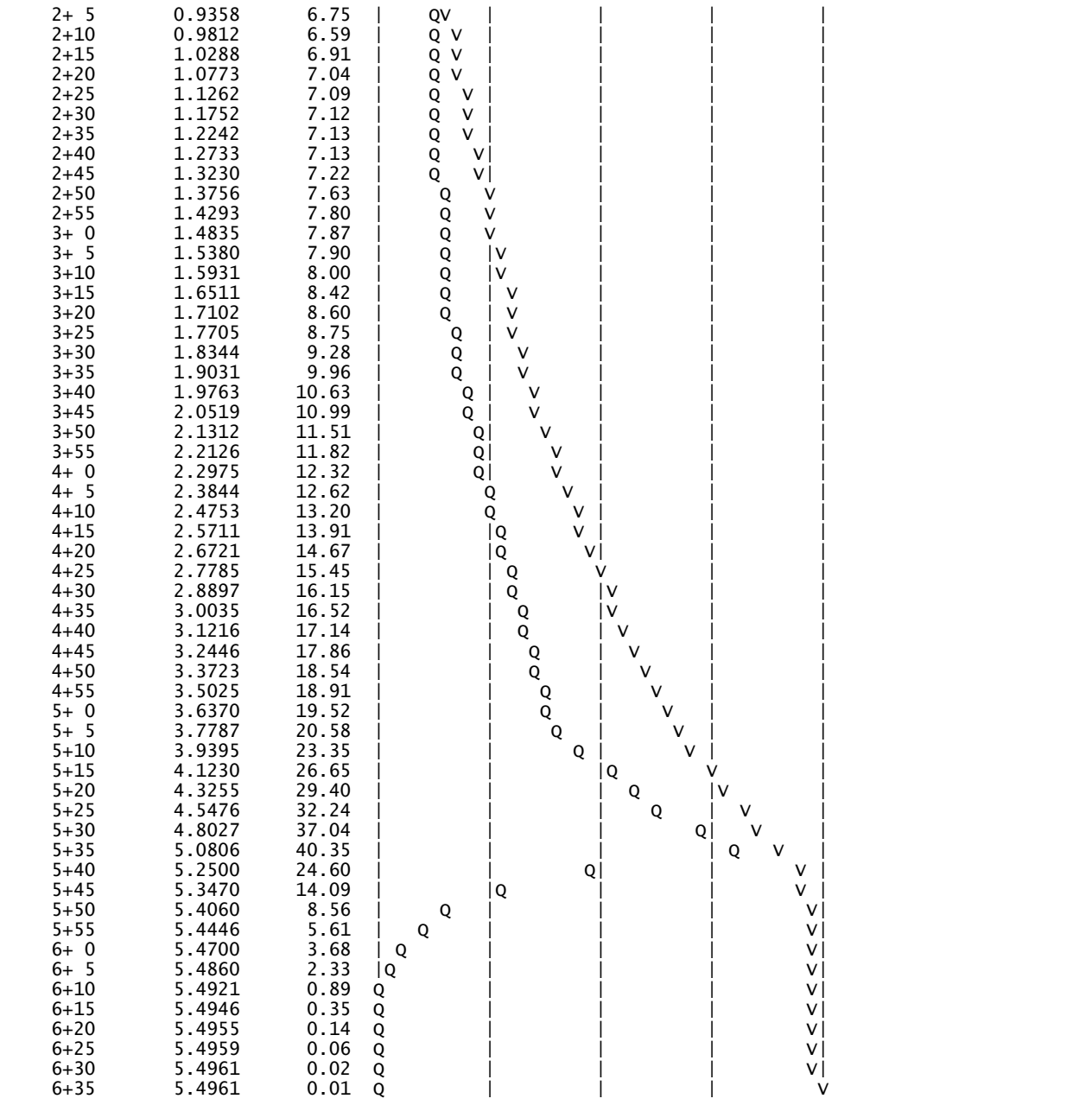
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.084	(0.226)	0.026	0.058
2	0.17	0.60	0.101	(0.226)	0.031	0.070
3	0.25	0.60	0.101	(0.226)	0.031	0.070
4	0.33	0.60	0.101	(0.226)	0.031	0.070
5	0.42	0.60	0.101	(0.226)	0.031	0.070
6	0.50	0.70	0.118	(0.226)	0.036	0.081
7	0.58	0.70	0.118	(0.226)	0.036	0.081
8	0.67	0.70	0.118	(0.226)	0.036	0.081
9	0.75	0.70	0.118	(0.226)	0.036	0.081
10	0.83	0.70	0.118	(0.226)	0.036	0.081
11	0.92	0.70	0.118	(0.226)	0.036	0.081
12	1.00	0.80	0.134	(0.226)	0.042	0.093
13	1.08	0.80	0.134	(0.226)	0.042	0.093
14	1.17	0.80	0.134	(0.226)	0.042	0.093
15	1.25	0.80	0.134	(0.226)	0.042	0.093
16	1.33	0.80	0.134	(0.226)	0.042	0.093
17	1.42	0.80	0.134	(0.226)	0.042	0.093
18	1.50	0.80	0.134	(0.226)	0.042	0.093
19	1.58	0.80	0.134	(0.226)	0.042	0.093
20	1.67	0.80	0.134	(0.226)	0.042	0.093
21	1.75	0.80	0.134	(0.226)	0.042	0.093
22	1.83	0.80	0.134	(0.226)	0.042	0.093
23	1.92	0.80	0.134	(0.226)	0.042	0.093
24	2.00	0.90	0.151	(0.226)	0.047	0.104
25	2.08	0.80	0.134	(0.226)	0.042	0.093
26	2.17	0.90	0.151	(0.226)	0.047	0.104
27	2.25	0.90	0.151	(0.226)	0.047	0.104
28	2.33	0.90	0.151	(0.226)	0.047	0.104
29	2.42	0.90	0.151	(0.226)	0.047	0.104
30	2.50	0.90	0.151	(0.226)	0.047	0.104
31	2.58	0.90	0.151	(0.226)	0.047	0.104
32	2.67	0.90	0.151	(0.226)	0.047	0.104
33	2.75	1.00	0.168	(0.226)	0.052	0.116
34	2.83	1.00	0.168	(0.226)	0.052	0.116
35	2.92	1.00	0.168	(0.226)	0.052	0.116
36	3.00	1.00	0.168	(0.226)	0.052	0.116
37	3.08	1.00	0.168	(0.226)	0.052	0.116
38	3.17	1.10	0.185	(0.226)	0.057	0.127
39	3.25	1.10	0.185	(0.226)	0.057	0.127
40	3.33	1.10	0.185	(0.226)	0.057	0.127
41	3.42	1.20	0.202	(0.226)	0.062	0.139
42	3.50	1.30	0.218	(0.226)	0.068	0.151

```
43   3.58     1.40      0.235       (  0.226)       0.073        0.162
44   3.67     1.40      0.235       (  0.226)       0.073        0.162
45   3.75     1.50      0.252       (  0.226)       0.078        0.174
46   3.83     1.50      0.252       (  0.226)       0.078        0.174
47   3.92     1.60      0.269       (  0.226)       0.083        0.185
48   4.00     1.60      0.269       (  0.226)       0.083        0.185
49   4.08     1.70      0.286       (  0.226)       0.089        0.197
50   4.17     1.80      0.302       (  0.226)       0.094        0.209
51   4.25     1.90      0.319       (  0.226)       0.099        0.220
52   4.33     2.00      0.336       (  0.226)       0.104        0.232
53   4.42     2.10      0.353       (  0.226)       0.109        0.243
54   4.50     2.10      0.353       (  0.226)       0.109        0.243
55   4.58     2.20      0.370       (  0.226)       0.115        0.255
56   4.67     2.30      0.386       (  0.226)       0.120        0.267
57   4.75     2.40      0.403       (  0.226)       0.125        0.278
58   4.83     2.40      0.403       (  0.226)       0.125        0.278
59   4.92     2.50      0.420       (  0.226)       0.130        0.290
60   5.00     2.60      0.437       (  0.226)       0.135        0.301
61   5.08     3.10      0.521       (  0.226)       0.161        0.359
62   5.17     3.60      0.605       (  0.226)       0.187        0.417
63   5.25     3.90      0.655       (  0.226)       0.203        0.452
64   5.33     4.20      0.705       (  0.226)       0.219        0.487
65   5.42     4.70      0.789          0.226    (  0.245)       0.563
66   5.50     5.60      0.941          0.226    (  0.292)       0.714
67   5.58     1.90      0.319       (  0.226)       0.099        0.220
68   5.67     0.90      0.151       (  0.226)       0.047        0.104
69   5.75     0.60      0.101       (  0.226)       0.031        0.070
70   5.83     0.50      0.084       (  0.226)       0.026        0.058
71   5.92     0.30      0.050       (  0.226)       0.016        0.035
72   6.00     0.20      0.034       (  0.226)       0.010        0.023
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    11.7
      Flood volume = Effective rainfall      0.97(In)
       times area      67.8(Ac.)/[(In)/(Ft.)] =       5.5(Ac.Ft)
      Total soil loss =      0.43(In)
      Total soil loss =     2.412(Ac.Ft)
      Total rainfall =      1.40(In)
      Flood volume =      239412.1 Cubic Feet
      Total soil loss =      105067.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     40.353(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
-------------------------------------------------------------------------
  0+ 5       0.0029      0.42  Q          |         |         |         |
  0+10       0.0208      2.59  V Q        |         |         |         |
  0+15       0.0474      3.86  V  Q       |         |         |         |
  0+20       0.0776      4.38  V  Q       |         |         |         |
  0+25       0.1093      4.61  V  Q       |         |         |         |
  0+30       0.1422      4.77  |V Q       |         |         |         |
  0+35       0.1781      5.22  |V  Q      |         |         |         |
  0+40       0.2155      5.42  |V  Q      |         |         |         |
  0+45       0.2533      5.50  |V  Q      |         |         |         |
  0+50       0.2914      5.53  | V Q      |         |         |         |
  0+55       0.3295      5.54  | V Q      |         |         |         |
  1+ 0       0.3683      5.63  | V Q      |         |         |         |
  1+ 5       0.4099      6.05  | V Q      |         |         |         |
  1+10       0.4528      6.22  |  VQ      |         |         |         |
  1+15       0.4961      6.29  |  V Q     |         |         |         |
  1+20       0.5396      6.32  |  V Q     |         |         |         |
  1+25       0.5832      6.33  |   VQ     |         |         |         |
  1+30       0.6268      6.33  |   VQ     |         |         |         |
  1+35       0.6705      6.34  |   VQ     |         |         |         |
  1+40       0.7141      6.34  |    Q     |         |         |         |
  1+45       0.7578      6.34  |    Q     |         |         |         |
  1+50       0.8014      6.34  |    Q     |         |         |         |
  1+55       0.8451      6.34  |    QV    |         |         |         |
  2+ 0       0.8893      6.42  |    QV    |         |         |         |
```


2+ 5 0.9358 6.75
2+10 0.9812 6.59
2+15 1.0288 6.91
2+20 1.0773 7.04
2+25 1.1262 7.09
2+30 1.1752 7.12
2+35 1.2242 7.13
2+40 1.2733 7.13
2+45 1.3230 7.22
2+50 1.3756 7.63
2+55 1.4293 7.80
3+ 0 1.4835 7.87
3+ 5 1.5380 7.90
3+10 1.5931 8.00
3+15 1.6511 8.42
3+20 1.7102 8.60
3+25 1.7705 8.75
3+30 1.8344 9.28
3+35 1.9031 9.96
3+40 1.9763 10.63
3+45 2.0519 10.99
3+50 2.1312 11.51
3+55 2.2126 11.82
4+ 0 2.2975 12.32
4+ 5 2.3844 12.62
4+10 2.4753 13.20
4+15 2.5711 13.91
4+20 2.6721 14.67
4+25 2.7785 15.45
4+30 2.8897 16.15
4+35 3.0035 16.52
4+40 3.1216 17.14
4+45 3.2446 17.86
4+50 3.3723 18.54
4+55 3.5025 18.91
5+ 0 3.6370 19.52
5+ 5 3.7787 20.58
5+10 3.9395 23.35
5+15 4.1230 26.65
5+20 4.3255 29.40
5+25 4.5476 32.24
5+30 4.8027 37.04
5+35 5.0806 40.35
5+40 5.2500 24.60
5+45 5.3470 14.09
5+50 5.4060 8.56
5+55 5.4446 5.61
6+ 0 5.4700 3.68
6+ 5 5.4860 2.33
6+10 5.4921 0.89
6+15 5.4946 0.35
6+20 5.4955 0.14
6+25 5.4959 0.06
6+30 5.4961 0.02
6+35 5.4961 0.01

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.50	169.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	6.50	440.70

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2	39.2	0.677	0.740	0.226	1.000	0.226
					Sum (F) =	0.226

Area averaged mean soil loss (F) (In/Hr) = 0.226
Minimum soil loss rate ((In/Hr)) = 0.113
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.401)	0.006	0.014
2	0.17	0.07	0.020	(0.399)	0.006	0.014
3	0.25	0.07	0.020	(0.398)	0.006	0.014
4	0.33	0.10	0.030	(0.396)	0.009	0.021
5	0.42	0.10	0.030	(0.395)	0.009	0.021
6	0.50	0.10	0.030	(0.393)	0.009	0.021
7	0.58	0.10	0.030	(0.392)	0.009	0.021
8	0.67	0.10	0.030	(0.390)	0.009	0.021
9	0.75	0.10	0.030	(0.389)	0.009	0.021
10	0.83	0.13	0.040	(0.387)	0.012	0.028
11	0.92	0.13	0.040	(0.386)	0.012	0.028
12	1.00	0.13	0.040	(0.384)	0.012	0.028
13	1.08	0.10	0.030	(0.383)	0.009	0.021
14	1.17	0.10	0.030	(0.381)	0.009	0.021
15	1.25	0.10	0.030	(0.380)	0.009	0.021
16	1.33	0.10	0.030	(0.378)	0.009	0.021
17	1.42	0.10	0.030	(0.377)	0.009	0.021
18	1.50	0.10	0.030	(0.375)	0.009	0.021
19	1.58	0.10	0.030	(0.374)	0.009	0.021
20	1.67	0.10	0.030	(0.372)	0.009	0.021
21	1.75	0.10	0.030	(0.371)	0.009	0.021
22	1.83	0.13	0.040	(0.369)	0.012	0.028
23	1.92	0.13	0.040	(0.368)	0.012	0.028
24	2.00	0.13	0.040	(0.366)	0.012	0.028
25	2.08	0.13	0.040	(0.365)	0.012	0.028
26	2.17	0.13	0.040	(0.363)	0.012	0.028
27	2.25	0.13	0.040	(0.362)	0.012	0.028
28	2.33	0.13	0.040	(0.360)	0.012	0.028
29	2.42	0.13	0.040	(0.359)	0.012	0.028
30	2.50	0.13	0.040	(0.357)	0.012	0.028
31	2.58	0.17	0.050	(0.356)	0.015	0.034
32	2.67	0.17	0.050	(0.354)	0.015	0.034
33	2.75	0.17	0.050	(0.353)	0.015	0.034
34	2.83	0.17	0.050	(0.351)	0.015	0.034
35	2.92	0.17	0.050	(0.350)	0.015	0.034
36	3.00	0.17	0.050	(0.348)	0.015	0.034
37	3.08	0.17	0.050	(0.347)	0.015	0.034
38	3.17	0.17	0.050	(0.346)	0.015	0.034
39	3.25	0.17	0.050	(0.344)	0.015	0.034
40	3.33	0.17	0.050	(0.343)	0.015	0.034
41	3.42	0.17	0.050	(0.341)	0.015	0.034
42	3.50	0.17	0.050	(0.340)	0.015	0.034

43	3.58	0.17	0.050	(0.338)	0.015	0.034
44	3.67	0.17	0.050	(0.337)	0.015	0.034
45	3.75	0.17	0.050	(0.336)	0.015	0.034
46	3.83	0.20	0.060	(0.334)	0.019	0.041
47	3.92	0.20	0.060	(0.333)	0.019	0.041
48	4.00	0.20	0.060	(0.331)	0.019	0.041
49	4.08	0.20	0.060	(0.330)	0.019	0.041
50	4.17	0.20	0.060	(0.329)	0.019	0.041
51	4.25	0.20	0.060	(0.327)	0.019	0.041
52	4.33	0.23	0.070	(0.326)	0.022	0.048
53	4.42	0.23	0.070	(0.324)	0.022	0.048
54	4.50	0.23	0.070	(0.323)	0.022	0.048
55	4.58	0.23	0.070	(0.322)	0.022	0.048
56	4.67	0.23	0.070	(0.320)	0.022	0.048
57	4.75	0.23	0.070	(0.319)	0.022	0.048
58	4.83	0.27	0.080	(0.317)	0.025	0.055
59	4.92	0.27	0.080	(0.316)	0.025	0.055
60	5.00	0.27	0.080	(0.315)	0.025	0.055
61	5.08	0.20	0.060	(0.313)	0.019	0.041
62	5.17	0.20	0.060	(0.312)	0.019	0.041
63	5.25	0.20	0.060	(0.311)	0.019	0.041
64	5.33	0.23	0.070	(0.309)	0.022	0.048
65	5.42	0.23	0.070	(0.308)	0.022	0.048
66	5.50	0.23	0.070	(0.307)	0.022	0.048
67	5.58	0.27	0.080	(0.305)	0.025	0.055
68	5.67	0.27	0.080	(0.304)	0.025	0.055
69	5.75	0.27	0.080	(0.303)	0.025	0.055
70	5.83	0.27	0.080	(0.301)	0.025	0.055
71	5.92	0.27	0.080	(0.300)	0.025	0.055
72	6.00	0.27	0.080	(0.299)	0.025	0.055
73	6.08	0.30	0.090	(0.297)	0.028	0.062
74	6.17	0.30	0.090	(0.296)	0.028	0.062
75	6.25	0.30	0.090	(0.295)	0.028	0.062
76	6.33	0.30	0.090	(0.293)	0.028	0.062
77	6.42	0.30	0.090	(0.292)	0.028	0.062
78	6.50	0.30	0.090	(0.291)	0.028	0.062
79	6.58	0.33	0.100	(0.289)	0.031	0.069
80	6.67	0.33	0.100	(0.288)	0.031	0.069
81	6.75	0.33	0.100	(0.287)	0.031	0.069
82	6.83	0.33	0.100	(0.285)	0.031	0.069
83	6.92	0.33	0.100	(0.284)	0.031	0.069
84	7.00	0.33	0.100	(0.283)	0.031	0.069
85	7.08	0.33	0.100	(0.282)	0.031	0.069
86	7.17	0.33	0.100	(0.280)	0.031	0.069
87	7.25	0.33	0.100	(0.279)	0.031	0.069
88	7.33	0.37	0.110	(0.278)	0.034	0.076
89	7.42	0.37	0.110	(0.276)	0.034	0.076
90	7.50	0.37	0.110	(0.275)	0.034	0.076
91	7.58	0.40	0.120	(0.274)	0.037	0.083
92	7.67	0.40	0.120	(0.273)	0.037	0.083
93	7.75	0.40	0.120	(0.271)	0.037	0.083
94	7.83	0.43	0.130	(0.270)	0.040	0.090
95	7.92	0.43	0.130	(0.269)	0.040	0.090
96	8.00	0.43	0.130	(0.268)	0.040	0.090
97	8.08	0.50	0.150	(0.266)	0.046	0.103
98	8.17	0.50	0.150	(0.265)	0.046	0.103
99	8.25	0.50	0.150	(0.264)	0.046	0.103
100	8.33	0.50	0.150	(0.263)	0.046	0.103
101	8.42	0.50	0.150	(0.262)	0.046	0.103
102	8.50	0.50	0.150	(0.260)	0.046	0.103
103	8.58	0.53	0.160	(0.259)	0.050	0.110
104	8.67	0.53	0.160	(0.258)	0.050	0.110
105	8.75	0.53	0.160	(0.257)	0.050	0.110
106	8.83	0.57	0.170	(0.255)	0.053	0.117
107	8.92	0.57	0.170	(0.254)	0.053	0.117
108	9.00	0.57	0.170	(0.253)	0.053	0.117
109	9.08	0.63	0.190	(0.252)	0.059	0.131
110	9.17	0.63	0.190	(0.251)	0.059	0.131
111	9.25	0.63	0.190	(0.249)	0.059	0.131
112	9.33	0.67	0.200	(0.248)	0.062	0.138
113	9.42	0.67	0.200	(0.247)	0.062	0.138
114	9.50	0.67	0.200	(0.246)	0.062	0.138
115	9.58	0.70	0.210	(0.245)	0.065	0.145
116	9.67	0.70	0.210	(0.244)	0.065	0.145
117	9.75	0.70	0.210	(0.242)	0.065	0.145

118	9.83	0.73	0.220	(0.241)	0.068	0.152
119	9.92	0.73	0.220	(0.240)	0.068	0.152
120	10.00	0.73	0.220	(0.239)	0.068	0.152
121	10.08	0.50	0.150	(0.238)	0.046	0.103
122	10.17	0.50	0.150	(0.237)	0.046	0.103
123	10.25	0.50	0.150	(0.235)	0.046	0.103
124	10.33	0.50	0.150	(0.234)	0.046	0.103
125	10.42	0.50	0.150	(0.233)	0.046	0.103
126	10.50	0.50	0.150	(0.232)	0.046	0.103
127	10.58	0.67	0.200	(0.231)	0.062	0.138
128	10.67	0.67	0.200	(0.230)	0.062	0.138
129	10.75	0.67	0.200	(0.229)	0.062	0.138
130	10.83	0.67	0.200	(0.227)	0.062	0.138
131	10.92	0.67	0.200	(0.226)	0.062	0.138
132	11.00	0.67	0.200	(0.225)	0.062	0.138
133	11.08	0.63	0.190	(0.224)	0.059	0.131
134	11.17	0.63	0.190	(0.223)	0.059	0.131
135	11.25	0.63	0.190	(0.222)	0.059	0.131
136	11.33	0.63	0.190	(0.221)	0.059	0.131
137	11.42	0.63	0.190	(0.220)	0.059	0.131
138	11.50	0.63	0.190	(0.219)	0.059	0.131
139	11.58	0.57	0.170	(0.218)	0.053	0.117
140	11.67	0.57	0.170	(0.216)	0.053	0.117
141	11.75	0.57	0.170	(0.215)	0.053	0.117
142	11.83	0.60	0.180	(0.214)	0.056	0.124
143	11.92	0.60	0.180	(0.213)	0.056	0.124
144	12.00	0.60	0.180	(0.212)	0.056	0.124
145	12.08	0.83	0.250	(0.211)	0.077	0.172
146	12.17	0.83	0.250	(0.210)	0.077	0.172
147	12.25	0.83	0.250	(0.209)	0.077	0.172
148	12.33	0.87	0.260	(0.208)	0.081	0.179
149	12.42	0.87	0.260	(0.207)	0.081	0.179
150	12.50	0.87	0.260	(0.206)	0.081	0.179
151	12.58	0.93	0.280	(0.205)	0.087	0.193
152	12.67	0.93	0.280	(0.204)	0.087	0.193
153	12.75	0.93	0.280	(0.203)	0.087	0.193
154	12.83	0.97	0.290	(0.202)	0.090	0.200
155	12.92	0.97	0.290	(0.201)	0.090	0.200
156	13.00	0.97	0.290	(0.200)	0.090	0.200
157	13.08	1.13	0.340	(0.199)	0.105	0.235
158	13.17	1.13	0.340	(0.198)	0.105	0.235
159	13.25	1.13	0.340	(0.197)	0.105	0.235
160	13.33	1.13	0.340	(0.196)	0.105	0.235
161	13.42	1.13	0.340	(0.195)	0.105	0.235
162	13.50	1.13	0.340	(0.194)	0.105	0.235
163	13.58	0.77	0.230	(0.193)	0.071	0.159
164	13.67	0.77	0.230	(0.192)	0.071	0.159
165	13.75	0.77	0.230	(0.191)	0.071	0.159
166	13.83	0.77	0.230	(0.190)	0.071	0.159
167	13.92	0.77	0.230	(0.189)	0.071	0.159
168	14.00	0.77	0.230	(0.188)	0.071	0.159
169	14.08	0.90	0.270	(0.187)	0.084	0.186
170	14.17	0.90	0.270	(0.186)	0.084	0.186
171	14.25	0.90	0.270	(0.185)	0.084	0.186
172	14.33	0.87	0.260	(0.184)	0.081	0.179
173	14.42	0.87	0.260	(0.183)	0.081	0.179
174	14.50	0.87	0.260	(0.182)	0.081	0.179
175	14.58	0.87	0.260	(0.181)	0.081	0.179
176	14.67	0.87	0.260	(0.180)	0.081	0.179
177	14.75	0.87	0.260	(0.179)	0.081	0.179
178	14.83	0.83	0.250	(0.178)	0.077	0.172
179	14.92	0.83	0.250	(0.178)	0.077	0.172
180	15.00	0.83	0.250	(0.177)	0.077	0.172
181	15.08	0.80	0.240	(0.176)	0.074	0.166
182	15.17	0.80	0.240	(0.175)	0.074	0.166
183	15.25	0.80	0.240	(0.174)	0.074	0.166
184	15.33	0.77	0.230	(0.173)	0.071	0.159
185	15.42	0.77	0.230	(0.172)	0.071	0.159
186	15.50	0.77	0.230	(0.171)	0.071	0.159
187	15.58	0.63	0.190	(0.170)	0.059	0.131
188	15.67	0.63	0.190	(0.170)	0.059	0.131
189	15.75	0.63	0.190	(0.169)	0.059	0.131
190	15.83	0.63	0.190	(0.168)	0.059	0.131
191	15.92	0.63	0.190	(0.167)	0.059	0.131
192	16.00	0.63	0.190	(0.166)	0.059	0.131

193	16.08	0.13	0.040	(0.165)	0.012	0.028
194	16.17	0.13	0.040	(0.164)	0.012	0.028
195	16.25	0.13	0.040	(0.164)	0.012	0.028
196	16.33	0.13	0.040	(0.163)	0.012	0.028
197	16.42	0.13	0.040	(0.162)	0.012	0.028
198	16.50	0.13	0.040	(0.161)	0.012	0.028
199	16.58	0.10	0.030	(0.160)	0.009	0.021
200	16.67	0.10	0.030	(0.159)	0.009	0.021
201	16.75	0.10	0.030	(0.159)	0.009	0.021
202	16.83	0.10	0.030	(0.158)	0.009	0.021
203	16.92	0.10	0.030	(0.157)	0.009	0.021
204	17.00	0.10	0.030	(0.156)	0.009	0.021
205	17.08	0.17	0.050	(0.155)	0.015	0.034
206	17.17	0.17	0.050	(0.155)	0.015	0.034
207	17.25	0.17	0.050	(0.154)	0.015	0.034
208	17.33	0.17	0.050	(0.153)	0.015	0.034
209	17.42	0.17	0.050	(0.152)	0.015	0.034
210	17.50	0.17	0.050	(0.152)	0.015	0.034
211	17.58	0.17	0.050	(0.151)	0.015	0.034
212	17.67	0.17	0.050	(0.150)	0.015	0.034
213	17.75	0.17	0.050	(0.149)	0.015	0.034
214	17.83	0.13	0.040	(0.149)	0.012	0.028
215	17.92	0.13	0.040	(0.148)	0.012	0.028
216	18.00	0.13	0.040	(0.147)	0.012	0.028
217	18.08	0.13	0.040	(0.146)	0.012	0.028
218	18.17	0.13	0.040	(0.146)	0.012	0.028
219	18.25	0.13	0.040	(0.145)	0.012	0.028
220	18.33	0.13	0.040	(0.144)	0.012	0.028
221	18.42	0.13	0.040	(0.144)	0.012	0.028
222	18.50	0.13	0.040	(0.143)	0.012	0.028
223	18.58	0.10	0.030	(0.142)	0.009	0.021
224	18.67	0.10	0.030	(0.141)	0.009	0.021
225	18.75	0.10	0.030	(0.141)	0.009	0.021
226	18.83	0.07	0.020	(0.140)	0.006	0.014
227	18.92	0.07	0.020	(0.139)	0.006	0.014
228	19.00	0.07	0.020	(0.139)	0.006	0.014
229	19.08	0.10	0.030	(0.138)	0.009	0.021
230	19.17	0.10	0.030	(0.137)	0.009	0.021
231	19.25	0.10	0.030	(0.137)	0.009	0.021
232	19.33	0.13	0.040	(0.136)	0.012	0.028
233	19.42	0.13	0.040	(0.136)	0.012	0.028
234	19.50	0.13	0.040	(0.135)	0.012	0.028
235	19.58	0.10	0.030	(0.134)	0.009	0.021
236	19.67	0.10	0.030	(0.134)	0.009	0.021
237	19.75	0.10	0.030	(0.133)	0.009	0.021
238	19.83	0.07	0.020	(0.133)	0.006	0.014
239	19.92	0.07	0.020	(0.132)	0.006	0.014
240	20.00	0.07	0.020	(0.131)	0.006	0.014
241	20.08	0.10	0.030	(0.131)	0.009	0.021
242	20.17	0.10	0.030	(0.130)	0.009	0.021
243	20.25	0.10	0.030	(0.130)	0.009	0.021
244	20.33	0.10	0.030	(0.129)	0.009	0.021
245	20.42	0.10	0.030	(0.129)	0.009	0.021
246	20.50	0.10	0.030	(0.128)	0.009	0.021
247	20.58	0.10	0.030	(0.127)	0.009	0.021
248	20.67	0.10	0.030	(0.127)	0.009	0.021
249	20.75	0.10	0.030	(0.126)	0.009	0.021
250	20.83	0.07	0.020	(0.126)	0.006	0.014
251	20.92	0.07	0.020	(0.125)	0.006	0.014
252	21.00	0.07	0.020	(0.125)	0.006	0.014
253	21.08	0.10	0.030	(0.124)	0.009	0.021
254	21.17	0.10	0.030	(0.124)	0.009	0.021
255	21.25	0.10	0.030	(0.123)	0.009	0.021
256	21.33	0.07	0.020	(0.123)	0.006	0.014
257	21.42	0.07	0.020	(0.122)	0.006	0.014
258	21.50	0.07	0.020	(0.122)	0.006	0.014
259	21.58	0.10	0.030	(0.122)	0.009	0.021
260	21.67	0.10	0.030	(0.121)	0.009	0.021
261	21.75	0.10	0.030	(0.121)	0.009	0.021
262	21.83	0.07	0.020	(0.120)	0.006	0.014
263	21.92	0.07	0.020	(0.120)	0.006	0.014
264	22.00	0.07	0.020	(0.119)	0.006	0.014
265	22.08	0.10	0.030	(0.119)	0.009	0.021
266	22.17	0.10	0.030	(0.119)	0.009	0.021
267	22.25	0.10	0.030	(0.118)	0.009	0.021

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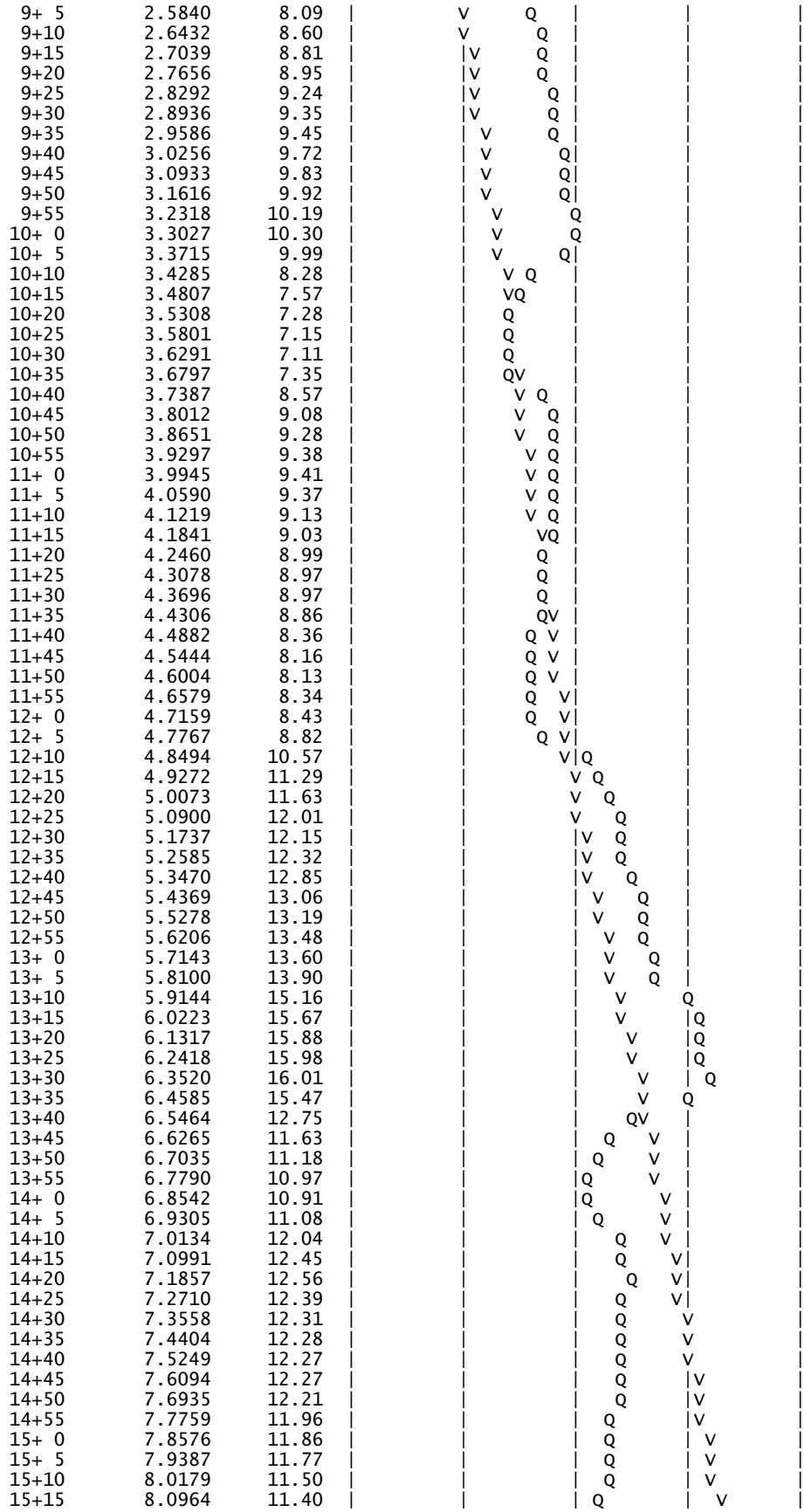
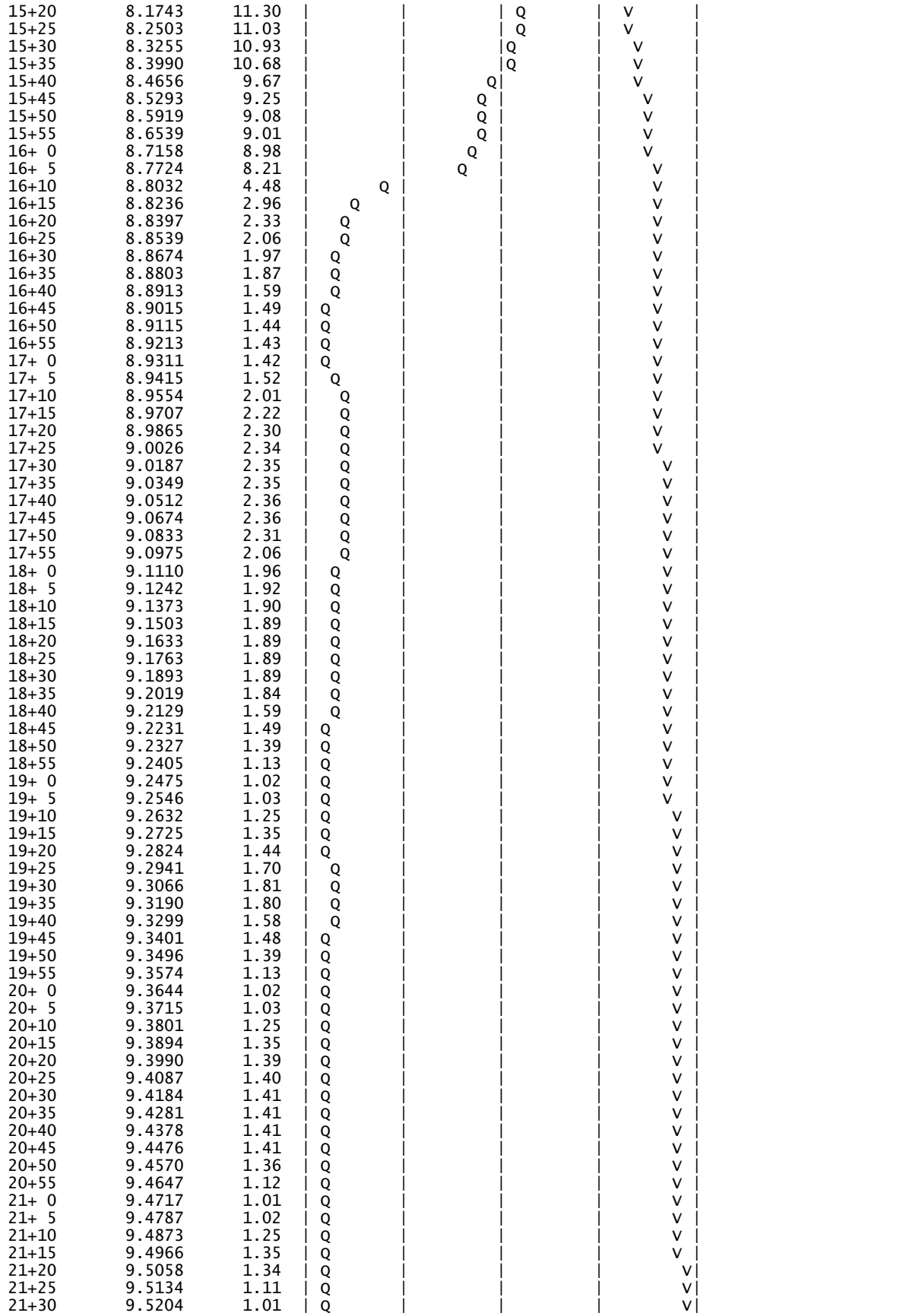
268  22.33     0.07      0.020       (  0.118)       0.006        0.014
269  22.42     0.07      0.020       (  0.118)       0.006        0.014
270  22.50     0.07      0.020       (  0.117)       0.006        0.014
271  22.58     0.07      0.020       (  0.117)       0.006        0.014
272  22.67     0.07      0.020       (  0.117)       0.006        0.014
273  22.75     0.07      0.020       (  0.116)       0.006        0.014
274  22.83     0.07      0.020       (  0.116)       0.006        0.014
275  22.92     0.07      0.020       (  0.116)       0.006        0.014
276  23.00     0.07      0.020       (  0.115)       0.006        0.014
277  23.08     0.07      0.020       (  0.115)       0.006        0.014
278  23.17     0.07      0.020       (  0.115)       0.006        0.014
279  23.25     0.07      0.020       (  0.115)       0.006        0.014
280  23.33     0.07      0.020       (  0.114)       0.006        0.014
281  23.42     0.07      0.020       (  0.114)       0.006        0.014
282  23.50     0.07      0.020       (  0.114)       0.006        0.014
283  23.58     0.07      0.020       (  0.114)       0.006        0.014
284  23.67     0.07      0.020       (  0.114)       0.006        0.014
285  23.75     0.07      0.020       (  0.113)       0.006        0.014
286  23.83     0.07      0.020       (  0.113)       0.006        0.014
287  23.92     0.07      0.020       (  0.113)       0.006        0.014
288  24.00     0.07      0.020       (  0.113)       0.006        0.014
               (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    20.7
      Flood volume = Effective rainfall      1.72(In)
       times area      67.8(Ac.)/[(In)/(Ft.)] =       9.7(Ac.Ft)
      Total soil loss =      0.77(In)
      Total soil loss =     4.378(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =      424490.4 Cubic Feet
      Total soil loss =      190713.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     16.008(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0007      0.10  Q         |          |          |          |
   0+10       0.0048      0.60  VQ        |          |          |          |
   0+15       0.0103      0.80  VQ        |          |          |          |
   0+20       0.0168      0.93  VQ        |          |          |          |
   0+25       0.0251      1.22  V Q       |          |          |          |
   0+30       0.0343      1.33  V Q       |          |          |          |
   0+35       0.0438      1.38  V Q       |          |          |          |
   0+40       0.0535      1.40  V Q       |          |          |          |
   0+45       0.0632      1.41  V Q       |          |          |          |
   0+50       0.0733      1.46  V Q       |          |          |          |
   0+55       0.0851      1.71  V  Q      |          |          |          |
   1+ 0       0.0976      1.82  V  Q      |          |          |          |
   1+ 5       0.1100      1.81  V  Q      |          |          |          |
   1+10       0.1209      1.58  V  Q      |          |          |          |
   1+15       0.1311      1.48  V Q       |          |          |          |
   1+20       0.1410      1.44  V Q       |          |          |          |
   1+25       0.1508      1.43  V Q       |          |          |          |
   1+30       0.1606      1.42  V Q       |          |          |          |
   1+35       0.1704      1.42  V Q       |          |          |          |
   1+40       0.1801      1.41  V Q       |          |          |          |
   1+45       0.1899      1.41  V Q       |          |          |          |
   1+50       0.2000      1.47  V Q       |          |          |          |
   1+55       0.2118      1.71  V  Q      |          |          |          |
   2+ 0       0.2243      1.82  V  Q      |          |          |          |
   2+ 5       0.2371      1.86  V  Q      |          |          |          |
   2+10       0.2500      1.88  |V Q       |          |          |          |
   2+15       0.2629      1.88  |V Q       |          |          |          |
   2+20       0.2759      1.88  |V Q       |          |          |          |
   2+25       0.2889      1.89  |V Q       |          |          |          |
   2+30       0.3019      1.89  |V Q       |          |          |          |
   2+35       0.3152      1.94  |V Q       |          |          |          |
   2+40       0.3303      2.19  |V  Q      |          |          |          |
   2+45       0.3460      2.29  |V  Q      |          |          |          |
```

```
2+50       0.3621      2.33  |V  Q     |         |         |         |
2+55       0.3782      2.35  |V  Q     |         |         |         |
3+ 0       0.3944      2.35  |V  Q     |         |         |         |
3+ 5       0.4106      2.36  |V  Q     |         |         |         |
3+10       0.4269      2.36  |V  Q     |         |         |         |
3+15       0.4431      2.36  |V  Q     |         |         |         |
3+20       0.4594      2.36  |V  Q     |         |         |         |
3+25       0.4756      2.36  |V  Q     |         |         |         |
3+30       0.4919      2.36  | V Q     |         |         |         |
3+35       0.5081      2.36  | V Q     |         |         |         |
3+40       0.5243      2.36  | V Q     |         |         |         |
3+45       0.5406      2.36  | V Q     |         |         |         |
3+50       0.5572      2.41  | V Q     |         |         |         |
3+55       0.5755      2.66  | V  Q    |         |         |         |
4+ 0       0.5945      2.76  | V  Q    |         |         |         |
4+ 5       0.6137      2.80  | V  Q    |         |         |         |
4+10       0.6332      2.82  | V  Q    |         |         |         |
4+15       0.6526      2.82  | V  Q    |         |         |         |
4+20       0.6724      2.88  | V  Q    |         |         |         |
4+25       0.6940      3.13  | V   Q   |         |         |         |
4+30       0.7162      3.23  | V   Q   |         |         |         |
4+35       0.7388      3.27  |  V  Q   |         |         |         |
4+40       0.7614      3.29  |  V  Q   |         |         |         |
4+45       0.7841      3.30  |  V  Q   |         |         |         |
4+50       0.8072      3.35  |  V  Q   |         |         |         |
4+55       0.8320      3.60  |  V   Q  |         |         |         |
5+ 0       0.8575      3.70  |  V   Q  |         |         |         |
5+ 5       0.8826      3.64  |  V   Q  |         |         |         |
5+10       0.9044      3.16  |  V  Q   |         |         |         |
5+15       0.9248      2.97  |  V Q    |         |         |         |
5+20       0.9450      2.94  |  V Q    |         |         |         |
5+25       0.9667      3.15  |  V  Q   |         |         |         |
5+30       0.9890      3.24  |   V Q   |         |         |         |
5+35       1.0120      3.33  |   V Q   |         |         |         |
5+40       1.0367      3.59  |   V  Q  |         |         |         |
5+45       1.0621      3.70  |   V  Q  |         |         |         |
5+50       1.0879      3.74  |   V  Q  |         |         |         |
5+55       1.1138      3.76  |   V  Q  |         |         |         |
6+ 0       1.1398      3.77  |   V  Q  |         |         |         |
6+ 5       1.1661      3.82  |   V  Q  |         |         |         |
6+10       1.1941      4.07  |   V   Q |         |         |         |
6+15       1.2229      4.17  |    V  Q |         |         |         |
6+20       1.2519      4.22  |    V  Q |         |         |         |
6+25       1.2810      4.23  |    V  Q |         |         |         |
6+30       1.3102      4.24  |    V  Q |         |         |         |
6+35       1.3398      4.29  |    V  Q |         |         |         |
6+40       1.3711      4.54  |    V   Q|         |         |         |
6+45       1.4031      4.65  |    V   Q|         |         |         |
6+50       1.4354      4.69  |    V   Q|         |         |         |
6+55       1.4678      4.71  |     V  Q|         |         |         |
7+ 0       1.5002      4.71  |     V  Q|         |         |         |
7+ 5       1.5327      4.71  |     V  Q|         |         |         |
7+10       1.5652      4.72  |     V  Q|         |         |         |
7+15       1.5976      4.72  |     V  Q|         |         |         |
7+20       1.6305      4.77  |     V  Q|         |         |         |
7+25       1.6650      5.02  |     V   Q         |         |         |
7+30       1.7003      5.12  |     V   Q         |         |         |
7+35       1.7361      5.21  |      V  Q         |         |         |
7+40       1.7738      5.48  |      V  Q         |         |         |
7+45       1.8123      5.58  |      V  |Q        |         |         |
7+50       1.8514      5.68  |      V  |Q        |         |         |
7+55       1.8923      5.95  |      V  |Q        |         |         |
8+ 0       1.9340      6.05  |      V  | Q       |         |         |
8+ 5       1.9767      6.20  |       V | Q       |         |         |
8+10       2.0230      6.72  |       V |  Q      |         |         |
8+15       2.0707      6.93  |       V |  Q      |         |         |
8+20       2.1190      7.01  |       V |   Q     |         |         |
8+25       2.1676      7.05  |       V |   Q     |         |         |
8+30       2.2162      7.06  |        V|   Q     |         |         |
8+35       2.2653      7.12  |        V|   Q     |         |         |
8+40       2.3160      7.37  |        V|   Q     |         |         |
8+45       2.3675      7.47  |        V|   Q     |         |         |
8+50       2.4196      7.57  |        V|    Q    |         |         |
8+55       2.4736      7.83  |         V    Q    |         |         |
9+ 0       2.5283      7.94  |         V    Q    |         |         |
```





```
   21+35       9.5274      1.02  | Q       |         |         |        v|
   21+40       9.5361      1.25  | Q       |         |         |        v|
   21+45       9.5454      1.35  | Q       |         |         |        v|
   21+50       9.5546      1.34  | Q       |         |         |        v|
   21+55       9.5622      1.11  | Q       |         |         |        v|
   22+ 0       9.5691      1.01  | Q       |         |         |        v|
   22+ 5       9.5762      1.02  | Q       |         |         |        v|
   22+10       9.5848      1.25  | Q       |         |         |        v|
   22+15       9.5941      1.35  | Q       |         |         |        v|
   22+20       9.6033      1.34  | Q       |         |         |        v|
   22+25       9.6109      1.11  | Q       |         |         |        v|
   22+30       9.6178      1.01  | Q       |         |         |        v|
   22+35       9.6245      0.97  |Q        |         |         |        v|
   22+40       9.6311      0.95  |Q        |         |         |        v|
   22+45       9.6376      0.95  |Q        |         |         |        v|
   22+50       9.6442      0.95  |Q        |         |         |        v|
   22+55       9.6507      0.94  |Q        |         |         |        v|
   23+ 0       9.6571      0.94  |Q        |         |         |        v|
   23+ 5       9.6636      0.94  |Q        |         |         |        v|
   23+10       9.6701      0.94  |Q        |         |         |        v|
   23+15       9.6766      0.94  |Q        |         |         |        v|
   23+20       9.6831      0.94  |Q        |         |         |        v|
   23+25       9.6896      0.94  |Q        |         |         |        v|
   23+30       9.6961      0.94  |Q        |         |         |        v|
   23+35       9.7026      0.94  |Q        |         |         |        v|
   23+40       9.7091      0.94  |Q        |         |         |        v|
   23+45       9.7156      0.94  |Q        |         |         |        v|
   23+50       9.7221      0.94  |Q        |         |         |        v|
   23+55       9.7286      0.94  |Q        |         |         |        v|
   24+ 0       9.7351      0.94  |Q        |         |         |        v|
   24+ 5       9.7409      0.84  |Q        |         |         |        v|
   24+10       9.7433      0.35  Q         |         |         |        v|
   24+15       9.7443      0.14  Q         |         |         |        v|
   24+20       9.7447      0.06  Q         |         |         |        v|
   24+25       9.7448      0.02  Q         |         |         |        v|
   24+30       9.7449      0.01  Q         |         |         |        v|
   24+35       9.7450      0.01  Q         |         |         |         v
-------------------------------------------------------------------------
```

PROPOSED CONDITION
5-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH5YR15.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	0.55	37.29

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	1.25	84.75

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.714(In)
Areal adjustment factor = 99.94 %
Adjusted average point rain = 0.714(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
      59.2  39.2      0.677     0.740        0.226       1.000      0.226
                                                        Sum (F) =   0.226
      Area averaged mean soil loss (F) (In/Hr) =  0.226
      Minimum soil loss rate ((In/Hr)) =  0.113
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.310
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         87.776         10.723              7.327
          2   0.167        175.552         52.562             35.916
          3   0.250        263.328         21.552             14.727
          4   0.333        351.104          8.827              6.031
          5   0.417        438.880          3.918              2.677
          6   0.500        526.656          1.227              0.838
          7   0.583        614.432          0.656              0.448
          8   0.667        702.208          0.534              0.365
                                   Sum = 100.000    Sum=      68.330
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)      Effective
       (Hr.)  Percent   (In/Hr)         Max   |    Low         (In/Hr)
   1   0.08     3.40      0.291       (  0.226)       0.090        0.201
   2   0.17     4.70      0.402       (  0.226)       0.125        0.278
   3   0.25     4.70      0.402       (  0.226)       0.125        0.278
   4   0.33     5.10      0.437       (  0.226)       0.135        0.301
   5   0.42     5.80      0.497       (  0.226)       0.154        0.343
   6   0.50     5.90      0.505       (  0.226)       0.157        0.349
   7   0.58     7.10      0.608       (  0.226)       0.188        0.419
   8   0.67     8.70      0.745          0.226    (  0.231)        0.519
   9   0.75    13.20      1.130          0.226    (  0.350)        0.904
  10   0.83    29.70      2.543          0.226    (  0.788)        2.317
  11   0.92     7.70      0.659       (  0.226)       0.204        0.455
  12   1.00     4.00      0.342       (  0.226)       0.106        0.236
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     6.6
        Flood volume = Effective rainfall      0.55(In)
         times area      67.8(Ac.)/[(In)/(Ft.)] =       3.1(Ac.Ft)
        Total soil loss =      0.16(In)
        Total soil loss =     0.924(Ac.Ft)
        Total rainfall =      0.71(In)
        Flood volume =      135342.0 Cubic Feet
        Total soil loss =       40264.9 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =    104.717(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ------------------------------------------------------------------------
    0+ 5       0.0101      1.47  Q         |         |         |         |
    0+10       0.0739      9.25  VQ        |         |         |         |
    0+15       0.1770     14.97  | Q       |         |         |         |
    0+20       0.2975     17.49  |  Q      |         |         |         |
    0+25       0.4327     19.64  |  Q V    |         |         |         |
    0+30       0.5835     21.90  |   Q  V  |         |         |         |
    0+35       0.7456     23.53  |   Q    V|         |         |         |
```

```
    0+40       0.9338     27.32  |    Q    | V       |         |         |
    0+45       1.1744     34.95  |     Q   |    V    |         |         |
    0+50       1.5953     61.10  |         | Q       V         |         |
    0+55       2.3165    104.72  |         |         Q       V|        |
    1+ 0       2.7276     59.69  |         |Q        |         |    V    |
    1+ 5       2.9503     32.35  |     Q   |         |         |      V  |
    1+10       3.0438     13.58  | Q       |         |         |        V|
    1+15       3.0795      5.18  |Q        |         |         |        V|
    1+20       3.0960      2.38  Q         |         |         |        V|
    1+25       3.1046      1.25  Q         |         |         |        V|
    1+30       3.1064      0.27  Q         |         |         |        V|
    1+35       3.1070      0.09  Q         |         |         |        V|
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH5YR35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	0.95	64.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.05	138.99

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.208(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 1.207(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 39.2 0.677 0.740 0.226 1.000 0.226
Sum (F) = 0.226

Area averaged mean soil loss (F) (In/Hr) = 0.226
Minimum soil loss rate ((In/Hr)) = 0.113
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.188	(0.226)	0.058	0.130
2	0.17	1.30	0.188	(0.226)	0.058	0.130
3	0.25	1.10	0.159	(0.226)	0.049	0.110
4	0.33	1.50	0.217	(0.226)	0.067	0.150
5	0.42	1.50	0.217	(0.226)	0.067	0.150
6	0.50	1.80	0.261	(0.226)	0.081	0.180
7	0.58	1.50	0.217	(0.226)	0.067	0.150
8	0.67	1.80	0.261	(0.226)	0.081	0.180
9	0.75	1.80	0.261	(0.226)	0.081	0.180
10	0.83	1.50	0.217	(0.226)	0.067	0.150
11	0.92	1.60	0.232	(0.226)	0.072	0.160
12	1.00	1.80	0.261	(0.226)	0.081	0.180
13	1.08	2.20	0.319	(0.226)	0.099	0.220
14	1.17	2.20	0.319	(0.226)	0.099	0.220
15	1.25	2.20	0.319	(0.226)	0.099	0.220
16	1.33	2.00	0.290	(0.226)	0.090	0.200
17	1.42	2.60	0.377	(0.226)	0.117	0.260
18	1.50	2.70	0.391	(0.226)	0.121	0.270
19	1.58	2.40	0.348	(0.226)	0.108	0.240
20	1.67	2.70	0.391	(0.226)	0.121	0.270
21	1.75	3.30	0.478	(0.226)	0.148	0.330
22	1.83	3.10	0.449	(0.226)	0.139	0.310
23	1.92	2.90	0.420	(0.226)	0.130	0.290
24	2.00	3.00	0.435	(0.226)	0.135	0.300
25	2.08	3.10	0.449	(0.226)	0.139	0.310
26	2.17	4.20	0.608	(0.226)	0.189	0.420
27	2.25	5.00	0.724	(0.226)	0.225	0.500
28	2.33	3.50	0.507	(0.226)	0.157	0.350
29	2.42	6.80	0.985	0.226	(0.305)	0.759
30	2.50	7.30	1.058	0.226	(0.328)	0.831
31	2.58	8.20	1.188	0.226	(0.368)	0.962
32	2.67	5.90	0.855	0.226	(0.265)	0.629
33	2.75	2.00	0.290	(0.226)	0.090	0.200
34	2.83	1.80	0.261	(0.226)	0.081	0.180
35	2.92	1.80	0.261	(0.226)	0.081	0.180
36	3.00	0.60	0.087	(0.226)	0.027	0.060
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	10.4

Flood volume = Effective rainfall 0.86(In)
times area 67.8(Ac.)/[(In)/(Ft.)] = 4.9(Ac.Ft)
Total soil loss = 0.34(In)
Total soil loss = 1.944(Ac.Ft)

Total rainfall = 1.21(In)
Flood volume = 212439.5 Cubic Feet
Total soil loss = 84691.1 Cubic Feet

Peak flow rate of this hydrograph = 57.657(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 15.0 30.0 45.0 60.0
0+ 5	0.0066	0.95	Q | | | |
0+10	0.0453	5.62	V Q | | | |
0+15	0.0962	7.39	V Q | | | |
0+20	0.1496	7.75	|V Q | | | |
0+25	0.2132	9.24	|V Q | | | |
0+30	0.2823	10.04	| V Q | | | |
0+35	0.3590	11.14	| V Q | | | |
0+40	0.4339	10.86	| V Q | | | |
0+45	0.5145	11.70	| V Q | | | |
0+50	0.5960	11.84	| V Q | | | |
0+55	0.6716	10.97	| V Q | | | |
1+ 0	0.7480	11.10	| VQ | | | |
1+ 5	0.8314	12.11	| V Q | | | |
1+10	0.9266	13.82	| V Q| | | |
1+15	1.0267	14.54	| VQ| | | |
1+20	1.1279	14.68	| Q| | | |
1+25	1.2279	14.52	| QV | | |
1+30	1.3415	16.50	| |Q | | |
1+35	1.4616	17.43	| |Q | | |
1+40	1.5790	17.04	| |QV | | |
1+45	1.7052	18.32	| | QV | | |
1+50	1.8475	20.66	| | Q V | | |
1+55	1.9908	20.81	| | Q V | | |
2+ 0	2.1307	20.31	| | Q V | | |
2+ 5	2.2719	20.51	| | Q V | | |
2+10	2.4213	21.70	| | Q V| | |
2+15	2.6032	26.41	| | Q |V | |
2+20	2.8090	29.89	| | Q| V | |
2+25	3.0112	29.36	| | Q| V | |
2+30	3.3085	43.16	| | | VQ | |
2+35	3.6677	52.16	| | | V Q |
2+40	4.0648	57.66	| | | | V Q |
2+45	4.3813	45.95	| | | Q V |
2+50	4.5656	26.77	| | Q | | V |
2+55	4.6914	18.27	| | Q | | | V |
3+ 0	4.7872	13.90	| | Q| | | | V|
3+ 5	4.8401	7.69	| Q | | | | V|
3+10	4.8625	3.25	| Q | | | | V|
3+15	4.8716	1.31	Q | | | | V|
3+20	4.8748	0.47	Q | | | | V|
3+25	4.8762	0.20	Q | | | | V|
3+30	4.8768	0.09	Q | | | | V|
3+35	4.8769	0.02	Q | | | | V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH5YR65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	1.40	94.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	3.00	203.40

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.775(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.774(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 39.2 0.677 0.740 0.226 1.000 0.226
Sum (F) = 0.226

Area averaged mean soil loss (F) (In/Hr) = 0.226
Minimum soil loss rate ((In/Hr)) = 0.113
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.106	(0.226)	0.033	0.073
2	0.17	0.60	0.128	(0.226)	0.040	0.088
3	0.25	0.60	0.128	(0.226)	0.040	0.088
4	0.33	0.60	0.128	(0.226)	0.040	0.088
5	0.42	0.60	0.128	(0.226)	0.040	0.088
6	0.50	0.70	0.149	(0.226)	0.046	0.103
7	0.58	0.70	0.149	(0.226)	0.046	0.103
8	0.67	0.70	0.149	(0.226)	0.046	0.103
9	0.75	0.70	0.149	(0.226)	0.046	0.103
10	0.83	0.70	0.149	(0.226)	0.046	0.103
11	0.92	0.70	0.149	(0.226)	0.046	0.103
12	1.00	0.80	0.170	(0.226)	0.053	0.118
13	1.08	0.80	0.170	(0.226)	0.053	0.118
14	1.17	0.80	0.170	(0.226)	0.053	0.118
15	1.25	0.80	0.170	(0.226)	0.053	0.118
16	1.33	0.80	0.170	(0.226)	0.053	0.118
17	1.42	0.80	0.170	(0.226)	0.053	0.118
18	1.50	0.80	0.170	(0.226)	0.053	0.118
19	1.58	0.80	0.170	(0.226)	0.053	0.118
20	1.67	0.80	0.170	(0.226)	0.053	0.118
21	1.75	0.80	0.170	(0.226)	0.053	0.118
22	1.83	0.80	0.170	(0.226)	0.053	0.118
23	1.92	0.80	0.170	(0.226)	0.053	0.118
24	2.00	0.90	0.192	(0.226)	0.059	0.132
25	2.08	0.80	0.170	(0.226)	0.053	0.118
26	2.17	0.90	0.192	(0.226)	0.059	0.132
27	2.25	0.90	0.192	(0.226)	0.059	0.132
28	2.33	0.90	0.192	(0.226)	0.059	0.132
29	2.42	0.90	0.192	(0.226)	0.059	0.132
30	2.50	0.90	0.192	(0.226)	0.059	0.132
31	2.58	0.90	0.192	(0.226)	0.059	0.132
32	2.67	0.90	0.192	(0.226)	0.059	0.132
33	2.75	1.00	0.213	(0.226)	0.066	0.147
34	2.83	1.00	0.213	(0.226)	0.066	0.147
35	2.92	1.00	0.213	(0.226)	0.066	0.147
36	3.00	1.00	0.213	(0.226)	0.066	0.147
37	3.08	1.00	0.213	(0.226)	0.066	0.147
38	3.17	1.10	0.234	(0.226)	0.073	0.162
39	3.25	1.10	0.234	(0.226)	0.073	0.162
40	3.33	1.10	0.234	(0.226)	0.073	0.162
41	3.42	1.20	0.256	(0.226)	0.079	0.176
42	3.50	1.30	0.277	(0.226)	0.086	0.191

```
43   3.58     1.40      0.298       (  0.226)       0.092        0.206
44   3.67     1.40      0.298       (  0.226)       0.092        0.206
45   3.75     1.50      0.319       (  0.226)       0.099        0.220
46   3.83     1.50      0.319       (  0.226)       0.099        0.220
47   3.92     1.60      0.341       (  0.226)       0.106        0.235
48   4.00     1.60      0.341       (  0.226)       0.106        0.235
49   4.08     1.70      0.362       (  0.226)       0.112        0.250
50   4.17     1.80      0.383       (  0.226)       0.119        0.264
51   4.25     1.90      0.405       (  0.226)       0.125        0.279
52   4.33     2.00      0.426       (  0.226)       0.132        0.294
53   4.42     2.10      0.447       (  0.226)       0.139        0.309
54   4.50     2.10      0.447       (  0.226)       0.139        0.309
55   4.58     2.20      0.468       (  0.226)       0.145        0.323
56   4.67     2.30      0.490       (  0.226)       0.152        0.338
57   4.75     2.40      0.511       (  0.226)       0.158        0.353
58   4.83     2.40      0.511       (  0.226)       0.158        0.353
59   4.92     2.50      0.532       (  0.226)       0.165        0.367
60   5.00     2.60      0.554       (  0.226)       0.172        0.382
61   5.08     3.10      0.660       (  0.226)       0.205        0.455
62   5.17     3.60      0.767          0.226    (  0.238)       0.540
63   5.25     3.90      0.830          0.226    (  0.257)       0.604
64   5.33     4.20      0.894          0.226    (  0.277)       0.668
65   5.42     4.70      1.001          0.226    (  0.310)       0.775
66   5.50     5.60      1.192          0.226    (  0.370)       0.966
67   5.58     1.90      0.405       (  0.226)       0.125        0.279
68   5.67     0.90      0.192       (  0.226)       0.059        0.132
69   5.75     0.60      0.128       (  0.226)       0.040        0.088
70   5.83     0.50      0.106       (  0.226)       0.033        0.073
71   5.92     0.30      0.064       (  0.226)       0.020        0.044
72   6.00     0.20      0.043       (  0.226)       0.013        0.029
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    15.0
      Flood volume = Effective rainfall      1.25(In)
       times area      67.8(Ac.)/[(In)/(Ft.)] =       7.1(Ac.Ft)
      Total soil loss =      0.52(In)
      Total soil loss =     2.957(Ac.Ft)
      Total rainfall =      1.77(In)
      Flood volume =      307904.6 Cubic Feet
      Total soil loss =      128786.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     54.624(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0037      0.54  Q          |         |         |         |
  0+10       0.0263      3.29  V Q        |         |         |         |
  0+15       0.0601      4.90  V  Q       |         |         |         |
  0+20       0.0983      5.56  V  Q       |         |         |         |
  0+25       0.1386      5.84  V  Q       |         |         |         |
  0+30       0.1802      6.05  |V  Q       |         |         |         |
  0+35       0.2258      6.62  |V  Q       |         |         |         |
  0+40       0.2732      6.87  |V  Q       |         |         |         |
  0+45       0.3212      6.97  |V  Q       |         |         |         |
  0+50       0.3694      7.01  | V Q       |         |         |         |
  0+55       0.4177      7.02  | V Q       |         |         |         |
  1+ 0       0.4669      7.13  | V Q       |         |         |         |
  1+ 5       0.5197      7.67  | V  Q      |         |         |         |
  1+10       0.5740      7.88  |  V Q      |         |         |         |
  1+15       0.6289      7.97  |  V Q      |         |         |         |
  1+20       0.6840      8.01  |  V Q      |         |         |         |
  1+25       0.7393      8.02  |   VQ      |         |         |         |
  1+30       0.7946      8.03  |   VQ      |         |         |         |
  1+35       0.8499      8.04  |   VQ      |         |         |         |
  1+40       0.9053      8.04  |    Q      |         |         |         |
  1+45       0.9606      8.04  |    Q      |         |         |         |
  1+50       1.0159      8.04  |    Q      |         |         |         |
  1+55       1.0713      8.04  |    QV     |         |         |         |
  2+ 0       1.1274      8.14  |    QV     |         |         |         |
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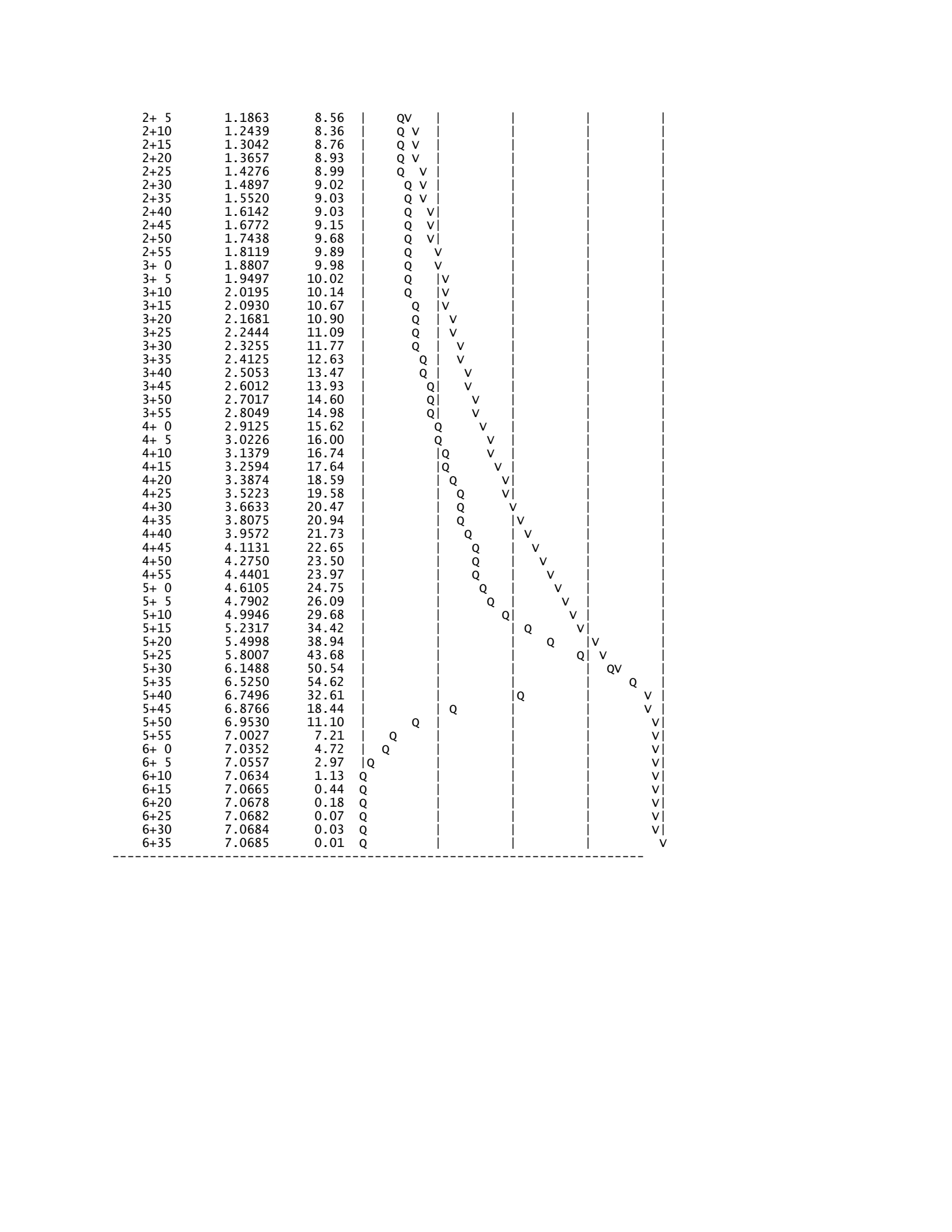
2+ 5 1.1863 8.56
2+10 1.2439 8.36
2+15 1.3042 8.76
2+20 1.3657 8.93
2+25 1.4276 8.99
2+30 1.4897 9.02
2+35 1.5520 9.03
2+40 1.6142 9.03
2+45 1.6772 9.15
2+50 1.7438 9.68
2+55 1.8119 9.89
3+ 0 1.8807 9.98
3+ 5 1.9497 10.02
3+10 2.0195 10.14
3+15 2.0930 10.67
3+20 2.1681 10.90
3+25 2.2444 11.09
3+30 2.3255 11.77
3+35 2.4125 12.63
3+40 2.5053 13.47
3+45 2.6012 13.93
3+50 2.7017 14.60
3+55 2.8049 14.98
4+ 0 2.9125 15.62
4+ 5 3.0226 16.00
4+10 3.1379 16.74
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4+30 3.6633 20.47
4+35 3.8075 20.94
4+40 3.9572 21.73
4+45 4.1131 22.65
4+50 4.2750 23.50
4+55 4.4401 23.97
5+ 0 4.6105 24.75
5+ 5 4.7902 26.09
5+10 4.9946 29.68
5+15 5.2317 34.42
5+20 5.4998 38.94
5+25 5.8007 43.68
5+30 6.1488 50.54
5+35 6.5250 54.62
5+40 6.7496 32.61
5+45 6.8766 18.44
5+50 6.9530 11.10
5+55 7.0027 7.21
6+ 0 7.0352 4.72
6+ 5 7.0557 2.97
6+10 7.0634 1.13
6+15 7.0665 0.44
6+20 7.0678 0.18
6+25 7.0682 0.07
6+30 7.0684 0.03
6+35 7.0685 0.01

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH5YR245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.50	169.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	6.50	440.70

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 3.437(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.436(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2	39.2	0.677	0.740	0.226	1.000	0.226
					Sum (F) =	0.226

Area averaged mean soil loss (F) (In/Hr) = 0.226
Minimum soil loss rate ((In/Hr)) = 0.113
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	(0.401)	0.009	0.019
2	0.17	0.07	0.027	(0.399)	0.009	0.019
3	0.25	0.07	0.027	(0.398)	0.009	0.019
4	0.33	0.10	0.041	(0.396)	0.013	0.028
5	0.42	0.10	0.041	(0.395)	0.013	0.028
6	0.50	0.10	0.041	(0.393)	0.013	0.028
7	0.58	0.10	0.041	(0.392)	0.013	0.028
8	0.67	0.10	0.041	(0.390)	0.013	0.028
9	0.75	0.10	0.041	(0.389)	0.013	0.028
10	0.83	0.13	0.055	(0.387)	0.017	0.038
11	0.92	0.13	0.055	(0.386)	0.017	0.038
12	1.00	0.13	0.055	(0.384)	0.017	0.038
13	1.08	0.10	0.041	(0.383)	0.013	0.028
14	1.17	0.10	0.041	(0.381)	0.013	0.028
15	1.25	0.10	0.041	(0.380)	0.013	0.028
16	1.33	0.10	0.041	(0.378)	0.013	0.028
17	1.42	0.10	0.041	(0.377)	0.013	0.028
18	1.50	0.10	0.041	(0.375)	0.013	0.028
19	1.58	0.10	0.041	(0.374)	0.013	0.028
20	1.67	0.10	0.041	(0.372)	0.013	0.028
21	1.75	0.10	0.041	(0.371)	0.013	0.028
22	1.83	0.13	0.055	(0.369)	0.017	0.038
23	1.92	0.13	0.055	(0.368)	0.017	0.038
24	2.00	0.13	0.055	(0.366)	0.017	0.038
25	2.08	0.13	0.055	(0.365)	0.017	0.038
26	2.17	0.13	0.055	(0.363)	0.017	0.038
27	2.25	0.13	0.055	(0.362)	0.017	0.038
28	2.33	0.13	0.055	(0.360)	0.017	0.038
29	2.42	0.13	0.055	(0.359)	0.017	0.038
30	2.50	0.13	0.055	(0.357)	0.017	0.038
31	2.58	0.17	0.069	(0.356)	0.021	0.047
32	2.67	0.17	0.069	(0.354)	0.021	0.047
33	2.75	0.17	0.069	(0.353)	0.021	0.047
34	2.83	0.17	0.069	(0.351)	0.021	0.047
35	2.92	0.17	0.069	(0.350)	0.021	0.047
36	3.00	0.17	0.069	(0.348)	0.021	0.047
37	3.08	0.17	0.069	(0.347)	0.021	0.047
38	3.17	0.17	0.069	(0.346)	0.021	0.047
39	3.25	0.17	0.069	(0.344)	0.021	0.047
40	3.33	0.17	0.069	(0.343)	0.021	0.047
41	3.42	0.17	0.069	(0.341)	0.021	0.047
42	3.50	0.17	0.069	(0.340)	0.021	0.047

43	3.58	0.17	0.069	(0.338)	0.021	0.047
44	3.67	0.17	0.069	(0.337)	0.021	0.047
45	3.75	0.17	0.069	(0.336)	0.021	0.047
46	3.83	0.20	0.082	(0.334)	0.026	0.057
47	3.92	0.20	0.082	(0.333)	0.026	0.057
48	4.00	0.20	0.082	(0.331)	0.026	0.057
49	4.08	0.20	0.082	(0.330)	0.026	0.057
50	4.17	0.20	0.082	(0.329)	0.026	0.057
51	4.25	0.20	0.082	(0.327)	0.026	0.057
52	4.33	0.23	0.096	(0.326)	0.030	0.066
53	4.42	0.23	0.096	(0.324)	0.030	0.066
54	4.50	0.23	0.096	(0.323)	0.030	0.066
55	4.58	0.23	0.096	(0.322)	0.030	0.066
56	4.67	0.23	0.096	(0.320)	0.030	0.066
57	4.75	0.23	0.096	(0.319)	0.030	0.066
58	4.83	0.27	0.110	(0.317)	0.034	0.076
59	4.92	0.27	0.110	(0.316)	0.034	0.076
60	5.00	0.27	0.110	(0.315)	0.034	0.076
61	5.08	0.20	0.082	(0.313)	0.026	0.057
62	5.17	0.20	0.082	(0.312)	0.026	0.057
63	5.25	0.20	0.082	(0.311)	0.026	0.057
64	5.33	0.23	0.096	(0.309)	0.030	0.066
65	5.42	0.23	0.096	(0.308)	0.030	0.066
66	5.50	0.23	0.096	(0.307)	0.030	0.066
67	5.58	0.27	0.110	(0.305)	0.034	0.076
68	5.67	0.27	0.110	(0.304)	0.034	0.076
69	5.75	0.27	0.110	(0.303)	0.034	0.076
70	5.83	0.27	0.110	(0.301)	0.034	0.076
71	5.92	0.27	0.110	(0.300)	0.034	0.076
72	6.00	0.27	0.110	(0.299)	0.034	0.076
73	6.08	0.30	0.124	(0.297)	0.038	0.085
74	6.17	0.30	0.124	(0.296)	0.038	0.085
75	6.25	0.30	0.124	(0.295)	0.038	0.085
76	6.33	0.30	0.124	(0.293)	0.038	0.085
77	6.42	0.30	0.124	(0.292)	0.038	0.085
78	6.50	0.30	0.124	(0.291)	0.038	0.085
79	6.58	0.33	0.137	(0.289)	0.043	0.095
80	6.67	0.33	0.137	(0.288)	0.043	0.095
81	6.75	0.33	0.137	(0.287)	0.043	0.095
82	6.83	0.33	0.137	(0.285)	0.043	0.095
83	6.92	0.33	0.137	(0.284)	0.043	0.095
84	7.00	0.33	0.137	(0.283)	0.043	0.095
85	7.08	0.33	0.137	(0.282)	0.043	0.095
86	7.17	0.33	0.137	(0.280)	0.043	0.095
87	7.25	0.33	0.137	(0.279)	0.043	0.095
88	7.33	0.37	0.151	(0.278)	0.047	0.104
89	7.42	0.37	0.151	(0.276)	0.047	0.104
90	7.50	0.37	0.151	(0.275)	0.047	0.104
91	7.58	0.40	0.165	(0.274)	0.051	0.114
92	7.67	0.40	0.165	(0.273)	0.051	0.114
93	7.75	0.40	0.165	(0.271)	0.051	0.114
94	7.83	0.43	0.179	(0.270)	0.055	0.123
95	7.92	0.43	0.179	(0.269)	0.055	0.123
96	8.00	0.43	0.179	(0.268)	0.055	0.123
97	8.08	0.50	0.206	(0.266)	0.064	0.142
98	8.17	0.50	0.206	(0.265)	0.064	0.142
99	8.25	0.50	0.206	(0.264)	0.064	0.142
100	8.33	0.50	0.206	(0.263)	0.064	0.142
101	8.42	0.50	0.206	(0.262)	0.064	0.142
102	8.50	0.50	0.206	(0.260)	0.064	0.142
103	8.58	0.53	0.220	(0.259)	0.068	0.152
104	8.67	0.53	0.220	(0.258)	0.068	0.152
105	8.75	0.53	0.220	(0.257)	0.068	0.152
106	8.83	0.57	0.234	(0.255)	0.072	0.161
107	8.92	0.57	0.234	(0.254)	0.072	0.161
108	9.00	0.57	0.234	(0.253)	0.072	0.161
109	9.08	0.63	0.261	(0.252)	0.081	0.180
110	9.17	0.63	0.261	(0.251)	0.081	0.180
111	9.25	0.63	0.261	(0.249)	0.081	0.180
112	9.33	0.67	0.275	(0.248)	0.085	0.190
113	9.42	0.67	0.275	(0.247)	0.085	0.190
114	9.50	0.67	0.275	(0.246)	0.085	0.190
115	9.58	0.70	0.289	(0.245)	0.089	0.199
116	9.67	0.70	0.289	(0.244)	0.089	0.199
117	9.75	0.70	0.289	(0.242)	0.089	0.199

118	9.83	0.73	0.302	(0.241)	0.094	0.209
119	9.92	0.73	0.302	(0.240)	0.094	0.209
120	10.00	0.73	0.302	(0.239)	0.094	0.209
121	10.08	0.50	0.206	(0.238)	0.064	0.142
122	10.17	0.50	0.206	(0.237)	0.064	0.142
123	10.25	0.50	0.206	(0.235)	0.064	0.142
124	10.33	0.50	0.206	(0.234)	0.064	0.142
125	10.42	0.50	0.206	(0.233)	0.064	0.142
126	10.50	0.50	0.206	(0.232)	0.064	0.142
127	10.58	0.67	0.275	(0.231)	0.085	0.190
128	10.67	0.67	0.275	(0.230)	0.085	0.190
129	10.75	0.67	0.275	(0.229)	0.085	0.190
130	10.83	0.67	0.275	(0.227)	0.085	0.190
131	10.92	0.67	0.275	(0.226)	0.085	0.190
132	11.00	0.67	0.275	(0.225)	0.085	0.190
133	11.08	0.63	0.261	(0.224)	0.081	0.180
134	11.17	0.63	0.261	(0.223)	0.081	0.180
135	11.25	0.63	0.261	(0.222)	0.081	0.180
136	11.33	0.63	0.261	(0.221)	0.081	0.180
137	11.42	0.63	0.261	(0.220)	0.081	0.180
138	11.50	0.63	0.261	(0.219)	0.081	0.180
139	11.58	0.57	0.234	(0.218)	0.072	0.161
140	11.67	0.57	0.234	(0.216)	0.072	0.161
141	11.75	0.57	0.234	(0.215)	0.072	0.161
142	11.83	0.60	0.247	(0.214)	0.077	0.171
143	11.92	0.60	0.247	(0.213)	0.077	0.171
144	12.00	0.60	0.247	(0.212)	0.077	0.171
145	12.08	0.83	0.344	(0.211)	0.107	0.237
146	12.17	0.83	0.344	(0.210)	0.107	0.237
147	12.25	0.83	0.344	(0.209)	0.107	0.237
148	12.33	0.87	0.357	(0.208)	0.111	0.247
149	12.42	0.87	0.357	(0.207)	0.111	0.247
150	12.50	0.87	0.357	(0.206)	0.111	0.247
151	12.58	0.93	0.385	(0.205)	0.119	0.266
152	12.67	0.93	0.385	(0.204)	0.119	0.266
153	12.75	0.93	0.385	(0.203)	0.119	0.266
154	12.83	0.97	0.399	(0.202)	0.124	0.275
155	12.92	0.97	0.399	(0.201)	0.124	0.275
156	13.00	0.97	0.399	(0.200)	0.124	0.275
157	13.08	1.13	0.467	(0.199)	0.145	0.322
158	13.17	1.13	0.467	(0.198)	0.145	0.322
159	13.25	1.13	0.467	(0.197)	0.145	0.322
160	13.33	1.13	0.467	(0.196)	0.145	0.322
161	13.42	1.13	0.467	(0.195)	0.145	0.322
162	13.50	1.13	0.467	(0.194)	0.145	0.322
163	13.58	0.77	0.316	(0.193)	0.098	0.218
164	13.67	0.77	0.316	(0.192)	0.098	0.218
165	13.75	0.77	0.316	(0.191)	0.098	0.218
166	13.83	0.77	0.316	(0.190)	0.098	0.218
167	13.92	0.77	0.316	(0.189)	0.098	0.218
168	14.00	0.77	0.316	(0.188)	0.098	0.218
169	14.08	0.90	0.371	(0.187)	0.115	0.256
170	14.17	0.90	0.371	(0.186)	0.115	0.256
171	14.25	0.90	0.371	(0.185)	0.115	0.256
172	14.33	0.87	0.357	(0.184)	0.111	0.247
173	14.42	0.87	0.357	(0.183)	0.111	0.247
174	14.50	0.87	0.357	(0.182)	0.111	0.247
175	14.58	0.87	0.357	(0.181)	0.111	0.247
176	14.67	0.87	0.357	(0.180)	0.111	0.247
177	14.75	0.87	0.357	(0.179)	0.111	0.247
178	14.83	0.83	0.344	(0.178)	0.107	0.237
179	14.92	0.83	0.344	(0.178)	0.107	0.237
180	15.00	0.83	0.344	(0.177)	0.107	0.237
181	15.08	0.80	0.330	(0.176)	0.102	0.228
182	15.17	0.80	0.330	(0.175)	0.102	0.228
183	15.25	0.80	0.330	(0.174)	0.102	0.228
184	15.33	0.77	0.316	(0.173)	0.098	0.218
185	15.42	0.77	0.316	(0.172)	0.098	0.218
186	15.50	0.77	0.316	(0.171)	0.098	0.218
187	15.58	0.63	0.261	(0.170)	0.081	0.180
188	15.67	0.63	0.261	(0.170)	0.081	0.180
189	15.75	0.63	0.261	(0.169)	0.081	0.180
190	15.83	0.63	0.261	(0.168)	0.081	0.180
191	15.92	0.63	0.261	(0.167)	0.081	0.180
192	16.00	0.63	0.261	(0.166)	0.081	0.180

193	16.08	0.13	0.055	(0.165)	0.017	0.038
194	16.17	0.13	0.055	(0.164)	0.017	0.038
195	16.25	0.13	0.055	(0.164)	0.017	0.038
196	16.33	0.13	0.055	(0.163)	0.017	0.038
197	16.42	0.13	0.055	(0.162)	0.017	0.038
198	16.50	0.13	0.055	(0.161)	0.017	0.038
199	16.58	0.10	0.041	(0.160)	0.013	0.028
200	16.67	0.10	0.041	(0.159)	0.013	0.028
201	16.75	0.10	0.041	(0.159)	0.013	0.028
202	16.83	0.10	0.041	(0.158)	0.013	0.028
203	16.92	0.10	0.041	(0.157)	0.013	0.028
204	17.00	0.10	0.041	(0.156)	0.013	0.028
205	17.08	0.17	0.069	(0.155)	0.021	0.047
206	17.17	0.17	0.069	(0.155)	0.021	0.047
207	17.25	0.17	0.069	(0.154)	0.021	0.047
208	17.33	0.17	0.069	(0.153)	0.021	0.047
209	17.42	0.17	0.069	(0.152)	0.021	0.047
210	17.50	0.17	0.069	(0.152)	0.021	0.047
211	17.58	0.17	0.069	(0.151)	0.021	0.047
212	17.67	0.17	0.069	(0.150)	0.021	0.047
213	17.75	0.17	0.069	(0.149)	0.021	0.047
214	17.83	0.13	0.055	(0.149)	0.017	0.038
215	17.92	0.13	0.055	(0.148)	0.017	0.038
216	18.00	0.13	0.055	(0.147)	0.017	0.038
217	18.08	0.13	0.055	(0.146)	0.017	0.038
218	18.17	0.13	0.055	(0.146)	0.017	0.038
219	18.25	0.13	0.055	(0.145)	0.017	0.038
220	18.33	0.13	0.055	(0.144)	0.017	0.038
221	18.42	0.13	0.055	(0.144)	0.017	0.038
222	18.50	0.13	0.055	(0.143)	0.017	0.038
223	18.58	0.10	0.041	(0.142)	0.013	0.028
224	18.67	0.10	0.041	(0.141)	0.013	0.028
225	18.75	0.10	0.041	(0.141)	0.013	0.028
226	18.83	0.07	0.027	(0.140)	0.009	0.019
227	18.92	0.07	0.027	(0.139)	0.009	0.019
228	19.00	0.07	0.027	(0.139)	0.009	0.019
229	19.08	0.10	0.041	(0.138)	0.013	0.028
230	19.17	0.10	0.041	(0.137)	0.013	0.028
231	19.25	0.10	0.041	(0.137)	0.013	0.028
232	19.33	0.13	0.055	(0.136)	0.017	0.038
233	19.42	0.13	0.055	(0.136)	0.017	0.038
234	19.50	0.13	0.055	(0.135)	0.017	0.038
235	19.58	0.10	0.041	(0.134)	0.013	0.028
236	19.67	0.10	0.041	(0.134)	0.013	0.028
237	19.75	0.10	0.041	(0.133)	0.013	0.028
238	19.83	0.07	0.027	(0.133)	0.009	0.019
239	19.92	0.07	0.027	(0.132)	0.009	0.019
240	20.00	0.07	0.027	(0.131)	0.009	0.019
241	20.08	0.10	0.041	(0.131)	0.013	0.028
242	20.17	0.10	0.041	(0.130)	0.013	0.028
243	20.25	0.10	0.041	(0.130)	0.013	0.028
244	20.33	0.10	0.041	(0.129)	0.013	0.028
245	20.42	0.10	0.041	(0.129)	0.013	0.028
246	20.50	0.10	0.041	(0.128)	0.013	0.028
247	20.58	0.10	0.041	(0.127)	0.013	0.028
248	20.67	0.10	0.041	(0.127)	0.013	0.028
249	20.75	0.10	0.041	(0.126)	0.013	0.028
250	20.83	0.07	0.027	(0.126)	0.009	0.019
251	20.92	0.07	0.027	(0.125)	0.009	0.019
252	21.00	0.07	0.027	(0.125)	0.009	0.019
253	21.08	0.10	0.041	(0.124)	0.013	0.028
254	21.17	0.10	0.041	(0.124)	0.013	0.028
255	21.25	0.10	0.041	(0.123)	0.013	0.028
256	21.33	0.07	0.027	(0.123)	0.009	0.019
257	21.42	0.07	0.027	(0.122)	0.009	0.019
258	21.50	0.07	0.027	(0.122)	0.009	0.019
259	21.58	0.10	0.041	(0.122)	0.013	0.028
260	21.67	0.10	0.041	(0.121)	0.013	0.028
261	21.75	0.10	0.041	(0.121)	0.013	0.028
262	21.83	0.07	0.027	(0.120)	0.009	0.019
263	21.92	0.07	0.027	(0.120)	0.009	0.019
264	22.00	0.07	0.027	(0.119)	0.009	0.019
265	22.08	0.10	0.041	(0.119)	0.013	0.028
266	22.17	0.10	0.041	(0.119)	0.013	0.028
267	22.25	0.10	0.041	(0.118)	0.013	0.028

268	22.33	0.07	0.027	(0.118)	0.009	0.019
269	22.42	0.07	0.027	(0.118)	0.009	0.019
270	22.50	0.07	0.027	(0.117)	0.009	0.019
271	22.58	0.07	0.027	(0.117)	0.009	0.019
272	22.67	0.07	0.027	(0.117)	0.009	0.019
273	22.75	0.07	0.027	(0.116)	0.009	0.019
274	22.83	0.07	0.027	(0.116)	0.009	0.019
275	22.92	0.07	0.027	(0.116)	0.009	0.019
276	23.00	0.07	0.027	(0.115)	0.009	0.019
277	23.08	0.07	0.027	(0.115)	0.009	0.019
278	23.17	0.07	0.027	(0.115)	0.009	0.019
279	23.25	0.07	0.027	(0.115)	0.009	0.019
280	23.33	0.07	0.027	(0.114)	0.009	0.019
281	23.42	0.07	0.027	(0.114)	0.009	0.019
282	23.50	0.07	0.027	(0.114)	0.009	0.019
283	23.58	0.07	0.027	(0.114)	0.009	0.019
284	23.67	0.07	0.027	(0.114)	0.009	0.019
285	23.75	0.07	0.027	(0.113)	0.009	0.019
286	23.83	0.07	0.027	(0.113)	0.009	0.019
287	23.92	0.07	0.027	(0.113)	0.009	0.019
288	24.00	0.07	0.027	(0.113)	0.009	0.019

(Loss Rate Not Used)

Sum = 100.0 Sum = 28.5

Flood volume = Effective rainfall 2.37(In)
times area 67.8(Ac.)/[(In)/(Ft.)] = 13.4(Ac.Ft)
Total soil loss = 1.07(In)
Total soil loss = 6.019(Ac.Ft)
Total rainfall = 3.44(In)
Flood volume = 583572.0 Cubic Feet
Total soil loss = 262184.5 Cubic Feet

Peak flow rate of this hydrograph = 22.007(CFS)

++

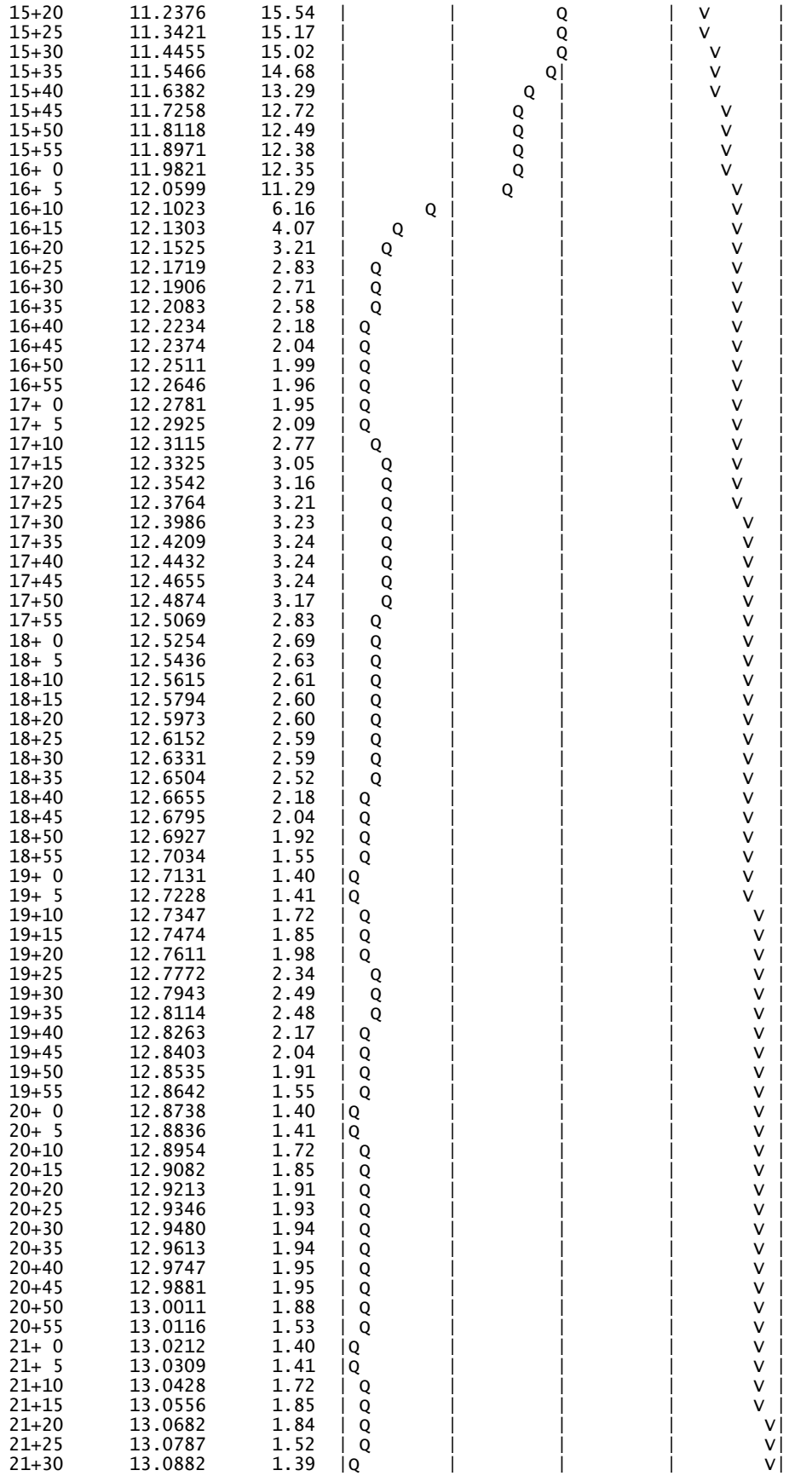
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5	30.0
0+ 5	0.0010	0.14	Q	|	|	|	|
0+10	0.0066	0.82	VQ	|	|	|	|
0+15	0.0142	1.10	VQ	|	|	|	|
0+20	0.0230	1.28	VQ	|	|	|	|
0+25	0.0346	1.68	V Q	|	|	|	|
0+30	0.0472	1.83	V Q	|	|	|	|
0+35	0.0603	1.90	V Q	|	|	|	|
0+40	0.0735	1.93	V Q	|	|	|	|
0+45	0.0869	1.94	V Q	|	|	|	|
0+50	0.1007	2.01	V Q	|	|	|	|
0+55	0.1170	2.36	V Q	|	|	|	|
1+ 0	0.1341	2.50	V Q	|	|	|	|
1+ 5	0.1512	2.48	V Q	|	|	|	|
1+10	0.1662	2.17	V Q	|	|	|	|
1+15	0.1802	2.04	V Q	|	|	|	|
1+20	0.1939	1.98	V Q	|	|	|	|
1+25	0.2074	1.96	V Q	|	|	|	|
1+30	0.2208	1.95	V Q	|	|	|	|
1+35	0.2342	1.95	V Q	|	|	|	|
1+40	0.2476	1.95	V Q	|	|	|	|
1+45	0.2610	1.95	V Q	|	|	|	|
1+50	0.2749	2.01	V Q	|	|	|	|
1+55	0.2911	2.36	V Q	|	|	|	|
2+ 0	0.3083	2.50	V Q	|	|	|	|
2+ 5	0.3259	2.55	V Q	|	|	|	|
2+10	0.3436	2.58	|V Q	|	|	|	|
2+15	0.3615	2.59	|V Q	|	|	|	|
2+20	0.3793	2.59	|V Q	|	|	|	|
2+25	0.3972	2.59	|V Q	|	|	|	|
2+30	0.4150	2.59	|V Q	|	|	|	|
2+35	0.4334	2.66	|V Q	|	|	|	|
2+40	0.4540	3.00	|V Q	|	|	|	|
2+45	0.4757	3.14	|V Q	|	|	|	|

```
2+50       0.4977      3.20  |V  Q     |         |         |         |
2+55       0.5200      3.23  |V  Q     |         |         |         |
3+ 0       0.5422      3.23  |V  Q     |         |         |         |
3+ 5       0.5645      3.24  |V  Q     |         |         |         |
3+10       0.5869      3.24  |V  Q     |         |         |         |
3+15       0.6092      3.24  |V  Q     |         |         |         |
3+20       0.6315      3.24  |V  Q     |         |         |         |
3+25       0.6539      3.24  |V  Q     |         |         |         |
3+30       0.6762      3.24  | V Q     |         |         |         |
3+35       0.6985      3.24  | V Q     |         |         |         |
3+40       0.7208      3.24  | V Q     |         |         |         |
3+45       0.7432      3.24  | V Q     |         |         |         |
3+50       0.7660      3.31  | V Q     |         |         |         |
3+55       0.7911      3.65  | V Q     |         |         |         |
4+ 0       0.8172      3.79  | V  Q    |         |         |         |
4+ 5       0.8438      3.85  | V  Q    |         |         |         |
4+10       0.8704      3.87  | V  Q    |         |         |         |
4+15       0.8972      3.88  | V  Q    |         |         |         |
4+20       0.9244      3.96  | V  Q    |         |         |         |
4+25       0.9541      4.30  | V  Q    |         |         |         |
4+30       0.9846      4.44  | V  Q    |         |         |         |
4+35       1.0156      4.50  |  V Q    |         |         |         |
4+40       1.0468      4.52  |  V  Q   |         |         |         |
4+45       1.0780      4.53  |  V  Q   |         |         |         |
4+50       1.1097      4.60  |  V  Q   |         |         |         |
4+55       1.1438      4.95  |  V  Q   |         |         |         |
5+ 0       1.1788      5.09  |  V  Q   |         |         |         |
5+ 5       1.2133      5.01  |  V  Q   |         |         |         |
5+10       1.2433      4.35  |  V Q    |         |         |         |
5+15       1.2714      4.08  |  V Q    |         |         |         |
5+20       1.2992      4.04  |  V Q    |         |         |         |
5+25       1.3290      4.33  |  V Q    |         |         |         |
5+30       1.3597      4.46  |   VQ    |         |         |         |
5+35       1.3912      4.57  |   V Q   |         |         |         |
5+40       1.4252      4.93  |   V Q   |         |         |         |
5+45       1.4602      5.08  |   V Q   |         |         |         |
5+50       1.4956      5.14  |   V Q   |         |         |         |
5+55       1.5312      5.17  |   V Q   |         |         |         |
6+ 0       1.5669      5.18  |   V Q   |         |         |         |
6+ 5       1.6031      5.25  |   V  Q  |         |         |         |
6+10       1.6416      5.60  |   V  Q  |         |         |         |
6+15       1.6811      5.74  |    V Q  |         |         |         |
6+20       1.7210      5.79  |    V Q  |         |         |         |
6+25       1.7611      5.82  |    V Q  |         |         |         |
6+30       1.8013      5.83  |    V Q  |         |         |         |
6+35       1.8419      5.90  |    V Q  |         |         |         |
6+40       1.8849      6.25  |    V  Q |         |         |         |
6+45       1.9289      6.39  |    V  Q |         |         |         |
6+50       1.9733      6.44  |    V  Q |         |         |         |
6+55       2.0178      6.47  |     V Q |         |         |         |
7+ 0       2.0624      6.48  |     V Q |         |         |         |
7+ 5       2.1071      6.48  |     V Q |         |         |         |
7+10       2.1517      6.48  |     V Q |         |         |         |
7+15       2.1964      6.48  |     V Q |         |         |         |
7+20       2.2415      6.55  |     V Q |         |         |         |
7+25       2.2890      6.89  |     V  Q|         |         |         |
7+30       2.3374      7.03  |     V  Q|         |         |         |
7+35       2.3868      7.16  |      V Q|         |         |         |
7+40       2.4386      7.53  |      V  Q         |         |         |
7+45       2.4915      7.67  |      V  Q         |         |         |
7+50       2.5452      7.81  |      V  Q         |         |         |
7+55       2.6015      8.18  |      V  Q         |         |         |
8+ 0       2.6588      8.32  |      V  |Q        |         |         |
8+ 5       2.7175      8.52  |       V |Q        |         |         |
8+10       2.7811      9.23  |       V |  Q      |         |         |
8+15       2.8467      9.52  |       V |  Q      |         |         |
8+20       2.9131      9.64  |       V |  Q      |         |         |
8+25       2.9799      9.69  |       V |  Q      |         |         |
8+30       3.0468      9.71  |        V|  Q      |         |         |
8+35       3.1142      9.79  |        V|   Q     |         |         |
8+40       3.1840     10.14  |        V|   Q     |         |         |
8+45       3.2548     10.28  |        V|   Q     |         |         |
8+50       3.3264     10.40  |        V|   Q     |         |         |
8+55       3.4006     10.77  |         V    Q    |         |         |
9+ 0       3.4758     10.92  |         V    Q    |         |         |
```

9+ 5	3.5523	11.12	V Q			
9+10	3.6338	11.83	V Q			
9+15	3.7172	12.12	|V Q			
9+20	3.8020	12.30	|V Q			
9+25	3.8894	12.70	|V Q			
9+30	3.9780	12.85	|V Q			
9+35	4.0674	12.99	| V Q			
9+40	4.1595	13.36	| V Q			
9+45	4.2525	13.51	| V Q			
9+50	4.3465	13.64	| V Q			
9+55	4.4429	14.01	| V Q			
10+ 0	4.5405	14.16	| V Q			
10+ 5	4.6350	13.73	| V Q			
10+10	4.7134	11.38	| VQ			
10+15	4.7851	10.41	| QV			
10+20	4.8540	10.01	| QV			
10+25	4.9218	9.84	| QV			
10+30	4.9891	9.78	| QV			
10+35	5.0587	10.10	| Q V			
10+40	5.1398	11.78	| Q			
10+45	5.2257	12.48	| VQ			
10+50	5.3136	12.76	| V Q			
10+55	5.4024	12.89	| VQ			
11+ 0	5.4914	12.93	| VQ			
11+ 5	5.5801	12.88	| VQ			
11+10	5.6666	12.56	| Q			
11+15	5.7521	12.42	| QV			
11+20	5.8373	12.36	| QV			
11+25	5.9222	12.34	| QV			
11+30	6.0071	12.33	| QV			
11+35	6.0910	12.18	| Q V			
11+40	6.1702	11.50	| Q V			
11+45	6.2475	11.22	| Q V			
11+50	6.3245	11.17	| Q V			
11+55	6.4034	11.46	| Q V|			
12+ 0	6.4832	11.59	| Q V|			
12+ 5	6.5667	12.12	| Q V|			
12+10	6.6668	14.53	| Q|			
12+15	6.7736	15.51	| Q			
12+20	6.8838	15.99	| VQ			
12+25	6.9975	16.51	| V Q			
12+30	7.1125	16.71	| |VQ			
12+35	7.2291	16.93	| |VQ			
12+40	7.3508	17.66	| |V Q			
12+45	7.4744	17.95	| | VQ			
12+50	7.5994	18.14	| | V Q			
12+55	7.7270	18.53	| | VQ			
13+ 0	7.8557	18.69	| | VQ			
13+ 5	7.9873	19.10	| | V Q			
13+10	8.1308	20.84	| | V Q			
13+15	8.2792	21.55	| | V Q			
13+20	8.4296	21.84	| | V Q|			
13+25	8.5809	21.97	| | V Q|			
13+30	8.7325	22.01	| | V Q|			
13+35	8.8789	21.26	| | V Q			
13+40	8.9997	17.53	| | Q V			
13+45	9.1098	15.99	| |Q V			
13+50	9.2156	15.37	| Q V			
13+55	9.3195	15.09	| Q V			
14+ 0	9.4228	15.00	| Q| V			
14+ 5	9.5277	15.23	| Q V			
14+10	9.6417	16.55	| | Q V			
14+15	9.7596	17.11	| | Q V|			
14+20	9.8786	17.27	| | Q V|			
14+25	9.9959	17.03	| | Q V|			
14+30	10.1124	16.93	| | Q V			
14+35	10.2287	16.89	| | Q V			
14+40	10.3450	16.87	| | Q V			
14+45	10.4611	16.87	| | Q |V			
14+50	10.5768	16.79	| | Q |V			
14+55	10.6901	16.45	| |Q |V			
15+ 0	10.8024	16.31	| |Q | V			
15+ 5	10.9138	16.18	| |Q | V			
15+10	11.0227	15.82	| |Q | V			
15+15	11.1306	15.67	| | Q | V			



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   21+35      13.0979      1.40  |Q        |         |         |        v|
   21+40      13.1098      1.72  | Q       |         |         |        v|
   21+45      13.1226      1.85  | Q       |         |         |        v|
   21+50      13.1352      1.84  | Q       |         |         |        v|
   21+55      13.1457      1.52  | Q       |         |         |        v|
   22+ 0      13.1552      1.39  |Q        |         |         |        v|
   22+ 5      13.1649      1.40  |Q        |         |         |        v|
   22+10      13.1768      1.72  | Q       |         |         |        v|
   22+15      13.1895      1.85  | Q       |         |         |        v|
   22+20      13.2022      1.84  | Q       |         |         |        v|
   22+25      13.2127      1.52  | Q       |         |         |        v|
   22+30      13.2222      1.39  |Q        |         |         |        v|
   22+35      13.2314      1.33  |Q        |         |         |        v|
   22+40      13.2404      1.31  |Q        |         |         |        v|
   22+45      13.2494      1.30  |Q        |         |         |        v|
   22+50      13.2584      1.30  |Q        |         |         |        v|
   22+55      13.2673      1.30  |Q        |         |         |        v|
   23+ 0      13.2763      1.30  |Q        |         |         |        v|
   23+ 5      13.2852      1.30  |Q        |         |         |        v|
   23+10      13.2941      1.30  |Q        |         |         |        v|
   23+15      13.3030      1.30  |Q        |         |         |        v|
   23+20      13.3120      1.30  |Q        |         |         |        v|
   23+25      13.3209      1.30  |Q        |         |         |        v|
   23+30      13.3298      1.30  |Q        |         |         |        v|
   23+35      13.3388      1.30  |Q        |         |         |        v|
   23+40      13.3477      1.30  |Q        |         |         |        v|
   23+45      13.3566      1.30  |Q        |         |         |        v|
   23+50      13.3656      1.30  |Q        |         |         |        v|
   23+55      13.3745      1.30  |Q        |         |         |        v|
   24+ 0      13.3834      1.30  |Q        |         |         |        v|
   24+ 5      13.3914      1.16  |Q        |         |         |        v|
   24+10      13.3947      0.48  Q         |         |         |        v|
   24+15      13.3960      0.20  Q         |         |         |        v|
   24+20      13.3966      0.08  Q         |         |         |        v|
   24+25      13.3968      0.03  Q         |         |         |        v|
   24+30      13.3969      0.02  Q         |         |         |        v|
   24+35      13.3970      0.01  Q         |         |         |         v
-------------------------------------------------------------------------
```

PROPOSED CONDITION
10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: SOUTH10YR110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	0.55	37.29

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	1.25	84.75

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.838(In)
Areal adjustment factor = 99.94 %
Adjusted average point rain = 0.837(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

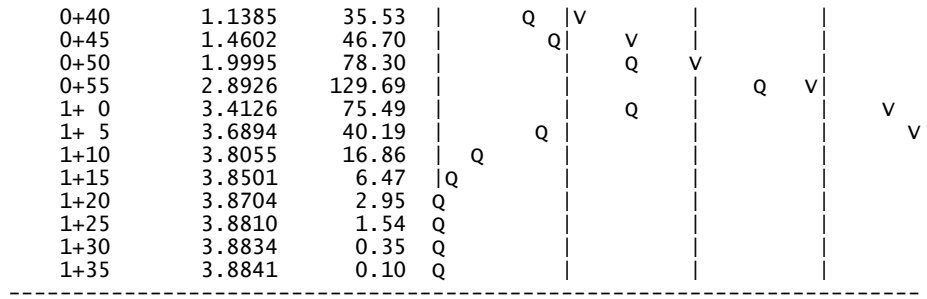
```
      59.2  59.2      0.478     0.740        0.160       1.000      0.160
                                                        Sum (F) =   0.160
      Area averaged mean soil loss (F) (In/Hr) =  0.160
      Minimum soil loss rate ((In/Hr)) =  0.080
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.310
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         87.776         10.723              7.327
          2   0.167        175.552         52.562             35.916
          3   0.250        263.328         21.552             14.727
          4   0.333        351.104          8.827              6.031
          5   0.417        438.880          3.918              2.677
          6   0.500        526.656          1.227              0.838
          7   0.583        614.432          0.656              0.448
          8   0.667        702.208          0.534              0.365
                                   Sum = 100.000    Sum=      68.330
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)      Effective
       (Hr.)  Percent   (In/Hr)         Max   |    Low         (In/Hr)
   1   0.08     3.40      0.342       (  0.160)       0.106         0.236
   2   0.17     4.70      0.472       (  0.160)       0.146         0.326
   3   0.25     4.70      0.472       (  0.160)       0.146         0.326
   4   0.33     5.10      0.513       (  0.160)       0.159         0.354
   5   0.42     5.80      0.583          0.160    (  0.181)         0.423
   6   0.50     5.90      0.593          0.160    (  0.184)         0.433
   7   0.58     7.10      0.714          0.160    (  0.221)         0.554
   8   0.67     8.70      0.874          0.160    (  0.271)         0.715
   9   0.75    13.20      1.327          0.160    (  0.411)         1.167
  10   0.83    29.70      2.985          0.160    (  0.925)         2.825
  11   0.92     7.70      0.774          0.160    (  0.240)         0.614
  12   1.00     4.00      0.402       (  0.160)       0.125         0.277
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =      8.2
        Flood volume = Effective rainfall      0.69(In)
         times area      67.8(Ac.)/[(In)/(Ft.)] =       3.9(Ac.Ft)
        Total soil loss =      0.15(In)
        Total soil loss =     0.848(Ac.Ft)
        Total rainfall =      0.84(In)
        Flood volume =      169191.9 Cubic Feet
        Total soil loss =       36921.4 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =    129.688(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f     H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ------------------------------------------------------------------------
    0+ 5       0.0119      1.73  Q         |         |         |         |
    0+10       0.0867     10.86  V Q       |         |         |         |
    0+15       0.2077     17.57  | VQ      |         |         |         |
    0+20       0.3491     20.53  |  VQ     |         |         |         |
    0+25       0.5090     23.21  |   QV    |         |         |         |
    0+30       0.6924     26.63  |    Q V  |         |         |         |
    0+35       0.8938     29.25  |    Q   V|         |         |         |
```


0+40 1.1385 35.53
0+45 1.4602 46.70
0+50 1.9995 78.30
0+55 2.8926 129.69
1+ 0 3.4126 75.49
1+ 5 3.6894 40.19
1+10 3.8055 16.86
1+15 3.8501 6.47
1+20 3.8704 2.95
1+25 3.8810 1.54
1+30 3.8834 0.35
1+35 3.8841 0.10

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH10YR310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	0.95	64.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.05	138.99

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.403(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 1.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 59.2 0.478 0.740 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.219	(0.160)	0.068	0.151
2	0.17	1.30	0.219	(0.160)	0.068	0.151
3	0.25	1.10	0.185	(0.160)	0.057	0.128
4	0.33	1.50	0.252	(0.160)	0.078	0.174
5	0.42	1.50	0.252	(0.160)	0.078	0.174
6	0.50	1.80	0.303	(0.160)	0.094	0.209
7	0.58	1.50	0.252	(0.160)	0.078	0.174
8	0.67	1.80	0.303	(0.160)	0.094	0.209
9	0.75	1.80	0.303	(0.160)	0.094	0.209
10	0.83	1.50	0.252	(0.160)	0.078	0.174
11	0.92	1.60	0.269	(0.160)	0.083	0.186
12	1.00	1.80	0.303	(0.160)	0.094	0.209
13	1.08	2.20	0.370	(0.160)	0.115	0.255
14	1.17	2.20	0.370	(0.160)	0.115	0.255
15	1.25	2.20	0.370	(0.160)	0.115	0.255
16	1.33	2.00	0.337	(0.160)	0.104	0.232
17	1.42	2.60	0.437	(0.160)	0.136	0.302
18	1.50	2.70	0.454	(0.160)	0.141	0.313
19	1.58	2.40	0.404	(0.160)	0.125	0.279
20	1.67	2.70	0.454	(0.160)	0.141	0.313
21	1.75	3.30	0.555	0.160	(0.172)	0.396
22	1.83	3.10	0.522	0.160	(0.162)	0.362
23	1.92	2.90	0.488	(0.160)	0.151	0.337
24	2.00	3.00	0.505	(0.160)	0.156	0.348
25	2.08	3.10	0.522	0.160	(0.162)	0.362
26	2.17	4.20	0.707	0.160	(0.219)	0.547
27	2.25	5.00	0.841	0.160	(0.261)	0.682
28	2.33	3.50	0.589	0.160	(0.183)	0.429
29	2.42	6.80	1.144	0.160	(0.355)	0.984
30	2.50	7.30	1.228	0.160	(0.381)	1.069
31	2.58	8.20	1.380	0.160	(0.428)	1.220
32	2.67	5.90	0.993	0.160	(0.308)	0.833
33	2.75	2.00	0.337	(0.160)	0.104	0.232
34	2.83	1.80	0.303	(0.160)	0.094	0.209
35	2.92	1.80	0.303	(0.160)	0.094	0.209
36	3.00	0.60	0.101	(0.160)	0.031	0.070
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	12.6

Flood volume = Effective rainfall 1.05(In)
times area 67.8(Ac.)/[(In)/(Ft.)] = 6.0(Ac.Ft)
Total soil loss = 0.35(In)
Total soil loss = 1.970(Ac.Ft)

Total rainfall = 1.40(In)
Flood volume = 259269.5 Cubic Feet
Total soil loss = 85815.0 Cubic Feet

Peak flow rate of this hydrograph = 73.730(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 20.0 40.0 60.0 80.0
0+ 5	0.0076	1.11	Q
0+10	0.0526	6.53	V Q
0+15	0.1117	8.58	V Q
0+20	0.1737	9.00	V Q
0+25	0.2476	10.73	V Q
0+30	0.3279	11.66	V Q
0+35	0.4170	12.94	V Q
0+40	0.5039	12.62	V Q
0+45	0.5975	13.59	V Q
0+50	0.6922	13.75	V Q
0+55	0.7799	12.74	VQ
1+ 0	0.8688	12.90	VQ
1+ 5	0.9656	14.06	VQ
1+10	1.0761	16.05	VQ
1+15	1.1924	16.89	Q
1+20	1.3099	17.05	Q
1+25	1.4261	16.87	QV
1+30	1.5581	19.17	QV
1+35	1.6975	20.24	QV
1+40	1.8338	19.79	Q V
1+45	1.9810	21.37	Q V
1+50	2.1494	24.46	Q V
1+55	2.3176	24.42	Q V
2+ 0	2.4808	23.69	Q V
2+ 5	2.6452	23.87	Q V
2+10	2.8224	25.72	Q V
2+15	3.0537	33.58	Q V
2+20	3.3250	39.40	Q V
2+25	3.5835	37.53	Q V
2+30	3.9671	55.69	VQ
2+35	4.4286	67.01	V Q
2+40	4.9363	73.73	V Q
2+45	5.3465	59.56	Q V
2+50	5.5782	33.64	Q V
2+55	5.7315	22.25	Q V
3+ 0	5.8458	16.59	Q V
3+ 5	5.9084	9.10	Q V
3+10	5.9350	3.86	Q V
3+15	5.9458	1.56	Q V
3+20	5.9495	0.54	Q V
3+25	5.9511	0.23	Q V
3+30	5.9518	0.11	Q V
3+35	5.9520	0.03	Q V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH10YR610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
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Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	1.40	94.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	3.00	203.40

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 2.058(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.058(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 59.2 0.478 0.740 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.123	(0.160)	0.038	0.085
2	0.17	0.60	0.148	(0.160)	0.046	0.102
3	0.25	0.60	0.148	(0.160)	0.046	0.102
4	0.33	0.60	0.148	(0.160)	0.046	0.102
5	0.42	0.60	0.148	(0.160)	0.046	0.102
6	0.50	0.70	0.173	(0.160)	0.054	0.119
7	0.58	0.70	0.173	(0.160)	0.054	0.119
8	0.67	0.70	0.173	(0.160)	0.054	0.119
9	0.75	0.70	0.173	(0.160)	0.054	0.119
10	0.83	0.70	0.173	(0.160)	0.054	0.119
11	0.92	0.70	0.173	(0.160)	0.054	0.119
12	1.00	0.80	0.198	(0.160)	0.061	0.136
13	1.08	0.80	0.198	(0.160)	0.061	0.136
14	1.17	0.80	0.198	(0.160)	0.061	0.136
15	1.25	0.80	0.198	(0.160)	0.061	0.136
16	1.33	0.80	0.198	(0.160)	0.061	0.136
17	1.42	0.80	0.198	(0.160)	0.061	0.136
18	1.50	0.80	0.198	(0.160)	0.061	0.136
19	1.58	0.80	0.198	(0.160)	0.061	0.136
20	1.67	0.80	0.198	(0.160)	0.061	0.136
21	1.75	0.80	0.198	(0.160)	0.061	0.136
22	1.83	0.80	0.198	(0.160)	0.061	0.136
23	1.92	0.80	0.198	(0.160)	0.061	0.136
24	2.00	0.90	0.222	(0.160)	0.069	0.153
25	2.08	0.80	0.198	(0.160)	0.061	0.136
26	2.17	0.90	0.222	(0.160)	0.069	0.153
27	2.25	0.90	0.222	(0.160)	0.069	0.153
28	2.33	0.90	0.222	(0.160)	0.069	0.153
29	2.42	0.90	0.222	(0.160)	0.069	0.153
30	2.50	0.90	0.222	(0.160)	0.069	0.153
31	2.58	0.90	0.222	(0.160)	0.069	0.153
32	2.67	0.90	0.222	(0.160)	0.069	0.153
33	2.75	1.00	0.247	(0.160)	0.077	0.170
34	2.83	1.00	0.247	(0.160)	0.077	0.170
35	2.92	1.00	0.247	(0.160)	0.077	0.170
36	3.00	1.00	0.247	(0.160)	0.077	0.170
37	3.08	1.00	0.247	(0.160)	0.077	0.170
38	3.17	1.10	0.272	(0.160)	0.084	0.187
39	3.25	1.10	0.272	(0.160)	0.084	0.187
40	3.33	1.10	0.272	(0.160)	0.084	0.187
41	3.42	1.20	0.296	(0.160)	0.092	0.204
42	3.50	1.30	0.321	(0.160)	0.100	0.221

43	3.58	1.40	0.346	(0.160)	0.107		0.239
44	3.67	1.40	0.346	(0.160)	0.107		0.239
45	3.75	1.50	0.370	(0.160)	0.115		0.256
46	3.83	1.50	0.370	(0.160)	0.115		0.256
47	3.92	1.60	0.395	(0.160)	0.122		0.273
48	4.00	1.60	0.395	(0.160)	0.122		0.273
49	4.08	1.70	0.420	(0.160)	0.130		0.290
50	4.17	1.80	0.444	(0.160)	0.138		0.307
51	4.25	1.90	0.469	(0.160)	0.145		0.324
52	4.33	2.00	0.494	(0.160)	0.153		0.341
53	4.42	2.10	0.519	0.160	(0.161)		0.359
54	4.50	2.10	0.519	0.160	(0.161)		0.359
55	4.58	2.20	0.543	0.160	(0.168)		0.384
56	4.67	2.30	0.568	0.160	(0.176)		0.408
57	4.75	2.40	0.593	0.160	(0.184)		0.433
58	4.83	2.40	0.593	0.160	(0.184)		0.433
59	4.92	2.50	0.617	0.160	(0.191)		0.458
60	5.00	2.60	0.642	0.160	(0.199)		0.482
61	5.08	3.10	0.765	0.160	(0.237)		0.606
62	5.17	3.60	0.889	0.160	(0.276)		0.729
63	5.25	3.90	0.963	0.160	(0.299)		0.803
64	5.33	4.20	1.037	0.160	(0.322)		0.877
65	5.42	4.70	1.161	0.160	(0.360)		1.001
66	5.50	5.60	1.383	0.160	(0.429)		1.223
67	5.58	1.90	0.469	(0.160)	0.145		0.324
68	5.67	0.90	0.222	(0.160)	0.069		0.153
69	5.75	0.60	0.148	(0.160)	0.046		0.102
70	5.83	0.50	0.123	(0.160)	0.038		0.085
71	5.92	0.30	0.074	(0.160)	0.023		0.051
72	6.00	0.20	0.049	(0.160)	0.015		0.034

(Loss Rate Not Used)

Sum = 100.0 Sum = 18.1

Flood volume = Effective rainfall 1.51(In)
times area 67.8(Ac.)/[(In)/(Ft.)] = 8.5(Ac.Ft)
Total soil loss = 0.55(In)
Total soil loss = 3.082(Ac.Ft)
Total rainfall = 2.06(In)
Flood volume = 372199.9 Cubic Feet
Total soil loss = 134246.9 Cubic Feet

Peak flow rate of this hydrograph = 69.578(CFS)

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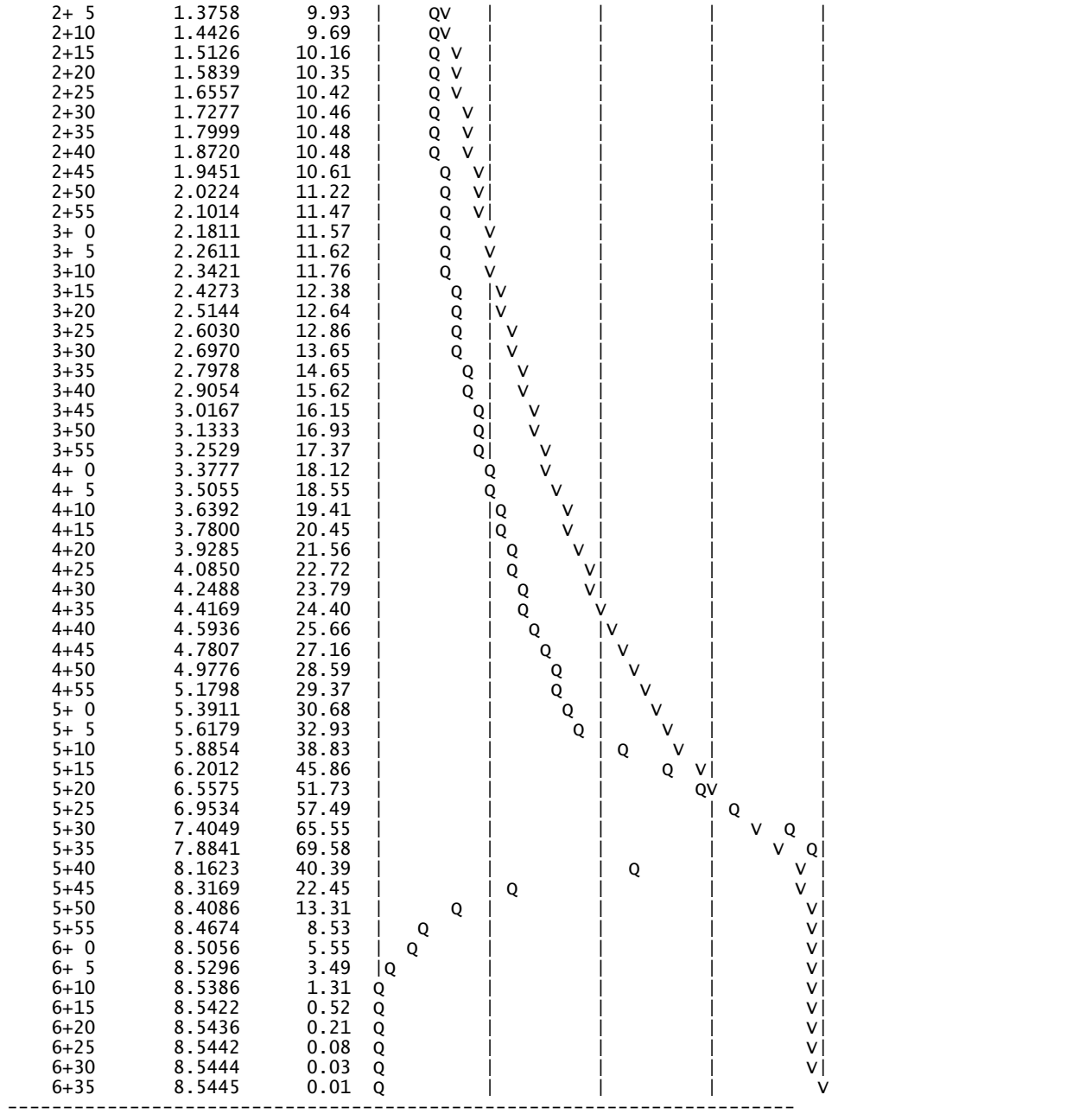
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	17.5	35.0	52.5	70.0
0+ 5	0.0043	0.62	Q	|	|	|	|
0+10	0.0305	3.81	V Q	|	|	|	|
0+15	0.0697	5.68	V Q	|	|	|	|
0+20	0.1140	6.44	V Q	|	|	|	|
0+25	0.1607	6.77	V Q	|	|	|	|
0+30	0.2090	7.02	V Q	|	|	|	|
0+35	0.2619	7.68	|V Q	|	|	|	|
0+40	0.3168	7.97	|V Q	|	|	|	|
0+45	0.3725	8.08	|V Q	|	|	|	|
0+50	0.4284	8.13	| V Q	|	|	|	|
0+55	0.4845	8.14	| V Q	|	|	|	|
1+ 0	0.5414	8.27	| V Q	|	|	|	|
1+ 5	0.6027	8.89	| V Q	|	|	|	|
1+10	0.6656	9.14	| V Q	|	|	|	|
1+15	0.7293	9.24	| V Q	|	|	|	|
1+20	0.7933	9.29	| V Q	|	|	|	|
1+25	0.8574	9.30	| VQ	|	|	|	|
1+30	0.9215	9.31	| VQ	|	|	|	|
1+35	0.9857	9.32	| VQ	|	|	|	|
1+40	1.0499	9.32	| VQ	|	|	|	|
1+45	1.1140	9.32	| Q	|	|	|	|
1+50	1.1782	9.32	| Q	|	|	|	|
1+55	1.2424	9.32	| Q	|	|	|	|
2+ 0	1.3074	9.44	| QV	|	|	|	|



U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: SOUTH10YR2410.out

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Riverside County Synthetic Unit Hydrology Method
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Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.50	169.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	6.50	440.70

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.145(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 59.2 0.478 0.740 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	(0.283)	0.010	0.023
2	0.17	0.07	0.033	(0.282)	0.010	0.023
3	0.25	0.07	0.033	(0.281)	0.010	0.023
4	0.33	0.10	0.050	(0.280)	0.015	0.034
5	0.42	0.10	0.050	(0.279)	0.015	0.034
6	0.50	0.10	0.050	(0.278)	0.015	0.034
7	0.58	0.10	0.050	(0.277)	0.015	0.034
8	0.67	0.10	0.050	(0.275)	0.015	0.034
9	0.75	0.10	0.050	(0.274)	0.015	0.034
10	0.83	0.13	0.066	(0.273)	0.021	0.046
11	0.92	0.13	0.066	(0.272)	0.021	0.046
12	1.00	0.13	0.066	(0.271)	0.021	0.046
13	1.08	0.10	0.050	(0.270)	0.015	0.034
14	1.17	0.10	0.050	(0.269)	0.015	0.034
15	1.25	0.10	0.050	(0.268)	0.015	0.034
16	1.33	0.10	0.050	(0.267)	0.015	0.034
17	1.42	0.10	0.050	(0.266)	0.015	0.034
18	1.50	0.10	0.050	(0.265)	0.015	0.034
19	1.58	0.10	0.050	(0.264)	0.015	0.034
20	1.67	0.10	0.050	(0.263)	0.015	0.034
21	1.75	0.10	0.050	(0.262)	0.015	0.034
22	1.83	0.13	0.066	(0.261)	0.021	0.046
23	1.92	0.13	0.066	(0.260)	0.021	0.046
24	2.00	0.13	0.066	(0.258)	0.021	0.046
25	2.08	0.13	0.066	(0.257)	0.021	0.046
26	2.17	0.13	0.066	(0.256)	0.021	0.046
27	2.25	0.13	0.066	(0.255)	0.021	0.046
28	2.33	0.13	0.066	(0.254)	0.021	0.046
29	2.42	0.13	0.066	(0.253)	0.021	0.046
30	2.50	0.13	0.066	(0.252)	0.021	0.046
31	2.58	0.17	0.083	(0.251)	0.026	0.057
32	2.67	0.17	0.083	(0.250)	0.026	0.057
33	2.75	0.17	0.083	(0.249)	0.026	0.057
34	2.83	0.17	0.083	(0.248)	0.026	0.057
35	2.92	0.17	0.083	(0.247)	0.026	0.057
36	3.00	0.17	0.083	(0.246)	0.026	0.057
37	3.08	0.17	0.083	(0.245)	0.026	0.057
38	3.17	0.17	0.083	(0.244)	0.026	0.057
39	3.25	0.17	0.083	(0.243)	0.026	0.057
40	3.33	0.17	0.083	(0.242)	0.026	0.057
41	3.42	0.17	0.083	(0.241)	0.026	0.057
42	3.50	0.17	0.083	(0.240)	0.026	0.057

43	3.58	0.17	0.083	(0.239)	0.026	0.057
44	3.67	0.17	0.083	(0.238)	0.026	0.057
45	3.75	0.17	0.083	(0.237)	0.026	0.057
46	3.83	0.20	0.099	(0.236)	0.031	0.069
47	3.92	0.20	0.099	(0.235)	0.031	0.069
48	4.00	0.20	0.099	(0.234)	0.031	0.069
49	4.08	0.20	0.099	(0.233)	0.031	0.069
50	4.17	0.20	0.099	(0.232)	0.031	0.069
51	4.25	0.20	0.099	(0.231)	0.031	0.069
52	4.33	0.23	0.116	(0.230)	0.036	0.080
53	4.42	0.23	0.116	(0.229)	0.036	0.080
54	4.50	0.23	0.116	(0.228)	0.036	0.080
55	4.58	0.23	0.116	(0.227)	0.036	0.080
56	4.67	0.23	0.116	(0.226)	0.036	0.080
57	4.75	0.23	0.116	(0.225)	0.036	0.080
58	4.83	0.27	0.133	(0.224)	0.041	0.092
59	4.92	0.27	0.133	(0.223)	0.041	0.092
60	5.00	0.27	0.133	(0.222)	0.041	0.092
61	5.08	0.20	0.099	(0.221)	0.031	0.069
62	5.17	0.20	0.099	(0.220)	0.031	0.069
63	5.25	0.20	0.099	(0.219)	0.031	0.069
64	5.33	0.23	0.116	(0.218)	0.036	0.080
65	5.42	0.23	0.116	(0.217)	0.036	0.080
66	5.50	0.23	0.116	(0.216)	0.036	0.080
67	5.58	0.27	0.133	(0.216)	0.041	0.092
68	5.67	0.27	0.133	(0.215)	0.041	0.092
69	5.75	0.27	0.133	(0.214)	0.041	0.092
70	5.83	0.27	0.133	(0.213)	0.041	0.092
71	5.92	0.27	0.133	(0.212)	0.041	0.092
72	6.00	0.27	0.133	(0.211)	0.041	0.092
73	6.08	0.30	0.149	(0.210)	0.046	0.103
74	6.17	0.30	0.149	(0.209)	0.046	0.103
75	6.25	0.30	0.149	(0.208)	0.046	0.103
76	6.33	0.30	0.149	(0.207)	0.046	0.103
77	6.42	0.30	0.149	(0.206)	0.046	0.103
78	6.50	0.30	0.149	(0.205)	0.046	0.103
79	6.58	0.33	0.166	(0.204)	0.051	0.114
80	6.67	0.33	0.166	(0.203)	0.051	0.114
81	6.75	0.33	0.166	(0.202)	0.051	0.114
82	6.83	0.33	0.166	(0.202)	0.051	0.114
83	6.92	0.33	0.166	(0.201)	0.051	0.114
84	7.00	0.33	0.166	(0.200)	0.051	0.114
85	7.08	0.33	0.166	(0.199)	0.051	0.114
86	7.17	0.33	0.166	(0.198)	0.051	0.114
87	7.25	0.33	0.166	(0.197)	0.051	0.114
88	7.33	0.37	0.182	(0.196)	0.057	0.126
89	7.42	0.37	0.182	(0.195)	0.057	0.126
90	7.50	0.37	0.182	(0.194)	0.057	0.126
91	7.58	0.40	0.199	(0.193)	0.062	0.137
92	7.67	0.40	0.199	(0.193)	0.062	0.137
93	7.75	0.40	0.199	(0.192)	0.062	0.137
94	7.83	0.43	0.216	(0.191)	0.067	0.149
95	7.92	0.43	0.216	(0.190)	0.067	0.149
96	8.00	0.43	0.216	(0.189)	0.067	0.149
97	8.08	0.50	0.249	(0.188)	0.077	0.172
98	8.17	0.50	0.249	(0.187)	0.077	0.172
99	8.25	0.50	0.249	(0.186)	0.077	0.172
100	8.33	0.50	0.249	(0.186)	0.077	0.172
101	8.42	0.50	0.249	(0.185)	0.077	0.172
102	8.50	0.50	0.249	(0.184)	0.077	0.172
103	8.58	0.53	0.265	(0.183)	0.082	0.183
104	8.67	0.53	0.265	(0.182)	0.082	0.183
105	8.75	0.53	0.265	(0.181)	0.082	0.183
106	8.83	0.57	0.282	(0.180)	0.087	0.194
107	8.92	0.57	0.282	(0.179)	0.087	0.194
108	9.00	0.57	0.282	(0.179)	0.087	0.194
109	9.08	0.63	0.315	(0.178)	0.098	0.217
110	9.17	0.63	0.315	(0.177)	0.098	0.217
111	9.25	0.63	0.315	(0.176)	0.098	0.217
112	9.33	0.67	0.332	(0.175)	0.103	0.229
113	9.42	0.67	0.332	(0.174)	0.103	0.229
114	9.50	0.67	0.332	(0.174)	0.103	0.229
115	9.58	0.70	0.348	(0.173)	0.108	0.240
116	9.67	0.70	0.348	(0.172)	0.108	0.240
117	9.75	0.70	0.348	(0.171)	0.108	0.240

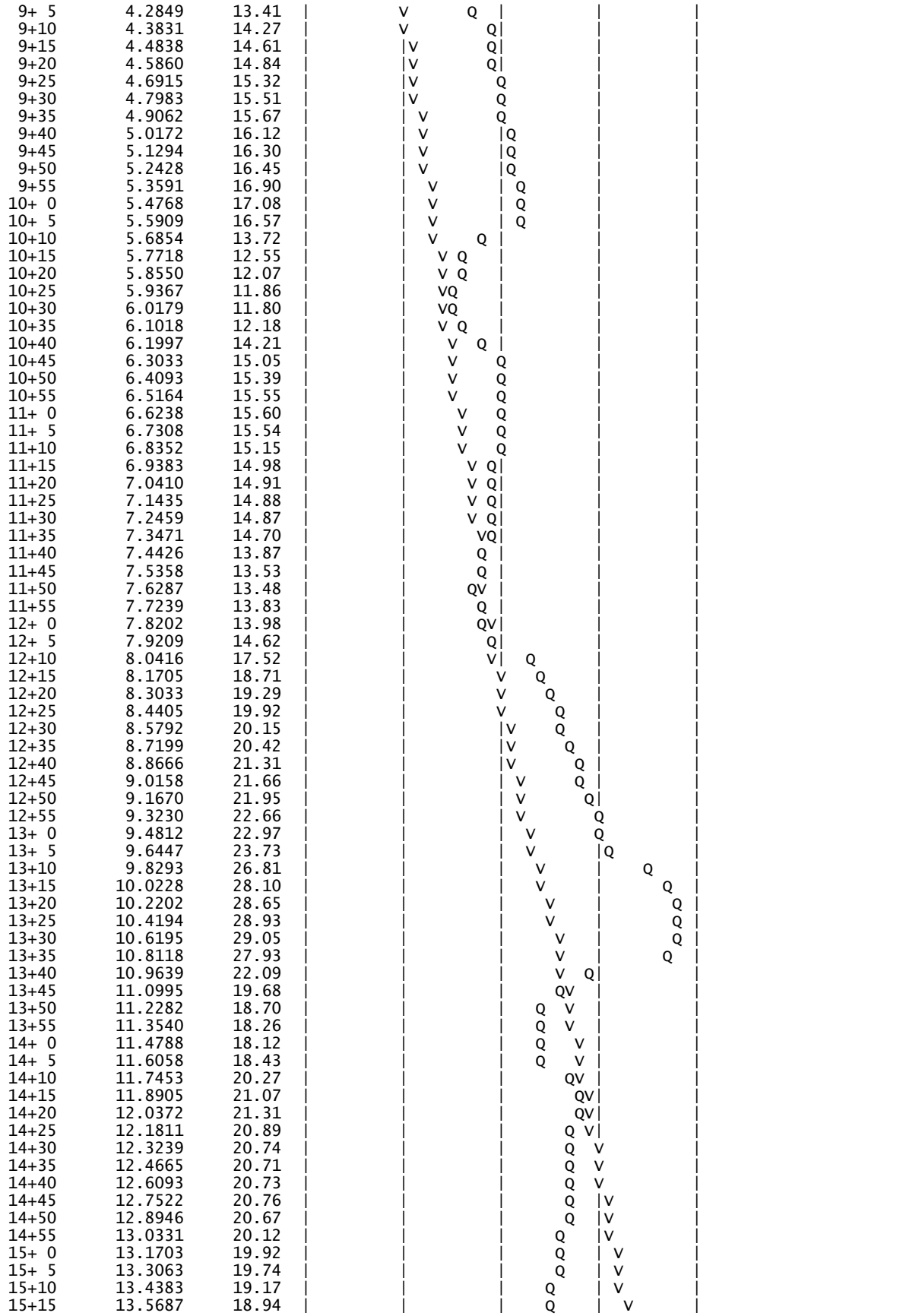
118	9.83	0.73	0.365	(0.170)	0.113	0.252
119	9.92	0.73	0.365	(0.169)	0.113	0.252
120	10.00	0.73	0.365	(0.169)	0.113	0.252
121	10.08	0.50	0.249	(0.168)	0.077	0.172
122	10.17	0.50	0.249	(0.167)	0.077	0.172
123	10.25	0.50	0.249	(0.166)	0.077	0.172
124	10.33	0.50	0.249	(0.165)	0.077	0.172
125	10.42	0.50	0.249	(0.165)	0.077	0.172
126	10.50	0.50	0.249	(0.164)	0.077	0.172
127	10.58	0.67	0.332	(0.163)	0.103	0.229
128	10.67	0.67	0.332	(0.162)	0.103	0.229
129	10.75	0.67	0.332	(0.161)	0.103	0.229
130	10.83	0.67	0.332	(0.161)	0.103	0.229
131	10.92	0.67	0.332	(0.160)	0.103	0.229
132	11.00	0.67	0.332	(0.159)	0.103	0.229
133	11.08	0.63	0.315	(0.158)	0.098	0.217
134	11.17	0.63	0.315	(0.157)	0.098	0.217
135	11.25	0.63	0.315	(0.157)	0.098	0.217
136	11.33	0.63	0.315	(0.156)	0.098	0.217
137	11.42	0.63	0.315	(0.155)	0.098	0.217
138	11.50	0.63	0.315	(0.154)	0.098	0.217
139	11.58	0.57	0.282	(0.154)	0.087	0.194
140	11.67	0.57	0.282	(0.153)	0.087	0.194
141	11.75	0.57	0.282	(0.152)	0.087	0.194
142	11.83	0.60	0.298	(0.151)	0.093	0.206
143	11.92	0.60	0.298	(0.151)	0.093	0.206
144	12.00	0.60	0.298	(0.150)	0.093	0.206
145	12.08	0.83	0.415	(0.149)	0.128	0.286
146	12.17	0.83	0.415	(0.148)	0.128	0.286
147	12.25	0.83	0.415	(0.148)	0.128	0.286
148	12.33	0.87	0.431	(0.147)	0.134	0.297
149	12.42	0.87	0.431	(0.146)	0.134	0.297
150	12.50	0.87	0.431	(0.145)	0.134	0.297
151	12.58	0.93	0.464	(0.145)	0.144	0.320
152	12.67	0.93	0.464	(0.144)	0.144	0.320
153	12.75	0.93	0.464	0.143	(0.144)	0.321
154	12.83	0.97	0.481	0.142	(0.149)	0.338
155	12.92	0.97	0.481	0.142	(0.149)	0.339
156	13.00	0.97	0.481	0.141	(0.149)	0.340
157	13.08	1.13	0.564	0.140	(0.175)	0.423
158	13.17	1.13	0.564	0.140	(0.175)	0.424
159	13.25	1.13	0.564	0.139	(0.175)	0.425
160	13.33	1.13	0.564	0.138	(0.175)	0.426
161	13.42	1.13	0.564	0.137	(0.175)	0.426
162	13.50	1.13	0.564	0.137	(0.175)	0.427
163	13.58	0.77	0.381	(0.136)	0.118	0.263
164	13.67	0.77	0.381	(0.135)	0.118	0.263
165	13.75	0.77	0.381	(0.135)	0.118	0.263
166	13.83	0.77	0.381	(0.134)	0.118	0.263
167	13.92	0.77	0.381	(0.133)	0.118	0.263
168	14.00	0.77	0.381	(0.133)	0.118	0.263
169	14.08	0.90	0.448	0.132	(0.139)	0.316
170	14.17	0.90	0.448	0.131	(0.139)	0.316
171	14.25	0.90	0.448	0.131	(0.139)	0.317
172	14.33	0.87	0.431	0.130	(0.134)	0.301
173	14.42	0.87	0.431	0.129	(0.134)	0.302
174	14.50	0.87	0.431	0.129	(0.134)	0.302
175	14.58	0.87	0.431	0.128	(0.134)	0.303
176	14.67	0.87	0.431	0.127	(0.134)	0.304
177	14.75	0.87	0.431	0.127	(0.134)	0.304
178	14.83	0.83	0.415	0.126	(0.128)	0.288
179	14.92	0.83	0.415	0.125	(0.128)	0.289
180	15.00	0.83	0.415	0.125	(0.128)	0.290
181	15.08	0.80	0.398	(0.124)	0.123	0.275
182	15.17	0.80	0.398	(0.123)	0.123	0.275
183	15.25	0.80	0.398	0.123	(0.123)	0.275
184	15.33	0.77	0.381	(0.122)	0.118	0.263
185	15.42	0.77	0.381	(0.122)	0.118	0.263
186	15.50	0.77	0.381	(0.121)	0.118	0.263
187	15.58	0.63	0.315	(0.120)	0.098	0.217
188	15.67	0.63	0.315	(0.120)	0.098	0.217
189	15.75	0.63	0.315	(0.119)	0.098	0.217
190	15.83	0.63	0.315	(0.118)	0.098	0.217
191	15.92	0.63	0.315	(0.118)	0.098	0.217
192	16.00	0.63	0.315	(0.117)	0.098	0.217

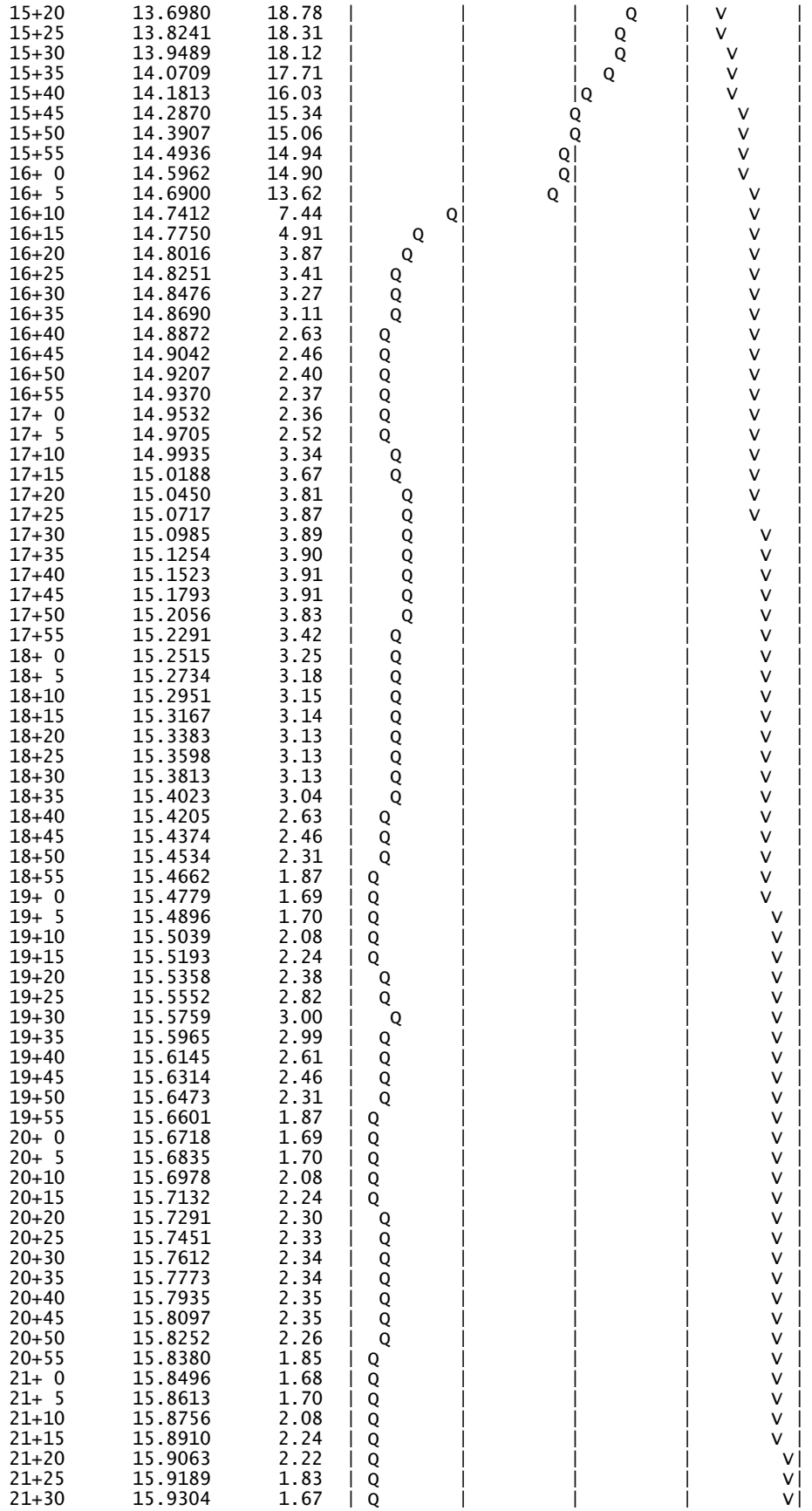
193	16.08	0.13	0.066	(0.117)	0.021	0.046
194	16.17	0.13	0.066	(0.116)	0.021	0.046
195	16.25	0.13	0.066	(0.115)	0.021	0.046
196	16.33	0.13	0.066	(0.115)	0.021	0.046
197	16.42	0.13	0.066	(0.114)	0.021	0.046
198	16.50	0.13	0.066	(0.114)	0.021	0.046
199	16.58	0.10	0.050	(0.113)	0.015	0.034
200	16.67	0.10	0.050	(0.113)	0.015	0.034
201	16.75	0.10	0.050	(0.112)	0.015	0.034
202	16.83	0.10	0.050	(0.111)	0.015	0.034
203	16.92	0.10	0.050	(0.111)	0.015	0.034
204	17.00	0.10	0.050	(0.110)	0.015	0.034
205	17.08	0.17	0.083	(0.110)	0.026	0.057
206	17.17	0.17	0.083	(0.109)	0.026	0.057
207	17.25	0.17	0.083	(0.109)	0.026	0.057
208	17.33	0.17	0.083	(0.108)	0.026	0.057
209	17.42	0.17	0.083	(0.108)	0.026	0.057
210	17.50	0.17	0.083	(0.107)	0.026	0.057
211	17.58	0.17	0.083	(0.106)	0.026	0.057
212	17.67	0.17	0.083	(0.106)	0.026	0.057
213	17.75	0.17	0.083	(0.105)	0.026	0.057
214	17.83	0.13	0.066	(0.105)	0.021	0.046
215	17.92	0.13	0.066	(0.104)	0.021	0.046
216	18.00	0.13	0.066	(0.104)	0.021	0.046
217	18.08	0.13	0.066	(0.103)	0.021	0.046
218	18.17	0.13	0.066	(0.103)	0.021	0.046
219	18.25	0.13	0.066	(0.102)	0.021	0.046
220	18.33	0.13	0.066	(0.102)	0.021	0.046
221	18.42	0.13	0.066	(0.101)	0.021	0.046
222	18.50	0.13	0.066	(0.101)	0.021	0.046
223	18.58	0.10	0.050	(0.100)	0.015	0.034
224	18.67	0.10	0.050	(0.100)	0.015	0.034
225	18.75	0.10	0.050	(0.099)	0.015	0.034
226	18.83	0.07	0.033	(0.099)	0.010	0.023
227	18.92	0.07	0.033	(0.098)	0.010	0.023
228	19.00	0.07	0.033	(0.098)	0.010	0.023
229	19.08	0.10	0.050	(0.098)	0.015	0.034
230	19.17	0.10	0.050	(0.097)	0.015	0.034
231	19.25	0.10	0.050	(0.097)	0.015	0.034
232	19.33	0.13	0.066	(0.096)	0.021	0.046
233	19.42	0.13	0.066	(0.096)	0.021	0.046
234	19.50	0.13	0.066	(0.095)	0.021	0.046
235	19.58	0.10	0.050	(0.095)	0.015	0.034
236	19.67	0.10	0.050	(0.094)	0.015	0.034
237	19.75	0.10	0.050	(0.094)	0.015	0.034
238	19.83	0.07	0.033	(0.094)	0.010	0.023
239	19.92	0.07	0.033	(0.093)	0.010	0.023
240	20.00	0.07	0.033	(0.093)	0.010	0.023
241	20.08	0.10	0.050	(0.092)	0.015	0.034
242	20.17	0.10	0.050	(0.092)	0.015	0.034
243	20.25	0.10	0.050	(0.092)	0.015	0.034
244	20.33	0.10	0.050	(0.091)	0.015	0.034
245	20.42	0.10	0.050	(0.091)	0.015	0.034
246	20.50	0.10	0.050	(0.090)	0.015	0.034
247	20.58	0.10	0.050	(0.090)	0.015	0.034
248	20.67	0.10	0.050	(0.090)	0.015	0.034
249	20.75	0.10	0.050	(0.089)	0.015	0.034
250	20.83	0.07	0.033	(0.089)	0.010	0.023
251	20.92	0.07	0.033	(0.089)	0.010	0.023
252	21.00	0.07	0.033	(0.088)	0.010	0.023
253	21.08	0.10	0.050	(0.088)	0.015	0.034
254	21.17	0.10	0.050	(0.087)	0.015	0.034
255	21.25	0.10	0.050	(0.087)	0.015	0.034
256	21.33	0.07	0.033	(0.087)	0.010	0.023
257	21.42	0.07	0.033	(0.086)	0.010	0.023
258	21.50	0.07	0.033	(0.086)	0.010	0.023
259	21.58	0.10	0.050	(0.086)	0.015	0.034
260	21.67	0.10	0.050	(0.086)	0.015	0.034
261	21.75	0.10	0.050	(0.085)	0.015	0.034
262	21.83	0.07	0.033	(0.085)	0.010	0.023
263	21.92	0.07	0.033	(0.085)	0.010	0.023
264	22.00	0.07	0.033	(0.084)	0.010	0.023
265	22.08	0.10	0.050	(0.084)	0.015	0.034
266	22.17	0.10	0.050	(0.084)	0.015	0.034
267	22.25	0.10	0.050	(0.084)	0.015	0.034

```
268  22.33     0.07      0.033       (  0.083)       0.010        0.023
269  22.42     0.07      0.033       (  0.083)       0.010        0.023
270  22.50     0.07      0.033       (  0.083)       0.010        0.023
271  22.58     0.07      0.033       (  0.083)       0.010        0.023
272  22.67     0.07      0.033       (  0.082)       0.010        0.023
273  22.75     0.07      0.033       (  0.082)       0.010        0.023
274  22.83     0.07      0.033       (  0.082)       0.010        0.023
275  22.92     0.07      0.033       (  0.082)       0.010        0.023
276  23.00     0.07      0.033       (  0.081)       0.010        0.023
277  23.08     0.07      0.033       (  0.081)       0.010        0.023
278  23.17     0.07      0.033       (  0.081)       0.010        0.023
279  23.25     0.07      0.033       (  0.081)       0.010        0.023
280  23.33     0.07      0.033       (  0.081)       0.010        0.023
281  23.42     0.07      0.033       (  0.081)       0.010        0.023
282  23.50     0.07      0.033       (  0.080)       0.010        0.023
283  23.58     0.07      0.033       (  0.080)       0.010        0.023
284  23.67     0.07      0.033       (  0.080)       0.010        0.023
285  23.75     0.07      0.033       (  0.080)       0.010        0.023
286  23.83     0.07      0.033       (  0.080)       0.010        0.023
287  23.92     0.07      0.033       (  0.080)       0.010        0.023
288  24.00     0.07      0.033       (  0.080)       0.010        0.023
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    34.6
      Flood volume = Effective rainfall      2.89(In)
       times area      67.8(Ac.)/[(In)/(Ft.)] =      16.3(Ac.Ft)
      Total soil loss =      1.26(In)
      Total soil loss =     7.117(Ac.Ft)
      Total rainfall =      4.15(In)
      Flood volume =      710149.8 Cubic Feet
      Total soil loss =      310013.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     29.048(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5       15.0       22.5       30.0
 ---------------------------------------------------------------------------
   0+ 5       0.0012      0.17  Q         |          |          |          |
   0+10       0.0080      0.99  VQ        |          |          |          |
   0+15       0.0171      1.33  VQ        |          |          |          |
   0+20       0.0278      1.55  V Q       |          |          |          |
   0+25       0.0417      2.02  V Q       |          |          |          |
   0+30       0.0569      2.21  V Q       |          |          |          |
   0+35       0.0727      2.29  V  Q      |          |          |          |
   0+40       0.0887      2.33  V  Q      |          |          |          |
   0+45       0.1048      2.34  V  Q      |          |          |          |
   0+50       0.1215      2.43  V  Q      |          |          |          |
   0+55       0.1411      2.84  V  Q      |          |          |          |
   1+ 0       0.1618      3.01  V   Q     |          |          |          |
   1+ 5       0.1824      3.00  V  Q      |          |          |          |
   1+10       0.2004      2.61  V  Q      |          |          |          |
   1+15       0.2174      2.46  V  Q      |          |          |          |
   1+20       0.2338      2.39  V  Q      |          |          |          |
   1+25       0.2501      2.37  V  Q      |          |          |          |
   1+30       0.2663      2.36  V  Q      |          |          |          |
   1+35       0.2825      2.35  V  Q      |          |          |          |
   1+40       0.2987      2.35  V  Q      |          |          |          |
   1+45       0.3148      2.35  V  Q      |          |          |          |
   1+50       0.3316      2.43  V  Q      |          |          |          |
   1+55       0.3512      2.84  V  Q      |          |          |          |
   2+ 0       0.3719      3.01  V   Q     |          |          |          |
   2+ 5       0.3931      3.08  V   Q     |          |          |          |
   2+10       0.4145      3.11  |V  Q     |          |          |          |
   2+15       0.4360      3.12  |V  Q     |          |          |          |
   2+20       0.4575      3.12  |V  Q     |          |          |          |
   2+25       0.4791      3.13  |V  Q     |          |          |          |
   2+30       0.5006      3.13  |V  Q     |          |          |          |
   2+35       0.5227      3.21  |V  Q     |          |          |          |
   2+40       0.5477      3.62  |V  Q     |          |          |          |
   2+45       0.5738      3.79  |V   Q    |          |          |          |
```

```
2+50       0.6004      3.86  |V   Q    |          |          |          |
2+55       0.6272      3.89  |V   Q    |          |          |          |
3+ 0       0.6541      3.90  |V   Q    |          |          |          |
3+ 5       0.6810      3.91  |V   Q    |          |          |          |
3+10       0.7079      3.91  |V   Q    |          |          |          |
3+15       0.7348      3.91  |V   Q    |          |          |          |
3+20       0.7618      3.91  |V   Q    |          |          |          |
3+25       0.7887      3.91  |V   Q    |          |          |          |
3+30       0.8156      3.91  | V  Q    |          |          |          |
3+35       0.8426      3.91  | V  Q    |          |          |          |
3+40       0.8695      3.91  | V  Q    |          |          |          |
3+45       0.8964      3.91  | V  Q    |          |          |          |
3+50       0.9239      3.99  | V  Q    |          |          |          |
3+55       0.9543      4.41  | V  Q    |          |          |          |
4+ 0       0.9858      4.57  | V   Q   |          |          |          |
4+ 5       1.0178      4.64  | V   Q   |          |          |          |
4+10       1.0499      4.67  | V   Q   |          |          |          |
4+15       1.0822      4.68  | V   Q   |          |          |          |
4+20       1.1151      4.77  | V   Q   |          |          |          |
4+25       1.1508      5.19  | V   Q   |          |          |          |
4+30       1.1877      5.36  | V    Q  |          |          |          |
4+35       1.2250      5.43  |  V   Q  |          |          |          |
4+40       1.2626      5.46  |  V   Q  |          |          |          |
4+45       1.3003      5.47  |  V   Q  |          |          |          |
4+50       1.3385      5.55  |  V   Q  |          |          |          |
4+55       1.3796      5.97  |  V   Q  |          |          |          |
5+ 0       1.4219      6.14  |  V    Q |          |          |          |
5+ 5       1.4635      6.04  |  V    Q |          |          |          |
5+10       1.4996      5.25  |  V  Q   |          |          |          |
5+15       1.5335      4.92  |  V  Q   |          |          |          |
5+20       1.5671      4.87  |  V  Q   |          |          |          |
5+25       1.6031      5.23  |  V  Q   |          |          |          |
5+30       1.6401      5.37  |   V  Q  |          |          |          |
5+35       1.6781      5.52  |   V  Q  |          |          |          |
5+40       1.7191      5.95  |   V  Q  |          |          |          |
5+45       1.7613      6.13  |   V   Q |          |          |          |
5+50       1.8040      6.20  |   V   Q |          |          |          |
5+55       1.8470      6.24  |   V   Q |          |          |          |
6+ 0       1.8900      6.25  |   V   Q |          |          |          |
6+ 5       1.9336      6.34  |   V   Q |          |          |          |
6+10       1.9801      6.75  |   V    Q|          |          |          |
6+15       2.0278      6.92  |   V    Q|          |          |          |
6+20       2.0759      6.99  |    V   Q|          |          |          |
6+25       2.1243      7.02  |    V   Q|          |          |          |
6+30       2.1727      7.03  |    V   Q|          |          |          |
6+35       2.2217      7.12  |    V   Q|          |          |          |
6+40       2.2736      7.53  |    V    Q          |          |          |
6+45       2.3267      7.70  |    V    Q          |          |          |
6+50       2.3802      7.77  |    V    Q          |          |          |
6+55       2.4339      7.80  |    V    Q          |          |          |
7+ 0       2.4877      7.81  |     V   Q          |          |          |
7+ 5       2.5416      7.82  |     V   Q          |          |          |
7+10       2.5954      7.82  |     V   Q          |          |          |
7+15       2.6493      7.82  |     V   Q          |          |          |
7+20       2.7037      7.91  |     V   Q          |          |          |
7+25       2.7610      8.32  |     V   |Q         |          |          |
7+30       2.8195      8.48  |     V   |Q         |          |          |
7+35       2.8789      8.64  |      V  |Q         |          |          |
7+40       2.9415      9.08  |      V  | Q        |          |          |
7+45       3.0052      9.26  |      V  | Q        |          |          |
7+50       3.0701      9.42  |      V  | Q        |          |          |
7+55       3.1380      9.86  |      V  |  Q       |          |          |
8+ 0       3.2071     10.04  |      V  |  Q       |          |          |
8+ 5       3.2779     10.28  |       V |  Q       |          |          |
8+10       3.3547     11.14  |       V |   Q      |          |          |
8+15       3.4338     11.49  |       V |    Q     |          |          |
8+20       3.5138     11.63  |       V |    Q     |          |          |
8+25       3.5944     11.69  |       V |    Q     |          |          |
8+30       3.6751     11.71  |        V|    Q     |          |          |
8+35       3.7564     11.81  |        V|    Q     |          |          |
8+40       3.8406     12.23  |        V|     Q    |          |          |
8+45       3.9259     12.40  |        V|     Q    |          |          |
8+50       4.0124     12.55  |        V|     Q    |          |          |
8+55       4.1018     12.99  |         V      Q   |          |          |
9+ 0       4.1925     13.17  |         V      Q   |          |          |
```





```
   21+35      15.9421      1.69  | Q       |         |         |        V|
   21+40      15.9564      2.08  | Q       |         |         |        V|
   21+45      15.9718      2.24  | Q       |         |         |        V|
   21+50      15.9871      2.22  | Q       |         |         |        V|
   21+55      15.9997      1.83  | Q       |         |         |        V|
   22+ 0      16.0112      1.67  | Q       |         |         |        V|
   22+ 5      16.0229      1.69  | Q       |         |         |        V|
   22+10      16.0372      2.08  | Q       |         |         |        V|
   22+15      16.0526      2.24  | Q       |         |         |        V|
   22+20      16.0679      2.22  | Q       |         |         |        V|
   22+25      16.0805      1.83  | Q       |         |         |        V|
   22+30      16.0920      1.67  | Q       |         |         |        V|
   22+35      16.1031      1.61  | Q       |         |         |        V|
   22+40      16.1140      1.58  | Q       |         |         |        V|
   22+45      16.1248      1.57  | Q       |         |         |        V|
   22+50      16.1356      1.57  | Q       |         |         |        V|
   22+55      16.1464      1.56  | Q       |         |         |        V|
   23+ 0      16.1572      1.56  | Q       |         |         |        V|
   23+ 5      16.1680      1.56  | Q       |         |         |        V|
   23+10      16.1787      1.56  | Q       |         |         |        V|
   23+15      16.1895      1.56  | Q       |         |         |        V|
   23+20      16.2003      1.56  | Q       |         |         |        V|
   23+25      16.2110      1.56  | Q       |         |         |        V|
   23+30      16.2218      1.56  | Q       |         |         |        V|
   23+35      16.2326      1.56  | Q       |         |         |        V|
   23+40      16.2434      1.56  | Q       |         |         |        V|
   23+45      16.2541      1.56  | Q       |         |         |        V|
   23+50      16.2649      1.56  | Q       |         |         |        V|
   23+55      16.2757      1.56  | Q       |         |         |        V|
   24+ 0      16.2865      1.56  | Q       |         |         |        V|
   24+ 5      16.2961      1.40  |Q        |         |         |        V|
   24+10      16.3000      0.57  Q         |         |         |        V|
   24+15      16.3017      0.24  Q         |         |         |        V|
   24+20      16.3023      0.10  Q         |         |         |        V|
   24+25      16.3026      0.04  Q         |         |         |        V|
   24+30      16.3027      0.02  Q         |         |         |        V|
   24+35      16.3028      0.01  Q         |         |         |         V
-------------------------------------------------------------------------
```

PROPOSED CONDITION
100-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: SOUTH100YR1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-24 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	0.55	37.29

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	1.25	84.75

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 1.250(In)
Areal adjustment factor = 99.94 %
Adjusted average point rain = 1.249(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
      59.2  59.2      0.478     0.740        0.160       1.000      0.160
                                                        Sum (F) =   0.160
      Area averaged mean soil loss (F) (In/Hr) =  0.160
      Minimum soil loss rate ((In/Hr)) =  0.080
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.310
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         87.776         10.723              7.327
          2   0.167        175.552         52.562             35.916
          3   0.250        263.328         21.552             14.727
          4   0.333        351.104          8.827              6.031
          5   0.417        438.880          3.918              2.677
          6   0.500        526.656          1.227              0.838
          7   0.583        614.432          0.656              0.448
          8   0.667        702.208          0.534              0.365
                                   Sum = 100.000    Sum=      68.330
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.510       (  0.160)       0.158        0.352
   2   0.17     4.70      0.705          0.160    (  0.218)        0.545
   3   0.25     4.70      0.705          0.160    (  0.218)        0.545
   4   0.33     5.10      0.765          0.160    (  0.237)        0.605
   5   0.42     5.80      0.869          0.160    (  0.270)        0.710
   6   0.50     5.90      0.884          0.160    (  0.274)        0.725
   7   0.58     7.10      1.064          0.160    (  0.330)        0.905
   8   0.67     8.70      1.304          0.160    (  0.404)        1.144
   9   0.75    13.20      1.979          0.160    (  0.613)        1.819
  10   0.83    29.70      4.452          0.160    (  1.380)        4.293
  11   0.92     7.70      1.154          0.160    (  0.358)        0.995
  12   1.00     4.00      0.600          0.160    (  0.186)        0.440
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =    13.1
        Flood volume = Effective rainfall      1.09(In)
         times area      67.8(Ac.)/[(In)/(Ft.)] =       6.2(Ac.Ft)
        Total soil loss =      0.16(In)
        Total soil loss =     0.902(Ac.Ft)
        Total rainfall =      1.25(In)
        Flood volume =      268182.6 Cubic Feet
        Total soil loss =       39270.8 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =    198.820(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f     H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ------------------------------------------------------------------------
    0+ 5       0.0178      2.58  Q         |         |         |         |
    0+10       0.1323     16.63  V  Q      |         |         |         |
    0+15       0.3303     28.76  | V  Q    |         |         |         |
    0+20       0.5656     34.16  |  V  Q   |         |         |         |
    0+25       0.8356     39.20  |    V Q  |         |         |         |
    0+30       1.1439     44.77  |      VQ |         |         |         |
    0+35       1.4804     48.86  |        Q|         |         |         |
```

```
    0+40       1.8820     58.31  |          |QV        |          |          |
    0+45       2.3986     75.02  |          |    Q     |          |          |
    0+50       3.2400    122.17  |          |          |V  Q      |          |
    0+55       4.6093    198.82  |          |          |          V|         Q|
    1+ 0       5.4192    117.60  |          |          |  Q       |    V     |
    1+ 5       5.8521     62.87  |          | Q        |          |       V  |
    1+10       6.0336     26.35  |    Q     |          |          |         V|
    1+15       6.1036     10.15  | Q        |          |          |         V|
    1+20       6.1353      4.60  Q          |          |          |         V|
    1+25       6.1517      2.38  Q          |          |          |         V|
    1+30       6.1555      0.56  Q          |          |          |         V|
    1+35       6.1566      0.16  Q          |          |          |          V
-------------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: SOUTH100YR3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-24 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	0.95	64.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.05	138.99

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 2.050(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 2.049(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 59.2 0.478 0.740 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	1.30	0.320	(0.160)	0.099	0.221
2	0.17	1.30	0.320	(0.160)	0.099	0.221
3	0.25	1.10	0.271	(0.160)	0.084	0.187
4	0.33	1.50	0.369	(0.160)	0.114	0.255
5	0.42	1.50	0.369	(0.160)	0.114	0.255
6	0.50	1.80	0.443	(0.160)	0.137	0.305
7	0.58	1.50	0.369	(0.160)	0.114	0.255
8	0.67	1.80	0.443	(0.160)	0.137	0.305
9	0.75	1.80	0.443	(0.160)	0.137	0.305
10	0.83	1.50	0.369	(0.160)	0.114	0.255
11	0.92	1.60	0.393	(0.160)	0.122	0.272
12	1.00	1.80	0.443	(0.160)	0.137	0.305
13	1.08	2.20	0.541	0.160	(0.168)	0.381
14	1.17	2.20	0.541	0.160	(0.168)	0.381
15	1.25	2.20	0.541	0.160	(0.168)	0.381
16	1.33	2.00	0.492	(0.160)	0.152	0.339
17	1.42	2.60	0.639	0.160	(0.198)	0.480
18	1.50	2.70	0.664	0.160	(0.206)	0.504
19	1.58	2.40	0.590	0.160	(0.183)	0.431
20	1.67	2.70	0.664	0.160	(0.206)	0.504
21	1.75	3.30	0.812	0.160	(0.252)	0.652
22	1.83	3.10	0.762	0.160	(0.236)	0.603
23	1.92	2.90	0.713	0.160	(0.221)	0.553
24	2.00	3.00	0.738	0.160	(0.229)	0.578
25	2.08	3.10	0.762	0.160	(0.236)	0.603
26	2.17	4.20	1.033	0.160	(0.320)	0.873
27	2.25	5.00	1.230	0.160	(0.381)	1.070
28	2.33	3.50	0.861	0.160	(0.267)	0.701
29	2.42	6.80	1.672	0.160	(0.518)	1.513
30	2.50	7.30	1.795	0.160	(0.557)	1.636
31	2.58	8.20	2.017	0.160	(0.625)	1.857
32	2.67	5.90	1.451	0.160	(0.450)	1.291
33	2.75	2.00	0.492	(0.160)	0.152	0.339
34	2.83	1.80	0.443	(0.160)	0.137	0.305
35	2.92	1.80	0.443	(0.160)	0.137	0.305
36	3.00	0.60	0.148	(0.160)	0.046	0.102
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	19.5

Flood volume = Effective rainfall 1.63(In)
times area 67.8(Ac.)/[(In)/(Ft.)] = 9.2(Ac.Ft)
Total soil loss = 0.42(In)
Total soil loss = 2.387(Ac.Ft)

Total rainfall = 2.05(In)
Flood volume = 400402.1 Cubic Feet
Total soil loss = 103982.0 Cubic Feet

Peak flow rate of this hydrograph = 112.806(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 50.0 100.0 150.0 200.0
0+ 5	0.0111	1.62	Q | | | |
0+10	0.0769	9.54	VQ | | | |
0+15	0.1633	12.55	V Q | | | |
0+20	0.2539	13.15	|VQ | | | |
0+25	0.3619	15.68	|V Q | | | |
0+30	0.4792	17.04	| VQ | | | |
0+35	0.6095	18.91	| VQ | | | |
0+40	0.7365	18.44	| Q | | | |
0+45	0.8733	19.87	| Q | | | |
0+50	1.0117	20.09	| Q | | | |
0+55	1.1400	18.63	| QV | | | |
1+ 0	1.2698	18.85	| Q V | | | |
1+ 5	1.4117	20.61	| Q V | | | |
1+10	1.5757	23.81	| Q V | | | |
1+15	1.7489	25.15	| Q V | | | |
1+20	1.9237	25.38	| Q V | | | |
1+25	2.0967	25.12	| Q V| | | |
1+30	2.3020	29.81	| Q V | | |
1+35	2.5226	32.02	| Q V | | |
1+40	2.7363	31.03	| Q |V | | |
1+45	2.9716	34.17	| Q | V | | |
1+50	3.2465	39.92	| Q | V | | |
1+55	3.5239	40.28	| Q | V | | |
2+ 0	3.7928	39.05	| Q | V | | |
2+ 5	4.0651	39.53	| Q | V | | |
2+10	4.3575	42.46	| Q | V | | |
2+15	4.7298	54.05	| Q V | | |
2+20	5.1610	62.61	| Q | V | | |
2+25	5.5734	59.88	| |Q | V | | |
2+30	6.1687	86.44	| | Q | V | |
2+35	6.8779	102.98	| | Q V| |
2+40	7.6548	112.81	| | | Q | V |
2+45	8.2854	91.56	| | Q | | V |
2+50	8.6367	51.02	| Q | | V |
2+55	8.8660	33.29	| Q | | | V |
3+ 0	9.0352	24.57	| Q | | | | V|
3+ 5	9.1277	13.42	| Q | | | | V|
3+10	9.1670	5.70	|Q | | | | V|
3+15	9.1829	2.31	Q | | | | V|
3+20	9.1883	0.79	Q | | | | V|
3+25	9.1906	0.33	Q | | | | V|
3+30	9.1917	0.16	Q | | | | V|
3+35	9.1920	0.04	Q | | | | V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: SOUTH100YR6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

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100-YEAR STORM EVENT
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Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	1.40	94.92

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	3.00	203.40

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 59.2 0.478 0.740 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.180	(0.160)	0.056	0.124
2	0.17	0.60	0.216	(0.160)	0.067	0.149
3	0.25	0.60	0.216	(0.160)	0.067	0.149
4	0.33	0.60	0.216	(0.160)	0.067	0.149
5	0.42	0.60	0.216	(0.160)	0.067	0.149
6	0.50	0.70	0.252	(0.160)	0.078	0.174
7	0.58	0.70	0.252	(0.160)	0.078	0.174
8	0.67	0.70	0.252	(0.160)	0.078	0.174
9	0.75	0.70	0.252	(0.160)	0.078	0.174
10	0.83	0.70	0.252	(0.160)	0.078	0.174
11	0.92	0.70	0.252	(0.160)	0.078	0.174
12	1.00	0.80	0.288	(0.160)	0.089	0.199
13	1.08	0.80	0.288	(0.160)	0.089	0.199
14	1.17	0.80	0.288	(0.160)	0.089	0.199
15	1.25	0.80	0.288	(0.160)	0.089	0.199
16	1.33	0.80	0.288	(0.160)	0.089	0.199
17	1.42	0.80	0.288	(0.160)	0.089	0.199
18	1.50	0.80	0.288	(0.160)	0.089	0.199
19	1.58	0.80	0.288	(0.160)	0.089	0.199
20	1.67	0.80	0.288	(0.160)	0.089	0.199
21	1.75	0.80	0.288	(0.160)	0.089	0.199
22	1.83	0.80	0.288	(0.160)	0.089	0.199
23	1.92	0.80	0.288	(0.160)	0.089	0.199
24	2.00	0.90	0.324	(0.160)	0.100	0.224
25	2.08	0.80	0.288	(0.160)	0.089	0.199
26	2.17	0.90	0.324	(0.160)	0.100	0.224
27	2.25	0.90	0.324	(0.160)	0.100	0.224
28	2.33	0.90	0.324	(0.160)	0.100	0.224
29	2.42	0.90	0.324	(0.160)	0.100	0.224
30	2.50	0.90	0.324	(0.160)	0.100	0.224
31	2.58	0.90	0.324	(0.160)	0.100	0.224
32	2.67	0.90	0.324	(0.160)	0.100	0.224
33	2.75	1.00	0.360	(0.160)	0.112	0.248
34	2.83	1.00	0.360	(0.160)	0.112	0.248
35	2.92	1.00	0.360	(0.160)	0.112	0.248
36	3.00	1.00	0.360	(0.160)	0.112	0.248
37	3.08	1.00	0.360	(0.160)	0.112	0.248
38	3.17	1.10	0.396	(0.160)	0.123	0.273
39	3.25	1.10	0.396	(0.160)	0.123	0.273
40	3.33	1.10	0.396	(0.160)	0.123	0.273
41	3.42	1.20	0.432	(0.160)	0.134	0.298
42	3.50	1.30	0.468	(0.160)	0.145	0.323

```
43   3.58     1.40      0.504       (  0.160)       0.156        0.348
44   3.67     1.40      0.504       (  0.160)       0.156        0.348
45   3.75     1.50      0.540          0.160    (  0.167)        0.380
46   3.83     1.50      0.540          0.160    (  0.167)        0.380
47   3.92     1.60      0.576          0.160    (  0.179)        0.416
48   4.00     1.60      0.576          0.160    (  0.179)        0.416
49   4.08     1.70      0.612          0.160    (  0.190)        0.452
50   4.17     1.80      0.648          0.160    (  0.201)        0.488
51   4.25     1.90      0.684          0.160    (  0.212)        0.524
52   4.33     2.00      0.720          0.160    (  0.223)        0.560
53   4.42     2.10      0.756          0.160    (  0.234)        0.596
54   4.50     2.10      0.756          0.160    (  0.234)        0.596
55   4.58     2.20      0.792          0.160    (  0.245)        0.632
56   4.67     2.30      0.828          0.160    (  0.257)        0.668
57   4.75     2.40      0.864          0.160    (  0.268)        0.704
58   4.83     2.40      0.864          0.160    (  0.268)        0.704
59   4.92     2.50      0.900          0.160    (  0.279)        0.740
60   5.00     2.60      0.936          0.160    (  0.290)        0.776
61   5.08     3.10      1.116          0.160    (  0.346)        0.956
62   5.17     3.60      1.296          0.160    (  0.402)        1.136
63   5.25     3.90      1.404          0.160    (  0.435)        1.244
64   5.33     4.20      1.512          0.160    (  0.469)        1.352
65   5.42     4.70      1.692          0.160    (  0.524)        1.532
66   5.50     5.60      2.016          0.160    (  0.625)        1.856
67   5.58     1.90      0.684          0.160    (  0.212)        0.524
68   5.67     0.90      0.324       (  0.160)       0.100        0.224
69   5.75     0.60      0.216       (  0.160)       0.067        0.149
70   5.83     0.50      0.180       (  0.160)       0.056        0.124
71   5.92     0.30      0.108       (  0.160)       0.033        0.075
72   6.00     0.20      0.072       (  0.160)       0.022        0.050
              (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    27.8
      Flood volume = Effective rainfall      2.31(In)
       times area      67.8(Ac.)/[(In)/(Ft.)] =      13.1(Ac.Ft)
      Total soil loss =      0.69(In)
      Total soil loss =     3.873(Ac.Ft)
      Total rainfall =      3.00(In)
      Flood volume =      569470.2 Cubic Feet
      Total soil loss =      168699.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =    106.257(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        50.0     100.0     150.0     200.0
-------------------------------------------------------------------------
  0+ 5       0.0063      0.91  Q          |         |         |         |
  0+10       0.0445      5.55  VQ         |         |         |         |
  0+15       0.1015      8.28  VQ         |         |         |         |
  0+20       0.1662      9.39  VQ         |         |         |         |
  0+25       0.2342      9.87  VQ         |         |         |         |
  0+30       0.3046     10.23  V Q        |         |         |         |
  0+35       0.3817     11.20  |VQ        |         |         |         |
  0+40       0.4618     11.62  |VQ        |         |         |         |
  0+45       0.5429     11.78  |VQ        |         |         |         |
  0+50       0.6244     11.84  |VQ        |         |         |         |
  0+55       0.7061     11.86  | Q        |         |         |         |
  1+ 0       0.7892     12.06  | Q        |         |         |         |
  1+ 5       0.8784     12.96  | Q        |         |         |         |
  1+10       0.9702     13.32  | Q        |         |         |         |
  1+15       1.0630     13.47  | QV       |         |         |         |
  1+20       1.1563     13.54  | QV       |         |         |         |
  1+25       1.2497     13.56  | QV       |         |         |         |
  1+30       1.3431     13.57  | Q V      |         |         |         |
  1+35       1.4367     13.58  | Q V      |         |         |         |
  1+40       1.5302     13.58  | Q V      |         |         |         |
  1+45       1.6238     13.58  | Q V      |         |         |         |
  1+50       1.7173     13.58  | Q  V     |         |         |         |
  1+55       1.8109     13.58  | Q  V     |         |         |         |
  2+ 0       1.9057     13.76  | Q  V     |         |         |         |
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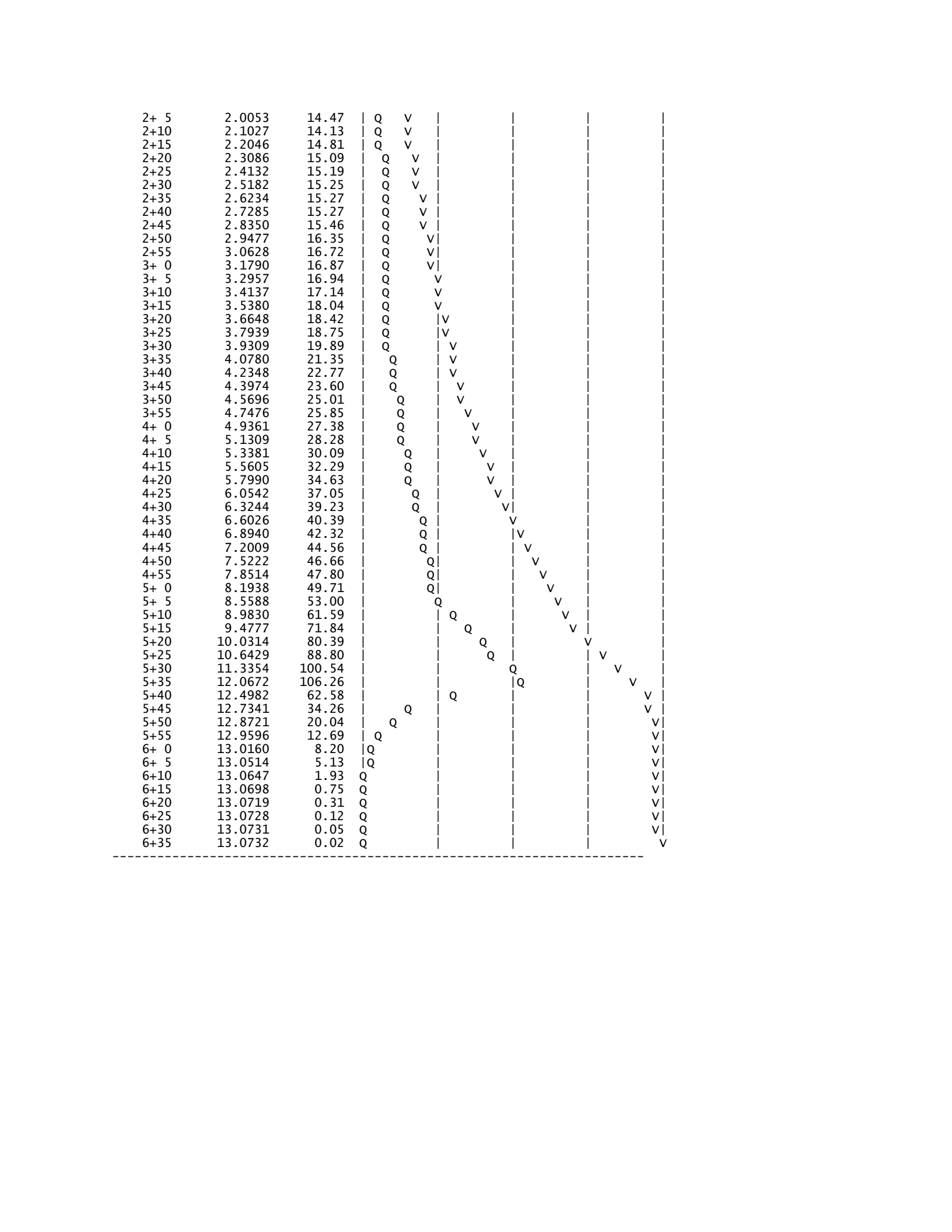

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: SOUTH100YR24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

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Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.50	169.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	6.50	440.70

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 6.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 6.499(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2 59.2 0.478 0.740 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.052	(0.283)	0.016	0.036
2	0.17	0.07	0.052	(0.282)	0.016	0.036
3	0.25	0.07	0.052	(0.281)	0.016	0.036
4	0.33	0.10	0.078	(0.280)	0.024	0.054
5	0.42	0.10	0.078	(0.279)	0.024	0.054
6	0.50	0.10	0.078	(0.278)	0.024	0.054
7	0.58	0.10	0.078	(0.277)	0.024	0.054
8	0.67	0.10	0.078	(0.275)	0.024	0.054
9	0.75	0.10	0.078	(0.274)	0.024	0.054
10	0.83	0.13	0.104	(0.273)	0.032	0.072
11	0.92	0.13	0.104	(0.272)	0.032	0.072
12	1.00	0.13	0.104	(0.271)	0.032	0.072
13	1.08	0.10	0.078	(0.270)	0.024	0.054
14	1.17	0.10	0.078	(0.269)	0.024	0.054
15	1.25	0.10	0.078	(0.268)	0.024	0.054
16	1.33	0.10	0.078	(0.267)	0.024	0.054
17	1.42	0.10	0.078	(0.266)	0.024	0.054
18	1.50	0.10	0.078	(0.265)	0.024	0.054
19	1.58	0.10	0.078	(0.264)	0.024	0.054
20	1.67	0.10	0.078	(0.263)	0.024	0.054
21	1.75	0.10	0.078	(0.262)	0.024	0.054
22	1.83	0.13	0.104	(0.261)	0.032	0.072
23	1.92	0.13	0.104	(0.260)	0.032	0.072
24	2.00	0.13	0.104	(0.258)	0.032	0.072
25	2.08	0.13	0.104	(0.257)	0.032	0.072
26	2.17	0.13	0.104	(0.256)	0.032	0.072
27	2.25	0.13	0.104	(0.255)	0.032	0.072
28	2.33	0.13	0.104	(0.254)	0.032	0.072
29	2.42	0.13	0.104	(0.253)	0.032	0.072
30	2.50	0.13	0.104	(0.252)	0.032	0.072
31	2.58	0.17	0.130	(0.251)	0.040	0.090
32	2.67	0.17	0.130	(0.250)	0.040	0.090
33	2.75	0.17	0.130	(0.249)	0.040	0.090
34	2.83	0.17	0.130	(0.248)	0.040	0.090
35	2.92	0.17	0.130	(0.247)	0.040	0.090
36	3.00	0.17	0.130	(0.246)	0.040	0.090
37	3.08	0.17	0.130	(0.245)	0.040	0.090
38	3.17	0.17	0.130	(0.244)	0.040	0.090
39	3.25	0.17	0.130	(0.243)	0.040	0.090
40	3.33	0.17	0.130	(0.242)	0.040	0.090
41	3.42	0.17	0.130	(0.241)	0.040	0.090
42	3.50	0.17	0.130	(0.240)	0.040	0.090

43	3.58	0.17	0.130	(0.239)	0.040	0.090
44	3.67	0.17	0.130	(0.238)	0.040	0.090
45	3.75	0.17	0.130	(0.237)	0.040	0.090
46	3.83	0.20	0.156	(0.236)	0.048	0.108
47	3.92	0.20	0.156	(0.235)	0.048	0.108
48	4.00	0.20	0.156	(0.234)	0.048	0.108
49	4.08	0.20	0.156	(0.233)	0.048	0.108
50	4.17	0.20	0.156	(0.232)	0.048	0.108
51	4.25	0.20	0.156	(0.231)	0.048	0.108
52	4.33	0.23	0.182	(0.230)	0.056	0.126
53	4.42	0.23	0.182	(0.229)	0.056	0.126
54	4.50	0.23	0.182	(0.228)	0.056	0.126
55	4.58	0.23	0.182	(0.227)	0.056	0.126
56	4.67	0.23	0.182	(0.226)	0.056	0.126
57	4.75	0.23	0.182	(0.225)	0.056	0.126
58	4.83	0.27	0.208	(0.224)	0.064	0.144
59	4.92	0.27	0.208	(0.223)	0.064	0.144
60	5.00	0.27	0.208	(0.222)	0.064	0.144
61	5.08	0.20	0.156	(0.221)	0.048	0.108
62	5.17	0.20	0.156	(0.220)	0.048	0.108
63	5.25	0.20	0.156	(0.219)	0.048	0.108
64	5.33	0.23	0.182	(0.218)	0.056	0.126
65	5.42	0.23	0.182	(0.217)	0.056	0.126
66	5.50	0.23	0.182	(0.216)	0.056	0.126
67	5.58	0.27	0.208	(0.216)	0.064	0.144
68	5.67	0.27	0.208	(0.215)	0.064	0.144
69	5.75	0.27	0.208	(0.214)	0.064	0.144
70	5.83	0.27	0.208	(0.213)	0.064	0.144
71	5.92	0.27	0.208	(0.212)	0.064	0.144
72	6.00	0.27	0.208	(0.211)	0.064	0.144
73	6.08	0.30	0.234	(0.210)	0.073	0.161
74	6.17	0.30	0.234	(0.209)	0.073	0.161
75	6.25	0.30	0.234	(0.208)	0.073	0.161
76	6.33	0.30	0.234	(0.207)	0.073	0.161
77	6.42	0.30	0.234	(0.206)	0.073	0.161
78	6.50	0.30	0.234	(0.205)	0.073	0.161
79	6.58	0.33	0.260	(0.204)	0.081	0.179
80	6.67	0.33	0.260	(0.203)	0.081	0.179
81	6.75	0.33	0.260	(0.202)	0.081	0.179
82	6.83	0.33	0.260	(0.202)	0.081	0.179
83	6.92	0.33	0.260	(0.201)	0.081	0.179
84	7.00	0.33	0.260	(0.200)	0.081	0.179
85	7.08	0.33	0.260	(0.199)	0.081	0.179
86	7.17	0.33	0.260	(0.198)	0.081	0.179
87	7.25	0.33	0.260	(0.197)	0.081	0.179
88	7.33	0.37	0.286	(0.196)	0.089	0.197
89	7.42	0.37	0.286	(0.195)	0.089	0.197
90	7.50	0.37	0.286	(0.194)	0.089	0.197
91	7.58	0.40	0.312	(0.193)	0.097	0.215
92	7.67	0.40	0.312	(0.193)	0.097	0.215
93	7.75	0.40	0.312	(0.192)	0.097	0.215
94	7.83	0.43	0.338	(0.191)	0.105	0.233
95	7.92	0.43	0.338	(0.190)	0.105	0.233
96	8.00	0.43	0.338	(0.189)	0.105	0.233
97	8.08	0.50	0.390	(0.188)	0.121	0.269
98	8.17	0.50	0.390	(0.187)	0.121	0.269
99	8.25	0.50	0.390	(0.186)	0.121	0.269
100	8.33	0.50	0.390	(0.186)	0.121	0.269
101	8.42	0.50	0.390	(0.185)	0.121	0.269
102	8.50	0.50	0.390	(0.184)	0.121	0.269
103	8.58	0.53	0.416	(0.183)	0.129	0.287
104	8.67	0.53	0.416	(0.182)	0.129	0.287
105	8.75	0.53	0.416	(0.181)	0.129	0.287
106	8.83	0.57	0.442	(0.180)	0.137	0.305
107	8.92	0.57	0.442	(0.179)	0.137	0.305
108	9.00	0.57	0.442	(0.179)	0.137	0.305
109	9.08	0.63	0.494	(0.178)	0.153	0.341
110	9.17	0.63	0.494	(0.177)	0.153	0.341
111	9.25	0.63	0.494	(0.176)	0.153	0.341
112	9.33	0.67	0.520	(0.175)	0.161	0.359
113	9.42	0.67	0.520	(0.174)	0.161	0.359
114	9.50	0.67	0.520	(0.174)	0.161	0.359
115	9.58	0.70	0.546	(0.173)	0.169	0.377
116	9.67	0.70	0.546	(0.172)	0.169	0.377
117	9.75	0.70	0.546	(0.171)	0.169	0.377

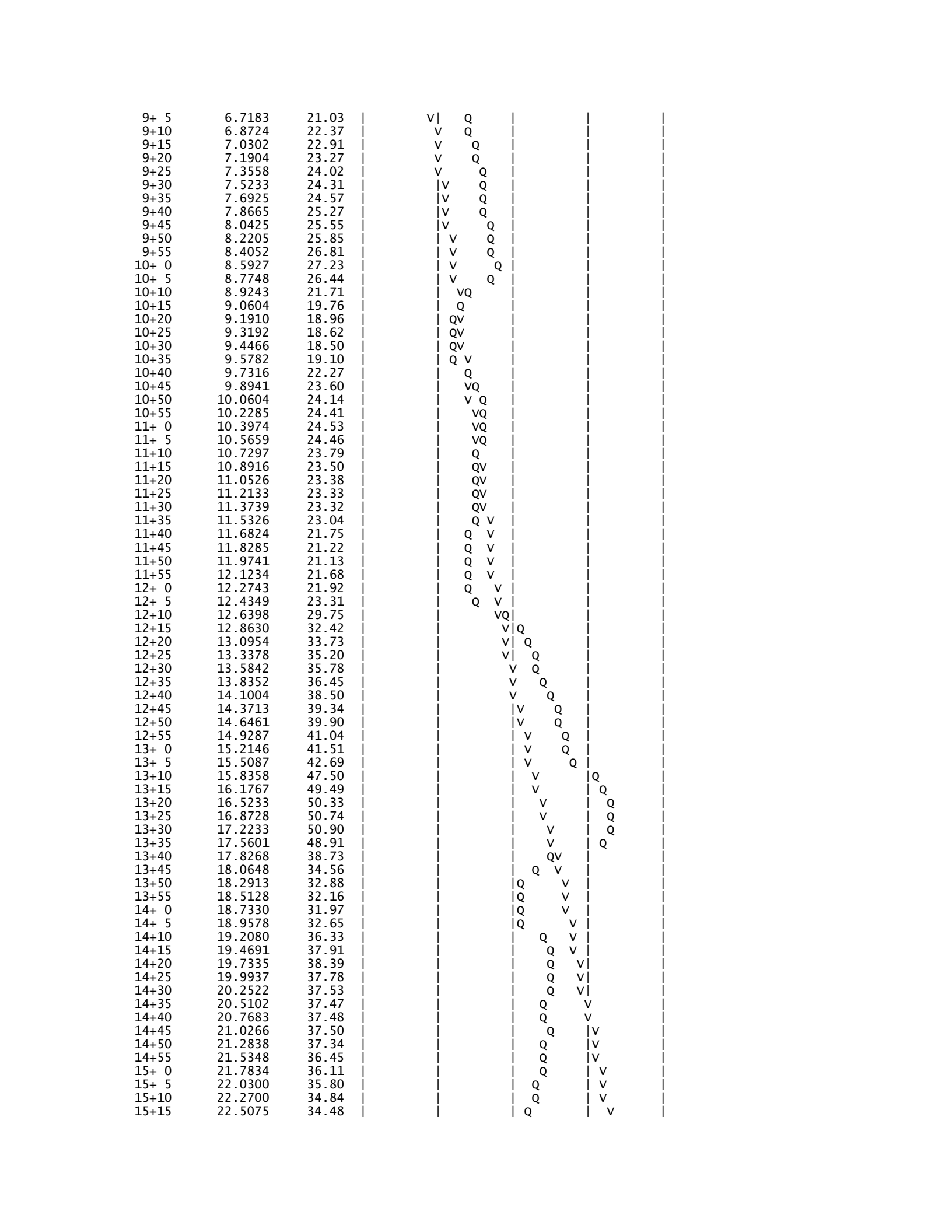
118	9.83	0.73	0.572		0.170	(0.177)	0.402
119	9.92	0.73	0.572		0.169	(0.177)	0.402
120	10.00	0.73	0.572		0.169	(0.177)	0.403
121	10.08	0.50	0.390	(0.168)		0.121	0.269
122	10.17	0.50	0.390	(0.167)		0.121	0.269
123	10.25	0.50	0.390	(0.166)		0.121	0.269
124	10.33	0.50	0.390	(0.165)		0.121	0.269
125	10.42	0.50	0.390	(0.165)		0.121	0.269
126	10.50	0.50	0.390	(0.164)		0.121	0.269
127	10.58	0.67	0.520	(0.163)		0.161	0.359
128	10.67	0.67	0.520	(0.162)		0.161	0.359
129	10.75	0.67	0.520	(0.161)		0.161	0.359
130	10.83	0.67	0.520		0.161	(0.161)	0.359
131	10.92	0.67	0.520		0.160	(0.161)	0.360
132	11.00	0.67	0.520		0.159	(0.161)	0.361
133	11.08	0.63	0.494	(0.158)		0.153	0.341
134	11.17	0.63	0.494	(0.157)		0.153	0.341
135	11.25	0.63	0.494	(0.157)		0.153	0.341
136	11.33	0.63	0.494	(0.156)		0.153	0.341
137	11.42	0.63	0.494	(0.155)		0.153	0.341
138	11.50	0.63	0.494	(0.154)		0.153	0.341
139	11.58	0.57	0.442	(0.154)		0.137	0.305
140	11.67	0.57	0.442	(0.153)		0.137	0.305
141	11.75	0.57	0.442	(0.152)		0.137	0.305
142	11.83	0.60	0.468	(0.151)		0.145	0.323
143	11.92	0.60	0.468	(0.151)		0.145	0.323
144	12.00	0.60	0.468	(0.150)		0.145	0.323
145	12.08	0.83	0.650		0.149	(0.201)	0.501
146	12.17	0.83	0.650		0.148	(0.201)	0.502
147	12.25	0.83	0.650		0.148	(0.201)	0.502
148	12.33	0.87	0.676		0.147	(0.210)	0.529
149	12.42	0.87	0.676		0.146	(0.210)	0.530
150	12.50	0.87	0.676		0.145	(0.210)	0.531
151	12.58	0.93	0.728		0.145	(0.226)	0.583
152	12.67	0.93	0.728		0.144	(0.226)	0.584
153	12.75	0.93	0.728		0.143	(0.226)	0.585
154	12.83	0.97	0.754		0.142	(0.234)	0.611
155	12.92	0.97	0.754		0.142	(0.234)	0.612
156	13.00	0.97	0.754		0.141	(0.234)	0.613
157	13.08	1.13	0.884		0.140	(0.274)	0.744
158	13.17	1.13	0.884		0.140	(0.274)	0.744
159	13.25	1.13	0.884		0.139	(0.274)	0.745
160	13.33	1.13	0.884		0.138	(0.274)	0.746
161	13.42	1.13	0.884		0.137	(0.274)	0.746
162	13.50	1.13	0.884		0.137	(0.274)	0.747
163	13.58	0.77	0.598		0.136	(0.185)	0.462
164	13.67	0.77	0.598		0.135	(0.185)	0.463
165	13.75	0.77	0.598		0.135	(0.185)	0.463
166	13.83	0.77	0.598		0.134	(0.185)	0.464
167	13.92	0.77	0.598		0.133	(0.185)	0.465
168	14.00	0.77	0.598		0.133	(0.185)	0.465
169	14.08	0.90	0.702		0.132	(0.218)	0.570
170	14.17	0.90	0.702		0.131	(0.218)	0.571
171	14.25	0.90	0.702		0.131	(0.218)	0.571
172	14.33	0.87	0.676		0.130	(0.210)	0.546
173	14.42	0.87	0.676		0.129	(0.210)	0.547
174	14.50	0.87	0.676		0.129	(0.210)	0.547
175	14.58	0.87	0.676		0.128	(0.210)	0.548
176	14.67	0.87	0.676		0.127	(0.210)	0.549
177	14.75	0.87	0.676		0.127	(0.210)	0.549
178	14.83	0.83	0.650		0.126	(0.201)	0.524
179	14.92	0.83	0.650		0.125	(0.201)	0.525
180	15.00	0.83	0.650		0.125	(0.201)	0.525
181	15.08	0.80	0.624		0.124	(0.193)	0.500
182	15.17	0.80	0.624		0.123	(0.193)	0.500
183	15.25	0.80	0.624		0.123	(0.193)	0.501
184	15.33	0.77	0.598		0.122	(0.185)	0.476
185	15.42	0.77	0.598		0.122	(0.185)	0.476
186	15.50	0.77	0.598		0.121	(0.185)	0.477
187	15.58	0.63	0.494		0.120	(0.153)	0.374
188	15.67	0.63	0.494		0.120	(0.153)	0.374
189	15.75	0.63	0.494		0.119	(0.153)	0.375
190	15.83	0.63	0.494		0.118	(0.153)	0.375
191	15.92	0.63	0.494		0.118	(0.153)	0.376
192	16.00	0.63	0.494		0.117	(0.153)	0.377

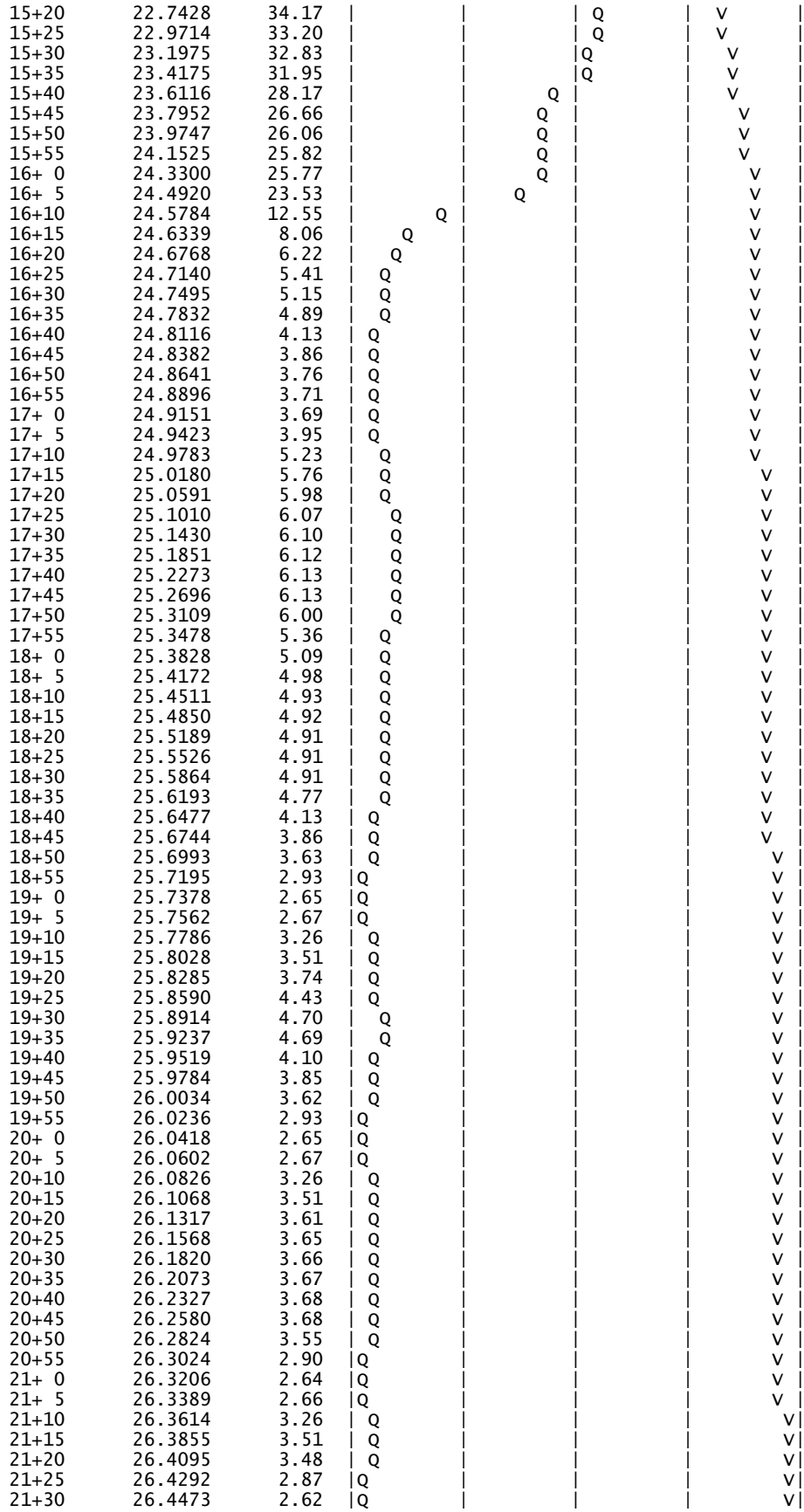
193	16.08	0.13	0.104	(0.117)	0.032	0.072
194	16.17	0.13	0.104	(0.116)	0.032	0.072
195	16.25	0.13	0.104	(0.115)	0.032	0.072
196	16.33	0.13	0.104	(0.115)	0.032	0.072
197	16.42	0.13	0.104	(0.114)	0.032	0.072
198	16.50	0.13	0.104	(0.114)	0.032	0.072
199	16.58	0.10	0.078	(0.113)	0.024	0.054
200	16.67	0.10	0.078	(0.113)	0.024	0.054
201	16.75	0.10	0.078	(0.112)	0.024	0.054
202	16.83	0.10	0.078	(0.111)	0.024	0.054
203	16.92	0.10	0.078	(0.111)	0.024	0.054
204	17.00	0.10	0.078	(0.110)	0.024	0.054
205	17.08	0.17	0.130	(0.110)	0.040	0.090
206	17.17	0.17	0.130	(0.109)	0.040	0.090
207	17.25	0.17	0.130	(0.109)	0.040	0.090
208	17.33	0.17	0.130	(0.108)	0.040	0.090
209	17.42	0.17	0.130	(0.108)	0.040	0.090
210	17.50	0.17	0.130	(0.107)	0.040	0.090
211	17.58	0.17	0.130	(0.106)	0.040	0.090
212	17.67	0.17	0.130	(0.106)	0.040	0.090
213	17.75	0.17	0.130	(0.105)	0.040	0.090
214	17.83	0.13	0.104	(0.105)	0.032	0.072
215	17.92	0.13	0.104	(0.104)	0.032	0.072
216	18.00	0.13	0.104	(0.104)	0.032	0.072
217	18.08	0.13	0.104	(0.103)	0.032	0.072
218	18.17	0.13	0.104	(0.103)	0.032	0.072
219	18.25	0.13	0.104	(0.102)	0.032	0.072
220	18.33	0.13	0.104	(0.102)	0.032	0.072
221	18.42	0.13	0.104	(0.101)	0.032	0.072
222	18.50	0.13	0.104	(0.101)	0.032	0.072
223	18.58	0.10	0.078	(0.100)	0.024	0.054
224	18.67	0.10	0.078	(0.100)	0.024	0.054
225	18.75	0.10	0.078	(0.099)	0.024	0.054
226	18.83	0.07	0.052	(0.099)	0.016	0.036
227	18.92	0.07	0.052	(0.098)	0.016	0.036
228	19.00	0.07	0.052	(0.098)	0.016	0.036
229	19.08	0.10	0.078	(0.098)	0.024	0.054
230	19.17	0.10	0.078	(0.097)	0.024	0.054
231	19.25	0.10	0.078	(0.097)	0.024	0.054
232	19.33	0.13	0.104	(0.096)	0.032	0.072
233	19.42	0.13	0.104	(0.096)	0.032	0.072
234	19.50	0.13	0.104	(0.095)	0.032	0.072
235	19.58	0.10	0.078	(0.095)	0.024	0.054
236	19.67	0.10	0.078	(0.094)	0.024	0.054
237	19.75	0.10	0.078	(0.094)	0.024	0.054
238	19.83	0.07	0.052	(0.094)	0.016	0.036
239	19.92	0.07	0.052	(0.093)	0.016	0.036
240	20.00	0.07	0.052	(0.093)	0.016	0.036
241	20.08	0.10	0.078	(0.092)	0.024	0.054
242	20.17	0.10	0.078	(0.092)	0.024	0.054
243	20.25	0.10	0.078	(0.092)	0.024	0.054
244	20.33	0.10	0.078	(0.091)	0.024	0.054
245	20.42	0.10	0.078	(0.091)	0.024	0.054
246	20.50	0.10	0.078	(0.090)	0.024	0.054
247	20.58	0.10	0.078	(0.090)	0.024	0.054
248	20.67	0.10	0.078	(0.090)	0.024	0.054
249	20.75	0.10	0.078	(0.089)	0.024	0.054
250	20.83	0.07	0.052	(0.089)	0.016	0.036
251	20.92	0.07	0.052	(0.089)	0.016	0.036
252	21.00	0.07	0.052	(0.088)	0.016	0.036
253	21.08	0.10	0.078	(0.088)	0.024	0.054
254	21.17	0.10	0.078	(0.087)	0.024	0.054
255	21.25	0.10	0.078	(0.087)	0.024	0.054
256	21.33	0.07	0.052	(0.087)	0.016	0.036
257	21.42	0.07	0.052	(0.086)	0.016	0.036
258	21.50	0.07	0.052	(0.086)	0.016	0.036
259	21.58	0.10	0.078	(0.086)	0.024	0.054
260	21.67	0.10	0.078	(0.086)	0.024	0.054
261	21.75	0.10	0.078	(0.085)	0.024	0.054
262	21.83	0.07	0.052	(0.085)	0.016	0.036
263	21.92	0.07	0.052	(0.085)	0.016	0.036
264	22.00	0.07	0.052	(0.084)	0.016	0.036
265	22.08	0.10	0.078	(0.084)	0.024	0.054
266	22.17	0.10	0.078	(0.084)	0.024	0.054
267	22.25	0.10	0.078	(0.084)	0.024	0.054

```
268  22.33     0.07      0.052       (  0.083)       0.016        0.036
269  22.42     0.07      0.052       (  0.083)       0.016        0.036
270  22.50     0.07      0.052       (  0.083)       0.016        0.036
271  22.58     0.07      0.052       (  0.083)       0.016        0.036
272  22.67     0.07      0.052       (  0.082)       0.016        0.036
273  22.75     0.07      0.052       (  0.082)       0.016        0.036
274  22.83     0.07      0.052       (  0.082)       0.016        0.036
275  22.92     0.07      0.052       (  0.082)       0.016        0.036
276  23.00     0.07      0.052       (  0.081)       0.016        0.036
277  23.08     0.07      0.052       (  0.081)       0.016        0.036
278  23.17     0.07      0.052       (  0.081)       0.016        0.036
279  23.25     0.07      0.052       (  0.081)       0.016        0.036
280  23.33     0.07      0.052       (  0.081)       0.016        0.036
281  23.42     0.07      0.052       (  0.081)       0.016        0.036
282  23.50     0.07      0.052       (  0.080)       0.016        0.036
283  23.58     0.07      0.052       (  0.080)       0.016        0.036
284  23.67     0.07      0.052       (  0.080)       0.016        0.036
285  23.75     0.07      0.052       (  0.080)       0.016        0.036
286  23.83     0.07      0.052       (  0.080)       0.016        0.036
287  23.92     0.07      0.052       (  0.080)       0.016        0.036
288  24.00     0.07      0.052       (  0.080)       0.016        0.036
               (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    57.4
      Flood volume = Effective rainfall      4.78(In)
       times area      67.8(Ac.)/[(In)/(Ft.)] =      27.0(Ac.Ft)
      Total soil loss =      1.71(In)
      Total soil loss =     9.689(Ac.Ft)
      Total rainfall =      6.50(In)
      Flood volume =     1177478.0 Cubic Feet
      Total soil loss =      422051.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     50.896(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0018      0.26  Q         |         |         |         |
  0+10       0.0125      1.55  VQ        |         |         |         |
  0+15       0.0268      2.08  VQ        |         |         |         |
  0+20       0.0436      2.43  VQ        |         |         |         |
  0+25       0.0654      3.17  V Q       |         |         |         |
  0+30       0.0892      3.46  V Q       |         |         |         |
  0+35       0.1140      3.59  V Q       |         |         |         |
  0+40       0.1391      3.65  V Q       |         |         |         |
  0+45       0.1643      3.66  V Q       |         |         |         |
  0+50       0.1905      3.80  V Q       |         |         |         |
  0+55       0.2212      4.45  V Q       |         |         |         |
  1+ 0       0.2537      4.72  V  Q      |         |         |         |
  1+ 5       0.2860      4.70  V  Q      |         |         |         |
  1+10       0.3143      4.10  V Q       |         |         |         |
  1+15       0.3408      3.85  V Q       |         |         |         |
  1+20       0.3666      3.75  V Q       |         |         |         |
  1+25       0.3922      3.71  V Q       |         |         |         |
  1+30       0.4176      3.69  V Q       |         |         |         |
  1+35       0.4430      3.69  V Q       |         |         |         |
  1+40       0.4683      3.68  V Q       |         |         |         |
  1+45       0.4937      3.68  V Q       |         |         |         |
  1+50       0.5199      3.81  V Q       |         |         |         |
  1+55       0.5506      4.45  V Q       |         |         |         |
  2+ 0       0.5831      4.72  V  Q      |         |         |         |
  2+ 5       0.6163      4.83  V  Q      |         |         |         |
  2+10       0.6499      4.88  V  Q      |         |         |         |
  2+15       0.6836      4.89  |V Q       |         |         |         |
  2+20       0.7173      4.90  |V Q       |         |         |         |
  2+25       0.7511      4.91  |V Q       |         |         |         |
  2+30       0.7849      4.91  |V Q       |         |         |         |
  2+35       0.8196      5.04  |V Q       |         |         |         |
  2+40       0.8587      5.68  |V Q       |         |         |         |
  2+45       0.8997      5.95  |V Q       |         |         |         |
```

2+50	0.9413	6.05	V Q			
2+55	0.9834	6.10	V Q			
3+ 0	1.0255	6.12	V Q			
3+ 5	1.0677	6.12	V Q			
3+10	1.1099	6.13	V Q			
3+15	1.1521	6.13	V Q			
3+20	1.1944	6.13	V Q			
3+25	1.2366	6.13	V Q			
3+30	1.2788	6.13	V Q			
3+35	1.3211	6.13	V Q			
3+40	1.3633	6.13	V Q			
3+45	1.4055	6.13	V Q			
3+50	1.4486	6.26	V Q			
3+55	1.4962	6.91	V Q			
4+ 0	1.5456	7.17	V Q			
4+ 5	1.5957	7.28	V Q			
4+10	1.6462	7.33	V Q			
4+15	1.6968	7.34	V Q			
4+20	1.7483	7.48	V Q			
4+25	1.8043	8.13	V Q			
4+30	1.8622	8.40	V Q			
4+35	1.9208	8.51	V Q			
4+40	1.9797	8.55	V Q			
4+45	2.0387	8.57	V Q			
4+50	2.0987	8.71	V Q			
4+55	2.1631	9.36	V Q			
5+ 0	2.2294	9.62	V Q			
5+ 5	2.2946	9.47	V Q			
5+10	2.3513	8.23	V Q			
5+15	2.4045	7.72	V Q			
5+20	2.4571	7.64	V Q			
5+25	2.5135	8.19	V Q			
5+30	2.5715	8.43	V Q			
5+35	2.6311	8.65	V Q			
5+40	2.6954	9.33	V Q			
5+45	2.7616	9.61	V Q			
5+50	2.8285	9.73	V Q			
5+55	2.8959	9.78	V Q			
6+ 0	2.9634	9.80	V Q			
6+ 5	3.0318	9.94	V Q			
6+10	3.1047	10.59	V Q			
6+15	3.1794	10.85	V Q			
6+20	3.2549	10.96	V Q			
6+25	3.3307	11.01	V Q			
6+30	3.4066	11.02	V Q			
6+35	3.4835	11.16	V Q			
6+40	3.5648	11.81	V Q			
6+45	3.6480	12.08	V Q			
6+50	3.7319	12.19	V Q			
6+55	3.8162	12.23	V Q			
7+ 0	3.9006	12.25	V Q			
7+ 5	3.9850	12.26	V Q			
7+10	4.0694	12.26	V Q			
7+15	4.1539	12.26	V Q			
7+20	4.2392	12.39	V Q			
7+25	4.3290	13.04	V Q			
7+30	4.4207	13.30	V Q			
7+35	4.5139	13.54	V Q			
7+40	4.6120	14.24	V Q			
7+45	4.7119	14.52	V Q			
7+50	4.8136	14.76	V Q			
7+55	4.9201	15.46	V Q			
8+ 0	5.0285	15.74	V Q			
8+ 5	5.1395	16.12	V Q			
8+10	5.2598	17.46	V Q			
8+15	5.3838	18.01	V Q			
8+20	5.5094	18.23	V Q			
8+25	5.6357	18.34	V Q			
8+30	5.7622	18.37	V Q			
8+35	5.8897	18.51	V Q			
8+40	6.0217	19.17	V Q			
8+45	6.1555	19.43	V Q			
8+50	6.2910	19.67	V Q			
8+55	6.4313	20.37	V Q			
9+ 0	6.5735	20.65	V Q			





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   21+35      26.4656      2.66  |Q        |         |         |        v|
   21+40      26.4880      3.26  | Q       |         |         |        v|
   21+45      26.5122      3.51  | Q       |         |         |        v|
   21+50      26.5361      3.48  | Q       |         |         |        v|
   21+55      26.5559      2.87  |Q        |         |         |        v|
   22+ 0      26.5740      2.62  |Q        |         |         |        v|
   22+ 5      26.5923      2.66  |Q        |         |         |        v|
   22+10      26.6147      3.26  | Q       |         |         |        v|
   22+15      26.6389      3.51  | Q       |         |         |        v|
   22+20      26.6628      3.48  | Q       |         |         |        v|
   22+25      26.6826      2.87  |Q        |         |         |        v|
   22+30      26.7007      2.62  |Q        |         |         |        v|
   22+35      26.7181      2.52  |Q        |         |         |        v|
   22+40      26.7352      2.48  |Q        |         |         |        v|
   22+45      26.7521      2.47  |Q        |         |         |        v|
   22+50      26.7691      2.46  |Q        |         |         |        v|
   22+55      26.7860      2.45  |Q        |         |         |        v|
   23+ 0      26.8029      2.45  |Q        |         |         |        v|
   23+ 5      26.8198      2.45  |Q        |         |         |        v|
   23+10      26.8367      2.45  |Q        |         |         |        v|
   23+15      26.8535      2.45  |Q        |         |         |        v|
   23+20      26.8704      2.45  |Q        |         |         |        v|
   23+25      26.8873      2.45  |Q        |         |         |        v|
   23+30      26.9042      2.45  |Q        |         |         |        v|
   23+35      26.9211      2.45  |Q        |         |         |        v|
   23+40      26.9380      2.45  |Q        |         |         |        v|
   23+45      26.9549      2.45  |Q        |         |         |        v|
   23+50      26.9718      2.45  |Q        |         |         |        v|
   23+55      26.9887      2.45  |Q        |         |         |        v|
   24+ 0      27.0056      2.45  |Q        |         |         |        v|
   24+ 5      27.0206      2.19  |Q        |         |         |        v|
   24+10      27.0268      0.90  Q         |         |         |        v|
   24+15      27.0294      0.37  Q         |         |         |        v|
   24+20      27.0305      0.16  Q         |         |         |        v|
   24+25      27.0309      0.06  Q         |         |         |        v|
   24+30      27.0311      0.03  Q         |         |         |        v|
   24+35      27.0312      0.01  Q         |         |         |        v|
-------------------------------------------------------------------------
```

STAGE-STORAGE/OUTFLOW TABLE

Building 2 Basin - Stage/Storage/Outflow Table

W.O.# 21-0044

Basin Information: Infiltration Basin		5-Year	WEIR	10-Year	WEIR	100-Year	WEIR	Infiltration*		
Tributary Area:	71.8 ac	Q EXISTING	8.8	Q EXISTING	18.2	Q Existing	34.5	I	11.5	IN/HR
DCV=	144,000 CF									
Bottom Elevation:	2450.00 FT	L(ft)	6	L(ft)	6	L(ft)	6	FS	3	
		C	3	C	3	C	3	Q	9.4	CFS
Bottom Area:	106,388 SF									
Bottom Slope:	0 %									
Constant Infiltration:	9.4 cfs									
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$										
Q_{WEIR}= C*L*H$^{3/2}$										
		Invert H (ft)	1.4	Invert H (ft)	2.15	Invert H (ft)	3.36			

#	Elevation (ft)	Depth (ft)	Basin Volume (cf)	Total Storage (ac-ft)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	5 Year (No infiltration) Total Q (cfs)	10 Year (No infiltration) Total Q (cfs)	100 Year (No infiltration) Total Q (cfs)	Total w/ Infiltration Total Q (cfs)	Comments
1	**2450**	**0**	**0.00**	**0.000**								**9.40**	**0.00**	**0.00**	**0.00**	**9.40**	**Bottom of Basin**
2	**2451.4**	**1.4**	**63102.96**	**1.449**								**9.40**	**0.00**	**0.00**	**0.00**	**9.40**	**Vbmp Ponding**
3	2451.5	1.5	67392.92	1.547								9.40	0.00	0.00	0.00	9.40	
4	2452	2	89262.48	2.049								9.40	0.00	0.00	0.00	9.40	
5	**2452.15**	**2.15**	**95906.28**	**2.202**	**0**							**9.40**	**0.00**	**0.00**	**0.00**	**9.40**	**Top of 2-Yr Ponding/Inv of 5-Yr**
6	2452.5	2.5	111408.49	2.558	0.35	3.73						9.40	3.73	3.73	3.73	13.13	
7	**2452.67**	**2.67**	**118844.14**	**2.728**	**0.52**	**6.75**	**0.000**					**9.40**	**6.75**	**6.75**	**6.75**	**16.15**	**Top of 5-Yr Ponding/Inv of 10-Yr**
8	**2452.98**	**2.98**	**132403.2707**	**3.040**	**0.83**	**13.61**	**0.310**	**3.11**	**0**			**9.40**	**13.61**	**16.72**	**16.72**	**26.12**	**Top of 10-Yr Ponding/Inv of 100-Yr**
9	2453	3	133278.05	3.060	0.85	14.11	0.330	3.41	0.02	0.05		9.40	14.11	17.52	17.57	26.97	
10	**2453.36**	**3.36**	**148392.6889**	**3.407**	**1.21**	**23.96**	**0.690**	**10.32**	**0.38**	**4.22**		**9.40**	**23.96**	**34.27**	**38.49**	**47.89**	**Top of 100-Yr Ponding**
11	2453.5	3.5	154270.60	3.542	1.35	28.23	0.830	13.61	0.52	6.75		9.40	28.23	41.85	48.59	57.99	
12	2454	4	173586.62	3.985	1.85	45.29	1.330	27.61	1.02	18.54		9.40	45.29	72.90	91.44	100.84	
13	2454.5	4.5	189486.72	4.350	2.35	64.84	1.830	44.56	1.52	33.73		9.40	64.84	109.41	143.14	152.54	
14	**2455**	**5**	**200670.97**	**4.607**	**2.85**	**86.60**	**2.330**	**64.02**	**2.02**	**51.68**		**9.40**	**86.60**	**150.62**	**202.30**	**211.70**	**Top of Basin**

H:\2021\21-0044\Drainage\HYD\Hydrology\Unit Hydrograph\[21-0044 UH Inputs and Stage Storage 2022-02-16.xlsx]O&W Bldg 2 Basin 2022-04-07

NOTE *:*

**A constant infiltration Q of 9.4 cfs is assumed within the basin extents. This value is based on the infiltration rate of 11.5 in/hr, the bottom area of 106,388 sf, and a Factor of Safety of 3.*

BASIN ROUTING
2-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

BSS BUILDING 2
2-YR 24 HR STORM EVENT
21-0044
2022-04-11 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: SOUTH2YR242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 16.008 (CFS)
Total volume = 9.745 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.400	1.449	9.400	1.417	1.481
1.500	1.547	9.400	1.515	1.579
2.000	2.049	9.400	2.017	2.081
2.500	2.558	9.400	2.526	2.590
3.000	3.060	9.400	3.028	3.092
3.500	3.542	9.400	3.510	3.574
4.000	3.985	9.400	3.953	4.017
4.500	4.350	9.400	4.318	4.382
5.000	4.607	9.400	4.575	4.639

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	4.0	8.00	12.01	16.01 (Ft.) Depth
0.083	0.10	0.00	0.000	O	|	|	|	0.00

0.167	0.60	0.02	0.003	OI	|	|	|	0.00
0.250	0.80	0.05	0.007	OI	|	|	|	0.01
0.333	0.93	0.08	0.013	OI	|	|	|	0.01
0.417	1.22	0.13	0.019	O I	|	|	|	0.02
0.500	1.33	0.18	0.027	O I	|	|	|	0.03
0.583	1.38	0.23	0.035	O I	|	|	|	0.03
0.667	1.40	0.28	0.043	O I	|	|	|	0.04
0.750	1.41	0.33	0.051	O I	|	|	|	0.05
0.833	1.46	0.38	0.058	O I	|	|	|	0.06
0.917	1.71	0.43	0.066	O I	|	|	|	0.06
1.000	1.82	0.49	0.075	O I	|	|	|	0.07
1.083	1.81	0.55	0.084	|O I	|	|	|	0.08
1.167	1.58	0.60	0.092	|O I	|	|	|	0.09
1.250	1.48	0.64	0.098	|OI	|	|	|	0.09
1.333	1.44	0.67	0.104	|OI	|	|	|	0.10
1.417	1.43	0.71	0.109	|OI	|	|	|	0.11
1.500	1.42	0.74	0.114	|OI	|	|	|	0.11
1.583	1.42	0.77	0.118	|OI	|	|	|	0.11
1.667	1.41	0.80	0.123	|OI	|	|	|	0.12
1.750	1.41	0.82	0.127	|OI	|	|	|	0.12
1.833	1.47	0.85	0.131	|OI	|	|	|	0.13
1.917	1.71	0.88	0.136	|O I	|	|	|	0.13
2.000	1.82	0.92	0.142	|O I	|	|	|	0.14
2.083	1.86	0.96	0.148	|O I	|	|	|	0.14
2.167	1.88	1.00	0.154	|O I	|	|	|	0.15
2.250	1.88	1.04	0.160	| OI	|	|	|	0.15
2.333	1.88	1.08	0.166	| OI	|	|	|	0.16
2.417	1.89	1.11	0.171	| OI	|	|	|	0.17
2.500	1.89	1.14	0.176	| OI	|	|	|	0.17
2.583	1.94	1.18	0.182	| OI	|	|	|	0.18
2.667	2.19	1.22	0.188	| O I	|	|	|	0.18
2.750	2.29	1.26	0.194	| O I	|	|	|	0.19
2.833	2.33	1.31	0.201	| O I	|	|	|	0.19
2.917	2.35	1.35	0.208	| O I	|	|	|	0.20
3.000	2.35	1.40	0.215	| O I	|	|	|	0.21
3.083	2.36	1.44	0.222	| O I	|	|	|	0.21
3.167	2.36	1.48	0.228	| O I	|	|	|	0.22
3.250	2.36	1.52	0.234	| OI	|	|	|	0.23
3.333	2.36	1.55	0.239	| OI	|	|	|	0.23
3.417	2.36	1.59	0.245	| OI	|	|	|	0.24
3.500	2.36	1.62	0.250	| OI	|	|	|	0.24
3.583	2.36	1.65	0.255	| OI	|	|	|	0.25
3.667	2.36	1.68	0.260	| OI	|	|	|	0.25
3.750	2.36	1.71	0.264	| OI	|	|	|	0.26
3.833	2.41	1.74	0.269	| OI	|	|	|	0.26
3.917	2.66	1.78	0.274	| O I	|	|	|	0.26
4.000	2.76	1.82	0.280	| O I	|	|	|	0.27
4.083	2.80	1.86	0.287	| O I	|	|	|	0.28
4.167	2.82	1.90	0.293	| O I	|	|	|	0.28
4.250	2.82	1.94	0.299	| O I	|	|	|	0.29
4.333	2.88	1.98	0.306	| O I	|	|	|	0.30
4.417	3.13	2.03	0.312	| O I	|	|	|	0.30
4.500	3.23	2.08	0.320	| O I	|	|	|	0.31
4.583	3.27	2.13	0.328	| O I	|	|	|	0.32
4.667	3.29	2.18	0.336	| O I	|	|	|	0.32
4.750	3.30	2.23	0.343	| O I	|	|	|	0.33
4.833	3.35	2.28	0.351	| O I	|	|	|	0.34
4.917	3.60	2.33	0.359	| O I|	|	|	|	0.35
5.000	3.70	2.39	0.368	| O I|	|	|	|	0.36
5.083	3.64	2.44	0.376	| O I|	|	|	|	0.36
5.167	3.16	2.48	0.383	| O I	|	|	|	0.37
5.250	2.97	2.51	0.387	| O	|	|	|	0.37
5.333	2.94	2.53	0.390	| O	|	|	|	0.38
5.417	3.15	2.55	0.393	| OI	|	|	|	0.38
5.500	3.24	2.58	0.398	| OI	|	|	|	0.38
5.583	3.33	2.61	0.402	| OI	|	|	|	0.39
5.667	3.59	2.65	0.408	| O I|	|	|	|	0.39
5.750	3.70	2.69	0.415	| O I|	|	|	|	0.40
5.833	3.74	2.74	0.422	| O I|	|	|	|	0.41
5.917	3.76	2.78	0.429	| O I|	|	|	|	0.41
6.000	3.77	2.82	0.435	| O I|	|	|	|	0.42
6.083	3.82	2.87	0.442	| O I|	|	|	|	0.43
6.167	4.07	2.91	0.449	| O I	|	|	|	0.43
6.250	4.17	2.97	0.457	| O I	|	|	|	0.44
6.333	4.22	3.02	0.465	| O I	|	|	|	0.45

6.417	4.23	3.07	0.474	o I				0.46
6.500	4.24	3.12	0.481	o I				0.47
6.583	4.29	3.17	0.489	o I				0.47
6.667	4.54	3.23	0.497	o |I				0.48
6.750	4.65	3.29	0.507	o |I				0.49
6.833	4.69	3.35	0.516	o |I				0.50
6.917	4.71	3.41	0.525	o |I				0.51
7.000	4.71	3.46	0.534	o |I				0.52
7.083	4.71	3.52	0.542	o|I				0.52
7.167	4.72	3.57	0.550	o|I				0.53
7.250	4.72	3.62	0.558	o|I				0.54
7.333	4.77	3.67	0.566	o|I				0.55
7.417	5.02	3.72	0.574	o| I				0.55
7.500	5.12	3.78	0.583	o| I				0.56
7.583	5.21	3.84	0.592	o| I				0.57
7.667	5.48	3.91	0.602	o| I				0.58
7.750	5.58	3.98	0.613	o| I				0.59
7.833	5.68	4.05	0.624	o I				0.60
7.917	5.95	4.13	0.636	o I				0.61
8.000	6.05	4.21	0.649	o I				0.63
8.083	6.20	4.29	0.662	o I				0.64
8.167	6.72	4.39	0.676	o I				0.65
8.250	6.93	4.49	0.693	o I				0.67
8.333	7.01	4.60	0.709	|o I				0.69
8.417	7.05	4.71	0.726	|o I				0.70
8.500	7.06	4.81	0.742	|o I				0.72
8.583	7.12	4.91	0.757	|o I				0.73
8.667	7.37	5.01	0.773	| o I				0.75
8.750	7.47	5.12	0.789	| o I				0.76
8.833	7.57	5.22	0.805	| o I|			0.78
8.917	7.83	5.33	0.822	| o I|			0.79
9.000	7.94	5.44	0.839	| o I|			0.81
9.083	8.09	5.56	0.856	| o I				0.83
9.167	8.60	5.68	0.875	| o |I				0.85
9.250	8.81	5.81	0.896	| o |I				0.87
9.333	8.95	5.94	0.916	| o |I				0.89
9.417	9.24	6.08	0.937	| o | I				0.91
9.500	9.35	6.22	0.959	| o | I				0.93
9.583	9.45	6.36	0.981	| o | I				0.95
9.667	9.72	6.50	1.002	| o | I				0.97
9.750	9.83	6.64	1.024	| o | I				0.99
9.833	9.92	6.79	1.046	| o | I				1.01
9.917	10.19	6.93	1.068	| o | I				1.03
10.000	10.30	7.07	1.090	| o | I				1.05
10.083	9.99	7.21	1.111	| o | I				1.07
10.167	8.28	7.29	1.124	| o I				1.09
10.250	7.57	7.32	1.128	| oI|			1.09
10.333	7.28	7.32	1.129	| o |			1.09
10.417	7.15	7.32	1.128	| o |			1.09
10.500	7.11	7.31	1.127	| o |			1.09
10.583	7.35	7.31	1.127	| o |			1.09
10.667	8.57	7.34	1.131	| o |I				1.09
10.750	9.08	7.40	1.141	| o | I				1.10
10.833	9.28	7.48	1.153	| o | I				1.11
10.917	9.38	7.56	1.165	| o| I				1.13
11.000	9.41	7.64	1.178	| o| I				1.14
11.083	9.37	7.72	1.189	| o| I				1.15
11.167	9.13	7.78	1.200	| o| I				1.16
11.250	9.03	7.84	1.209	| o| I				1.17
11.333	8.99	7.89	1.216	| o|I				1.18
11.417	8.97	7.94	1.224	| o|I				1.18
11.500	8.97	7.98	1.231	| o|I				1.19
11.583	8.86	8.02	1.237	| oI				1.20
11.667	8.36	8.05	1.241	| o				1.20
11.750	8.16	8.06	1.242	| o				1.20
11.833	8.13	8.06	1.243	| o				1.20
11.917	8.34	8.07	1.244	| o				1.20
12.000	8.43	8.08	1.246	| o				1.20
12.083	8.82	8.11	1.250	| oI				1.21
12.167	10.57	8.18	1.261	| o I				1.22
12.250	11.29	8.30	1.279	| o I				1.24
12.333	11.63	8.44	1.300	| o I|			1.26
12.417	12.01	8.58	1.323	| |o I				1.28
12.500	12.15	8.74	1.347	| |o I				1.30
12.583	12.32	8.89	1.370	| |o I				1.32

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12.667   12.85    9.05      1.395  |        |        | o     |I      |     1.35
12.750   13.06    9.22      1.421  |        |        | o     | I     |     1.37
12.833   13.19    9.39      1.448  |        |        | o     | I     |     1.40
12.917   13.48    9.40      1.475  |        |        | o     | I     |     1.43
13.000   13.60    9.40      1.503  |        |        | o     |  I    |     1.46
13.083   13.90    9.40      1.533  |        |        | o     |  I    |     1.49
13.167   15.16    9.40      1.569  |        |        | o     |     I |     1.52
13.250   15.67    9.40      1.610  |        |        | o     |      I|     1.56
13.333   15.88    9.40      1.654  |        |        | o     |      I|     1.61
13.417   15.98    9.40      1.699  |        |        | o     |      I|     1.65
13.500   16.01    9.40      1.744  |        |        | o     |       I     1.70
13.583   15.47    9.40      1.788  |        |        | o     |     I |     1.74
13.667   12.75    9.40      1.821  |        |        | o     |I      |     1.77
13.750   11.63    9.40      1.840  |        |        | o    I|       |     1.79
13.833   11.18    9.40      1.854  |        |        | o   I |       |     1.81
13.917   10.97    9.40      1.865  |        |        | o  I  |       |     1.82
14.000   10.91    9.40      1.876  |        |        | o  I  |       |     1.83
14.083   11.08    9.40      1.887  |        |        | o   I |       |     1.84
14.167   12.04    9.40      1.902  |        |        | o     I       |     1.85
14.250   12.45    9.40      1.921  |        |        | o     I       |     1.87
14.333   12.56    9.40      1.943  |        |        | o     |I      |     1.89
14.417   12.39    9.40      1.964  |        |        | o     I       |     1.92
14.500   12.31    9.40      1.984  |        |        | o     I       |     1.94
14.583   12.28    9.40      2.004  |        |        | o     I       |     1.96
14.667   12.27    9.40      2.024  |        |        | o     I       |     1.97
14.750   12.27    9.40      2.044  |        |        | o     I       |     1.99
14.833   12.21    9.40      2.063  |        |        | o     I       |     2.01
14.917   11.96    9.40      2.082  |        |        | o    I|       |     2.03
15.000   11.86    9.40      2.099  |        |        | o    I|       |     2.05
15.083   11.77    9.40      2.116  |        |        | o    I|       |     2.07
15.167   11.50    9.40      2.131  |        |        | o   I |       |     2.08
15.250   11.40    9.40      2.145  |        |        | o   I |       |     2.09
15.333   11.30    9.40      2.159  |        |        | o   I |       |     2.11
15.417   11.03    9.40      2.171  |        |        | o   I |       |     2.12
15.500   10.93    9.40      2.182  |        |        | o  I  |       |     2.13
15.583   10.68    9.40      2.191  |        |        | o  I  |       |     2.14
15.667    9.67    9.40      2.197  |        |        | oI    |       |     2.15
15.750    9.25    9.40      2.197  |        |        | o     |       |     2.15
15.833    9.08    9.40      2.195  |        |        | o     |       |     2.14
15.917    9.01    9.40      2.193  |        |        | o     |       |     2.14
16.000    8.98    9.40      2.190  |        |        |Io     |       |     2.14
16.083    8.21    9.40      2.185  |        |       I o     |       |     2.13
16.167    4.48    9.40      2.164  |       I|       | o     |       |     2.11
16.250    2.96    9.40      2.125  |    I   |       | o     |       |     2.07
16.333    2.33    9.40      2.078  |   I    |       | o     |       |     2.03
16.417    2.06    9.40      2.028  |   I    |       | o     |       |     1.98
16.500    1.97    9.40      1.978  |  I     |       | o     |       |     1.93
16.583    1.87    9.40      1.926  |  I     |       | o     |       |     1.88
16.667    1.59    9.40      1.873  |  I     |       | o     |       |     1.83
16.750    1.49    9.40      1.819  | I      |       | o     |       |     1.77
16.833    1.44    9.40      1.765  | I      |       | o     |       |     1.72
16.917    1.43    9.40      1.710  | I      |       | o     |       |     1.66
17.000    1.42    9.40      1.655  | I      |       | o     |       |     1.61
17.083    1.52    9.40      1.600  |  I     |       | o     |       |     1.55
17.167    2.01    9.40      1.548  |   I    |       | o     |       |     1.50
17.250    2.22    9.40      1.497  |   I    |       | o     |       |     1.45
17.333    2.30    9.39      1.448  |   I    |       | o     |       |     1.40
17.417    2.34    9.09      1.400  |   I    |       | o     |       |     1.35
17.500    2.35    8.79      1.355  |   I    |       |o      |       |     1.31
17.583    2.35    8.51      1.312  |   I    |       |o      |       |     1.27
17.667    2.36    8.24      1.270  |   I    |      o        |       |     1.23
17.750    2.36    7.98      1.231  |   I    |      o|       |       |     1.19
17.833    2.31    7.74      1.193  |   I    |      o|       |       |     1.15
17.917    2.06    7.49      1.155  |   I    |     o |       |       |     1.12
18.000    1.96    7.25      1.118  |  I     |     o |       |       |     1.08
18.083    1.92    7.02      1.082  |  I     |     o |       |       |     1.05
18.167    1.90    6.80      1.048  |  I     |    o  |       |       |     1.01
18.250    1.89    6.58      1.015  |  I     |    o  |       |       |     0.98
18.333    1.89    6.38      0.983  |  I     |   o   |       |       |     0.95
18.417    1.89    6.18      0.953  |  I     |   o   |       |       |     0.92
18.500    1.89    5.99      0.924  |  I     |  o    |       |       |     0.89
18.583    1.84    5.81      0.896  |  I     |  o    |       |       |     0.87
18.667    1.59    5.63      0.869  |  I     |  o    |       |       |     0.84
18.750    1.49    5.46      0.841  | I      | o     |       |       |     0.81
18.833    1.39    5.28      0.814  | I      | o     |       |       |     0.79
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18.917	1.13	5.10	0.787	I	O			0.76
19.000	1.02	4.93	0.760	I	O			0.73
19.083	1.03	4.76	0.733	I	O			0.71
19.167	1.25	4.60	0.709	I	O			0.69
19.250	1.35	4.46	0.687	I	O			0.66
19.333	1.44	4.32	0.666	I	O			0.64
19.417	1.70	4.20	0.648	I	O			0.63
19.500	1.81	4.09	0.631	I	O			0.61
19.583	1.80	3.99	0.616	I	O			0.59
19.667	1.58	3.89	0.600	I	O			0.58
19.750	1.48	3.79	0.584	I	O			0.56
19.833	1.39	3.69	0.568	I	O			0.55
19.917	1.13	3.58	0.552	I	O			0.53
20.000	1.02	3.47	0.535	I	O			0.52
20.083	1.03	3.36	0.519	I	O			0.50
20.167	1.25	3.27	0.504	I	O			0.49
20.250	1.35	3.18	0.490	I	O			0.47
20.333	1.39	3.10	0.478	I	O			0.46
20.417	1.40	3.03	0.467	I	O			0.45
20.500	1.41	2.96	0.456	I	O			0.44
20.583	1.41	2.89	0.445	I	O			0.43
20.667	1.41	2.83	0.435	I	O			0.42
20.750	1.41	2.76	0.426	I	O			0.41
20.833	1.36	2.70	0.417	I	O			0.40
20.917	1.12	2.64	0.407	I	O			0.39
21.000	1.01	2.57	0.396	I	O			0.38
21.083	1.02	2.50	0.386	I	O			0.37
21.167	1.25	2.44	0.377	I	O			0.36
21.250	1.35	2.39	0.369	I	O			0.36
21.333	1.34	2.35	0.362	I	O			0.35
21.417	1.11	2.30	0.354	I	O			0.34
21.500	1.01	2.24	0.346	I	O			0.33
21.583	1.02	2.19	0.338	I	O			0.33
21.667	1.25	2.14	0.331	I	O			0.32
21.750	1.35	2.11	0.325	I	O			0.31
21.833	1.34	2.07	0.320	I	O			0.31
21.917	1.11	2.04	0.314	I	O			0.30
22.000	1.01	1.99	0.307	I	O			0.30
22.083	1.02	1.95	0.301	I	O			0.29
22.167	1.25	1.92	0.295	I	O			0.29
22.250	1.35	1.89	0.291	I	O			0.28
22.333	1.34	1.86	0.287	I	O			0.28
22.417	1.11	1.84	0.283	I	O			0.27
22.500	1.01	1.80	0.278	I	O			0.27
22.583	0.97	1.77	0.272	I	O			0.26
22.667	0.95	1.73	0.267	I	O			0.26
22.750	0.95	1.70	0.262	I	O			0.25
22.833	0.95	1.67	0.257	I	O			0.25
22.917	0.94	1.63	0.252	I	O			0.24
23.000	0.94	1.60	0.247	I	O			0.24
23.083	0.94	1.57	0.243	I	O			0.23
23.167	0.94	1.55	0.238	I	O			0.23
23.250	0.94	1.52	0.234	I	O			0.23
23.333	0.94	1.50	0.231	I	O			0.22
23.417	0.94	1.47	0.227	I	O			0.22
23.500	0.94	1.45	0.223	I	O			0.22
23.583	0.94	1.43	0.220	I	O			0.21
23.667	0.94	1.41	0.217	I	O			0.21
23.750	0.94	1.38	0.213	I	O			0.21
23.833	0.94	1.37	0.210	I	O			0.20
23.917	0.94	1.35	0.208	I	O			0.20
24.000	0.94	1.33	0.205	I	O			0.20
24.083	0.84	1.31	0.202	I	O			0.20
24.167	0.35	1.28	0.197	I	O			0.19
24.250	0.14	1.23	0.190	I	O			0.18
24.333	0.06	1.18	0.183	I	O			0.18
24.417	0.02	1.13	0.175	I	O			0.17
24.500	0.01	1.09	0.167	I	O			0.16
24.583	0.01	1.04	0.160	I	O			0.15
24.667	0.00	0.99	0.153	I	O			0.15
24.750	0.00	0.95	0.146	I	O			0.14
24.833	0.00	0.91	0.140	I	O			0.14
24.917	0.00	0.87	0.134	I	O			0.13
25.000	0.00	0.83	0.128	I	O			0.12
25.083	0.00	0.79	0.122	I	O			0.12

25.167	0.00	0.76	0.117	IO	|	|	|	|	0.11
25.250	0.00	0.73	0.112	IO	|	|	|	|	0.11
25.333	0.00	0.69	0.107	IO	|	|	|	|	0.10
25.417	0.00	0.66	0.102	IO	|	|	|	|	0.10
25.500	0.00	0.64	0.098	IO	|	|	|	|	0.09
25.583	0.00	0.61	0.094	IO	|	|	|	|	0.09
25.667	0.00	0.58	0.090	IO	|	|	|	|	0.09
25.750	0.00	0.56	0.086	IO	|	|	|	|	0.08
25.833	0.00	0.53	0.082	IO	|	|	|	|	0.08
25.917	0.00	0.51	0.078	IO	|	|	|	|	0.08
26.000	0.00	0.49	0.075	O	|	|	|	|	0.07
26.083	0.00	0.46	0.072	O	|	|	|	|	0.07
26.167	0.00	0.44	0.068	O	|	|	|	|	0.07
26.250	0.00	0.42	0.066	O	|	|	|	|	0.06
26.333	0.00	0.41	0.063	O	|	|	|	|	0.06
26.417	0.00	0.39	0.060	O	|	|	|	|	0.06
26.500	0.00	0.37	0.057	O	|	|	|	|	0.06
26.583	0.00	0.36	0.055	O	|	|	|	|	0.05
26.667	0.00	0.34	0.052	O	|	|	|	|	0.05
26.750	0.00	0.33	0.050	O	|	|	|	|	0.05
26.833	0.00	0.31	0.048	O	|	|	|	|	0.05
26.917	0.00	0.30	0.046	O	|	|	|	|	0.04
27.000	0.00	0.28	0.044	O	|	|	|	|	0.04
27.083	0.00	0.27	0.042	O	|	|	|	|	0.04
27.167	0.00	0.26	0.040	O	|	|	|	|	0.04
27.250	0.00	0.25	0.038	O	|	|	|	|	0.04
27.333	0.00	0.24	0.037	O	|	|	|	|	0.04
27.417	0.00	0.23	0.035	O	|	|	|	|	0.03
27.500	0.00	0.22	0.034	O	|	|	|	|	0.03
27.583	0.00	0.21	0.032	O	|	|	|	|	0.03
27.667	0.00	0.20	0.031	O	|	|	|	|	0.03
27.750	0.00	0.19	0.029	O	|	|	|	|	0.03
27.833	0.00	0.18	0.028	O	|	|	|	|	0.03
27.917	0.00	0.17	0.027	O	|	|	|	|	0.03
28.000	0.00	0.17	0.026	O	|	|	|	|	0.02
28.083	0.00	0.16	0.025	O	|	|	|	|	0.02
28.167	0.00	0.15	0.023	O	|	|	|	|	0.02
28.250	0.00	0.15	0.022	O	|	|	|	|	0.02
28.333	0.00	0.14	0.021	O	|	|	|	|	0.02
28.417	0.00	0.13	0.020	O	|	|	|	|	0.02
28.500	0.00	0.13	0.020	O	|	|	|	|	0.02
28.583	0.00	0.12	0.019	O	|	|	|	|	0.02
28.667	0.00	0.12	0.018	O	|	|	|	|	0.02
28.750	0.00	0.11	0.017	O	|	|	|	|	0.02
28.833	0.00	0.11	0.016	O	|	|	|	|	0.02
28.917	0.00	0.10	0.016	O	|	|	|	|	0.02
29.000	0.00	0.10	0.015	O	|	|	|	|	0.01
29.083	0.00	0.09	0.014	O	|	|	|	|	0.01
29.167	0.00	0.09	0.014	O	|	|	|	|	0.01
29.250	0.00	0.09	0.013	O	|	|	|	|	0.01
29.333	0.00	0.08	0.013	O	|	|	|	|	0.01
29.417	0.00	0.08	0.012	O	|	|	|	|	0.01
29.500	0.00	0.07	0.011	O	|	|	|	|	0.01
29.583	0.00	0.07	0.011	O	|	|	|	|	0.01
29.667	0.00	0.07	0.010	O	|	|	|	|	0.01
29.750	0.00	0.07	0.010	O	|	|	|	|	0.01
29.833	0.00	0.06	0.010	O	|	|	|	|	0.01
29.917	0.00	0.06	0.009	O	|	|	|	|	0.01
30.000	0.00	0.06	0.009	O	|	|	|	|	0.01
30.083	0.00	0.05	0.008	O	|	|	|	|	0.01
30.167	0.00	0.05	0.008	O	|	|	|	|	0.01
30.250	0.00	0.05	0.008	O	|	|	|	|	0.01
30.333	0.00	0.05	0.007	O	|	|	|	|	0.01
30.417	0.00	0.05	0.007	O	|	|	|	|	0.01
30.500	0.00	0.04	0.007	O	|	|	|	|	0.01
30.583	0.00	0.04	0.006	O	|	|	|	|	0.01
30.667	0.00	0.04	0.006	O	|	|	|	|	0.01
30.750	0.00	0.04	0.006	O	|	|	|	|	0.01
30.833	0.00	0.04	0.006	O	|	|	|	|	0.01
30.917	0.00	0.03	0.005	O	|	|	|	|	0.01
31.000	0.00	0.03	0.005	O	|	|	|	|	0.00
31.083	0.00	0.03	0.005	O	|	|	|	|	0.00
31.167	0.00	0.03	0.005	O	|	|	|	|	0.00
31.250	0.00	0.03	0.004	O	|	|	|	|	0.00
31.333	0.00	0.03	0.004	O	|	|	|	|	0.00

31.417	0.00	0.03	0.004	o					0.00
31.500	0.00	0.03	0.004	o					0.00
31.583	0.00	0.02	0.004	o					0.00
31.667	0.00	0.02	0.004	o					0.00
31.750	0.00	0.02	0.003	o					0.00
31.833	0.00	0.02	0.003	o					0.00
31.917	0.00	0.02	0.003	o					0.00
32.000	0.00	0.02	0.003	o					0.00
32.083	0.00	0.02	0.003	o					0.00
32.167	0.00	0.02	0.003	o					0.00
32.250	0.00	0.02	0.003	o					0.00
32.333	0.00	0.02	0.003	o					0.00
32.417	0.00	0.02	0.002	o					0.00
32.500	0.00	0.01	0.002	o					0.00
32.583	0.00	0.01	0.002	o					0.00
32.667	0.00	0.01	0.002	o					0.00
32.750	0.00	0.01	0.002	o					0.00
32.833	0.00	0.01	0.002	o					0.00
32.917	0.00	0.01	0.002	o					0.00
33.000	0.00	0.01	0.002	o					0.00
33.083	0.00	0.01	0.002	o					0.00
33.167	0.00	0.01	0.002	o					0.00
33.250	0.00	0.01	0.002	o					0.00
33.333	0.00	0.01	0.001	o					0.00
33.417	0.00	0.01	0.001	o					0.00
33.500	0.00	0.01	0.001	o					0.00
33.583	0.00	0.01	0.001	o					0.00
33.667	0.00	0.01	0.001	o					0.00
33.750	0.00	0.01	0.001	o					0.00
33.833	0.00	0.01	0.001	o					0.00
33.917	0.00	0.01	0.001	o					0.00
34.000	0.00	0.01	0.001	o					0.00

Remaining water in basin = 0.00 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 408
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 9.400 (CFS)
Total volume = 9.744 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

BASIN ROUTING
5-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

EXETER INDUSTRIAL BASIN ROUTING
5-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-11 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: SOUTH5YR245.rte

**********HYDROGRAPH DATA**********

Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 22.007 (CFS)
Total volume = 13.397 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.400	1.449	9.400	1.417	1.481
1.500	1.547	9.400	1.515	1.579
2.000	2.049	9.400	2.017	2.081
2.150	2.202	9.400	2.170	2.234
2.500	2.558	13.130	2.513	2.603
3.000	3.060	23.510	2.979	3.141
3.500	3.542	37.630	3.412	3.672
4.000	3.985	54.690	3.797	4.173
4.500	4.350	74.240	4.094	4.606
5.000	4.607	96.000	4.276	4.938

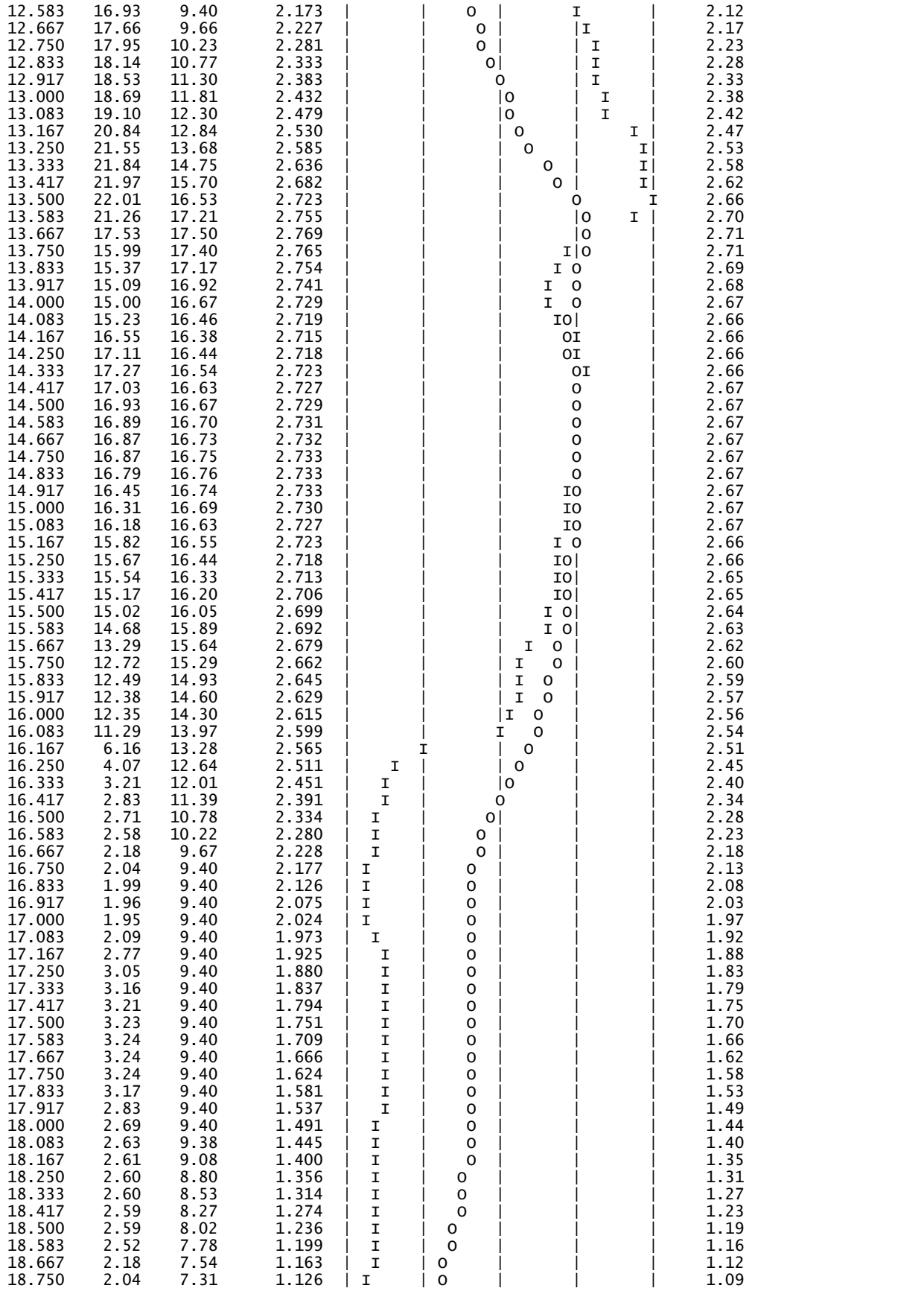
Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 5.5 11.00 16.51 22.01 (Ft.) Depth

0.083	0.14	0.00	0.000	O	|	|	|	0.00
0.167	0.82	0.02	0.004	OI	|	|	|	0.00
0.250	1.10	0.06	0.010	OI	|	|	|	0.01
0.333	1.28	0.11	0.018	OI	|	|	|	0.02
0.417	1.68	0.17	0.027	O I	|	|	|	0.03
0.500	1.83	0.24	0.037	O I	|	|	|	0.04
0.583	1.90	0.31	0.048	O I	|	|	|	0.05
0.667	1.93	0.38	0.059	O I	|	|	|	0.06
0.750	1.94	0.45	0.070	O I	|	|	|	0.07
0.833	2.01	0.52	0.080	O I	|	|	|	0.08
0.917	2.36	0.59	0.091	O I	|	|	|	0.09
1.000	2.50	0.67	0.103	O I	|	|	|	0.10
1.083	2.48	0.75	0.116	|O I	|	|	|	0.11
1.167	2.17	0.82	0.126	|O I	|	|	|	0.12
1.250	2.04	0.88	0.135	|OI	|	|	|	0.13
1.333	1.98	0.92	0.143	|OI	|	|	|	0.14
1.417	1.96	0.97	0.150	|OI	|	|	|	0.14
1.500	1.95	1.01	0.156	|OI	|	|	|	0.15
1.583	1.95	1.05	0.163	|OI	|	|	|	0.16
1.667	1.95	1.09	0.169	|OI	|	|	|	0.16
1.750	1.95	1.13	0.174	|OI	|	|	|	0.17
1.833	2.01	1.17	0.180	|OI	|	|	|	0.17
1.917	2.36	1.21	0.187	|O I	|	|	|	0.18
2.000	2.50	1.27	0.195	|O I	|	|	|	0.19
2.083	2.55	1.32	0.204	|O I	|	|	|	0.20
2.167	2.58	1.37	0.212	|O I	|	|	|	0.20
2.250	2.59	1.43	0.220	| OI	|	|	|	0.21
2.333	2.59	1.48	0.228	| OI	|	|	|	0.22
2.417	2.59	1.53	0.235	| OI	|	|	|	0.23
2.500	2.59	1.57	0.243	| OI	|	|	|	0.23
2.583	2.66	1.62	0.250	| OI	|	|	|	0.24
2.667	3.00	1.67	0.258	| O I	|	|	|	0.25
2.750	3.14	1.73	0.267	| O I	|	|	|	0.26
2.833	3.20	1.80	0.277	| O I	|	|	|	0.27
2.917	3.23	1.86	0.287	| O I	|	|	|	0.28
3.000	3.23	1.92	0.296	| O I	|	|	|	0.29
3.083	3.24	1.98	0.305	| O I	|	|	|	0.29
3.167	3.24	2.03	0.313	| O I	|	|	|	0.30
3.250	3.24	2.08	0.321	| OI	|	|	|	0.31
3.333	3.24	2.13	0.329	| OI	|	|	|	0.32
3.417	3.24	2.18	0.337	| OI	|	|	|	0.33
3.500	3.24	2.23	0.344	| OI	|	|	|	0.33
3.583	3.24	2.27	0.351	| OI	|	|	|	0.34
3.667	3.24	2.32	0.357	| OI	|	|	|	0.34
3.750	3.24	2.36	0.363	| OI	|	|	|	0.35
3.833	3.31	2.40	0.369	| OI	|	|	|	0.36
3.917	3.65	2.44	0.377	| O I	|	|	|	0.36
4.000	3.79	2.50	0.385	| O I	|	|	|	0.37
4.083	3.85	2.56	0.394	| O I	|	|	|	0.38
4.167	3.87	2.61	0.403	| O I	|	|	|	0.39
4.250	3.88	2.67	0.412	| O I	|	|	|	0.40
4.333	3.96	2.72	0.420	| O I	|	|	|	0.41
4.417	4.30	2.79	0.429	| O I	|	|	|	0.41
4.500	4.44	2.86	0.440	| O I	|	|	|	0.43
4.583	4.50	2.93	0.451	| O I	|	|	|	0.44
4.667	4.52	3.00	0.462	| O I	|	|	|	0.45
4.750	4.53	3.06	0.472	| O I	|	|	|	0.46
4.833	4.60	3.13	0.482	| O I	|	|	|	0.47
4.917	4.95	3.20	0.493	| O I|	|	|	|	0.48
5.000	5.09	3.28	0.506	| O I|	|	|	|	0.49
5.083	5.01	3.36	0.517	| O I|	|	|	|	0.50
5.167	4.35	3.41	0.526	| O I |	|	|	|	0.51
5.250	4.08	3.45	0.532	| O |	|	|	|	0.51
5.333	4.04	3.48	0.536	| O |	|	|	|	0.52
5.417	4.33	3.51	0.541	| OI |	|	|	|	0.52
5.500	4.46	3.55	0.547	| OI |	|	|	|	0.53
5.583	4.57	3.59	0.553	| OI |	|	|	|	0.53
5.667	4.93	3.64	0.561	| O I|	|	|	|	0.54
5.750	5.08	3.70	0.570	| O I|	|	|	|	0.55
5.833	5.14	3.76	0.580	| O I|	|	|	|	0.56
5.917	5.17	3.82	0.589	| O I|	|	|	|	0.57
6.000	5.18	3.88	0.598	| O I|	|	|	|	0.58
6.083	5.25	3.94	0.607	| O I|	|	|	|	0.59
6.167	5.60	4.00	0.617	| O I	|	|	|	0.60
6.250	5.74	4.08	0.628	| O I	|	|	|	0.61

6.333	5.79	4.15	0.640	o I				0.62
6.417	5.82	4.22	0.651	o I				0.63
6.500	5.83	4.29	0.662	o I				0.64
6.583	5.90	4.36	0.672	o I				0.65
6.667	6.25	4.44	0.684	o |I				0.66
6.750	6.39	4.52	0.697	o |I				0.67
6.833	6.44	4.60	0.709	o |I				0.69
6.917	6.47	4.68	0.722	o |I				0.70
7.000	6.48	4.76	0.734	o |I				0.71
7.083	6.48	4.84	0.745	o|I				0.72
7.167	6.48	4.91	0.757	o|I				0.73
7.250	6.48	4.98	0.767	o|I				0.74
7.333	6.55	5.04	0.778	o|I				0.75
7.417	6.89	5.12	0.789	o| I				0.76
7.500	7.03	5.20	0.801	o| I				0.77
7.583	7.16	5.28	0.814	o| I				0.79
7.667	7.53	5.37	0.828	o| I				0.80
7.750	7.67	5.47	0.843	o| I				0.81
7.833	7.81	5.57	0.858	o I				0.83
7.917	8.18	5.67	0.875	o I				0.85
8.000	8.32	5.79	0.892	o I				0.86
8.083	8.52	5.90	0.910	o I				0.88
8.167	9.23	6.03	0.930	o I				0.90
8.250	9.52	6.18	0.952	o I				0.92
8.333	9.64	6.33	0.975	|o I				0.94
8.417	9.69	6.47	0.998	|o I				0.96
8.500	9.71	6.61	1.020	|o I				0.99
8.583	9.79	6.75	1.041	|o I				1.01
8.667	10.14	6.89	1.062	| o I				1.03
8.750	10.28	7.04	1.085	| o I				1.05
8.833	10.40	7.18	1.107	| o I|			1.07
8.917	10.77	7.33	1.130	| o I|			1.09
9.000	10.92	7.48	1.154	| o I|			1.11
9.083	11.12	7.64	1.177	| o I				1.14
9.167	11.83	7.81	1.203	| o |I				1.16
9.250	12.12	7.99	1.231	| o |I				1.19
9.333	12.30	8.17	1.260	| o |I				1.22
9.417	12.70	8.36	1.289	| o | I				1.25
9.500	12.85	8.55	1.319	| o | I				1.27
9.583	12.99	8.74	1.348	| o | I				1.30
9.667	13.36	8.94	1.378	| o | I				1.33
9.750	13.51	9.14	1.408	| o | I				1.36
9.833	13.64	9.33	1.438	| o | I				1.39
9.917	14.01	9.40	1.469	| o | I				1.42
10.000	14.16	9.40	1.501	| o | I				1.45
10.083	13.73	9.40	1.532	| o | I				1.49
10.167	11.38	9.40	1.554	| o I				1.51
10.250	10.41	9.40	1.564	| o I|			1.52
10.333	10.01	9.40	1.570	| oI |			1.52
10.417	9.84	9.40	1.574	| oI |			1.53
10.500	9.78	9.40	1.576	| oI |			1.53
10.583	10.10	9.40	1.580	| oI |			1.53
10.667	11.78	9.40	1.591	| o |I				1.54
10.750	12.48	9.40	1.609	| o | I				1.56
10.833	12.76	9.40	1.632	| o | I				1.58
10.917	12.89	9.40	1.655	| o | I				1.61
11.000	12.93	9.40	1.679	| o | I				1.63
11.083	12.88	9.40	1.704	| o | I				1.66
11.167	12.56	9.40	1.726	| o | I				1.68
11.250	12.42	9.40	1.748	| o | I				1.70
11.333	12.36	9.40	1.768	| o |I				1.72
11.417	12.34	9.40	1.789	| o |I				1.74
11.500	12.33	9.40	1.809	| o |I				1.76
11.583	12.18	9.40	1.828	| o |I				1.78
11.667	11.50	9.40	1.845	| o I				1.80
11.750	11.22	9.40	1.859	| o I				1.81
11.833	11.17	9.40	1.871	| o I				1.82
11.917	11.46	9.40	1.884	| o I				1.84
12.000	11.59	9.40	1.899	| o I				1.85
12.083	12.12	9.40	1.916	| o |I				1.87
12.167	14.53	9.40	1.943	| o | I				1.89
12.250	15.51	9.40	1.982	| o | I				1.93
12.333	15.99	9.40	2.025	| o | I|				1.98
12.417	16.51	9.40	2.073	| o | I				2.02
12.500	16.71	9.40	2.122	| o | I				2.07



18.833	1.92	7.07	1.090	I	O			1.05
18.917	1.55	6.84	1.054	I	O			1.02
19.000	1.40	6.61	1.018	I	O			0.98
19.083	1.41	6.38	0.983	I	O			0.95
19.167	1.72	6.17	0.951	I	O			0.92
19.250	1.85	5.98	0.921	I	O			0.89
19.333	1.98	5.80	0.894	I	O			0.86
19.417	2.34	5.64	0.869	I	O			0.84
19.500	2.49	5.50	0.848	I	O			0.82
19.583	2.48	5.37	0.827	I	O			0.80
19.667	2.17	5.23	0.807	I	O			0.78
19.750	2.04	5.10	0.786	I	O			0.76
19.833	1.91	4.96	0.765	I	O			0.74
19.917	1.55	4.82	0.743	I	O			0.72
20.000	1.40	4.67	0.720	I	O			0.70
20.083	1.41	4.53	0.698	I	O			0.67
20.167	1.72	4.40	0.678	I	O			0.66
20.250	1.85	4.29	0.661	I	O			0.64
20.333	1.91	4.18	0.645	I	O			0.62
20.417	1.93	4.08	0.629	I	O			0.61
20.500	1.94	3.99	0.615	I	O			0.59
20.583	1.94	3.90	0.601	I	O			0.58
20.667	1.95	3.81	0.588	I	O			0.57
20.750	1.95	3.73	0.575	I	O			0.56
20.833	1.88	3.65	0.563	I	O			0.54
20.917	1.53	3.57	0.550	I	O			0.53
21.000	1.40	3.48	0.536	I	O			0.52
21.083	1.41	3.39	0.522	I	O			0.50
21.167	1.72	3.31	0.510	I	O			0.49
21.250	1.85	3.24	0.499	I	O			0.48
21.333	1.84	3.18	0.490	I	O			0.47
21.417	1.52	3.11	0.480	I	O			0.46
21.500	1.39	3.04	0.469	I	O			0.45
21.583	1.40	2.97	0.458	I	O			0.44
21.667	1.72	2.91	0.448	I	O			0.43
21.750	1.85	2.86	0.441	I	O			0.43
21.833	1.84	2.81	0.434	I	O			0.42
21.917	1.52	2.76	0.426	I	O			0.41
22.000	1.39	2.71	0.417	I	O			0.40
22.083	1.40	2.65	0.408	I	O			0.39
22.167	1.72	2.60	0.401	I	O			0.39
22.250	1.85	2.57	0.396	I	O			0.38
22.333	1.84	2.54	0.391	I	O			0.38
22.417	1.52	2.50	0.385	I	O			0.37
22.500	1.39	2.45	0.378	I	O			0.37
22.583	1.33	2.40	0.371	I	O			0.36
22.667	1.31	2.36	0.363	I	O			0.35
22.750	1.30	2.31	0.356	I	O			0.34
22.833	1.30	2.27	0.350	I	O			0.34
22.917	1.30	2.23	0.343	I	O			0.33
23.000	1.30	2.18	0.337	I	O			0.33
23.083	1.30	2.15	0.331	I	O			0.32
23.167	1.30	2.11	0.325	I	O			0.31
23.250	1.30	2.07	0.320	I	O			0.31
23.333	1.30	2.04	0.314	I	O			0.30
23.417	1.30	2.01	0.309	I	O			0.30
23.500	1.30	1.98	0.305	I	O			0.29
23.583	1.30	1.95	0.300	I	O			0.29
23.667	1.30	1.92	0.296	I	O			0.29
23.750	1.30	1.89	0.291	I	O			0.28
23.833	1.30	1.86	0.287	I	O			0.28
23.917	1.30	1.84	0.284	I	O			0.27
24.000	1.30	1.82	0.280	I	O			0.27
24.083	1.16	1.79	0.276	I	O			0.27
24.167	0.48	1.75	0.269	I	O			0.26
24.250	0.20	1.69	0.260	I	O			0.25
24.333	0.08	1.62	0.249	I	O			0.24
24.417	0.03	1.55	0.239	I	O			0.23
24.500	0.02	1.48	0.229	I	O			0.22
24.583	0.01	1.42	0.219	I	O			0.21
24.667	0.00	1.36	0.209	I	O			0.20
24.750	0.00	1.30	0.200	I	O			0.19
24.833	0.00	1.24	0.191	I	O			0.18
24.917	0.00	1.19	0.183	I	O			0.18
25.000	0.00	1.14	0.175	I	O			0.17

25.083	0.00	1.09	0.167	IO	|	|	|	|	0.16
25.167	0.00	1.04	0.160	IO	|	|	|	|	0.15
25.250	0.00	0.99	0.153	IO	|	|	|	|	0.15
25.333	0.00	0.95	0.146	IO	|	|	|	|	0.14
25.417	0.00	0.91	0.140	IO	|	|	|	|	0.14
25.500	0.00	0.87	0.134	IO	|	|	|	|	0.13
25.583	0.00	0.83	0.128	IO	|	|	|	|	0.12
25.667	0.00	0.79	0.122	IO	|	|	|	|	0.12
25.750	0.00	0.76	0.117	IO	|	|	|	|	0.11
25.833	0.00	0.73	0.112	IO	|	|	|	|	0.11
25.917	0.00	0.69	0.107	IO	|	|	|	|	0.10
26.000	0.00	0.66	0.102	O	|	|	|	|	0.10
26.083	0.00	0.63	0.098	O	|	|	|	|	0.09
26.167	0.00	0.61	0.094	O	|	|	|	|	0.09
26.250	0.00	0.58	0.090	O	|	|	|	|	0.09
26.333	0.00	0.56	0.086	O	|	|	|	|	0.08
26.417	0.00	0.53	0.082	O	|	|	|	|	0.08
26.500	0.00	0.51	0.078	O	|	|	|	|	0.08
26.583	0.00	0.49	0.075	O	|	|	|	|	0.07
26.667	0.00	0.46	0.072	O	|	|	|	|	0.07
26.750	0.00	0.44	0.068	O	|	|	|	|	0.07
26.833	0.00	0.42	0.065	O	|	|	|	|	0.06
26.917	0.00	0.41	0.063	O	|	|	|	|	0.06
27.000	0.00	0.39	0.060	O	|	|	|	|	0.06
27.083	0.00	0.37	0.057	O	|	|	|	|	0.06
27.167	0.00	0.36	0.055	O	|	|	|	|	0.05
27.250	0.00	0.34	0.052	O	|	|	|	|	0.05
27.333	0.00	0.32	0.050	O	|	|	|	|	0.05
27.417	0.00	0.31	0.048	O	|	|	|	|	0.05
27.500	0.00	0.30	0.046	O	|	|	|	|	0.04
27.583	0.00	0.28	0.044	O	|	|	|	|	0.04
27.667	0.00	0.27	0.042	O	|	|	|	|	0.04
27.750	0.00	0.26	0.040	O	|	|	|	|	0.04
27.833	0.00	0.25	0.038	O	|	|	|	|	0.04
27.917	0.00	0.24	0.037	O	|	|	|	|	0.04
28.000	0.00	0.23	0.035	O	|	|	|	|	0.03
28.083	0.00	0.22	0.033	O	|	|	|	|	0.03
28.167	0.00	0.21	0.032	O	|	|	|	|	0.03
28.250	0.00	0.20	0.031	O	|	|	|	|	0.03
28.333	0.00	0.19	0.029	O	|	|	|	|	0.03
28.417	0.00	0.18	0.028	O	|	|	|	|	0.03
28.500	0.00	0.17	0.027	O	|	|	|	|	0.03
28.583	0.00	0.17	0.026	O	|	|	|	|	0.02
28.667	0.00	0.16	0.024	O	|	|	|	|	0.02
28.750	0.00	0.15	0.023	O	|	|	|	|	0.02
28.833	0.00	0.15	0.022	O	|	|	|	|	0.02
28.917	0.00	0.14	0.021	O	|	|	|	|	0.02
29.000	0.00	0.13	0.020	O	|	|	|	|	0.02
29.083	0.00	0.13	0.020	O	|	|	|	|	0.02
29.167	0.00	0.12	0.019	O	|	|	|	|	0.02
29.250	0.00	0.12	0.018	O	|	|	|	|	0.02
29.333	0.00	0.11	0.017	O	|	|	|	|	0.02
29.417	0.00	0.11	0.016	O	|	|	|	|	0.02
29.500	0.00	0.10	0.016	O	|	|	|	|	0.02
29.583	0.00	0.10	0.015	O	|	|	|	|	0.01
29.667	0.00	0.09	0.014	O	|	|	|	|	0.01
29.750	0.00	0.09	0.014	O	|	|	|	|	0.01
29.833	0.00	0.09	0.013	O	|	|	|	|	0.01
29.917	0.00	0.08	0.013	O	|	|	|	|	0.01
30.000	0.00	0.08	0.012	O	|	|	|	|	0.01
30.083	0.00	0.07	0.011	O	|	|	|	|	0.01
30.167	0.00	0.07	0.011	O	|	|	|	|	0.01
30.250	0.00	0.07	0.010	O	|	|	|	|	0.01
30.333	0.00	0.07	0.010	O	|	|	|	|	0.01
30.417	0.00	0.06	0.010	O	|	|	|	|	0.01
30.500	0.00	0.06	0.009	O	|	|	|	|	0.01
30.583	0.00	0.06	0.009	O	|	|	|	|	0.01
30.667	0.00	0.05	0.008	O	|	|	|	|	0.01
30.750	0.00	0.05	0.008	O	|	|	|	|	0.01
30.833	0.00	0.05	0.008	O	|	|	|	|	0.01
30.917	0.00	0.05	0.007	O	|	|	|	|	0.01
31.000	0.00	0.05	0.007	O	|	|	|	|	0.01
31.083	0.00	0.04	0.007	O	|	|	|	|	0.01
31.167	0.00	0.04	0.006	O	|	|	|	|	0.01
31.250	0.00	0.04	0.006	O	|	|	|	|	0.01

31.333	0.00	0.04	0.006	o	|	|	|	|	0.01
31.417	0.00	0.04	0.006	o	|	|	|	|	0.01
31.500	0.00	0.03	0.005	o	|	|	|	|	0.01
31.583	0.00	0.03	0.005	o	|	|	|	|	0.00
31.667	0.00	0.03	0.005	o	|	|	|	|	0.00
31.750	0.00	0.03	0.005	o	|	|	|	|	0.00
31.833	0.00	0.03	0.004	o	|	|	|	|	0.00
31.917	0.00	0.03	0.004	o	|	|	|	|	0.00
32.000	0.00	0.03	0.004	o	|	|	|	|	0.00
32.083	0.00	0.03	0.004	o	|	|	|	|	0.00
32.167	0.00	0.02	0.004	o	|	|	|	|	0.00
32.250	0.00	0.02	0.004	o	|	|	|	|	0.00
32.333	0.00	0.02	0.003	o	|	|	|	|	0.00
32.417	0.00	0.02	0.003	o	|	|	|	|	0.00
32.500	0.00	0.02	0.003	o	|	|	|	|	0.00
32.583	0.00	0.02	0.003	o	|	|	|	|	0.00
32.667	0.00	0.02	0.003	o	|	|	|	|	0.00
32.750	0.00	0.02	0.003	o	|	|	|	|	0.00
32.833	0.00	0.02	0.003	o	|	|	|	|	0.00
32.917	0.00	0.02	0.003	o	|	|	|	|	0.00
33.000	0.00	0.02	0.002	o	|	|	|	|	0.00
33.083	0.00	0.01	0.002	o	|	|	|	|	0.00
33.167	0.00	0.01	0.002	o	|	|	|	|	0.00
33.250	0.00	0.01	0.002	o	|	|	|	|	0.00
33.333	0.00	0.01	0.002	o	|	|	|	|	0.00
33.417	0.00	0.01	0.002	o	|	|	|	|	0.00
33.500	0.00	0.01	0.002	o	|	|	|	|	0.00
33.583	0.00	0.01	0.002	o	|	|	|	|	0.00
33.667	0.00	0.01	0.002	o	|	|	|	|	0.00
33.750	0.00	0.01	0.002	o	|	|	|	|	0.00
33.833	0.00	0.01	0.002	o	|	|	|	|	0.00
33.917	0.00	0.01	0.001	o	|	|	|	|	0.00
34.000	0.00	0.01	0.001	o	|	|	|	|	0.00
34.083	0.00	0.01	0.001	o	|	|	|	|	0.00
34.167	0.00	0.01	0.001	o	|	|	|	|	0.00
34.250	0.00	0.01	0.001	o	|	|	|	|	0.00
34.333	0.00	0.01	0.001	o	|	|	|	|	0.00
34.417	0.00	0.01	0.001	o	|	|	|	|	0.00
34.500	0.00	0.01	0.001	o	|	|	|	|	0.00
34.583	0.00	0.01	0.001	o	|	|	|	|	0.00

Remaining water in basin = 0.00 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 415
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 17.502 (CFS)
Total volume = 13.396 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

BASIN ROUTING
10-YEAR, 24-HOUR -HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

EXETER INDUSTRIAL BASIN ROUTING
10-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: SOUTH10YR2410.rte

**********HYDROGRAPH DATA**********

Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 29.048 (CFS)
Total volume = 16.303 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.400	1.449	9.400	1.417	1.481
1.500	1.547	9.400	1.515	1.579
2.000	2.049	9.400	2.017	2.081
2.150	2.202	9.400	2.170	2.234
2.500	2.558	13.127	2.513	2.603
2.670	2.728	16.150	2.672	2.784
3.000	3.060	26.918	2.967	3.153
3.500	3.542	51.245	3.366	3.718
4.000	3.985	82.302	3.702	4.268
4.500	4.350	118.805	3.941	4.759
5.000	4.607	160.023	4.056	5.158

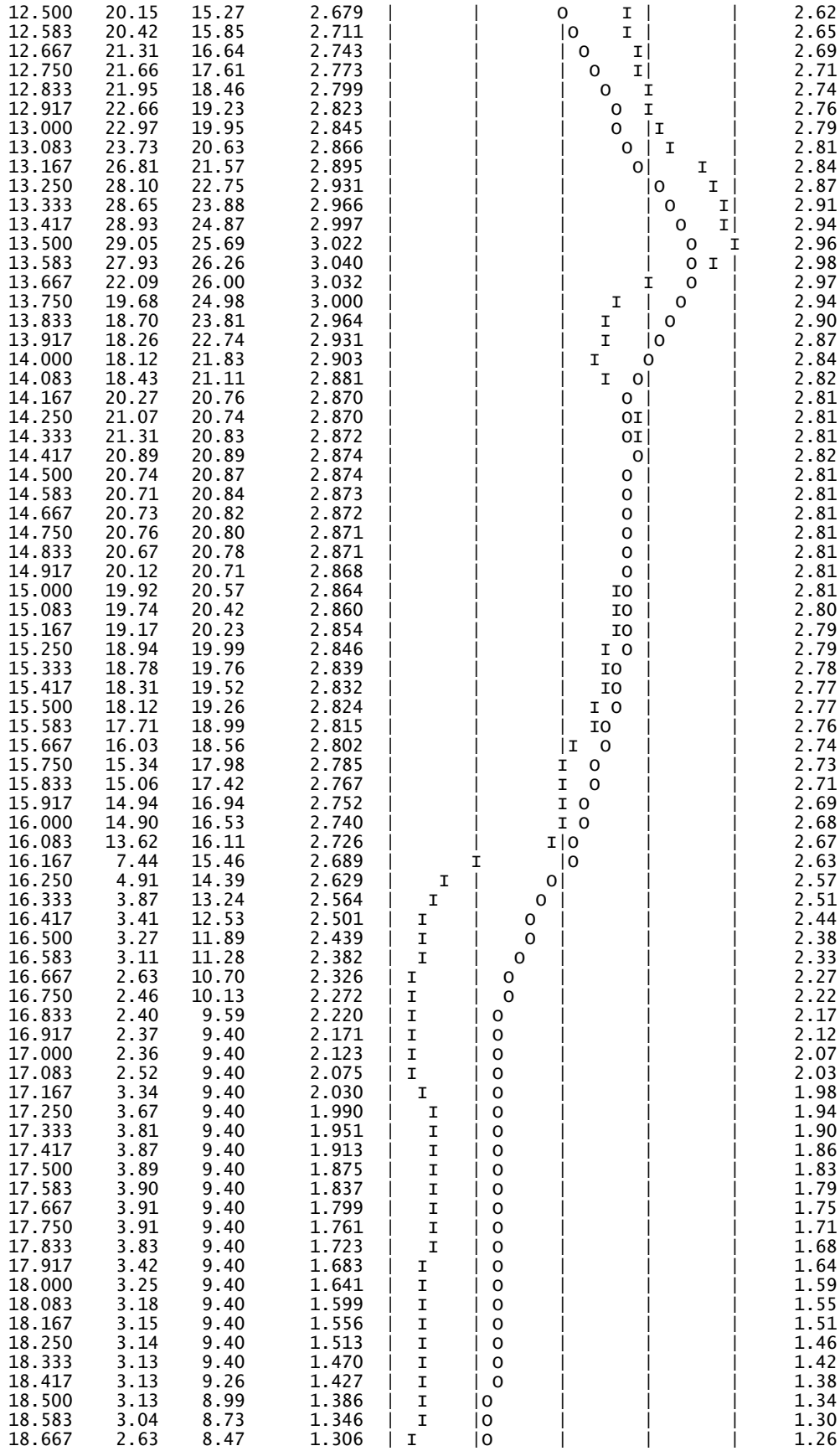
Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time	Inflow	Outflow	Storage	Depth

(Hours)	(CFS)	(CFS)	(Ac.Ft)	.0	7.3	14.52	21.79	29.05	(Ft.)
0.083	0.17	0.00	0.001	O					0.00
0.167	0.99	0.03	0.004	OI					0.00
0.250	1.33	0.08	0.012	OI					0.01
0.333	1.55	0.14	0.021	OI					0.02
0.417	2.02	0.21	0.032	O I					0.03
0.500	2.21	0.29	0.045	O I					0.04
0.583	2.29	0.38	0.058	O I					0.06
0.667	2.33	0.46	0.071	O I					0.07
0.750	2.34	0.54	0.084	O I					0.08
0.833	2.43	0.62	0.096	O I					0.09
0.917	2.84	0.71	0.110	O I					0.11
1.000	3.01	0.81	0.125	O I					0.12
1.083	3.00	0.91	0.140	O I					0.13
1.167	2.61	0.99	0.152	OI					0.15
1.250	2.46	1.06	0.163	OI					0.16
1.333	2.39	1.12	0.172	OI					0.17
1.417	2.37	1.17	0.180	OI					0.17
1.500	2.36	1.22	0.188	OI					0.18
1.583	2.35	1.27	0.196	OI					0.19
1.667	2.35	1.32	0.203	OI					0.20
1.750	2.35	1.36	0.210	OI					0.20
1.833	2.43	1.41	0.217	OI					0.21
1.917	2.84	1.46	0.225	O I					0.22
2.000	3.01	1.53	0.235	O I					0.23
2.083	3.08	1.59	0.246	O I					0.24
2.167	3.11	1.66	0.256	O I					0.25
2.250	3.12	1.72	0.265	O I					0.26
2.333	3.12	1.78	0.275	O I					0.27
2.417	3.13	1.84	0.284	OI					0.27
2.500	3.13	1.90	0.293	OI					0.28
2.583	3.21	1.95	0.301	OI					0.29
2.667	3.62	2.02	0.311	OI					0.30
2.750	3.79	2.09	0.322	O I					0.31
2.833	3.86	2.17	0.334	O I					0.32
2.917	3.89	2.24	0.346	O I					0.33
3.000	3.90	2.31	0.357	O I					0.34
3.083	3.91	2.38	0.367	O I					0.36
3.167	3.91	2.45	0.378	O I					0.36
3.250	3.91	2.51	0.388	O I					0.37
3.333	3.91	2.58	0.397	O I					0.38
3.417	3.91	2.63	0.406	O I					0.39
3.500	3.91	2.69	0.415	O I					0.40
3.583	3.91	2.74	0.423	OI					0.41
3.667	3.91	2.79	0.431	OI					0.42
3.750	3.91	2.84	0.438	OI					0.42
3.833	3.99	2.89	0.446	OI					0.43
3.917	4.41	2.95	0.454	OI					0.44
4.000	4.57	3.02	0.465	O I					0.45
4.083	4.64	3.09	0.476	O I					0.46
4.167	4.67	3.15	0.486	O I					0.47
4.250	4.68	3.22	0.496	O I					0.48
4.333	4.77	3.29	0.507	O I					0.49
4.417	5.19	3.36	0.518	O I					0.50
4.500	5.36	3.44	0.531	O I					0.51
4.583	5.43	3.53	0.544	O I					0.53
4.667	5.46	3.61	0.557	O I					0.54
4.750	5.47	3.69	0.569	O I					0.55
4.833	5.55	3.77	0.582	O I					0.56
4.917	5.97	3.86	0.595	O I					0.57
5.000	6.14	3.96	0.610	O I					0.59
5.083	6.04	4.05	0.624	O I					0.60
5.167	5.25	4.12	0.635	OI					0.61
5.250	4.92	4.16	0.641	OI					0.62
5.333	4.87	4.19	0.646	OI					0.62
5.417	5.23	4.23	0.652	OI					0.63
5.500	5.37	4.28	0.659	OI					0.64
5.583	5.52	4.33	0.667	O I					0.64
5.667	5.95	4.39	0.677	O I					0.65
5.750	6.13	4.46	0.688	O I					0.66
5.833	6.20	4.54	0.699	O I					0.68
5.917	6.24	4.61	0.711	OI					0.69
6.000	6.25	4.68	0.722	OI					0.70
6.083	6.34	4.75	0.732	OI					0.71
6.167	6.75	4.83	0.745	O I					0.72

6.250	6.92	4.92	0.758		O I			0.73
6.333	6.99	5.01	0.772		O I			0.75
6.417	7.02	5.09	0.785		O I			0.76
6.500	7.03	5.18	0.798		O I			0.77
6.583	7.12	5.26	0.811		O I			0.78
6.667	7.53	5.35	0.825		O I			0.80
6.750	7.70	5.45	0.840		O I			0.81
6.833	7.77	5.55	0.856		O I			0.83
6.917	7.80	5.65	0.871		O I			0.84
7.000	7.81	5.74	0.885		O I			0.86
7.083	7.82	5.83	0.899		O I			0.87
7.167	7.82	5.92	0.913		O I			0.88
7.250	7.82	6.00	0.925		O I			0.89
7.333	7.91	6.08	0.938		O I			0.91
7.417	8.32	6.17	0.952		O I			0.92
7.500	8.48	6.27	0.967		O I			0.93
7.583	8.64	6.37	0.982		O I			0.95
7.667	9.08	6.48	0.999		O I			0.96
7.750	9.26	6.60	1.017		O I			0.98
7.833	9.42	6.72	1.035		O I			1.00
7.917	9.86	6.84	1.055		O I			1.02
8.000	10.04	6.98	1.076		O I			1.04
8.083	10.28	7.12	1.097		O I			1.06
8.167	11.14	7.28	1.122		O I			1.08
8.250	11.49	7.45	1.149		O I			1.11
8.333	11.63	7.63	1.176		O I			1.14
8.417	11.69	7.81	1.204		O I			1.16
8.500	11.71	7.98	1.230		O I			1.19
8.583	11.81	8.14	1.255		O I			1.21
8.667	12.23	8.31	1.281		O I			1.24
8.750	12.40	8.49	1.308		O I			1.26
8.833	12.55	8.66	1.335		O I			1.29
8.917	12.99	8.84	1.363		O I			1.32
9.000	13.17	9.03	1.391		O I			1.34
9.083	13.41	9.21	1.420		O I			1.37
9.167	14.27	9.40	1.451		O I			1.40
9.250	14.61	9.40	1.486		O I			1.44
9.333	14.84	9.40	1.523		O I			1.48
9.417	15.32	9.40	1.562		O I			1.51
9.500	15.51	9.40	1.603		O I			1.56
9.583	15.67	9.40	1.646		O I			1.60
9.667	16.12	9.40	1.691		O I			1.64
9.750	16.30	9.40	1.737		O I			1.69
9.833	16.45	9.40	1.785		O I			1.74
9.917	16.90	9.40	1.836		O I			1.79
10.000	17.08	9.40	1.888		O I			1.84
10.083	16.57	9.40	1.939		O I			1.89
10.167	13.72	9.40	1.979		O I			1.93
10.250	12.55	9.40	2.004		O I			1.96
10.333	12.07	9.40	2.024		O I			1.98
10.417	11.86	9.40	2.042		O I			1.99
10.500	11.80	9.40	2.059		O I			2.01
10.583	12.18	9.40	2.077		O I			2.03
10.667	14.21	9.40	2.103		O I			2.05
10.750	15.05	9.40	2.139		O I			2.09
10.833	15.39	9.40	2.179		O I			2.13
10.917	15.55	9.59	2.220		O I			2.17
11.000	15.60	10.01	2.260		O I			2.21
11.083	15.54	10.39	2.297		O I			2.24
11.167	15.15	10.74	2.330		O I			2.28
11.250	14.98	11.04	2.358		O I			2.30
11.333	14.91	11.31	2.384		O I			2.33
11.417	14.88	11.56	2.408		O I			2.35
11.500	14.87	11.79	2.430		O I			2.37
11.583	14.70	12.00	2.450		O I			2.39
11.667	13.87	12.16	2.465		O I			2.41
11.750	13.53	12.26	2.476		O I			2.42
11.833	13.48	12.35	2.484		O I			2.43
11.917	13.83	12.44	2.493		O I			2.44
12.000	13.98	12.54	2.502		O I			2.45
12.083	14.62	12.67	2.514		O I			2.46
12.167	17.52	12.90	2.537		O I			2.48
12.250	18.71	13.36	2.571		O I			2.51
12.333	19.29	14.01	2.608		O I			2.55
12.417	19.92	14.65	2.644		O I			2.59



18.750	2.46	8.21	1.266	| I |O | | | 1.22
18.833	2.31	7.96	1.227	| I O | | | 1.19
18.917	1.87	7.70	1.187	| I O | | | 1.15
19.000	1.69	7.44	1.148	|I O | | | 1.11
19.083	1.70	7.19	1.109	|I O| | | 1.07
19.167	2.08	6.96	1.073	| I O| | | 1.04
19.250	2.24	6.75	1.041	| I O| | | 1.01
19.333	2.38	6.56	1.011	| I O| | | 0.98
19.417	2.82	6.38	0.984	| I O| | | 0.95
19.500	3.00	6.23	0.961	| I O | | | 0.93
19.583	2.99	6.09	0.939	| I O | | | 0.91
19.667	2.61	5.95	0.917	| I O | | | 0.89
19.750	2.46	5.80	0.894	| I O | | | 0.86
19.833	2.31	5.65	0.871	| I O | | | 0.84
19.917	1.87	5.49	0.847	| I O | | | 0.82
20.000	1.69	5.33	0.822	|I O | | | 0.79
20.083	1.70	5.17	0.797	|I O | | | 0.77
20.167	2.08	5.03	0.775	| I O | | | 0.75
20.250	2.24	4.90	0.756	| I O | | | 0.73
20.333	2.30	4.79	0.738	| I O | | | 0.71
20.417	2.33	4.68	0.721	| I O | | | 0.70
20.500	2.34	4.58	0.706	| I O | | | 0.68
20.583	2.34	4.48	0.691	| I O | | | 0.67
20.667	2.35	4.39	0.676	| I O | | | 0.65
20.750	2.35	4.30	0.662	| I O | | | 0.64
20.833	2.26	4.21	0.649	| I O | | | 0.63
20.917	1.85	4.12	0.635	| I O | | | 0.61
21.000	1.68	4.01	0.619	|I O | | | 0.60
21.083	1.70	3.91	0.603	|I O | | | 0.58
21.167	2.08	3.82	0.589	| I O | | | 0.57
21.250	2.24	3.75	0.578	| I O | | | 0.56
21.333	2.22	3.68	0.568	| I O | | | 0.55
21.417	1.83	3.61	0.557	| IO | | | 0.54
21.500	1.67	3.53	0.544	|I O | | | 0.53
21.583	1.69	3.45	0.532	|I O | | | 0.51
21.667	2.08	3.38	0.521	| IO | | | 0.50
21.750	2.24	3.33	0.513	| IO | | | 0.50
21.833	2.22	3.28	0.506	| IO | | | 0.49
21.917	1.83	3.22	0.497	| IO | | | 0.48
22.000	1.67	3.16	0.487	|I O | | | 0.47
22.083	1.69	3.10	0.477	|I O | | | 0.46
22.167	2.08	3.04	0.469	| IO | | | 0.45
22.250	2.24	3.00	0.463	| IO | | | 0.45
22.333	2.22	2.97	0.458	| IO | | | 0.44
22.417	1.83	2.93	0.452	| IO | | | 0.44
22.500	1.67	2.88	0.444	|I O | | | 0.43
22.583	1.61	2.82	0.435	|I O | | | 0.42
22.667	1.58	2.77	0.427	|I O | | | 0.41
22.750	1.57	2.72	0.419	|IO | | | 0.40
22.833	1.57	2.67	0.411	|IO | | | 0.40
22.917	1.56	2.62	0.404	|IO | | | 0.39
23.000	1.56	2.57	0.397	|IO | | | 0.38
23.083	1.56	2.53	0.390	|IO | | | 0.38
23.167	1.56	2.49	0.383	|IO | | | 0.37
23.250	1.56	2.45	0.377	|IO | | | 0.36
23.333	1.56	2.41	0.371	|IO | | | 0.36
23.417	1.56	2.37	0.366	|IO | | | 0.35
23.500	1.56	2.34	0.360	|IO | | | 0.35
23.583	1.56	2.30	0.355	|IO | | | 0.34
23.667	1.56	2.27	0.350	|IO | | | 0.34
23.750	1.56	2.24	0.345	|IO | | | 0.33
23.833	1.56	2.21	0.341	|IO | | | 0.33
23.917	1.56	2.18	0.336	|IO | | | 0.32
24.000	1.56	2.15	0.332	|IO | | | 0.32
24.083	1.40	2.13	0.328	|IO | | | 0.32
24.167	0.57	2.08	0.320	I O | | | 0.31
24.250	0.24	2.00	0.309	I O | | | 0.30
24.333	0.10	1.92	0.296	I O | | | 0.29
24.417	0.04	1.84	0.284	I O | | | 0.27
24.500	0.02	1.76	0.272	IO | | | 0.26
24.583	0.01	1.69	0.260	IO | | | 0.25
24.667	0.00	1.61	0.249	IO | | | 0.24
24.750	0.00	1.54	0.238	IO | | | 0.23
24.833	0.00	1.47	0.227	IO | | | 0.22
24.917	0.00	1.41	0.217	IO | | | 0.21

25.000	0.00	1.35	0.208	IO	|	|	|	|	0.20
25.083	0.00	1.29	0.199	IO	|	|	|	|	0.19
25.167	0.00	1.23	0.190	IO	|	|	|	|	0.18
25.250	0.00	1.18	0.182	IO	|	|	|	|	0.18
25.333	0.00	1.13	0.174	IO	|	|	|	|	0.17
25.417	0.00	1.08	0.166	IO	|	|	|	|	0.16
25.500	0.00	1.03	0.159	IO	|	|	|	|	0.15
25.583	0.00	0.99	0.152	IO	|	|	|	|	0.15
25.667	0.00	0.94	0.145	IO	|	|	|	|	0.14
25.750	0.00	0.90	0.139	O	|	|	|	|	0.13
25.833	0.00	0.86	0.133	O	|	|	|	|	0.13
25.917	0.00	0.82	0.127	O	|	|	|	|	0.12
26.000	0.00	0.79	0.122	O	|	|	|	|	0.12
26.083	0.00	0.75	0.116	O	|	|	|	|	0.11
26.167	0.00	0.72	0.111	O	|	|	|	|	0.11
26.250	0.00	0.69	0.106	O	|	|	|	|	0.10
26.333	0.00	0.66	0.102	O	|	|	|	|	0.10
26.417	0.00	0.63	0.097	O	|	|	|	|	0.09
26.500	0.00	0.60	0.093	O	|	|	|	|	0.09
26.583	0.00	0.58	0.089	O	|	|	|	|	0.09
26.667	0.00	0.55	0.085	O	|	|	|	|	0.08
26.750	0.00	0.53	0.081	O	|	|	|	|	0.08
26.833	0.00	0.50	0.078	O	|	|	|	|	0.08
26.917	0.00	0.48	0.074	O	|	|	|	|	0.07
27.000	0.00	0.46	0.071	O	|	|	|	|	0.07
27.083	0.00	0.44	0.068	O	|	|	|	|	0.07
27.167	0.00	0.42	0.065	O	|	|	|	|	0.06
27.250	0.00	0.40	0.062	O	|	|	|	|	0.06
27.333	0.00	0.39	0.059	O	|	|	|	|	0.06
27.417	0.00	0.37	0.057	O	|	|	|	|	0.05
27.500	0.00	0.35	0.054	O	|	|	|	|	0.05
27.583	0.00	0.34	0.052	O	|	|	|	|	0.05
27.667	0.00	0.32	0.050	O	|	|	|	|	0.05
27.750	0.00	0.31	0.048	O	|	|	|	|	0.05
27.833	0.00	0.30	0.045	O	|	|	|	|	0.04
27.917	0.00	0.28	0.043	O	|	|	|	|	0.04
28.000	0.00	0.27	0.042	O	|	|	|	|	0.04
28.083	0.00	0.26	0.040	O	|	|	|	|	0.04
28.167	0.00	0.25	0.038	O	|	|	|	|	0.04
28.250	0.00	0.24	0.036	O	|	|	|	|	0.04
28.333	0.00	0.23	0.035	O	|	|	|	|	0.03
28.417	0.00	0.22	0.033	O	|	|	|	|	0.03
28.500	0.00	0.21	0.032	O	|	|	|	|	0.03
28.583	0.00	0.20	0.030	O	|	|	|	|	0.03
28.667	0.00	0.19	0.029	O	|	|	|	|	0.03
28.750	0.00	0.18	0.028	O	|	|	|	|	0.03
28.833	0.00	0.17	0.027	O	|	|	|	|	0.03
28.917	0.00	0.17	0.025	O	|	|	|	|	0.02
29.000	0.00	0.16	0.024	O	|	|	|	|	0.02
29.083	0.00	0.15	0.023	O	|	|	|	|	0.02
29.167	0.00	0.14	0.022	O	|	|	|	|	0.02
29.250	0.00	0.14	0.021	O	|	|	|	|	0.02
29.333	0.00	0.13	0.020	O	|	|	|	|	0.02
29.417	0.00	0.13	0.019	O	|	|	|	|	0.02
29.500	0.00	0.12	0.019	O	|	|	|	|	0.02
29.583	0.00	0.12	0.018	O	|	|	|	|	0.02
29.667	0.00	0.11	0.017	O	|	|	|	|	0.02
29.750	0.00	0.11	0.016	O	|	|	|	|	0.02
29.833	0.00	0.10	0.016	O	|	|	|	|	0.02
29.917	0.00	0.10	0.015	O	|	|	|	|	0.01
30.000	0.00	0.09	0.014	O	|	|	|	|	0.01
30.083	0.00	0.09	0.014	O	|	|	|	|	0.01
30.167	0.00	0.08	0.013	O	|	|	|	|	0.01
30.250	0.00	0.08	0.012	O	|	|	|	|	0.01
30.333	0.00	0.08	0.012	O	|	|	|	|	0.01
30.417	0.00	0.07	0.011	O	|	|	|	|	0.01
30.500	0.00	0.07	0.011	O	|	|	|	|	0.01
30.583	0.00	0.07	0.010	O	|	|	|	|	0.01
30.667	0.00	0.06	0.010	O	|	|	|	|	0.01
30.750	0.00	0.06	0.010	O	|	|	|	|	0.01
30.833	0.00	0.06	0.009	O	|	|	|	|	0.01
30.917	0.00	0.06	0.009	O	|	|	|	|	0.01
31.000	0.00	0.05	0.008	O	|	|	|	|	0.01
31.083	0.00	0.05	0.008	O	|	|	|	|	0.01
31.167	0.00	0.05	0.008	O	|	|	|	|	0.01

31.250	0.00	0.05	0.007	o	|	|	|	0.01
31.333	0.00	0.05	0.007	o	|	|	|	0.01
31.417	0.00	0.04	0.007	o	|	|	|	0.01
31.500	0.00	0.04	0.006	o	|	|	|	0.01
31.583	0.00	0.04	0.006	o	|	|	|	0.01
31.667	0.00	0.04	0.006	o	|	|	|	0.01
31.750	0.00	0.04	0.006	o	|	|	|	0.01
31.833	0.00	0.03	0.005	o	|	|	|	0.01
31.917	0.00	0.03	0.005	o	|	|	|	0.00
32.000	0.00	0.03	0.005	o	|	|	|	0.00
32.083	0.00	0.03	0.005	o	|	|	|	0.00
32.167	0.00	0.03	0.004	o	|	|	|	0.00
32.250	0.00	0.03	0.004	o	|	|	|	0.00
32.333	0.00	0.03	0.004	o	|	|	|	0.00
32.417	0.00	0.03	0.004	o	|	|	|	0.00
32.500	0.00	0.02	0.004	o	|	|	|	0.00
32.583	0.00	0.02	0.004	o	|	|	|	0.00
32.667	0.00	0.02	0.003	o	|	|	|	0.00
32.750	0.00	0.02	0.003	o	|	|	|	0.00
32.833	0.00	0.02	0.003	o	|	|	|	0.00
32.917	0.00	0.02	0.003	o	|	|	|	0.00
33.000	0.00	0.02	0.003	o	|	|	|	0.00
33.083	0.00	0.02	0.003	o	|	|	|	0.00
33.167	0.00	0.02	0.003	o	|	|	|	0.00
33.250	0.00	0.02	0.002	o	|	|	|	0.00
33.333	0.00	0.02	0.002	o	|	|	|	0.00
33.417	0.00	0.01	0.002	o	|	|	|	0.00
33.500	0.00	0.01	0.002	o	|	|	|	0.00
33.583	0.00	0.01	0.002	o	|	|	|	0.00
33.667	0.00	0.01	0.002	o	|	|	|	0.00
33.750	0.00	0.01	0.002	o	|	|	|	0.00
33.833	0.00	0.01	0.002	o	|	|	|	0.00
33.917	0.00	0.01	0.002	o	|	|	|	0.00
34.000	0.00	0.01	0.002	o	|	|	|	0.00
34.083	0.00	0.01	0.002	o	|	|	|	0.00
34.167	0.00	0.01	0.002	o	|	|	|	0.00
34.250	0.00	0.01	0.001	o	|	|	|	0.00
34.333	0.00	0.01	0.001	o	|	|	|	0.00
34.417	0.00	0.01	0.001	o	|	|	|	0.00
34.500	0.00	0.01	0.001	o	|	|	|	0.00
34.583	0.00	0.01	0.001	o	|	|	|	0.00
34.667	0.00	0.01	0.001	o	|	|	|	0.00
34.750	0.00	0.01	0.001	o	|	|	|	0.00
34.833	0.00	0.01	0.001	o	|	|	|	0.00
34.917	0.00	0.01	0.001	o	|	|	|	0.00

**********HYDROGRAPH DATA**********

Number of intervals = 419
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 26.256 (CFS)
Total volume = 16.302 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

BASIN ROUTING
100-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

BSS BUILDING 2
100-YR 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: SOUTH100YR24100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 50.896 (CFS)
Total volume = 27.031 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

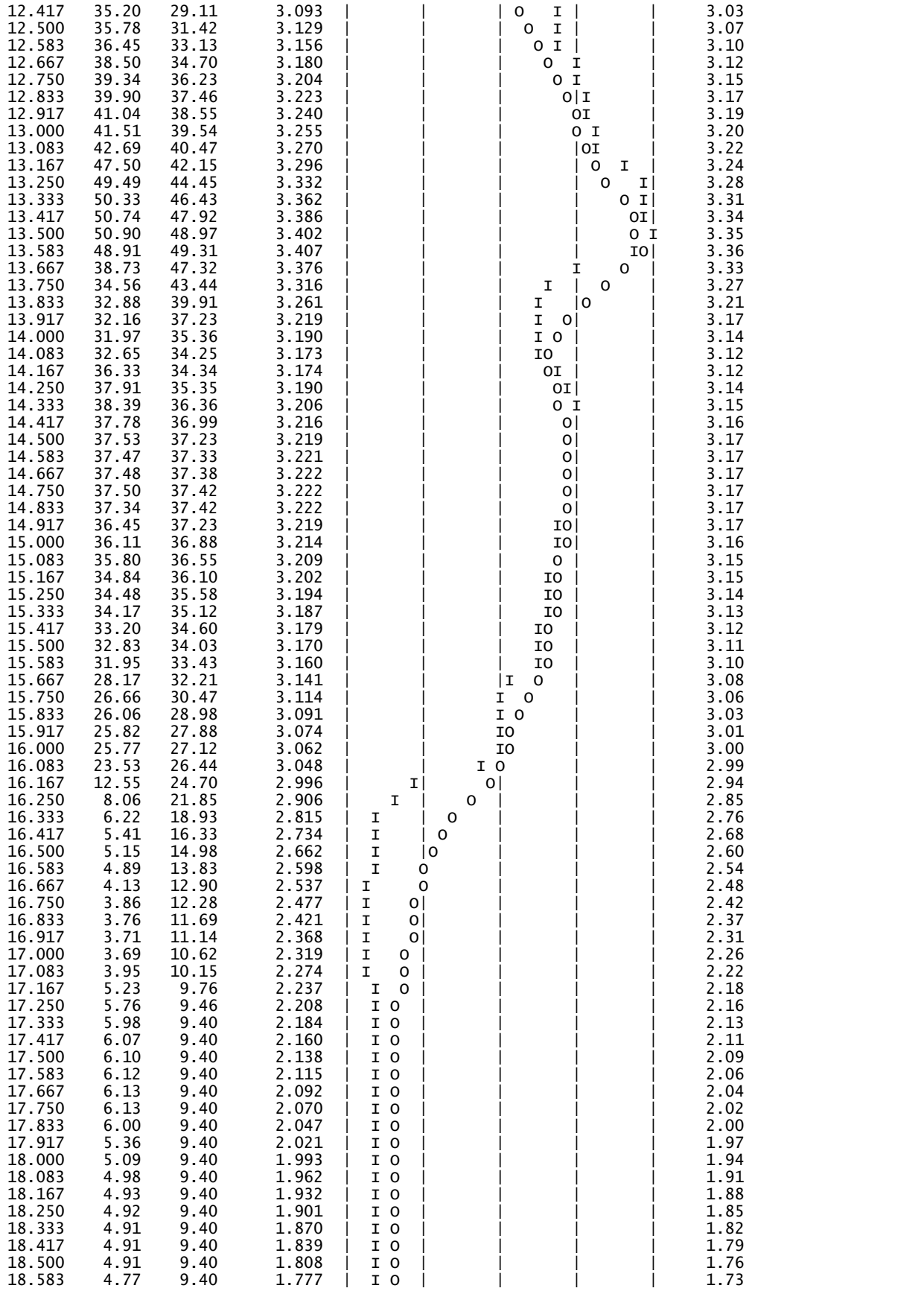
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.400	1.449	9.400	1.417	1.481
1.500	1.547	9.400	1.515	1.579
2.000	2.049	9.400	2.017	2.081
2.150	2.202	9.400	2.170	2.234
2.500	2.558	13.127	2.513	2.603
2.670	2.728	16.150	2.672	2.784
2.980	3.040	26.118	2.950	3.130
3.000	3.060	26.969	2.967	3.153
3.500	3.542	57.995	3.342	3.742
4.000	3.985	100.845	3.638	4.332
4.500	4.350	152.537	3.825	4.875
5.000	4.607	211.700	3.878	5.336

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	12.7	25.45	38.17	50.90	Depth (Ft.)
0.083	0.26	0.01	0.001	O					0.00
0.167	1.55	0.05	0.007	O					0.01
0.250	2.08	0.12	0.019	OI					0.02
0.333	2.43	0.22	0.033	OI					0.03
0.417	3.17	0.33	0.051	OI					0.05
0.500	3.46	0.46	0.071	O I					0.07
0.583	3.59	0.59	0.091	O I					0.09
0.667	3.65	0.73	0.112	O I					0.11
0.750	3.66	0.85	0.132	O I					0.13
0.833	3.80	0.98	0.151	O I					0.15
0.917	4.45	1.12	0.172	O I					0.17
1.000	4.72	1.27	0.196	O I					0.19
1.083	4.70	1.42	0.219	O I					0.21
1.167	4.10	1.55	0.239	O I					0.23
1.250	3.85	1.66	0.255	|OI					0.25
1.333	3.75	1.75	0.270	|OI					0.26
1.417	3.71	1.84	0.283	|OI					0.27
1.500	3.69	1.92	0.296	|OI					0.29
1.583	3.69	1.99	0.307	|OI					0.30
1.667	3.68	2.07	0.319	|OI					0.31
1.750	3.68	2.14	0.330	|OI					0.32
1.833	3.81	2.21	0.340	|OI					0.33
1.917	4.45	2.29	0.353	|OI					0.34
2.000	4.72	2.39	0.369	|OI					0.36
2.083	4.83	2.50	0.385	|O I					0.37
2.167	4.88	2.60	0.401	|O I					0.39
2.250	4.89	2.70	0.416	|O I					0.40
2.333	4.90	2.80	0.431	|O I					0.42
2.417	4.91	2.89	0.445	|O I					0.43
2.500	4.91	2.98	0.459	|O I					0.44
2.583	5.04	3.06	0.472	|O I					0.46
2.667	5.68	3.16	0.488	|O I					0.47
2.750	5.95	3.28	0.505	| OI					0.49
2.833	6.05	3.40	0.524	| OI					0.51
2.917	6.10	3.52	0.542	| OI					0.52
3.000	6.12	3.63	0.559	| OI					0.54
3.083	6.12	3.74	0.576	| OI					0.56
3.167	6.13	3.84	0.592	| OI					0.57
3.250	6.13	3.94	0.608	| OI					0.59
3.333	6.13	4.04	0.622	| OI					0.60
3.417	6.13	4.13	0.637	| OI					0.61
3.500	6.13	4.22	0.650	| OI					0.63
3.583	6.13	4.30	0.663	| OI					0.64
3.667	6.13	4.38	0.675	| OI					0.65
3.750	6.13	4.46	0.687	| OI					0.66
3.833	6.26	4.53	0.699	| OI					0.68
3.917	6.91	4.62	0.713	| O I					0.69
4.000	7.17	4.73	0.729	| O I					0.70
4.083	7.28	4.84	0.746	| OI					0.72
4.167	7.33	4.95	0.762	| OI					0.74
4.250	7.34	5.05	0.778	| OI					0.75
4.333	7.48	5.15	0.794	| OI					0.77
4.417	8.13	5.27	0.812	| O I					0.78
4.500	8.40	5.40	0.832	| O I					0.80
4.583	8.51	5.53	0.853	| O I					0.82
4.667	8.55	5.66	0.873	| O I					0.84
4.750	8.57	5.79	0.893	| O I					0.86
4.833	8.71	5.92	0.912	| O I					0.88
4.917	9.36	6.05	0.933	| O I					0.90
5.000	9.62	6.20	0.956	| O I					0.92
5.083	9.47	6.35	0.979	| O I					0.95
5.167	8.23	6.46	0.995	| OI					0.96
5.250	7.72	6.52	1.006	| O					0.97
5.333	7.64	6.57	1.013	| O					0.98
5.417	8.19	6.63	1.022	| OI					0.99
5.500	8.43	6.71	1.034	| OI					1.00
5.583	8.65	6.79	1.046	| OI					1.01
5.667	9.33	6.88	1.061	| OI					1.03
5.750	9.61	7.00	1.078	| O I					1.04
5.833	9.73	7.11	1.096	| O I					1.06
5.917	9.78	7.23	1.114	| O I					1.08
6.000	9.80	7.34	1.131	| O I					1.09
6.083	9.94	7.45	1.148	| O I					1.11

6.167	10.59	7.57	1.167	O I				1.13
6.250	10.85	7.71	1.189	O I				1.15
6.333	10.96	7.85	1.210	O I				1.17
6.417	11.01	7.99	1.231	OI				1.19
6.500	11.02	8.12	1.252	OI				1.21
6.583	11.16	8.25	1.272	O I				1.23
6.667	11.81	8.39	1.293	O I				1.25
6.750	12.08	8.55	1.317	O I				1.27
6.833	12.19	8.70	1.342	O I				1.30
6.917	12.23	8.86	1.365	O I				1.32
7.000	12.25	9.00	1.388	O I				1.34
7.083	12.26	9.15	1.410	O I				1.36
7.167	12.26	9.28	1.431	O I				1.38
7.250	12.26	9.40	1.451	O I				1.40
7.333	12.39	9.40	1.471	O I				1.42
7.417	13.04	9.40	1.494	O I				1.45
7.500	13.30	9.40	1.520	O I				1.47
7.583	13.54	9.40	1.548	O I				1.50
7.667	14.24	9.40	1.579	O I				1.53
7.750	14.52	9.40	1.613	O I				1.57
7.833	14.76	9.40	1.649	O I				1.60
7.917	15.46	9.40	1.688	O I				1.64
8.000	15.74	9.40	1.731	O I				1.68
8.083	16.12	9.40	1.776	O I				1.73
8.167	17.46	9.40	1.827	O I				1.78
8.250	18.01	9.40	1.884	O I				1.84
8.333	18.23	9.40	1.944	O I				1.90
8.417	18.34	9.40	2.005	O I				1.96
8.500	18.37	9.40	2.067	O I				2.02
8.583	18.51	9.40	2.129	O I				2.08
8.667	19.17	9.40	2.194	O I				2.14
8.750	19.43	10.01	2.261	O I				2.21
8.833	19.67	10.68	2.324	O I				2.27
8.917	20.37	11.33	2.386	O I				2.33
9.000	20.65	11.97	2.447	O I				2.39
9.083	21.03	12.58	2.506	O I				2.45
9.167	22.37	13.28	2.566	O I				2.51
9.250	22.91	14.36	2.627	O I				2.57
9.333	23.27	15.37	2.684	O I				2.63
9.417	24.02	16.44	2.737	O I				2.68
9.500	24.31	17.97	2.785	O I				2.73
9.583	24.57	19.26	2.825	O I				2.77
9.667	25.27	20.38	2.860	O I				2.80
9.750	25.55	21.38	2.892	O I				2.83
9.833	25.85	22.23	2.918	O I				2.86
9.917	26.81	23.05	2.944	O I				2.88
10.000	27.23	23.83	2.968	O I				2.91
10.083	26.44	24.43	2.987	OI				2.93
10.167	21.71	24.36	2.985	I O				2.93
10.250	19.76	23.64	2.962	I O				2.90
10.333	18.96	22.79	2.936	I O				2.88
10.417	18.62	22.00	2.911	I O				2.85
10.500	18.50	21.32	2.890	I O				2.83
10.583	19.10	20.82	2.874	IO				2.82
10.667	22.27	20.79	2.873	OI				2.81
10.750	23.60	21.22	2.887	OI				2.83
10.833	24.14	21.74	2.903	O I				2.84
10.917	24.41	22.24	2.919	O I				2.86
11.000	24.53	22.69	2.933	OI				2.87
11.083	24.46	23.04	2.944	OI				2.88
11.167	23.79	23.26	2.950	O				2.89
11.250	23.50	23.34	2.953	O				2.89
11.333	23.38	23.36	2.954	O				2.89
11.417	23.33	23.36	2.954	O				2.89
11.500	23.32	23.35	2.953	O				2.89
11.583	23.04	23.32	2.952	O				2.89
11.667	21.75	23.13	2.947	IO				2.89
11.750	21.22	22.81	2.936	IO				2.88
11.833	21.13	22.48	2.926	IO				2.87
11.917	21.68	22.27	2.920	IO				2.86
12.000	21.92	22.18	2.917	O				2.86
12.083	23.31	22.26	2.919	OI				2.86
12.167	29.75	23.11	2.946	O	I			2.89
12.250	32.42	24.69	2.995	O	I			2.94
12.333	33.73	26.42	3.047	O	I			2.99



18.667	4.13	9.40	1.743	| I O |	|	|	|	1.70
18.750	3.86	9.40	1.706	| I O |	|	|	|	1.66
18.833	3.63	9.40	1.667	| I O |	|	|	|	1.62
18.917	2.93	9.40	1.624	|I O |	|	|	|	1.58
19.000	2.65	9.40	1.579	|I O |	|	|	|	1.53
19.083	2.67	9.40	1.533	|I O |	|	|	|	1.49
19.167	3.26	9.40	1.488	| I O |	|	|	|	1.44
19.250	3.51	9.39	1.447	| I O |	|	|	|	1.40
19.333	3.74	9.13	1.408	| I O |	|	|	|	1.36
19.417	4.43	8.91	1.374	| I O |	|	|	|	1.33
19.500	4.70	8.72	1.345	| I O |	|	|	|	1.30
19.583	4.69	8.55	1.318	| I O |	|	|	|	1.27
19.667	4.10	8.37	1.290	| I O |	|	|	|	1.25
19.750	3.85	8.17	1.260	| I O |	|	|	|	1.22
19.833	3.62	7.98	1.230	| I O |	|	|	|	1.19
19.917	2.93	7.77	1.198	|I O |	|	|	|	1.16
20.000	2.65	7.56	1.165	|I O |	|	|	|	1.13
20.083	2.67	7.34	1.132	|I O |	|	|	|	1.09
20.167	3.26	7.15	1.102	| I O |	|	|	|	1.07
20.250	3.51	6.99	1.077	| I O |	|	|	|	1.04
20.333	3.61	6.84	1.054	| I O |	|	|	|	1.02
20.417	3.65	6.70	1.032	| I O |	|	|	|	1.00
20.500	3.66	6.56	1.012	| I O |	|	|	|	0.98
20.583	3.67	6.44	0.992	| I O |	|	|	|	0.96
20.667	3.68	6.32	0.974	| IO |	|	|	|	0.94
20.750	3.68	6.20	0.956	| IO |	|	|	|	0.92
20.833	3.55	6.09	0.938	| IO |	|	|	|	0.91
20.917	2.90	5.96	0.919	|I O |	|	|	|	0.89
21.000	2.64	5.82	0.898	|I O |	|	|	|	0.87
21.083	2.66	5.68	0.876	|I O |	|	|	|	0.85
21.167	3.26	5.57	0.858	| IO |	|	|	|	0.83
21.250	3.51	5.47	0.843	| IO |	|	|	|	0.81
21.333	3.48	5.38	0.830	| IO |	|	|	|	0.80
21.417	2.87	5.29	0.815	|I O |	|	|	|	0.79
21.500	2.62	5.18	0.798	|I O |	|	|	|	0.77
21.583	2.66	5.07	0.781	|I O |	|	|	|	0.75
21.667	3.26	4.97	0.767	| IO |	|	|	|	0.74
21.750	3.51	4.90	0.756	| IO |	|	|	|	0.73
21.833	3.48	4.84	0.746	| IO |	|	|	|	0.72
21.917	2.87	4.77	0.735	|IO |	|	|	|	0.71
22.000	2.62	4.68	0.722	|IO |	|	|	|	0.70
22.083	2.66	4.59	0.708	|IO |	|	|	|	0.68
22.167	3.26	4.52	0.697	| O |	|	|	|	0.67
22.250	3.51	4.47	0.689	| O |	|	|	|	0.67
22.333	3.48	4.43	0.683	| O |	|	|	|	0.66
22.417	2.87	4.37	0.674	|IO |	|	|	|	0.65
22.500	2.62	4.30	0.663	|IO |	|	|	|	0.64
22.583	2.52	4.23	0.652	|IO |	|	|	|	0.63
22.667	2.48	4.15	0.640	|IO |	|	|	|	0.62
22.750	2.47	4.08	0.629	|IO |	|	|	|	0.61
22.833	2.46	4.01	0.618	|IO |	|	|	|	0.60
22.917	2.45	3.94	0.607	|IO |	|	|	|	0.59
23.000	2.45	3.87	0.597	|IO |	|	|	|	0.58
23.083	2.45	3.81	0.588	|IO |	|	|	|	0.57
23.167	2.45	3.75	0.579	|IO |	|	|	|	0.56
23.250	2.45	3.70	0.570	|IO |	|	|	|	0.55
23.333	2.45	3.64	0.561	|IO |	|	|	|	0.54
23.417	2.45	3.59	0.553	|IO |	|	|	|	0.53
23.500	2.45	3.54	0.546	|IO |	|	|	|	0.53
23.583	2.45	3.49	0.538	|IO |	|	|	|	0.52
23.667	2.45	3.45	0.531	|IO |	|	|	|	0.51
23.750	2.45	3.40	0.525	|IO |	|	|	|	0.51
23.833	2.45	3.36	0.518	|IO |	|	|	|	0.50
23.917	2.45	3.32	0.512	|IO |	|	|	|	0.49
24.000	2.45	3.28	0.506	|IO |	|	|	|	0.49
24.083	2.19	3.24	0.500	|IO |	|	|	|	0.48
24.167	0.90	3.17	0.488	IO |	|	|	|	0.47
24.250	0.37	3.06	0.471	IO |	|	|	|	0.46
24.333	0.16	2.94	0.452	IO |	|	|	|	0.44
24.417	0.06	2.81	0.433	IO |	|	|	|	0.42
24.500	0.03	2.69	0.415	IO |	|	|	|	0.40
24.583	0.01	2.57	0.397	IO |	|	|	|	0.38
24.667	0.00	2.46	0.380	IO |	|	|	|	0.37
24.750	0.00	2.35	0.363	IO |	|	|	|	0.35
24.833	0.00	2.25	0.347	IO |	|	|	|	0.34

24.917	0.00	2.15	0.332	IO	|	|	|	|	0.32
25.000	0.00	2.06	0.317	IO	|	|	|	|	0.31
25.083	0.00	1.97	0.304	IO	|	|	|	|	0.29
25.167	0.00	1.88	0.290	IO	|	|	|	|	0.28
25.250	0.00	1.80	0.278	IO	|	|	|	|	0.27
25.333	0.00	1.72	0.265	IO	|	|	|	|	0.26
25.417	0.00	1.65	0.254	IO	|	|	|	|	0.25
25.500	0.00	1.57	0.243	O	|	|	|	|	0.23
25.583	0.00	1.51	0.232	O	|	|	|	|	0.22
25.667	0.00	1.44	0.222	O	|	|	|	|	0.21
25.750	0.00	1.38	0.212	O	|	|	|	|	0.21
25.833	0.00	1.32	0.203	O	|	|	|	|	0.20
25.917	0.00	1.26	0.194	O	|	|	|	|	0.19
26.000	0.00	1.20	0.186	O	|	|	|	|	0.18
26.083	0.00	1.15	0.178	O	|	|	|	|	0.17
26.167	0.00	1.10	0.170	O	|	|	|	|	0.16
26.250	0.00	1.05	0.162	O	|	|	|	|	0.16
26.333	0.00	1.01	0.155	O	|	|	|	|	0.15
26.417	0.00	0.96	0.148	O	|	|	|	|	0.14
26.500	0.00	0.92	0.142	O	|	|	|	|	0.14
26.583	0.00	0.88	0.136	O	|	|	|	|	0.13
26.667	0.00	0.84	0.130	O	|	|	|	|	0.13
26.750	0.00	0.81	0.124	O	|	|	|	|	0.12
26.833	0.00	0.77	0.119	O	|	|	|	|	0.11
26.917	0.00	0.74	0.114	O	|	|	|	|	0.11
27.000	0.00	0.70	0.109	O	|	|	|	|	0.10
27.083	0.00	0.67	0.104	O	|	|	|	|	0.10
27.167	0.00	0.64	0.099	O	|	|	|	|	0.10
27.250	0.00	0.62	0.095	O	|	|	|	|	0.09
27.333	0.00	0.59	0.091	O	|	|	|	|	0.09
27.417	0.00	0.56	0.087	O	|	|	|	|	0.08
27.500	0.00	0.54	0.083	O	|	|	|	|	0.08
27.583	0.00	0.52	0.079	O	|	|	|	|	0.08
27.667	0.00	0.49	0.076	O	|	|	|	|	0.07
27.750	0.00	0.47	0.073	O	|	|	|	|	0.07
27.833	0.00	0.45	0.069	O	|	|	|	|	0.07
27.917	0.00	0.43	0.066	O	|	|	|	|	0.06
28.000	0.00	0.41	0.064	O	|	|	|	|	0.06
28.083	0.00	0.39	0.061	O	|	|	|	|	0.06
28.167	0.00	0.38	0.058	O	|	|	|	|	0.06
28.250	0.00	0.36	0.056	O	|	|	|	|	0.05
28.333	0.00	0.34	0.053	O	|	|	|	|	0.05
28.417	0.00	0.33	0.051	O	|	|	|	|	0.05
28.500	0.00	0.32	0.049	O	|	|	|	|	0.05
28.583	0.00	0.30	0.046	O	|	|	|	|	0.04
28.667	0.00	0.29	0.044	O	|	|	|	|	0.04
28.750	0.00	0.28	0.042	O	|	|	|	|	0.04
28.833	0.00	0.26	0.041	O	|	|	|	|	0.04
28.917	0.00	0.25	0.039	O	|	|	|	|	0.04
29.000	0.00	0.24	0.037	O	|	|	|	|	0.04
29.083	0.00	0.23	0.036	O	|	|	|	|	0.03
29.167	0.00	0.22	0.034	O	|	|	|	|	0.03
29.250	0.00	0.21	0.032	O	|	|	|	|	0.03
29.333	0.00	0.20	0.031	O	|	|	|	|	0.03
29.417	0.00	0.19	0.030	O	|	|	|	|	0.03
29.500	0.00	0.18	0.028	O	|	|	|	|	0.03
29.583	0.00	0.18	0.027	O	|	|	|	|	0.03
29.667	0.00	0.17	0.026	O	|	|	|	|	0.03
29.750	0.00	0.16	0.025	O	|	|	|	|	0.02
29.833	0.00	0.15	0.024	O	|	|	|	|	0.02
29.917	0.00	0.15	0.023	O	|	|	|	|	0.02
30.000	0.00	0.14	0.022	O	|	|	|	|	0.02
30.083	0.00	0.13	0.021	O	|	|	|	|	0.02
30.167	0.00	0.13	0.020	O	|	|	|	|	0.02
30.250	0.00	0.12	0.019	O	|	|	|	|	0.02
30.333	0.00	0.12	0.018	O	|	|	|	|	0.02
30.417	0.00	0.11	0.017	O	|	|	|	|	0.02
30.500	0.00	0.11	0.017	O	|	|	|	|	0.02
30.583	0.00	0.10	0.016	O	|	|	|	|	0.02
30.667	0.00	0.10	0.015	O	|	|	|	|	0.01
30.750	0.00	0.09	0.015	O	|	|	|	|	0.01
30.833	0.00	0.09	0.014	O	|	|	|	|	0.01
30.917	0.00	0.09	0.013	O	|	|	|	|	0.01
31.000	0.00	0.08	0.013	O	|	|	|	|	0.01
31.083	0.00	0.08	0.012	O	|	|	|	|	0.01

31.167	0.00	0.08	0.012	o	|	|	|	0.01
31.250	0.00	0.07	0.011	o	|	|	|	0.01
31.333	0.00	0.07	0.011	o	|	|	|	0.01
31.417	0.00	0.07	0.010	o	|	|	|	0.01
31.500	0.00	0.06	0.010	o	|	|	|	0.01
31.583	0.00	0.06	0.009	o	|	|	|	0.01
31.667	0.00	0.06	0.009	o	|	|	|	0.01
31.750	0.00	0.06	0.009	o	|	|	|	0.01
31.833	0.00	0.05	0.008	o	|	|	|	0.01
31.917	0.00	0.05	0.008	o	|	|	|	0.01
32.000	0.00	0.05	0.007	o	|	|	|	0.01
32.083	0.00	0.05	0.007	o	|	|	|	0.01
32.167	0.00	0.04	0.007	o	|	|	|	0.01
32.250	0.00	0.04	0.007	o	|	|	|	0.01
32.333	0.00	0.04	0.006	o	|	|	|	0.01
32.417	0.00	0.04	0.006	o	|	|	|	0.01
32.500	0.00	0.04	0.006	o	|	|	|	0.01
32.583	0.00	0.04	0.005	o	|	|	|	0.01
32.667	0.00	0.03	0.005	o	|	|	|	0.01
32.750	0.00	0.03	0.005	o	|	|	|	0.00
32.833	0.00	0.03	0.005	o	|	|	|	0.00
32.917	0.00	0.03	0.005	o	|	|	|	0.00
33.000	0.00	0.03	0.004	o	|	|	|	0.00
33.083	0.00	0.03	0.004	o	|	|	|	0.00
33.167	0.00	0.03	0.004	o	|	|	|	0.00
33.250	0.00	0.02	0.004	o	|	|	|	0.00
33.333	0.00	0.02	0.004	o	|	|	|	0.00
33.417	0.00	0.02	0.003	o	|	|	|	0.00
33.500	0.00	0.02	0.003	o	|	|	|	0.00
33.583	0.00	0.02	0.003	o	|	|	|	0.00
33.667	0.00	0.02	0.003	o	|	|	|	0.00
33.750	0.00	0.02	0.003	o	|	|	|	0.00
33.833	0.00	0.02	0.003	o	|	|	|	0.00
33.917	0.00	0.02	0.003	o	|	|	|	0.00
34.000	0.00	0.02	0.003	o	|	|	|	0.00
34.083	0.00	0.02	0.002	o	|	|	|	0.00
34.167	0.00	0.02	0.002	o	|	|	|	0.00
34.250	0.00	0.01	0.002	o	|	|	|	0.00
34.333	0.00	0.01	0.002	o	|	|	|	0.00
34.417	0.00	0.01	0.002	o	|	|	|	0.00
34.500	0.00	0.01	0.002	o	|	|	|	0.00
34.583	0.00	0.01	0.002	o	|	|	|	0.00
34.667	0.00	0.01	0.002	o	|	|	|	0.00
34.750	0.00	0.01	0.002	o	|	|	|	0.00
34.833	0.00	0.01	0.002	o	|	|	|	0.00
34.917	0.00	0.01	0.002	o	|	|	|	0.00
35.000	0.00	0.01	0.001	o	|	|	|	0.00
35.083	0.00	0.01	0.001	o	|	|	|	0.00
35.167	0.00	0.01	0.001	o	|	|	|	0.00
35.250	0.00	0.01	0.001	o	|	|	|	0.00
35.333	0.00	0.01	0.001	o	|	|	|	0.00
35.417	0.00	0.01	0.001	o	|	|	|	0.00
35.500	0.00	0.01	0.001	o	|	|	|	0.00
35.583	0.00	0.01	0.001	o	|	|	|	0.00
35.667	0.00	0.01	0.001	o	|	|	|	0.00
35.750	0.00	0.01	0.001	o	|	|	|	0.00

**********HYDROGRAPH DATA**********

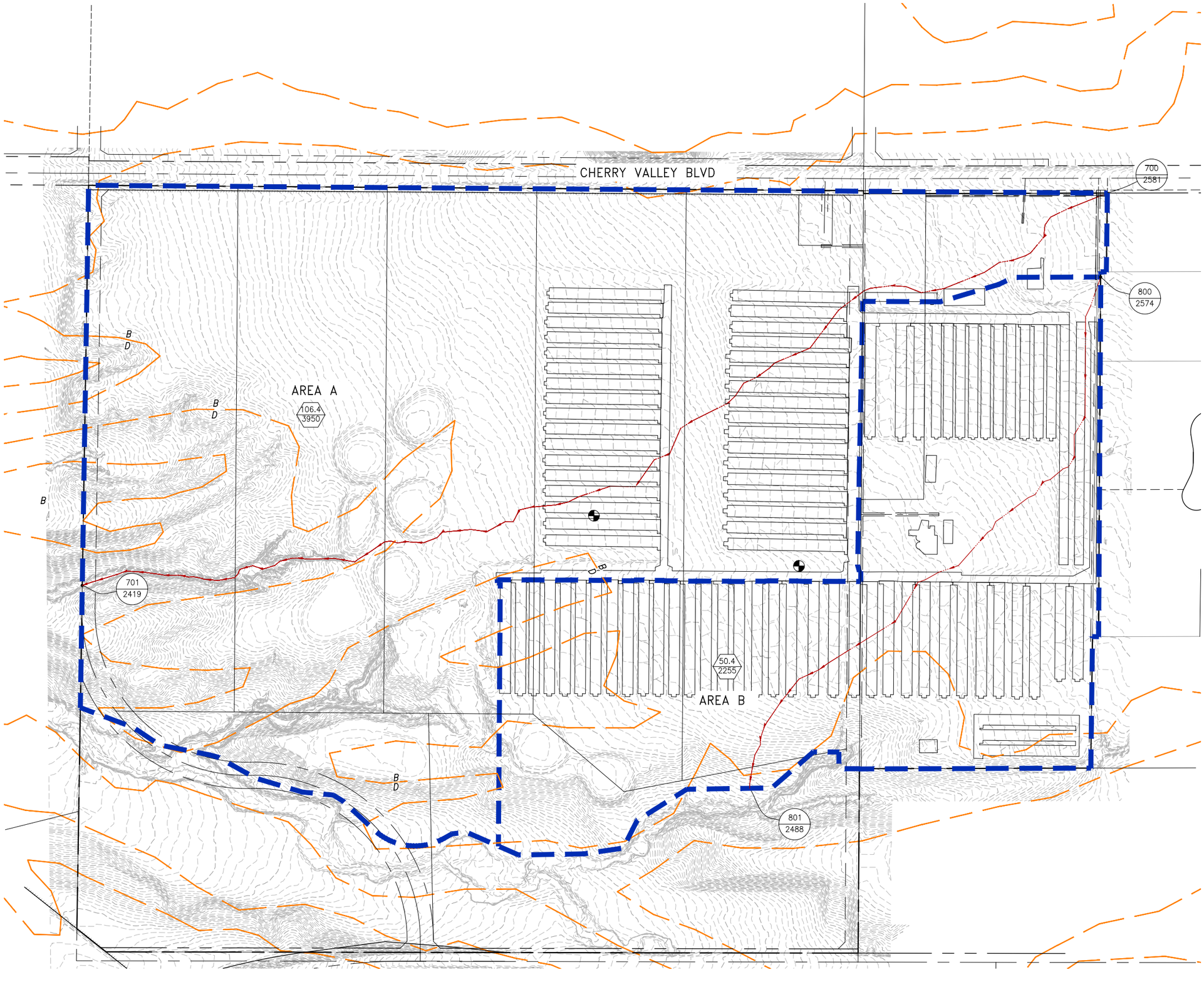
Number of intervals = 429
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 49.310 (CFS)
Total volume = 27.030 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

UNIT HYDROGRAPH HYDROLOGY MAP



EXISTING AREA A	
TOTAL AREA	106.4 AC
L_T	3950 Ft
L_{CA}	1805 Ft
ΔH	162.0 Ft

EXISTING AREA B	
TOTAL AREA	50.4 AC
L_T	2255 Ft
L_{CA}	615 Ft
ΔH	86.0 Ft

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- AC / FT – AREA (AC) / LENGTH (FT)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY

N W E S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 6
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE:	1"=X'
DATE:	8/10/2021
DESIGNED:	EP
CHECKED:	
PLN CK REF:	
F.B.	

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O.	21-0044
SHEET	1
OF	3 SHEETS
DWG. NO.	

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CHERRY VALLEY BLVD

AREA A

88.8 ACRES

17.7 ACRES

AREA B

B
D

LEGEND

- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY
- PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED WEST AREA (83.4% AREA A)
- PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED NORTH AREA (16.6% AREA A)

N
W WEBB E
S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 7
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION AREA A PORTIONS
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/10/2021			SHEET 2
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

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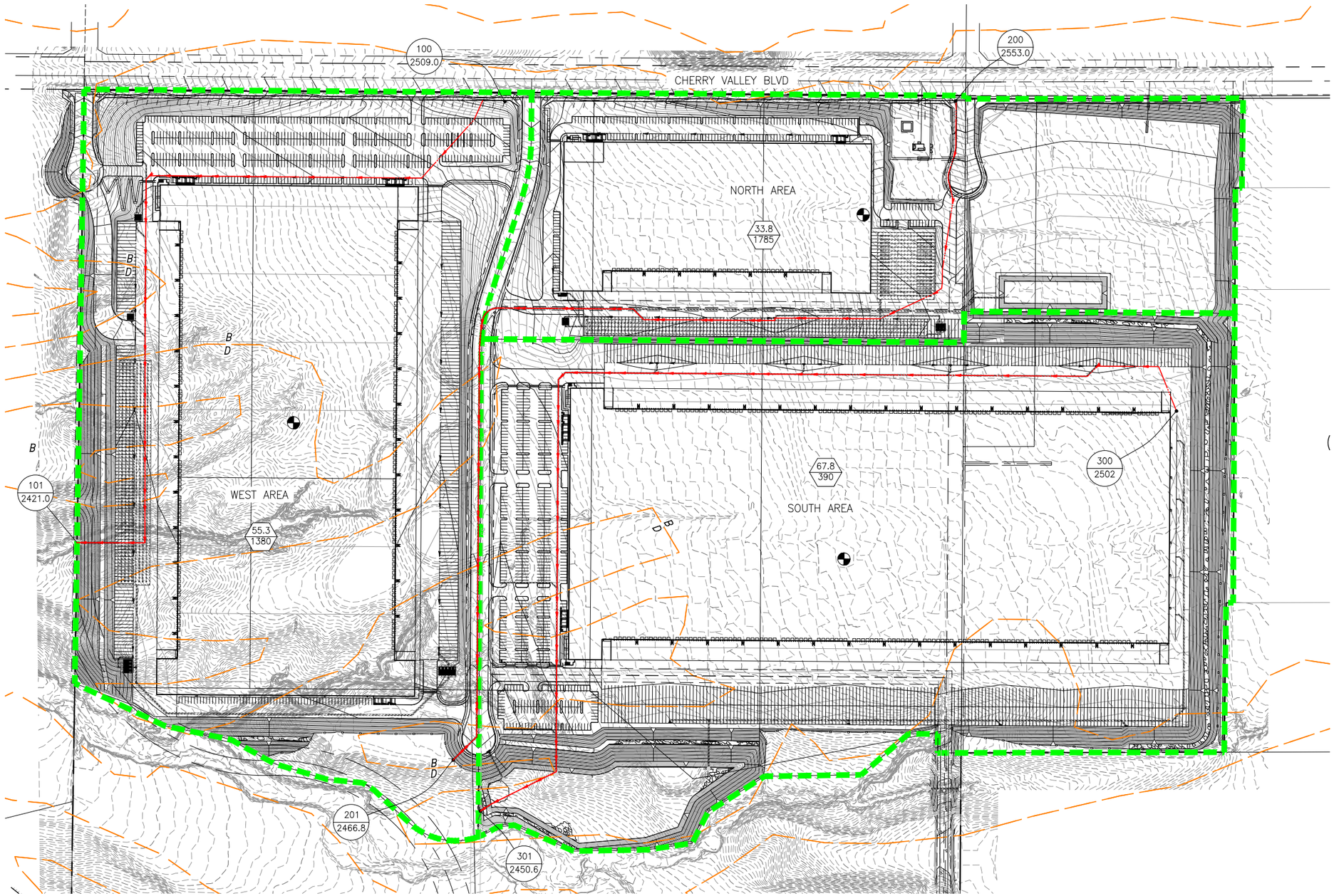

PROPOSED WEST AREA	
TOTAL AREA	55.3 AC
L_T	1380 Ft
L_{CA}	695 Ft
ΔH	12.0 Ft

PROPOSED NORTH AREA	
TOTAL AREA	33.8 AC
L_T	1785 Ft
L_{CA}	1340 Ft
ΔH	27.0 Ft

PROPOSED SOUTH AREA	
TOTAL AREA	67.8 AC
L_T	390 Ft
L_{CA}	360 Ft
ΔH	9.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER / ELEVATION (FT)

AC / FT – AREA (AC) / LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W E S WEBB

1" = 150'

150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 8
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 7/20/2021			SHEET 3
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

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APPENDIX D – REFERENCES

RELEVANT EXCERPTS FROM "BEAUMONT SUMMIT STATION PRELIMINARY DRAINAGE STUDY"

SECTION 4 - BASIN ANALYSIS

ON-SITE UNIT HYDROGRAPH METHOD HYDROLOGY

The unit hydrograph method was used to determine the peak flow rates and volumes in order to adequately size the proposed basin and chamber detention systems to address increased runoff mitigation. Unit hydrographs were performed for both the 24-hour existing condition and developed condition only in the preliminary condition since it was assumed that the 24-hour condition will require the greatest mitigation volume. The existing condition is used to establish a baseline for comparative purposes. The developed condition is used for design purposes, it was utilized in the basin routing analysis in order to size and analyze the proposed basin and chamber detention systems. The unit hydrograph analysis for both the existing and developed condition was conducted for a total of 156.8 acres. This comprises the entirety of the proposed development with the BSS project site.

In the existing condition analysis, the overall project site was broken up into two areas. Approximately 106.4 acres are labelled as Area A and is tributary to the existing streambed area to the west of the project site. The remaining 50.4 acres are labelled as Area B and are tributary to a region of the streambed to the south of the project site. In the proposed condition, Area A is divided into a West Area and North Area (corresponding to Building 1 and Building 3, respectively). The West Area consists of approximately 55.3 acres while the North area is approximately 33.8 acres. Area B is referred to as the South Area in the developed condition and corresponds to the Building 2 project site, consisting of approximately 67.8 acres. In the developed condition, approximately 17.4 acres of area which was tributary to Area A in the existing condition have been included in the development of the South Area (part of the existing condition Area B). Therefore, the developed South Area will be over mitigating for flows as a greater area, and therefore greater discharge, is included in the developed condition analysis. While the existing condition Area A will be under mitigated once developed, the overall BSS site will be mass graded together as grading will require cut from the Building 2 area, in Area B, to be used in fill for mass grading of the Building 1 project site. Therefore, overall the BSS project will be fully mitigated once developed.

The following table summarizes the results of the unit hydrograph analysis:

Table 4 – Unit Hydrograph Results

EXISTING CONDITION - AREA A (WEST & NORTH)					EXISTING CONDITION - AREA B (SOUTH)				
AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)
EX100YRA	100	1	8.9	*235.28*	*EX100YRB*	100	1	4.2	*147.87*
		3	11.7	*150.79*			3	5.7	*80.72*
		6	14.5	*146.20*			6	7.5	*74.35*
		24	27.3	*70.90*			24	14.7	*34.45*
EX10YRA	10	1	5.2	*149.05*	*EX10YRB*	10	1	2.5	*95.19*
		3	6.4	*94.83*			3	3.3	*51.45*
		6	8.2	*92.02*			6	4.5	*47.26*
		24	12.4	*36.93*			24	7.6	*18.23*
EX5YRA	5	1	3.1	*105.39*	*EX5YRB*	5	1	1.7	*72.26*
		3	3.5	*59.58*			3	2.3	*35.60*
		6	4.5	*57.43*			6	3.1	*32.86*
		24	6.1	*10.83*			24	5.3	*8.78*
EX2YRA	2	1	2.1	*72.68*	*EX2YRB*	2	1	1.2	*51.91*
		3	2.4	*38.48*			3	1.7	*24.06*
		6	3.1	*36.56*			6	2.3	*22.47*
		24	2.7	*4.33*			24	3.9	*6.39*

DEVELOPED CONDITION - WEST					DEVELOPED CONDITION - NORTH					DEVELOPED CONDITION - SOUTH				
AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)
WEST100YR	100	1	5	164.42	NORTH100YR	100	1	3.1	101.13	SOUTH100YR	100	1	6.2	198.82
		3	7.5	92.35			3	4.6	56.59			3	9.2	112.81
		6	10.6	87.55			6	6.6	52.80			6	13.1	106.26
		24	21.8	41.63			24	13.7	25.34			24	27	50.90
WEST10YR	10	1	3.2	107.30	NORTH10YR	10	1	1.9	65.99	SOUTH10YR	10	1	3.9	129.69
		3	4.8	60.37			3	3	36.98			3	6	73.73
		6	6.9	57.27			6	4.3	34.61			6	8.5	69.58
		24	13	23.78			24	8.3	14.44			24	16.3	29.05
WEST5YR	5	1	2.5	86.26	NORTH5YR	5	1	1.6	53.56	SOUTH5YR	5	1	3.1	104.72
		3	3.9	46.71			3	2.5	29.08			3	4.9	57.66
		6	5.6	44.08			6	3.6	27.35			6	7.1	54.62
		24	10.6	17.46			24	6.9	11.30			24	13.4	22.01
WEST2YR	2	1	1.9	64.36	NORTH2YR	2	1	1.2	39.96	SOUTH2YR	2	1	2.3	78.02
		3	3	34.16			3	1.9	21.45			3	3.8	42.40
		6	4.4	32.10			6	2.8	20.29			6	5.5	40.35
		24	7.7	12.70			24	5	8.22			24	9.7	16.01

The unit hydrograph output files and hydrology map have been included in Appendix C.

BASIN ROUTING ANALYSIS

A routing analysis was completed to demonstrate that the basin and CMP chamber systems contain substantial volume needed to mitigate flows down to existing condition peak flow rates.

Basin routing calculations were conducted for each building area (west, north and south). A stage-storage-discharge table was determined for each area. The stage-storage-discharge tables provide input data at select elevations in the basin and/or chambers which will determine the storage and discharge at each point based on the mitigation configuration of the outlet structures.

In the proposed condition unit hydrograph analysis, the North Area outlets to the south of the Building 1 project site. Runoff from this region will connect with the outlet of the existing condition Area A, as the streambed into which Area A outlets runs from the southern portion of the Building 1 project area to the northwest along the western boundary. In the existing condition, the entire Area A generally drains to the southwest. Approximately 16.6% of Area A drains more towards the southern boundary before being conveyed to the west along the streambed. This area corresponds to the developed North Area (Building 3). The remaining portion, approximately 83.4%, correlates to the developed West Area (Building 1) and drains directly to the western boundary of Area A. For the developed condition West Area and North Area, a ratio of the areas was used to determine the existing peak flow rates which serve as the limits for the routing analysis of each area. An exhibit showing the portion of the existing condition Area A which flows south can be found in Appendix C.

For the BSS – Building 1 area, the proposed outlet structure consists of four 4-inch orifices with an invert set at the water quality ponding elevation of 2.4 ft above the chamber bottom. This orifice mitigates the 2-year storm event. A 1.5-ft weir is proposed at the maximum ponding depth for the 2-year, 24-hour storm (a depth of approximately 5.82 ft). This orifice mitigates for the 5-year storm event and creates a maximum ponding depth of 6.96 ft above the chamber bottom. At the 5-year ponding depth, a 7-ft weir is proposed to mitigate the 10-year and 100-year storm event. The 100-year storm produces a maximum ponding of 7.99 ft, which is below the 8 ft depth of the top of the chambers. The routing analysis produced a maximum drawdown time of 88.6 hours within the chambers. While this exceeds the 72-hour limit for above ground basins to prevent vector issues, the CMP detention system consists of underground chambers and therefore vector issues are not anticipated even with a high drawdown time.

For the BSS – Building 2 area, a constant flow rate of 9.4 cfs was assumed for the basin in order to account for the expected infiltration within the basin extents. This value was determined based on a recommended infiltration rate of 11.5 in/hr within the basin (see Appendix D for the infiltration report), the bottom basin area, and a factor of safety of 3. The water quality volume produces a maximum ponding of 1.4 ft above the basin bottom. Routing of the 2-year, 24-hour storm event shows that the infiltration within the basin is sufficient to meet the existing condition flow rates while producing 2.15 ft of ponding above the basin bottom. The proposed outlet structure consists of a rectangular weir with a length of 6 ft set at the 2-year storm ponding depth. This weir mitigates the 5-year storm event and produces a ponding depth of 2.67 ft. A 6-ft weir mitigates for the 10-year storm event and creates a maximum ponding depth of 2.98 ft within the basin. At the 10-year ponding elevation, a 6-ft weir mitigates for the 100-year storm. The 100-year storm creates a total ponding of 3.36 ft from the basin bottom, allowing at least 1 ft of freeboard below the top of the basin.

For the BSS- Building 3 area, the proposed outlet structure consists of a 3.5-inch orifice plate with an invert set at the bottom of the chambers. The water quality flows will be pumped out to be treated by the proposed bioretention basin therefore the chambers do not hold the water quality volume. This orifice mitigates the 2-year storm event. A 5-inch orifice is proposed at the maximum ponding depth for the 2-year, 24-hour storm (a depth of approximately 3.49 ft). This orifice mitigates for the 5-year storm event and creates a maximum ponding depth of 4.46 ft within the chambers. At this depth, a 0.8 ft weir is proposed to mitigate for the 10-year and 100-year storm events. The 10-year, 24-hour storm event creates

a maximum ponding of 5.16 ft while the 100-year storm creates a maximum ponding of 7.03 ft, which is below 9 ft depth of the top of the gravel which provides storage above the chambers as well. The routing analysis for the BSS – Building 3 detention chambers resulted in a maximum drawdown time of approximately 228 hours. While this exceeds the 72-hour limit for above ground basins to prevent vector issues the CMP detention system consists of underground chambers and therefore vector issues are not anticipated even with a high drawdown time. This is due to this area over mitigating as the developed Building 3 project area is larger than the portion of the existing condition Area A which is used as the limit for the routing analysis of this region. While the mitigation for both Building 3 and Parcel 4 are included in the BSS – Building 3 Area, Parcel 4 will be required to treat for water quality separately from Building 3.

The following tables present the result of routing analysis for the 2-, 5-, 10- and 100-year 24-hour storm events to demonstrate that the basin and CMP chamber systems provide the necessary storage volume needed to restrict the outflow to existing condition flow rates.

Table 5 – Basin Routing Results

		Existing Condition							
		Area A (106.4 ac)		83.4% A	16.6% A	Area B (50.4 ac)		Total (156.8 ac)	
Storm Event		Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)
2-Year	1-Hour	2.1	72.7	**60.6**	12.1	1.2	**51.9**	3.3	124.6
	3-Hour	2.4	38.5	**32.1**	6.4	1.7	**24.1**	4.1	62.5
	6-Hour	3.1	36.6	**30.5**	6.1	2.3	**22.5**	5.4	59.0
	24-Hour	2.7	4.3	**3.6**	0.7	3.9	**6.4**	6.6	10.7
5-Year	1-Hour	3.1	105.4	**87.9**	17.5	1.7	**72.3**	4.8	177.7
	3-Hour	3.5	59.6	49.7	9.9	2.3	**35.6**	5.8	95.2
	6-Hour	4.5	57.4	47.9	9.5	3.1	**32.9**	7.6	90.3
	24-Hour	6.1	10.8	9.0	1.8	5.3	**8.8**	11.4	19.6
10-Year	1-Hour	5.2	149.1	**124.3**	24.7	2.5	**95.2**	7.7	244.2
	3-Hour	6.4	94.8	79.1	15.7	3.3	**51.5**	9.7	146.3
	6-Hour	8.2	92.0	76.7	15.3	4.5	**47.3**	12.7	139.3
	24-Hour	12.4	36.9	30.8	6.1	7.6	**18.2**	20.0	55.2
100-Year	1-Hour	8.9	235.28	196.0	39.1	4.2	**147.9**	13.1	383.2
	3-Hour	11.7	150.79	125.6	25.0	5.7	**80.7**	17.4	231.5
	6-Hour	14.5	146.20	121.8	24.3	7.5	**74.4**	22.0	220.6
	24-Hour	27.3	70.90	59.1	11.8	14.7	**34.5**	42.0	105.4

Storm Event		Developed Condition										Basin Routing Results				
		West Area (55.3 ac)		North Area (33.8 ac)		Combined (89.1 ac)		South Area (67.8 ac)		Total (156.8 ac)		West Area	North Area	Combined	South Area	Total
		Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	*Peak Flow (cfs)	**Peak Flow (cfs)	Peak Flow (cfs)
2-Year	1-Hour	1.9	64.4	1.2	40.0	3.1	104.3	2.30	78.02	5.40	*182.34*	*To be analyzed during Final Engineering*				
	3-Hour	3.0	34.2	1.9	21.5	4.9	55.6	3.80	42.40	8.70	*98.01*					
	6-Hour	4.4	32.1	2.8	20.3	7.2	52.4	5.50	40.35	12.70	*92.74*					
	24-Hour	7.7	12.7	5.0	8.2	12.7	20.9	9.70	16.01	22.40	*36.93*	*3.31*	*0.65*	*3.96*	*0*	*3.96*
5-Year	1-Hour	2.5	86.3	1.6	53.6	4.1	139.8	3.10	104.72	7.20	*244.54*	*To be analyzed during Final Engineering*				
	3-Hour	3.9	46.7	2.5	29.1	6.4	75.8	4.90	57.66	11.30	*133.45*					
	6-Hour	5.6	44.1	3.6	27.4	9.2	71.4	7.10	54.62	16.30	*126.05*					
	24-Hour	10.6	17.5	6.9	11.3	17.5	28.8	13.40	22.01	30.90	*50.77*	*9.37*	*1.44*	*10.81*	*8.10*	*18.91*
10-Year	1-Hour	3.2	107.3	1.9	66.0	5.1	173.3	3.90	129.69	9.00	*302.98*	*To be analyzed during Final Engineering*				
	3-Hour	4.8	60.4	3.0	37.0	7.8	97.4	6.00	73.73	13.80	*171.08*					
	6-Hour	6.9	57.3	4.3	34.6	11.2	91.9	8.50	69.58	19.70	*161.46*					
	24-Hour	13.0	23.8	8.3	14.4	21.3	38.2	16.30	29.05	37.60	*67.27*	*16.43*	*3.18*	*19.61*	*16.86*	*36.47*
100-Year	1-Hour	5.0	164.4	3.1	101.1	8.1	265.5	6.2	198.82	14.3	*464.32*	*To be analyzed during Final Engineering*				
	3-Hour	7.5	92.4	4.6	56.6	12.1	149.0	9.2	112.81	21.3	*261.81*					
	6-Hour	10.6	87.6	6.6	52.8	17.2	140.4	13.1	106.26	30.3	*246.66*					
	24-Hour	21.8	41.6	13.7	25.3	35.5	66.9	27.0	50.90	62.5	*117.80*	*40.75*	*12.18*	*52.93*	*39.9*	*92.83*

Note:

**The Combined Peak Flow describes the flows exiting the site along the western and southwestern boundary of the site. This value is the sum of the peak flow rates generated by the West and North Areas in the proposed condition which have been routed to be less than the existing condition peak flow for Area A or within 10% of this value.*

***For the routing analysis of the South Area (Building 2), a constant flow rate of 9.4 cfs is assumed to be infiltrating within the basin extents (based on 11.5 in/hr infiltration rate, the basin bottom area, and a factor of safety of 3) and has been subtracted from the peak flow results from the routing analysis.*

The basin routing calculations and other hydraulic calculations have been provided in Appendix C. Based on the table above, the proposed infiltration basin and detention chambers for each building area have the capacity to mitigate for all the required HCOC storm events. All discharge flow rates in the developed condition are lower than or within ten percent of the flow rate exiting the site in the existing condition.

INFILTRATION REPORT

August 13, 2021

Exeter Property Group
4602 East University Drive, Suite 185
Phoenix, Arizona 85034

Attention: Mr. Andrew Greybar
Senior Project Manager

Project No.: **21G133-2**

Subject: **Results of Infiltration Testing**
Proposed E-Commerce Development
Cherry Valley Avenue, West of Fabian Lane
Beaumont, California

Reference: Geotechnical Investigation, Proposed E-Commerce Development, Beaumont, California, prepared by Southern California Geotechnical, Inc. (SCG), prepared for Exeter Property Group, SCG Project No. 21G133-1.

Mr. Greybar:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Change Order No. 21G133-CO, dated July 14, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located on the south side of Cherry Valley Boulevard, 1,500± feet west of the intersection of Cherry Valley Boulevard and Fabian Lane in Beaumont, California. The site is bounded to the north by Cherry Valley Boulevard, to the east by single-family residences (SFRs) and vacant lots, to the south by Brookside Avenue, to the southwest by the Redlands Freeway (Interstate 10) and to the west by vacant land. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several irregular to rectangular-shaped parcels which total 178.4± acres in size. The site is presently developed with three (3) single-family residences and several small abandoned buildings located in the northeastern area of the site. Remnants of shade structures including Portland cement concrete panels and sawed-off poles are present

throughout the northeastern areas of the site. Several above-ground storage tanks are also present throughout the northeastern area of the site. One of the smaller abandoned structures possesses a below-grade room with what appears to be a turbine. The remaining areas of the site are presently vacant and undeveloped. Five (5) circular to oval-shaped leech ponds are located in the west-central area of the site. Two (2) additional leech ponds are located in the south-central area of the site. Ground surface cover consist of exposed soil and moderate to dense native grass and weed growth. Several large trees are located in the southern areas of the site. Limited areas of trash and debris are located throughout the site.

Detailed topographic information was obtained from the conceptual grading plan prepared by Albert A. Webb Associates (Webb). Based on the provided plan, the northeastern to northern two-thirds of the site slopes downward to the southwest at a gradient of 4± percent. The seven (7) circular leech ponds located in the west-central and south-central areas of the site are surrounded by a berm that is 5± feet higher than the surrounding topography. The northwestern area of the site possesses several east-west and southeast-northwest trending drainage courses. The drainage features possess gradual to steep side walls with elevation differences of up to 15± feet below the surrounding topography. To the south of the leech pits, the site slopes towards the south to southwest at a gradient of 10± percent. The topography descends by 50± feet in this area. Another significant east-west trending drainage is located at the base of the descending slope, located in the southern-most region of the site. The drainage possesses gradual to steep side walls with an elevation difference up 10± feet below the surrounding topography. A hill, located to the southeast of this drainage, is approximately 20 to 30 feet higher than the surrounding topography. The hill possesses slope gradients ranging from 14 to 40± percent. To the south of the hill, the site topography slopes gently to the west at a gradient of 3.5± percent, where it meets up with a tributary drainage to the previously mentioned bisecting drainage. The area to the southwest of the bisecting drainage slopes to the west a gradient of 2.5± percent. Another hill with a north-facing descending slope is located at the southwest corner of the site. The slope has a gradient of 20± percent. The maximum site elevation is 2581± feet mean sea level (msl), in the northeast corner of the site. The minimum site elevation is 2406± feet msl, located in drainage swale channel located in the southern-most region of the site.

Proposed Development

Based on the conceptual site plan prepared by Webb, the site will be developed with three (3) new E-Commerce buildings. Building 1 will be 985,860± ft^2 in size, located in the western area of the site. Building 2 will be 1,254,000± ft^2 in size, located in the east-central region of the site. Lastly, Building 3 will be 358,370± ft^2 in size, located in the north-central area of the site. A cross-dock configuration will be constructed on Building 1 and Building 2, along the east/west and north/south building walls, respectively. Dock-high doors will be constructed along a portion of the southern building wall of Building 3. The buildings will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete (PCC) pavements in the truck court, and areas of concrete flatwork and landscape planters. Several new fill and cut slopes will be constructed along all permitters, as well as within the site. The new fill slopes will range from 10 to 40± feet in height and will possess slope inclinations not to exceed 2h:1v (horizontal to vertical). New retaining walls will also be required to establish the

new site grades. The new retaining walls will possess maximum retained heights ranging from 10 to 50± feet.

The proposed development will include on-site stormwater infiltration. Based on our conversations with the project civil engineer and the proposed site plan, infiltration systems will consist of two (2) below-grade chambers and one (1) detention basin. One of the infiltration chamber systems will be located in the northern area of the site (south of Building 3). The bottom of the chambers are expected to range from 28 to 34± feet below the existing site grades. The second infiltration chamber system will be located in the southern area of the site (south of Building 2). The bottom of the chambers are expected to range from 24 to 36± feet below the existing site grades. The detention basin will be located in the south-central area of the site. The bottom of the basin will be at an elevation of, approximately 10 to 43± feet, below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site, also referenced above. The investigation conducted for this project consisted of forty-four (44) borings advanced to depths of 10 to 50± feet, and seven (7) trenches excavated to depths of 6½ to 10½± feet below the existing site grades. Artificial fill soils were encountered at the ground surface of several boring and trench locations. The fill soils generally consist of loose to medium dense silty fine sands and clayey fine to medium sands. The fill soils possess a disturbed and mottled appearance, resulting in their classification as artificial fill. Native alluvium was encountered beneath the artificial fill soils or at the ground surface at several of the borings and trench locations. The alluvial soils extend to depths of 2½ to 10± feet below ground surface in the northern areas of the site, and 25 to 50± feet below ground surface in the southern areas of the site. The alluvial soils generally consist of loose to very dense silty fine sands and silty fine to medium sands. Older alluvial soils were encountered at the ground surface, beneath the artificial fill, and/or beneath the alluvium of the boring and trench locations, extending to at least the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of medium dense to very dense silty fine sands, silty fine to medium sands, silty fine to coarse sands and silty fine sands to fine sandy silts.

Groundwater

Groundwater was not encountered at any of the boring or trench locations. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet below existing site grades at the time of the subsurface investigation.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level and recent groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring wells in this database are located in the northeast corner of the site. Water level readings within one of these monitoring wells indicates a historic high groundwater level of 317± feet below the ground surface in September 1990. Water level readings within another of these monitoring

wells indicates a recent high groundwater level of 412± feet below the ground surface in December 2020.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of sixteen (16) infiltration test borings, advanced to depths ranging from 10 to 43± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-1 through I-16) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Upon the completion of the infiltration borings, the bottom of each test boring was covered with 2± inches of clean ¾-inch gravel. A sufficient length of 3-inch-diameter perforated PVC casing was then placed into each test hole so that the PVC casing extended from the bottom of the test hole to the ground surface. Clean ¾-inch gravel was then installed in the annulus surrounding the PVC casing.

Geotechnical Conditions

Alluvial soils were encountered at the ground surface some of the infiltration borings, extending to depths of 4 to 32± feet below existing site grades. The alluvial soils in generally consist of loose to dense silty fine sands, silty fine to medium sands, clayey sands, fine to coarse sands, and fine to coarse sandy silts with variable gravel content. Older alluvium was encountered at the ground surface or beneath the alluvium at most of the boring locations. The older alluvium generally consists of medium dense to dense fine sands, fine to coarse sands, silty fine sands, silty fine to medium sands, and clayey fine to medium sands, extending to the maximum depth explored of 43± feet.

Infiltration Testing

As previously mentioned, the infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards all sixteen (16) of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak. Based on the results of the pre-soaking process, different infiltration procedures were used during the infiltration testing at the infiltration boring locations.

Infiltration Testing

Following the pre-soaking process of the infiltration test borings, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole, and less than or equal to the water level used during the pre-soaking process. In accordance with the Riverside County guidelines, since "sandy soils" and "non-sandy" conditions were encountered at the bottom of the infiltration borings tests were run for an additional hour with measurements taken at 10-minute intervals for "sandy" conditions and 30-minute intervals for six hours in "non-sandy" conditions. After each reading, the borings were refilled to the correct water level above the gravel at the bottom of each test hole. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Test Elevation (feet) MSL	Soil Description	Infiltration Rate (inches/hour)
I-1	22	2496	Red Brown fine to coarse Sandy Silt	4.0
I-2	25	2495	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-3	31	2494	Red Brown Clayey fine to coarse Sand, trace Silt	0.0
I-4	34	2496	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-5	24	2474½	Red Brown Silty fine to medium Sand, trace coarse Sand	4.4
I-6	25	2474	Red Brown Silty fine to medium Sand, trace coarse Sand	3.6
I-7	30	2474	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel	3.7
I-8	30	2474	Brown Gravelly fine to coarse Sand, little Silt	8.0
I-9	36	2475	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel	4.2
I-10	35	2475	Brown fine to coarse Sand, trace fine Gravel, trace Silt	8.7
I-11	10	2446	Brown Silty fine to medium Sand, trace fine Gravel	0.8

I-12	14	2443	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel	4.8
I-13	28	2445	Brown fine to coarse Sand, little fine Gravel, little Silt	19.4
I-14	16	2444	Gray Brown Gravelly fine to coarse Sand, little Silt	13.5
I-15	27	2449	Red Brown Silty fine to coarse Sand, trace fine Gravel	15.7
I-16	43	2445	Red Brown Silty fine to medium Sand, trace coarse Sand	14.6

Laboratory Testing

Moisture Content

The moisture contents for the recovered soil samples within the borings were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the bottom of each infiltration test boring have been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these tests are presented on Plates C-1 through C-17 of this report.

Design Recommendations

Sixteen (16) infiltration tests were performed at the subject site. As noted above, the infiltration rates at these locations range from 0 to 19.4 inches per hour.

Based on the results of the infiltration testing, we recommend the following infiltration rates for the proposed infiltration systems:

Infiltration System	Site Location	Infiltration Rate (Inches per Hour)
A	North-Central	0
B	South-Central	5.4
C	South-Central	11.5

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the chamber system. It should be confirmed that the soils at the base of the proposed

infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the proposed storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Beaumont and/or County of Riverside guidelines. However, it is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rate recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rates are based on infiltration testing at sixteen (16) discrete locations and the overall infiltration rate of the storm water infiltration system could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the City of Beaumont and/or County of Riverside guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the basins. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration systems

correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within basins. As such, the bottom 24 inches of the infiltration systems should be excavated with non-rubber-tired equipment, such as excavators.

Basin Maintenance

The proposed project may include infiltration basins. Water flowing into these basins will carry some level of sediment. Wind-blown sediments and erosion of the basin side walls will also contribute to sediment deposition at the bottom of the basin. This layer has the potential to significantly reduce the infiltration rate of the basin subgrade soils. Therefore, a formal basin maintenance program should be established to ensure that these silt and clay deposits are removed from the basin on a regular basis. Appropriate vegetation on the basin sidewalls and bottom may reduce erosion and sediment deposition.

Basin maintenance should also include measures to prevent animal burrows, and to repair any burrows or damage caused by such. Animal burrows in the basin sidewalls can significantly increase the risk of erosion and piping failures.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration systems may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and

preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

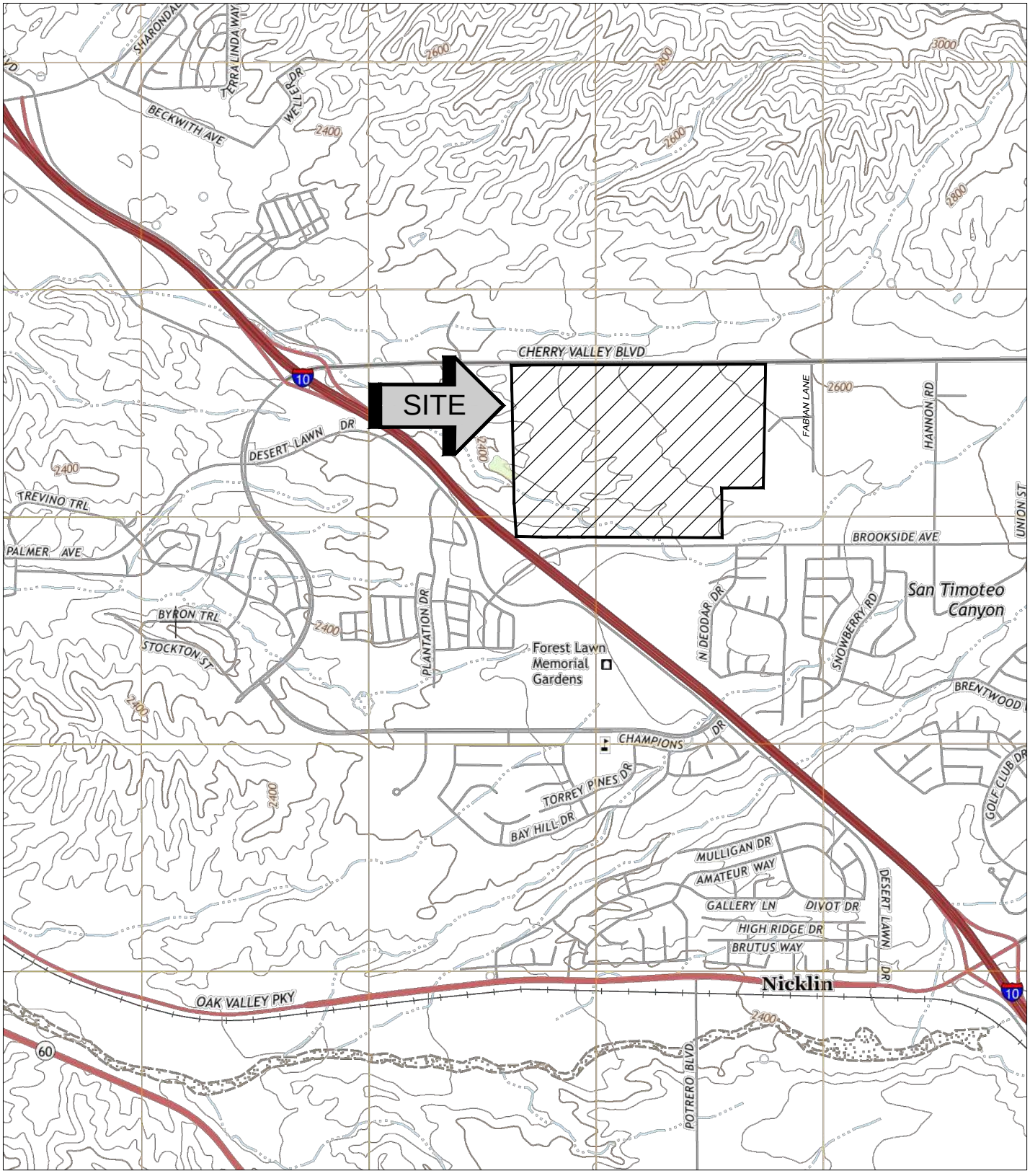
SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Jose A. Zuniga
Staff Engineer

Robert G. Trazo, GE 2655
Principal Engineer

Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Boring Log Legend and Logs (20 pages)
Infiltration Test Results Spreadsheets (16 pages)
Grain Size Distribution Graphs (17 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE EL CASCO QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2015.

SITE LOCATION MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

CHERRY VALLEY BOULEVARD

BROOKSIDE AVENUE

PROPOSED BUILDING 3
358,370 S.F.

INFILTRATION SYSTEM "A"

PROPOSED BUILDING 1
985,860 S.F.

PROPOSED BUILDING 2
1,254,000 S.F.

INFILTRATION SYSTEM "B"

INFILTRATION SYSTEM "C"

PROPOSED INFILTRATION BASIN

PROPOSED RETAINING WALL

PROPOSED RETAINING WALL

PARCEL 4
RETAIL

NAP

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-33 B-34 B-35 B-36 B-37 B-38 B-39 B-40 B-41 B-42 B-43 B-44

T-1 T-2 T-3 T-4 T-5 T-6 T-7

I-1 I-2 I-3 I-4 I-5 I-6 I-7 I-8 I-9 I-10 I-11 I-12 I-13 I-14 I-15 I-16

NORTH

SoCalGeo

GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 21G133-1)
- APPROXIMATE TRENCH LOCATION (SCG PROJECT NO. 21G133-1)

INFILTRATION TEST LOCATION PLAN

PROPOSED E-COMMERCE DEVELOPMENT

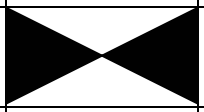
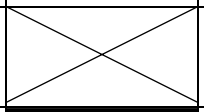
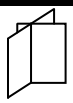
BEAUMONT, CALIFORNIA

SCALE: 1" = 300'	
DRAWN: JAZ CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 2	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

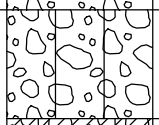
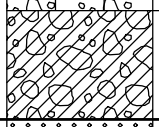
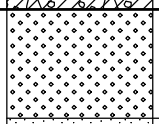
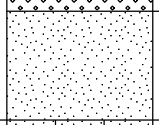
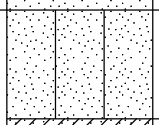
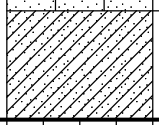
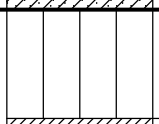
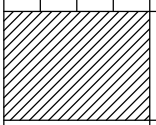
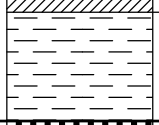
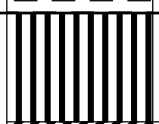
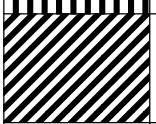
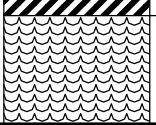
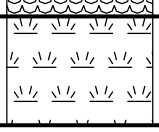
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-1

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2518 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, medium dense-damp to moist							
		12					9					
5												
		12					10					
10												
					Brown fine Sand, trace medium to coarse Sand, trace fine Gravel, trace Silt, medium dense-damp							
		17					7					
15												
					Brown Silty fine to medium Sand, medium dense-damp							
		14					6					
20												
		18			Red Brown Silty fine to coarse Sand, medium dense-damp		6			26		
					Red Brown fine to coarse Sandy Silt, medium dense-damp to moist		10			51		
					Boring Terminated at 22'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-2

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2520 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Gray Brown Clayey fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist							
		10					10					
5												
					Brown Silty fine Sand, trace medium Sand, medium dense-damp							
		16					7					
10												
		13					6					
15												
					Red Brown fine Sandy Silt to Silty fine Sand, loose to medium dense-moist							
		10					11					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-moist							
		16					11			48		
25												
					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-3

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2525 feet MSL							
					ALLUVIUM: Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, loose to medium dense-damp to moist							
5		8					12					
10		10					8					
15		13					10					
20		20					10					
					OLDER ALLUVIUM: Red Brown Clayey fine to medium Sand, medium dense-moist							
25		21					13					
					Red Brown Clayey fine to coarse Sand, trace Silt, medium dense-moist							
30		22					12			49		
					Boring Terminated at 31'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-4

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2530 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		8			ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist		6					
10		19					11					
15		16					9					
20		10			Red Brown fine to coarse Sand, trace fine to coarse Gravel, trace Silt, loose to medium dense-damp to moist		8					
25		15			Gray Brown fine to coarse Sand, medium dense-damp		3					
30		10			Red Brown fine Sandy Silt, trace coarse Gravel, loose to medium dense-moist		15					
		16			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, slightly cemented, medium dense-moist		12			39		
					Boring Terminated at 34'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-4**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-5

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2498.5 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		14					6					
5					OLDER ALLUVIUM: Brown fine to coarse Sandy Silt, trace fine to coarse Gravel, trace Clay, medium dense-damp		7					
					Brown Silty fine to coarse Sand, trace coarse Gravel, slightly cemented, medium dense-damp							
		27					8					
10												
					Brown fine Sand, little medium Sand, trace coarse Sand, medium dense-damp							
		26					5					
15												
					Brown fine to coarse Sand, trace fine Gravel, dense-damp							
		37					4					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
		26					7			28		
					Boring Terminated at 24'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-6

JOB NO.: 21G133-2 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2499 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown fine Sandy Clay, little medium Sand, slightly cemented, very stiff-damp							
5		19					9					
					Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
10		24					5					
					Red Brown fine Sand, trace to little Silt, medium dense-damp							
15		20					6					
					Red Brown Silty fine Sand, trace calcareous veining, medium dense-moist							
20		29					10					
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
25		29					7			35		
					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-7

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp							
5		33					5					
					Red Brown Clayey fine to medium Sand, slightly cemented, medium dense-moist							
10		16					12					
					Red Brown fine to coarse Sand, little Silt, medium dense to dense-damp							
15		24					4					
		48					3					
20					Gray Brown fine Sand, dense-damp							
		32					5					
25					Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp							
		25					7			36		
30					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-7**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-8

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, medium dense-damp							
		24					3					
5					Red Brown fine Sandy Silt, trace medium Sand, trace fine Gravel, trace Clay, medium dense-damp		5					
					Brown fine to medium Sand, trace coarse Sand, little Silt, medium dense-damp							
		17					5					
10												
		28					7					
15					Brown fine to medium Sandy Silt, trace coarse Sand, medium dense-damp		7					
					Brown Silty fine Sand, little medium Sand, trace fine to coarse Gravel, medium dense-damp							
		22					5					
20												
		24					6					
25												
					Brown fine to coarse Sand, little Silt, very dense-damp							
		65					6					
					Brown Gravelly fine to coarse Sand, little Silt, very dense-damp		4			12		
30												
					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-8**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2511 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Clayey fine Sand, little Silt, slightly cemented, medium dense to dense-damp to moist							
5		30					8					
10		21					11					
15		36			Brown Clayey fine to medium Sand, slightly cemented, dense-damp		8					
20		38			Brown fine to medium Sand, little coarse Sand, trace Silt, dense-damp		4					
25		19			Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		8					
30		27					12					
					Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel, medium dense-damp							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	27					7			34		
					Boring Terminated at 36'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-10

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2510 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, porous, trace fine root fibers, medium dense-damp							
5		20					4					
					Red Brown Clayey fine to medium Sand, trace coarse Gravel, slightly cemented, dense-moist							
10		33					11					
					Red Brown Silty fine to medium Sand, dense-damp							
15		31					6					
					Brown fine to coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					4					
					Red Brown fine to medium Sand, trace fine Gravel, dense-damp							
25		37					5					
					Red Brown Silty fine Sand, dense-moist							
30		36					11					
					Brown fine to coarse Sand, trace fine Gravel, trace Silt, dense-dry to damp							
		43					3			9		
					Boring Terminated at 35'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-10**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-11

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2456 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine to medium Sand, trace fine root fibers, medium dense-dry to damp							
		14					2					
5												
					Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp							
		21					7			37		
10												
					Boring Terminated at 10'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-11**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-12

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2457 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		69			ALLUVIUM: Light Gray fine to coarse Sand, little fine to coarse Gravel, very dense-damp		4					
10		20			Gray Brown Silty fine Sand, medium dense- damp to moist		9					
		41			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp		7			38		
					Boring Terminated at 14'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-12**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-13

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2473 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Light Gray fine to coarse Sand, little fine Gravel, trace fine root fibers, dense-dry to damp							
5		41			@ 5 to 6½ feet, slightly cemented		2					
					Brown Silty fine Sand, trace fine Gravel, medium dense-damp							
10		29					6					
15		25					8					
					Gray Brown fine to medium Sand, little coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					6					
					Brown fine to coarse Sand, little fine Gravel, little Silt, very dense-damp							
25		50/4"					4			14		
					Boring Terminated at 28'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-13**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-14

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2460 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown to Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, medium dense-damp							
5		22					4					
10		21			@ 10 to 11½ feet, trace fine Gravel		8					
					Gray Brown Gravelly fine to coarse Sand, little Silt, very dense-dry to damp							
15		50/5"					3			14		
					Boring Terminated at 16'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-14**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-15

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2476 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, trace coarse Gravel, trace fine root fibers, dense-damp							
5		49					6					
					Brown fine to medium Sand, little coarse Sand, dense-dry to damp							
10		37					3					
					Red Brown Silty fine Sand, trace medium Sand, dense-damp							
15		35					9					
					Gray Brown fine to coarse Sand, trace fine Gravel, very dense-damp							
20		50/5"					9					
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine Gravel, slightly cemented, very dense-damp							
25		70					4			27		
					Boring Terminated at 27'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-15**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2488 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine to medium Sand, medium dense-damp							
5		27					5					
					Red Brown Silty fine Sand, medium dense-damp							
10		23					8					
15		30			@ 15 to 16½ feet, trace medium Sand, dense-moist		11					
20		26					11					
					OLDER ALLUVIUM: Brown fine to coarse Sand, trace fine Gravel, trace Silt, very dense-dry to damp							
25		63					3					
30		59					4					
					Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		50/5"			Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist		3					
40												
		35					11					
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, dense-very moist		18			39		
					Boring Terminated at 43'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16b**

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	22.00	(ft)

Infiltration Test Hole: I-1

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:00 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	11:25 AM		20.92			
2	Initial	11:28 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	11:53 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:00 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:10 PM		19.90			
2	Initial	12:11 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:21 PM		19.91			
3	Initial	12:22 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:32 PM		19.90			
4	Initial	12:33 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:43 PM		19.91			
5	Initial	12:44 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:54 PM		19.90			
6	Initial	12:55 PM	10.00	19.00	0.90	2.55	3.98
	Final	1:05 PM		19.90			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-2

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	10:50 AM		22.47			
2	Initial	10:51 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	11:16 AM		22.47			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:18 AM	30.00	22.20	0.32	2.64	0.46
	Final	11:48 AM		22.52			
2	Initial	11:50 AM	30.00	22.20	0.30	2.65	0.43
	Final	12:20 PM		22.50			
3	Initial	12:22 PM	30.00	22.20	0.30	2.65	0.43
	Final	12:52 PM		22.50			
4	Initial	12:55 PM	30.00	22.20	0.30	2.65	0.43
	Final	1:25 PM		22.50			
5	Initial	1:28 PM	30.00	22.50	0.00	2.50	0.00
	Final	1:58 PM		22.50			
6	Initial	2:00 PM	30.00	22.50	0.00	2.50	0.00
	Final	2:30 PM		22.50			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	31.00	(ft)

Infiltration Test Hole: I-3

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:00 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		29.00			
2	Initial	9:28 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:53 AM		29.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	10:30 AM		29.00			
2	Initial	10:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:00 AM		29.00			
3	Initial	11:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:30 AM		29.00			
4	Initial	11:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	12:00 PM		29.00			
5	Initial	12:00 PM	30.00	29.00	0.00	2.00	0.00
	Final	12:30 PM		29.00			
6	Initial	12:30 PM	30.00	29.00	0.00	2.00	0.00
	Final	1:00 PM		29.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	34.00	(ft)

Infiltration Test Hole: I-4

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:30 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	8:55 AM		32.30			
2	Initial	9:00 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		32.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	10:00 AM		32.30			
2	Initial	10:00 AM	30.00	32.00	0.30	1.85	0.60
	Final	10:30 AM		32.30			
3	Initial	10:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:00 AM		32.30			
4	Initial	11:00 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:30 AM		32.30			
5	Initial	11:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	12:00 PM		32.30			
6	Initial	12:00 PM	30.00	32.30	0.00	1.70	0.00
	Final	12:30 PM		32.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	24.00	(ft)

Infiltration Test Hole: I-5

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:00 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:25 AM		24.00			
2	Initial	8:26 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:51 AM		24.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:52 AM	10.00	22.00	1.62	1.19	14.33
	Final	9:02 AM		23.62			
2	Initial	9:03 AM	10.00	22.00	1.00	1.50	7.20
	Final	9:13 AM		23.00			
3	Initial	9:14 AM	10.00	22.00	0.75	1.63	5.02
	Final	9:24 AM		22.75			
4	Initial	9:25 AM	10.00	22.00	0.64	1.68	4.16
	Final	9:35 AM		22.64			
5	Initial	9:36 AM	10.00	22.00	0.68	1.66	4.47
	Final	9:46 AM		22.68			
6	Initial	9:47 AM	10.00	22.00	0.67	1.67	4.39
	Final	9:57 AM		22.67			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-6

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:45 PM	25.00	21.00	43.80	YES	SANDY SOILS
	Final	4:10 PM		24.65			
2	Initial	4:12 PM	25.00	21.00	37.80	YES	SANDY SOILS
	Final	4:37 PM		24.15			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:38 PM	10.00	21.00	1.30	3.35	4.44
	Final	4:48 PM		22.30			
2	Initial	4:49 PM	10.00	21.00	1.10	3.45	3.65
	Final	4:59 PM		22.10			
3	Initial	5:00 PM	10.00	21.00	1.20	3.40	4.04
	Final	5:10 PM		22.20			
4	Initial	5:11 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:21 PM		22.10			
5	Initial	5:22 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:32 PM		22.10			
6	Initial	5:33 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:43 PM		22.10			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-7

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:30 AM	25.00	28.20	14.16	YES	SANDY SOILS
	Final	9:55 AM		29.38			
2	Initial	9:56 AM	25.00	28.20	14.40	YES	SANDY SOILS
	Final	10:21 AM		29.40			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:22 AM	10.00	28.20	0.60	1.50	4.32
	Final	10:32 AM		28.80			
2	Initial	10:33 AM	10.00	28.20	0.41	1.60	2.79
	Final	10:43 AM		28.61			
3	Initial	10:44 AM	10.00	28.00	0.71	1.65	4.70
	Final	10:54 AM		28.71			
4	Initial	10:55 AM	10.00	28.00	0.60	1.70	3.86
	Final	11:05 AM		28.60			
5	Initial	11:06 AM	10.00	28.00	0.66	1.67	4.31
	Final	11:16 AM		28.66			
6	Initial	11:17 AM	10.00	28.00	0.58	1.71	3.71
	Final	11:27 AM		28.58			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-8

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:25 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	9:50 AM		30.30			
2	Initial	9:51 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	10:16 AM		30.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:18 AM	10.00	28.30	1.35	1.03	13.59
	Final	10:28 AM		29.65			
2	Initial	10:29 AM	10.00	28.30	1.03	1.19	9.14
	Final	10:39 AM		29.33			
3	Initial	10:40 AM	10.00	28.30	0.97	1.22	8.42
	Final	10:50 AM		29.27			
4	Initial	10:51 AM	10.00	28.30	0.94	1.23	8.08
	Final	11:01 AM		29.24			
5	Initial	11:02 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:12 AM		29.23			
6	Initial	11:13 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:23 AM		29.23			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	36.00	(ft)

Infiltration Test Hole: I-9

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	1:10 PM	25.00	31.00	51.60	YES	SANDY SOILS
	Final	1:35 PM		35.30			
2	Initial	1:36 PM	25.00	31.00	45.60	YES	SANDY SOILS
	Final	2:01 PM		34.80			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	2:02 PM	10.00	31.00	1.70	4.15	4.73
	Final	2:12 PM		32.70			
2	Initial	2:13 PM	10.00	31.00	1.60	4.20	4.40
	Final	2:23 PM		32.60			
3	Initial	2:24 PM	10.00	31.00	1.57	4.22	4.30
	Final	2:34 PM		32.57			
4	Initial	2:25 PM	10.00	31.00	1.55	4.23	4.24
	Final	2:35 PM		32.55			
5	Initial	2:36 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:46 PM		32.54			
6	Initial	2:47 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:57 PM		32.54			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	35.00	(ft)

Infiltration Test Hole: I-10

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:10 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	11:35 AM		35.00			
2	Initial	11:36 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	12:01 PM		35.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:02 PM	10.00	33.00	1.43	1.29	11.82
	Final	12:12 PM		34.43			
2	Initial	12:13 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:23 PM		34.20			
3	Initial	12:24 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:34 PM		34.20			
4	Initial	12:35 PM	10.00	33.00	1.15	1.43	8.67
	Final	12:45 PM		34.15			
5	Initial	12:46 PM	10.00	33.00	1.14	1.43	8.57
	Final	12:56 PM		34.14			
6	Initial	12:57 PM	10.00	33.00	1.15	1.43	8.67
	Final	1:07 PM		34.15			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	10.00	(ft)

Infiltration Test Hole	I-11

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:20 AM	25.00	3.00	31.80	YES	SANDY SOILS
	Final	10:45 AM		5.65			
2	Initial	10:46 AM	25.00	3.00	12.60	YES	SANDY SOILS
	Final	11:11 AM		4.05			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:12 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:22 AM		3.50			
2	Initial	11:23 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:33 AM		3.50			
3	Initial	11:34 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:44 AM		3.50			
4	Initial	11:45 AM	10.00	3.00	0.45	6.78	0.78
	Final	11:55 AM		3.45			
5	Initial	11:56 AM	10.00	3.00	0.45	6.78	0.78
	Final	12:06 PM		3.45			
6	Initial	12:07 PM	10.00	3.00	0.45	6.78	0.78
	Final	12:17 PM		3.45			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where: Q = Infiltration Rate (in inches per hour)

ΔH = Change in Height (Water Level) over the time interval

r = Test Hole (Borehole) Radius

Δt = Time Interval

H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	14.00	(ft)

Infiltration Test Hole: I-12

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:15 PM	25.00	10.00	33.60	YES	SANDY SOILS
	Final	3:40 PM		12.80			
2	Initial	3:41 PM	25.00	10.00	32.40	YES	SANDY SOILS
	Final	4:06 PM		12.70			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:07 PM	10.00	10.00	1.50	3.25	5.27
	Final	4:17 PM		11.50			
2	Initial	4:18 PM	10.00	10.00	1.47	3.27	5.14
	Final	4:28 PM		11.47			
3	Initial	4:38 PM	10.00	10.00	1.45	3.28	5.06
	Final	4:48 PM		11.45			
4	Initial	4:49 PM	10.00	10.00	1.44	3.28	5.01
	Final	4:59 PM		11.44			
5	Initial	5:00 PM	10.00	10.00	1.43	3.29	4.97
	Final	5:10 PM		11.43			
6	Initial	5:11 PM	10.00	10.00	1.40	3.30	4.85
	Final	5:21 PM		11.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	28.00	(ft)

Infiltration Test Hole	I-13

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:35 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:00 PM		29.20			
2	Initial	1:01 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:26 PM		29.20			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:27 PM	10.00	26.20	2.15	0.73	28.93
	Final	1:37 PM		28.35			
2	Initial	1:38 PM	10.00	26.20	2.44	0.58	39.21
	Final	1:48 PM		28.64			
3	Initial	1:49 PM	10.00	26.20	1.77	0.92	19.64
	Final	1:59 PM		27.97			
4	Initial	2:00 PM	10.00	26.20	1.74	0.93	19.04
	Final	2:10 PM		27.94			
5	Initial	2:11 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:21 PM		27.96			
6	Initial	2:22 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:32 PM		27.96			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	16.00	(ft)

Infiltration Test Hole: I-14

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:15 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	8:40 AM		16.00			
2	Initial	8:41 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	9:06 AM		16.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:07 AM	10.00	12.00	3.20	2.40	14.96
	Final	9:17 AM		15.20			
2	Initial	9:18 AM	10.00	12.00	3.10	2.45	14.22
	Final	9:28 AM		15.10			
3	Initial	9:29 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:39 AM		15.00			
4	Initial	9:40 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:50 AM		15.00			
5	Initial	9:51 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:01 AM		15.00			
6	Initial	10:02 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:12 AM		15.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	27.00	(ft)

Infiltration Test Hole: I-15

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:54 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:19 PM		27.00			
2	Initial	1:20 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:45 PM		27.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:48 PM	10.00	23.00	3.60	2.20	18.25
	Final	1:58 PM		26.60			
2	Initial	1:59 PM	10.00	23.00	3.50	2.25	17.38
	Final	2:09 PM		26.50			
3	Initial	2:10 PM	10.00	23.00	3.45	2.28	16.96
	Final	2:20 PM		26.45			
4	Initial	2:21 PM	10.00	23.00	3.38	2.31	16.38
	Final	2:31 PM		26.38			
5	Initial	2:32 PM	10.00	23.00	3.35	2.33	16.13
	Final	2:42 PM		26.35			
6	Initial	2:43 PM	10.00	23.00	3.30	2.35	15.74
	Final	2:53 PM		26.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	43.00	(ft)

Infiltration Test Hole: I-16

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	40.00	33.84	YES	SANDY SOILS
	Final	10:50 AM		42.82			
2	Initial	10:51 AM	25.00	40.00	34.80	YES	SANDY SOILS
	Final	11:16 AM		42.90			

Test Data

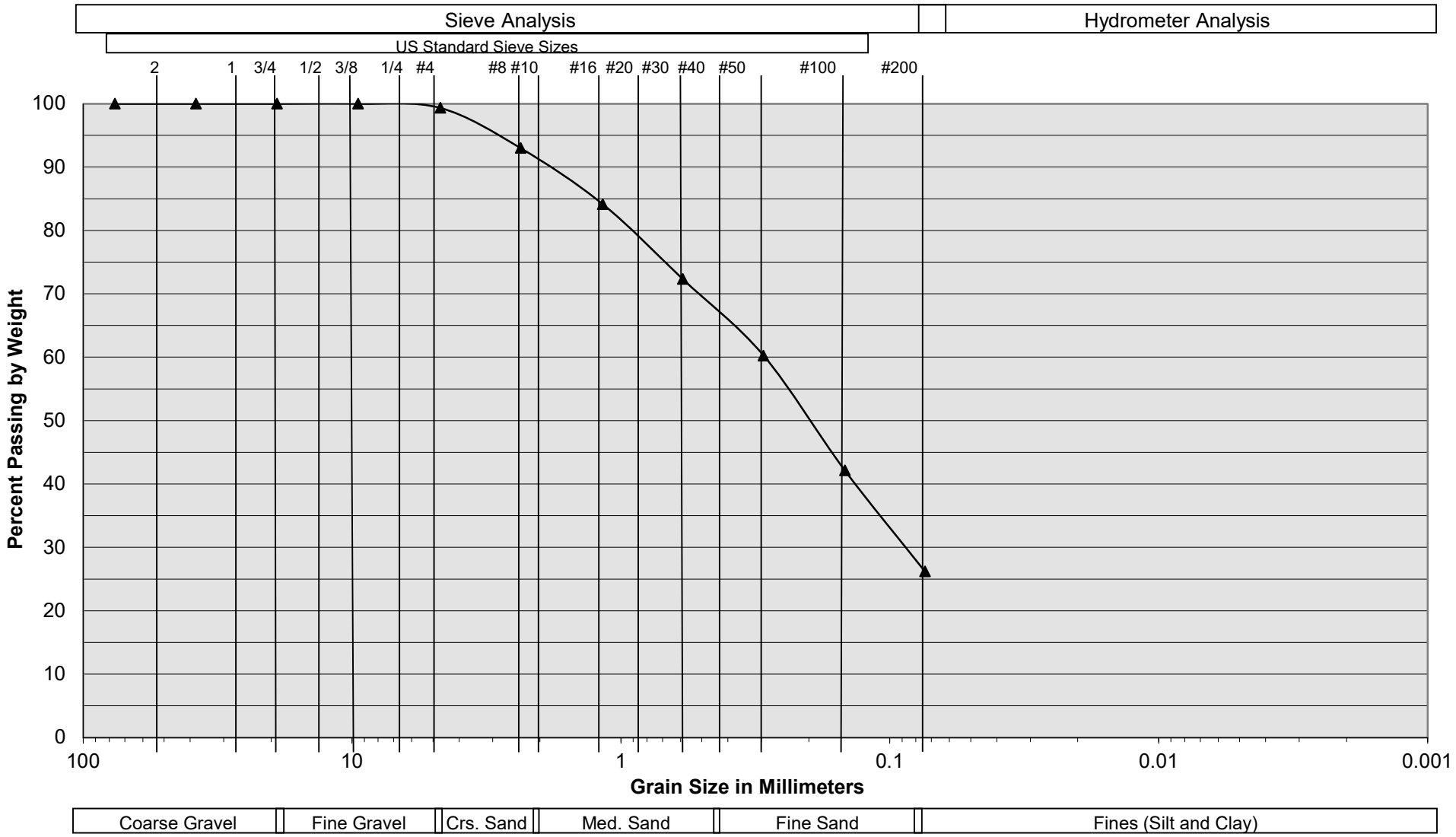
Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:17 AM	10.00	40.00	2.80	1.60	19.02
	Final	11:27 AM		42.80			
2	Initial	11:28 AM	10.00	40.00	2.90	1.55	20.27
	Final	11:38 AM		42.90			
3	Initial	11:39 AM	10.00	40.00	2.35	1.83	14.16
	Final	11:49 AM		42.35			
4	Initial	11:50 AM	10.00	40.00	2.20	1.90	12.77
	Final	12:00 PM		42.20			
5	Initial	12:01 PM	10.00	40.00	2.35	1.83	14.16
	Final	12:11 PM		42.35			
6	Initial	12:12 PM	10.00	40.00	2.40	1.80	14.64
	Final	12:22 PM		42.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

Grain Size Distribution

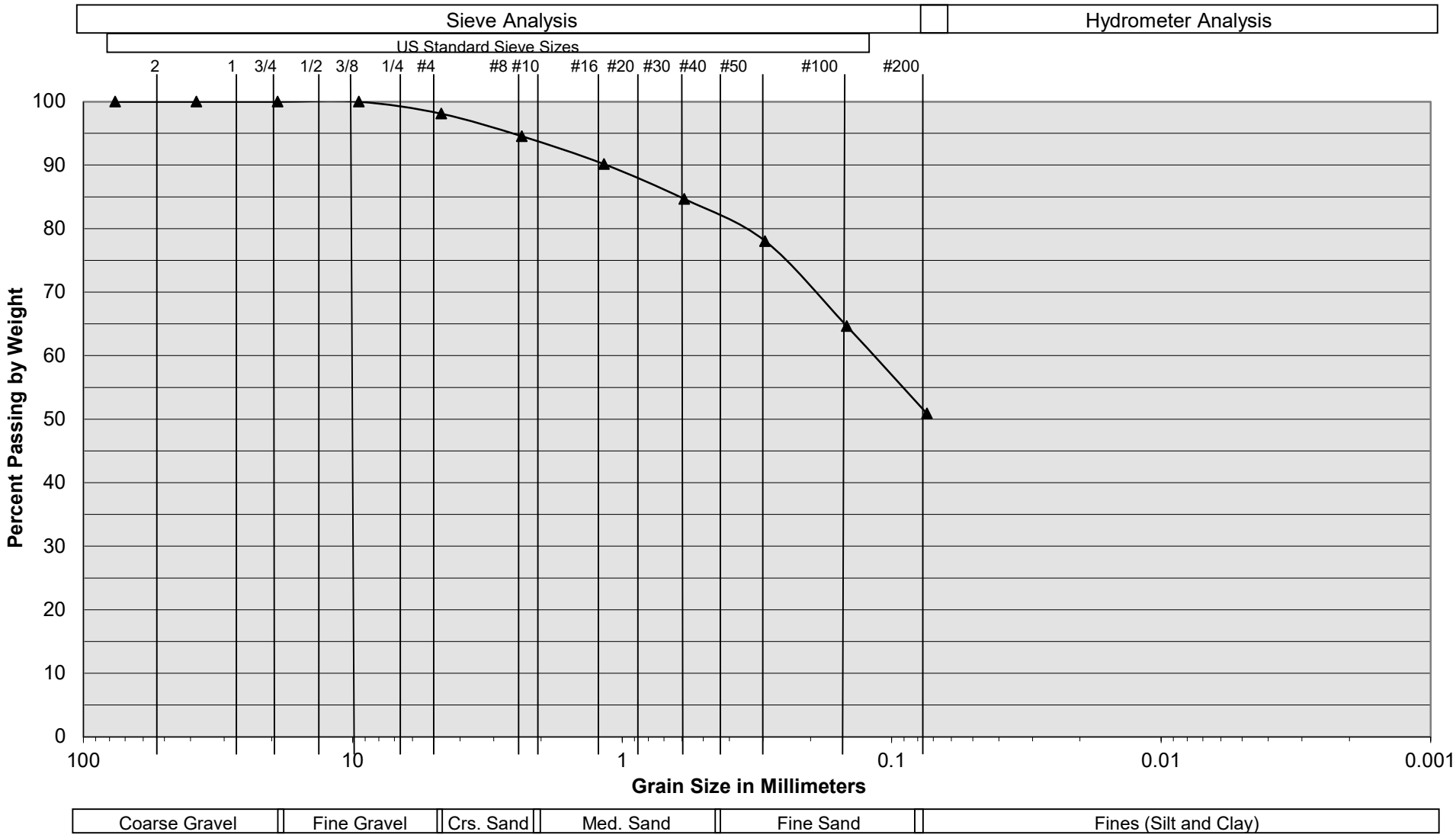


Sample Description	I-1 @ 20½'
Soil Classification	Red Brown Silty fine to coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

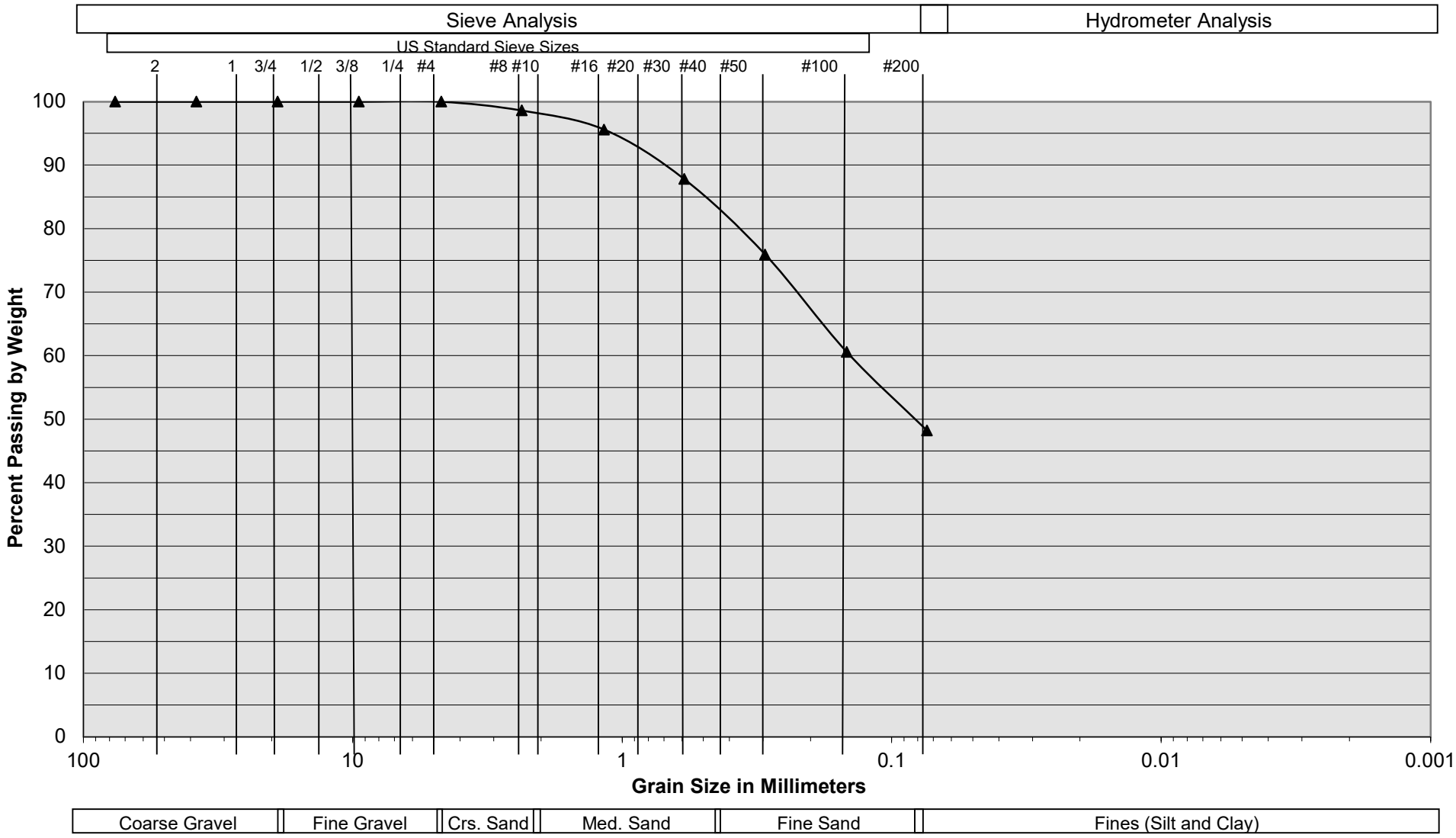


Sample Description	I-1 @ 21½'
Soil Classification	Red Brown fine to coarse Sandy Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

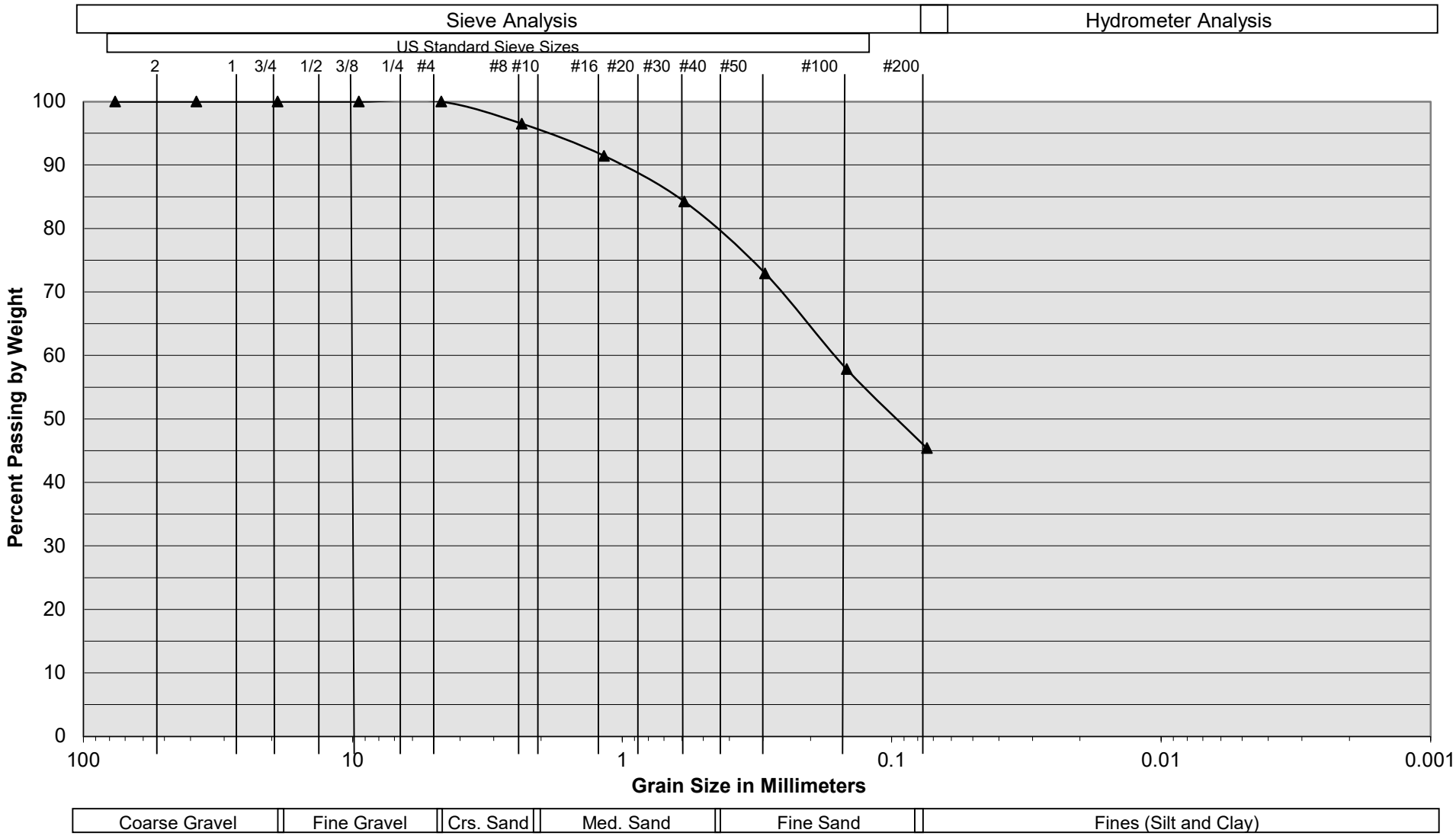


Sample Description	I-2 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

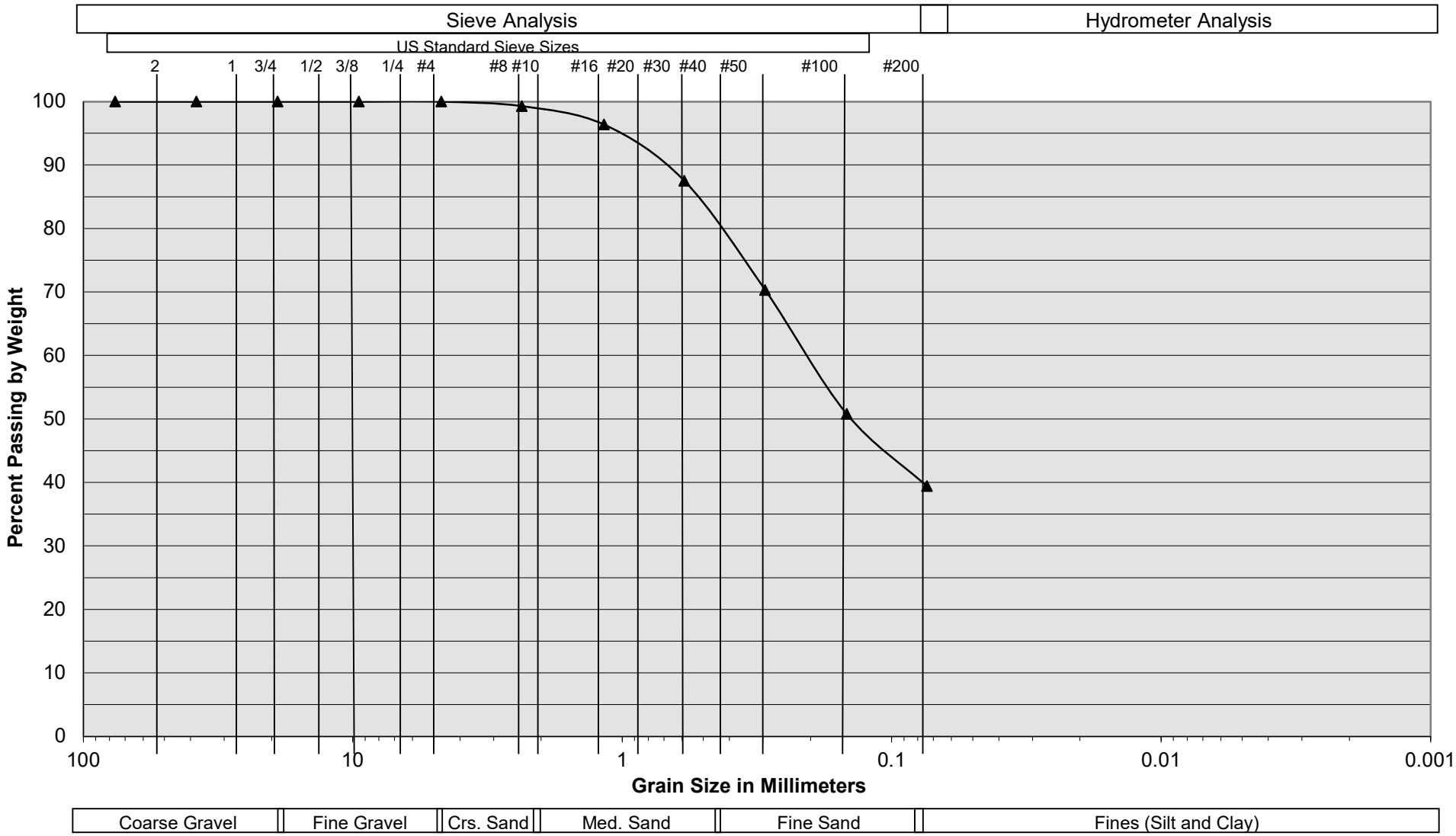


Sample Description	I-3 @ 29½'
Soil Classification	Red Brown Clayey fine to coarse Sand, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

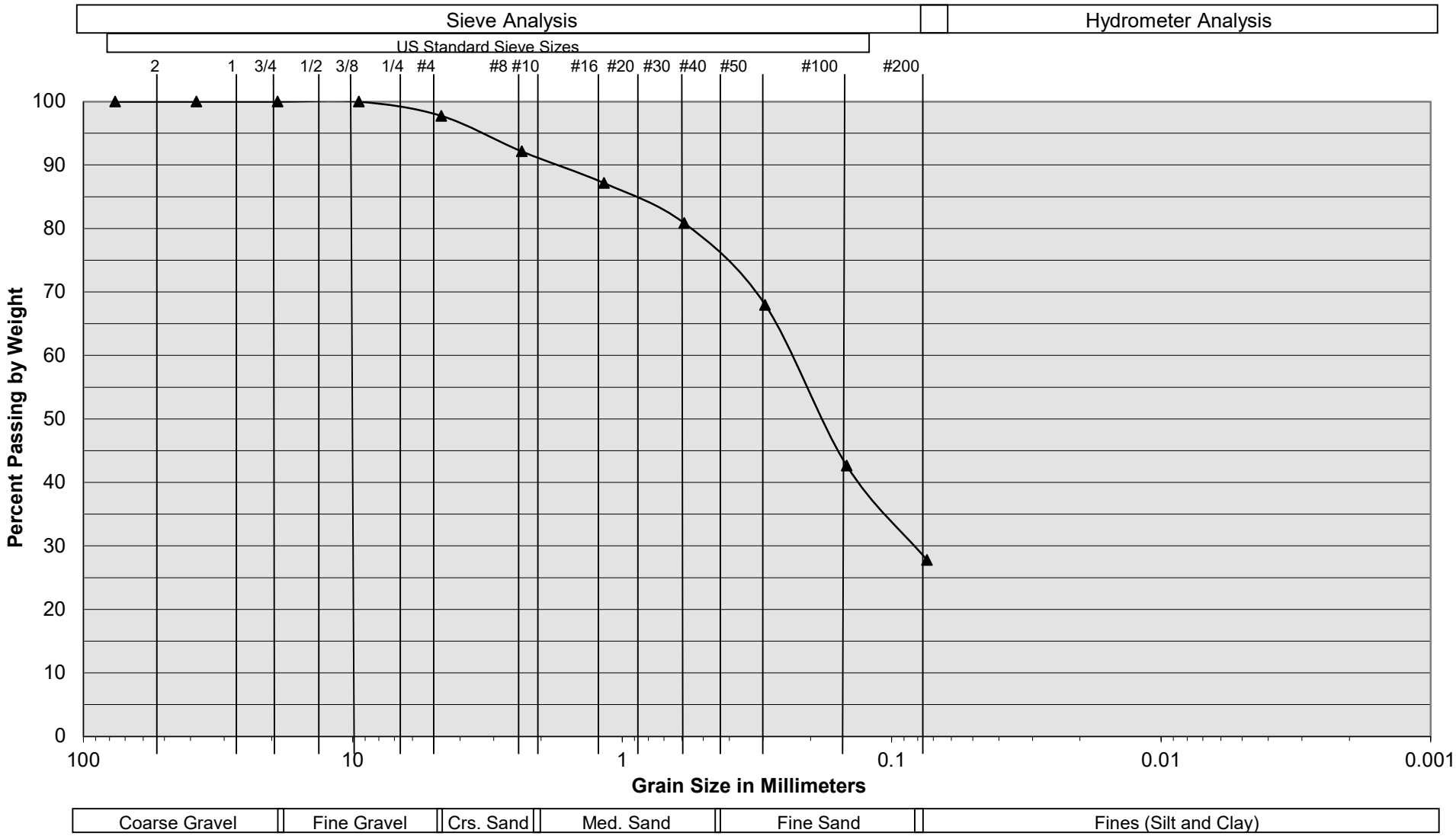


Sample Description	I-4 @ 32½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-5 @ 22½'
Soil Classification	Red Brown Silty fine to medium Sand, little coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

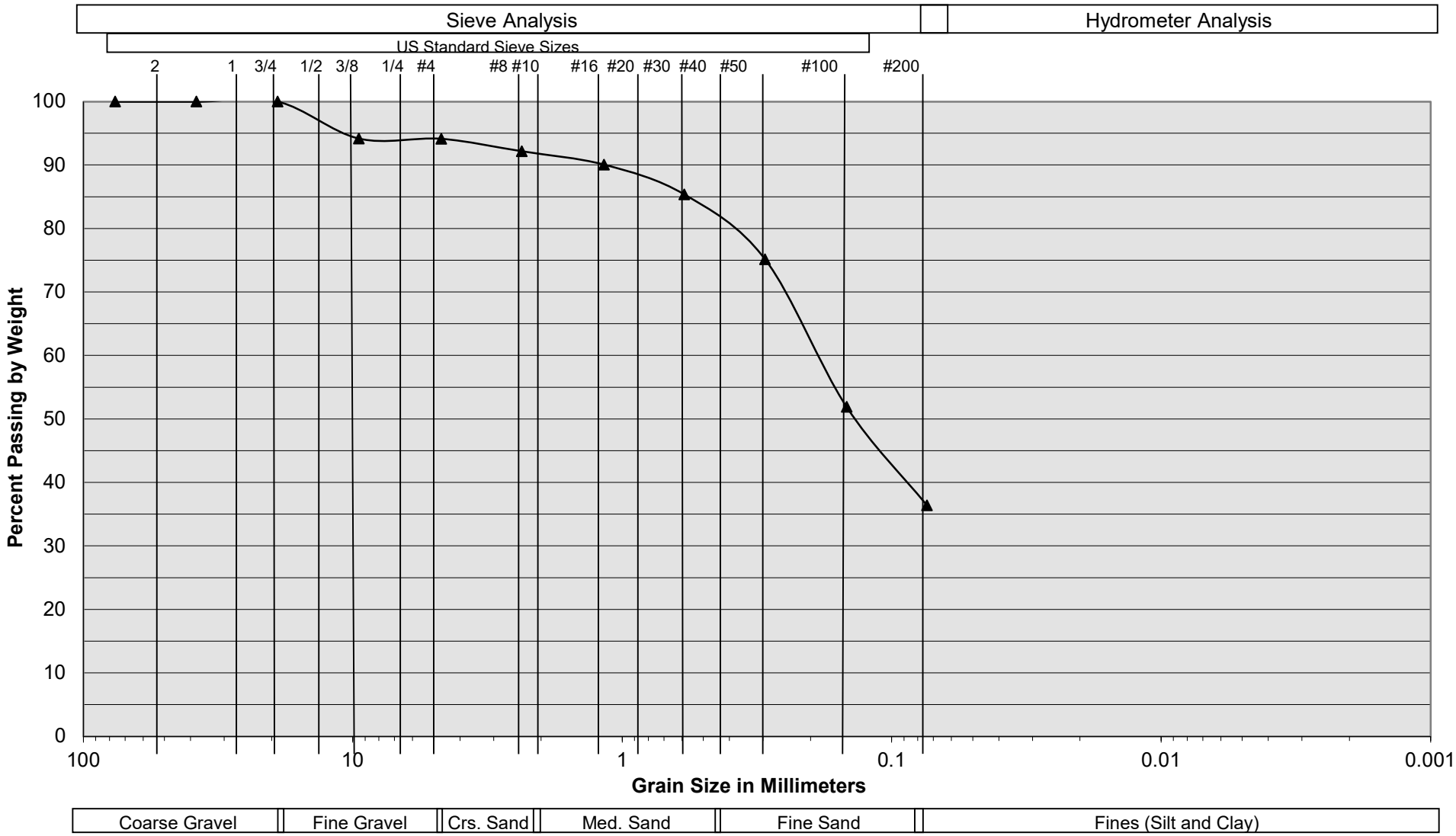
Grain Size Distribution

Sample Description	I-6 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

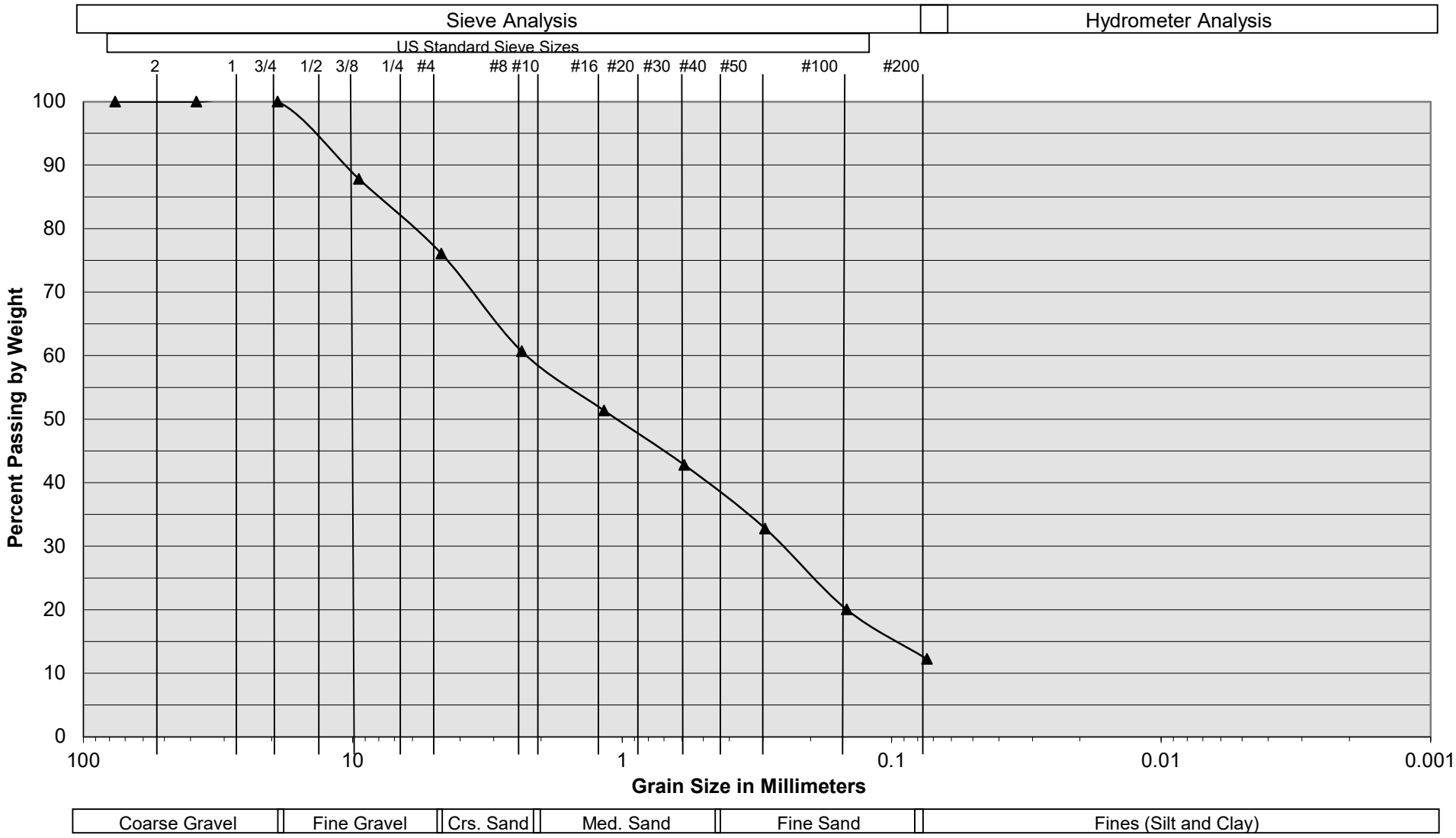


Sample Description	I-7 @ 28½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

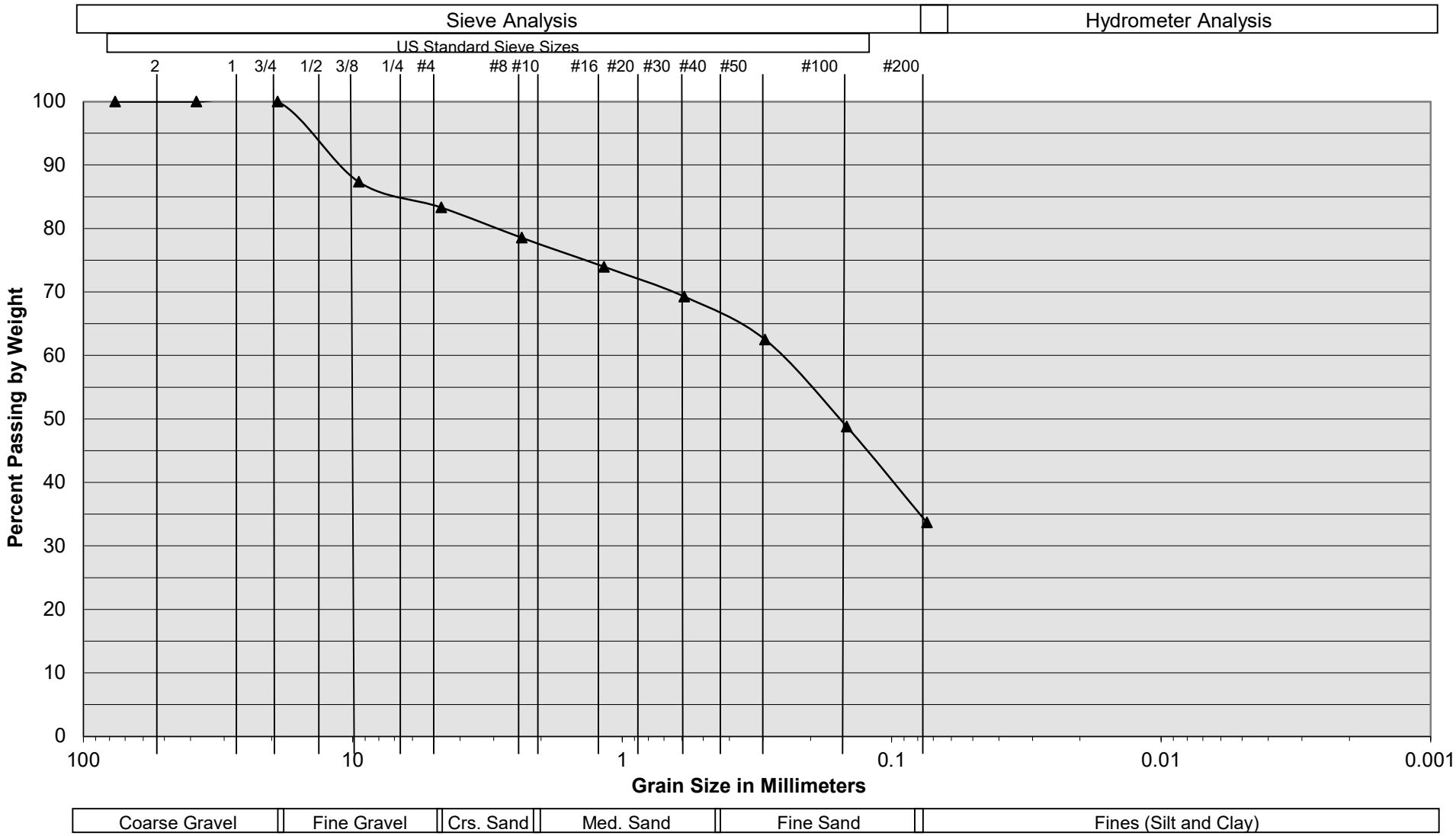


Sample Description	I-8 @ 29'
Soil Classification	Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 9

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

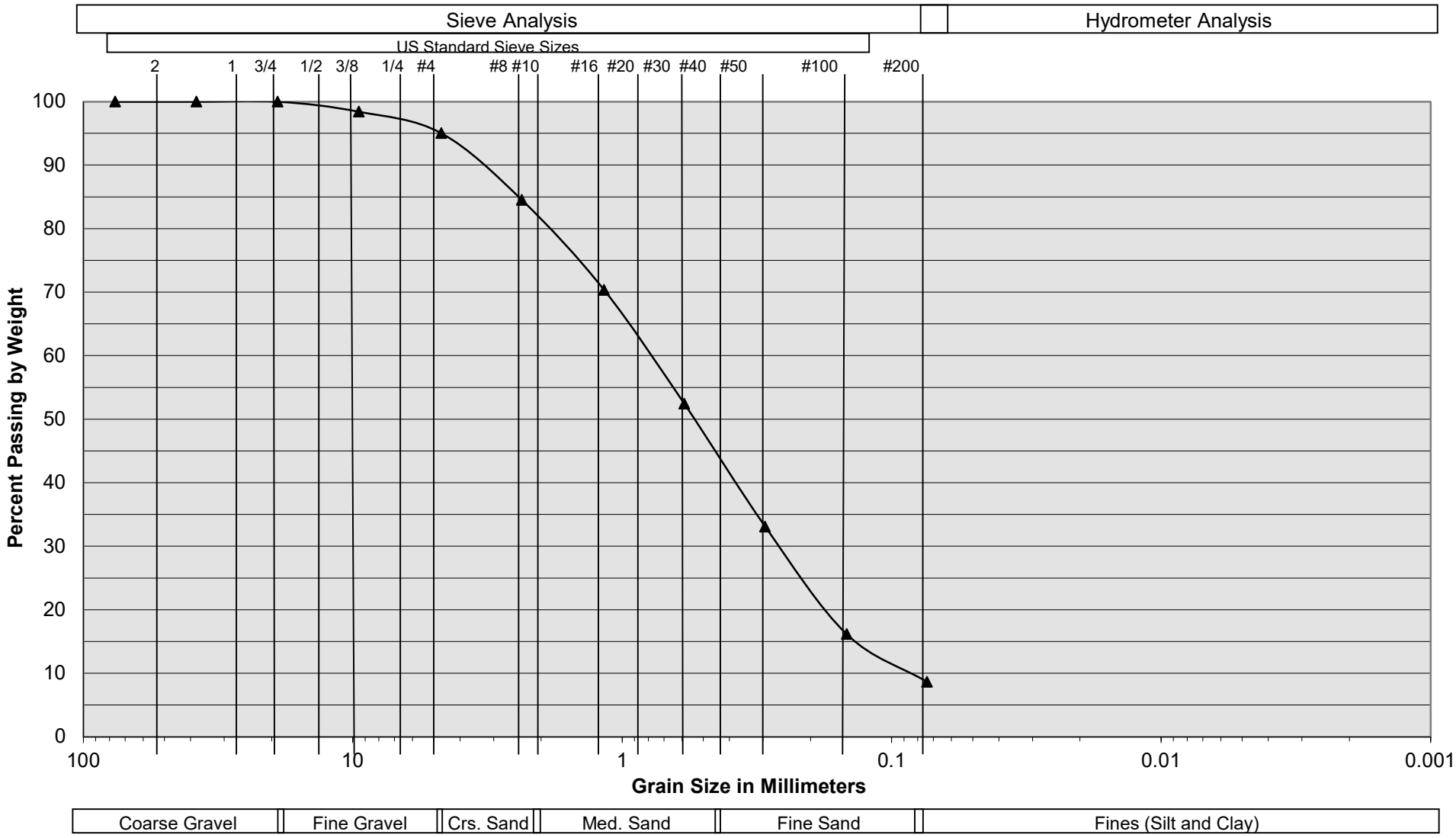


Sample Description	I-9 @ 34½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 10

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

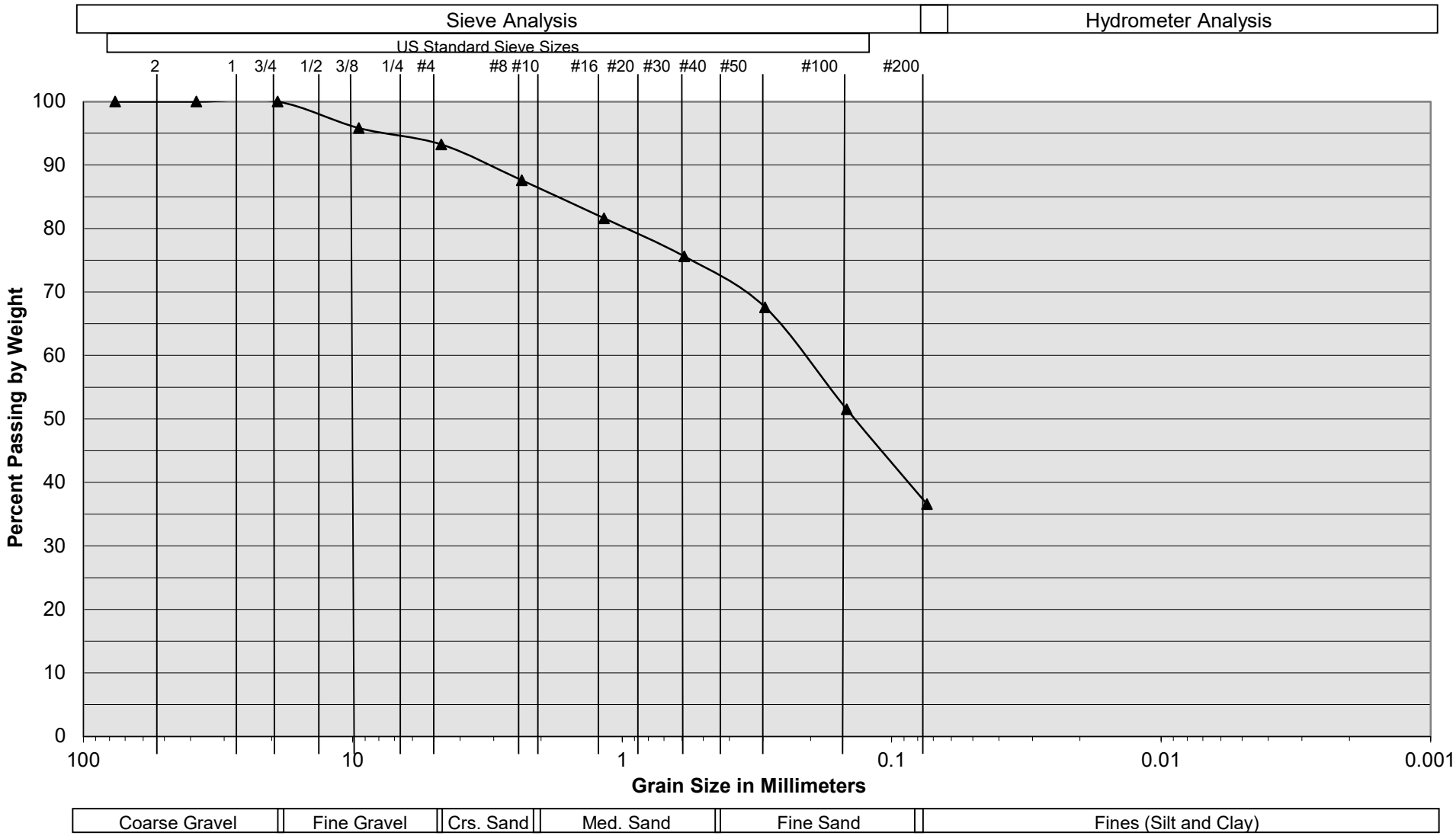


Sample Description	I-10 @ 33½'
Soil Classification	Brown fine to coarse Sand, trace fine Gravel, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 11

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

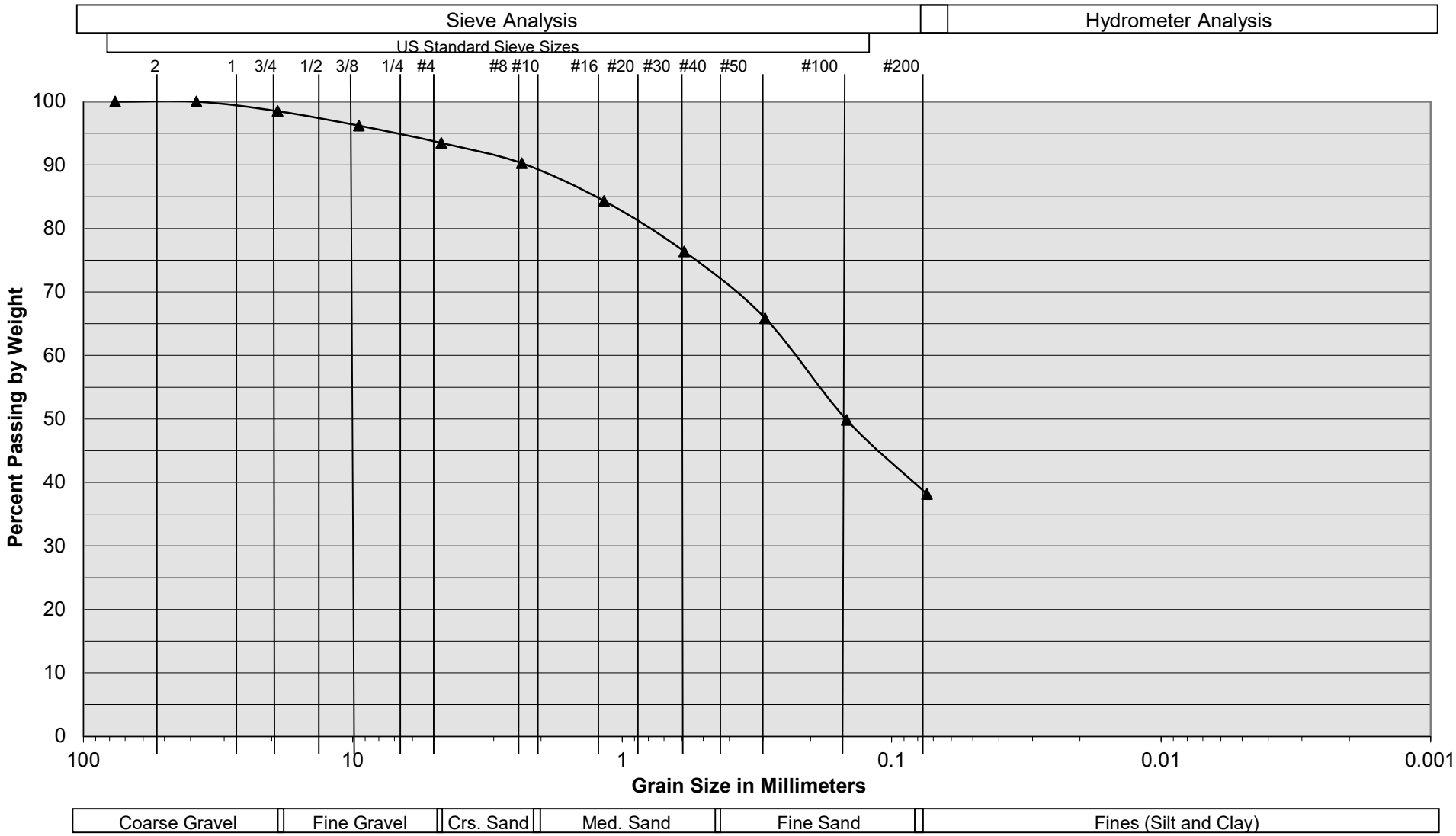


Sample Description	I-11 @ 8½'
Soil Classification	Brown Silty fine to medium Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 12

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

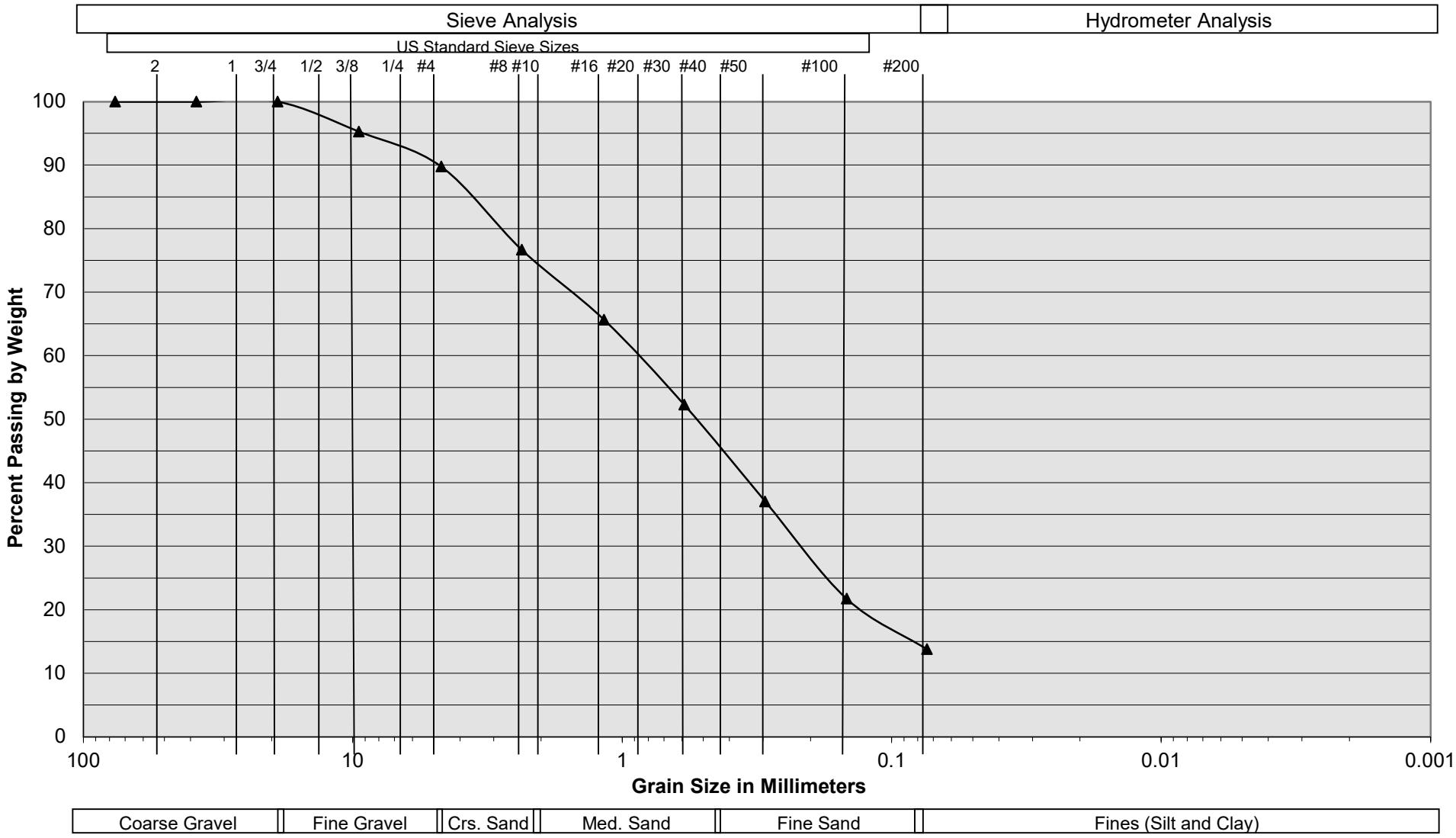


Sample Description	I-12 @12½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 13

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

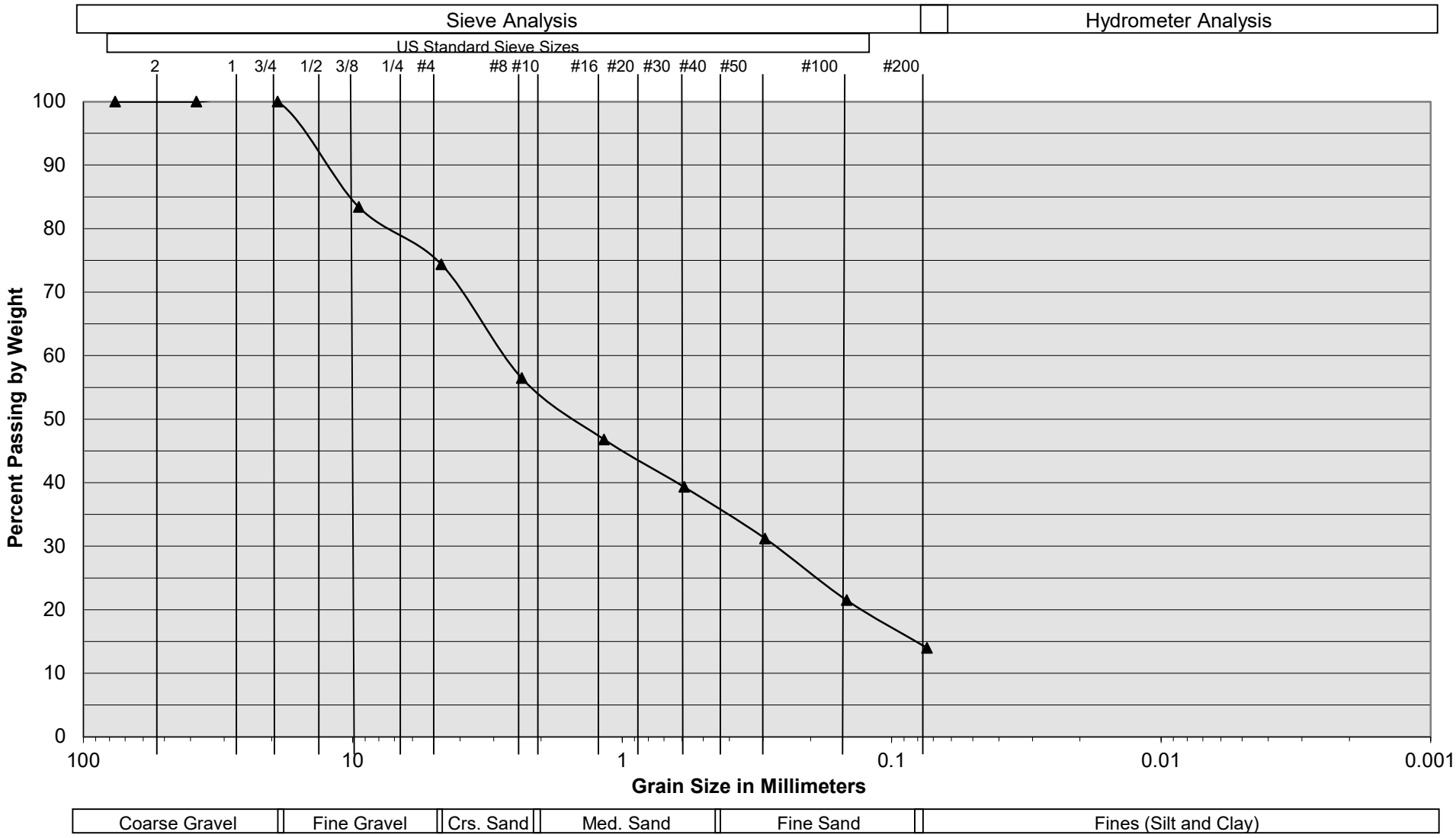


Sample Description	I-13 @ 26½'
Soil Classification	Brown fine to coarse Sand, little fine Gravel, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 14

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

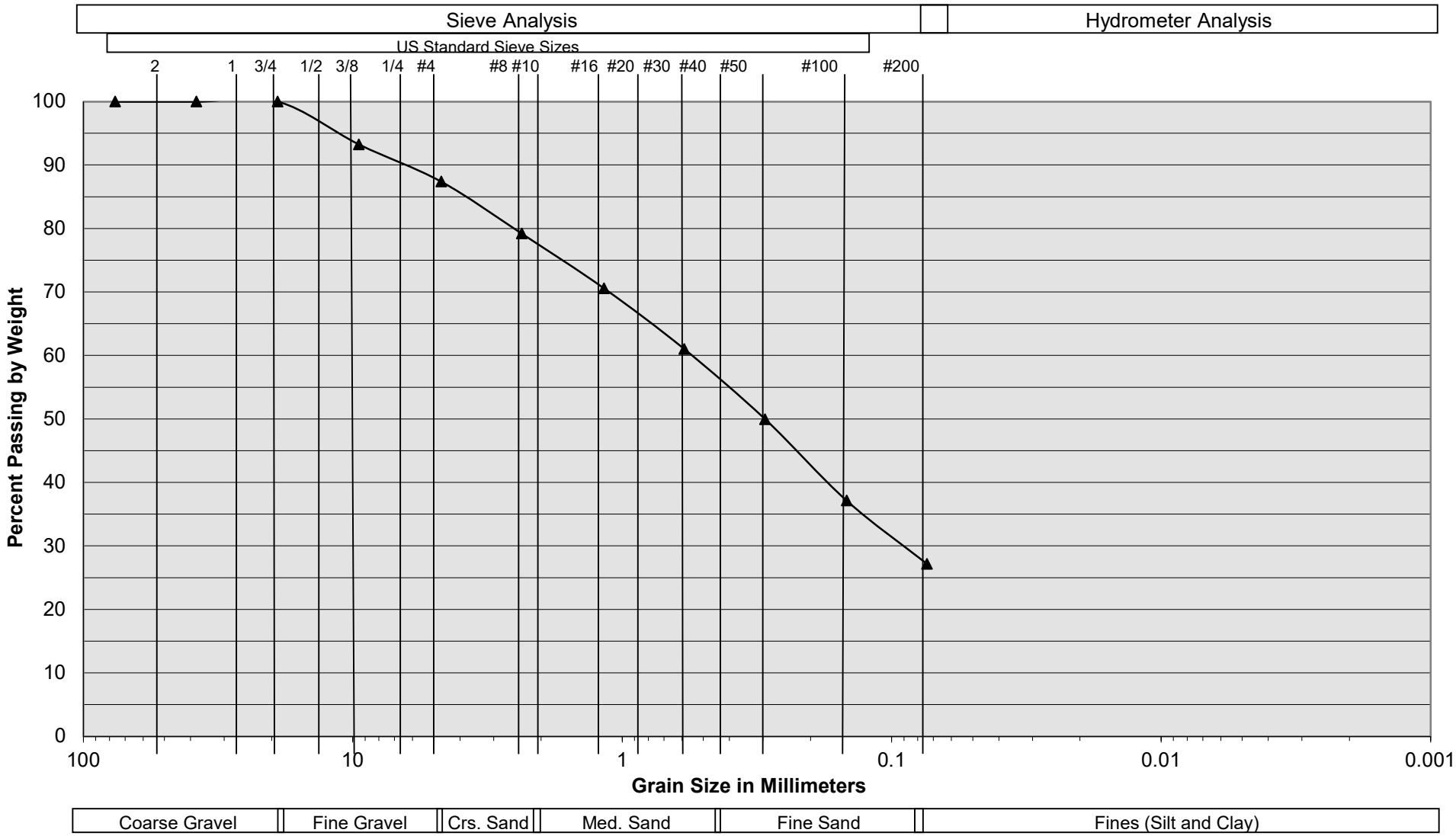


Sample Description	I-14 @ 14½'
Soil Classification	Gray Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 15

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-15 @ 25½'
Soil Classification	Red Brown Silty fine to coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 16

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

Sample Description	I-16 @ 41½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 17

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Preliminary Drainage Study – Building 3

Beaumont Summit Station – Building 3
TPM 38223
County of Riverside, California

Preliminary Drainage Study

Prepared for:
Exeter Cherry Valley Land, LLC
4602 East University Drive, Suite 185
Phoenix, AZ 85034
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Prepared By:

3788 McCray Street
Riverside, CA 92506

Original Date Prepared: August 2021
Revision Date(s): April 2022

[Stamp]

Byanka Velasco
Senior Engineer

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RELEVANT EXCERPTS FROM "BEAUMONT SUMMIT STATION PRELIMINARY DRAINAGE STUDY"
RELEVANT EXCERPTS FROM "BEAUMONT SUMMIT STATION – BUILDING 1 PRELIMINARY DRAINAGE STUDY"

SECTION 1 - SUMMARY

PURPOSE

The purpose of this report is to document the hydrologic and hydraulic analyses performed in support of the Beaumont Summit Station (BSS) - Building 3 project located in the City of Beaumont, County of Riverside, California. The overall project site consists of approximately 188 acres of TPM 38223 which currently contains mostly vacant land with some pavement and structures and is bounded by Cherry Valley Boulevard to the north, Brookside Avenue to the south, residential lots to the east and vacant land to the west. TPM 38223 consists of approximately 145.4 acres of e-commerce, 11.4 acres of commercial, and 31.2 acres of open space areas. This report will focus on the BSS - Building 3 project, a proposed e-commerce development on approximately 20.7 acres of the northeast portion of the overall project area. The BSS – Building 3 project is bounded by Cherry Valley Boulevard to the north, the future BSS – Building 1 development to the west, vacant Parcel 4 of TPM 38223 to the east and the future BSS – Building 2 development to the south. This report will summarize the hydrologic and hydraulic analyses that were conducted in order to determine the necessary drainage improvements required to provide flood protection for the proposed building and safely convey the runoff through the site.

The scope of this report will include the following:

- Determine the peak 100-year and 10-year flow rates for the developed condition using the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Rational Method.
- Determine the required storm drain facilities, alignment, and sizes required to flood protect the project site.
- Preparation of a preliminary report summarizing the hydrology and hydraulic results.

DESCRIPTION OF WATERSHED

As previously described, the project is proposing to build an e-commerce development of three warehouses on approximately 145.4 acres of vacant land with some pavement and structures. The BSS project is located within the Sunny Cal Specific Plan. Existing elevations across the site vary from 2554 to 2419 (NAVD88 datum). The slopes throughout the site vary, while the general existing drainage pattern for the site is characterized by sheet flow to the southwest. Along the southwestern boundary of the BSS project, an existing escarpment conveys runoff from the site into a vegetated streambed which runs northwest. A portion of the eastern and southern areas of the site drain south, where the streambed parallels Brookside Avenue. The majority of the site drains southwest into the same streambed, further downstream. A field survey was performed to determine the boundary of the project site in order to reduce the impacts on the existing vegetated streambed. The streambed eventually enters an existing concrete ditch along Calimesa Boulevard to the northwest of the project.

EXISTING CONDITIONS

The BSS – Building 3 project is a proposed e-commerce development on approximately 20.7 acres of vacant land within the boundaries of the overall BSS project boundary. Existing elevations across the site vary from 2554 to 2502 (NAVD88 datum). The area of the site currently slopes down at approximately 7% to southwest. The existing drainage pattern for the site and the general area is characterized by sheet flow to the southwest.

PROPOSED CONDITIONS

The overall project includes development of Buildings 1, 2, and 3 with mass grading of Parcel 4. Prior to the individual building developments, the overall BSS site will be mass graded. During mass grading, the backbone infrastructure will be constructed, including "A", "B", and "C" Streets and the emergency

access road along with associated utilities. After mass grading, the individual building sites will be developed separately. Each building will mitigate for increased runoff within its own site. Facilities proposed to mitigate for increased runoff will be constructed as part of the individual building developments.

In the Building 3 proposed condition, onsite runoff will be conveyed throughout the site via proposed ribbon gutters and curb and gutters. Onsite runoff will then be captured by a network of inlets provided at low points. Proposed underground storm drain conveys captured flows towards a proposed underground detention system. Due to the lack of downstream storm drain facilities, the project site will be required to mitigate for increases in runoff. The underground CMP detention chambers have been sized to mitigate for increased runoff for the 2-year, 5-year, 10-year and 100-year storm event with a duration of 24-hours. For preliminary purposes, it was assumed this will result in the largest mitigation volume required. Additional durations will be analyzed during final engineering. Further details on the mitigation for increased runoff for the overall BSS project may be found in the "Beaumont Summit Station Preliminary Drainage Study" (See Appendix D). An outlet structure from the detention system has been designed to achieve outflow that does not surpass the existing flowrates. The runoff will discharge from the detention system into a proposed storm drain line which will also collect the flows from Parcel 4 of TPM 38223. The proposed storm drain line will run south along the proposed access road, "B" Street, within the BSS project area and outlet into the existing vegetated streambed along the southern boundary of the BSS site. The streambed will convey runoff towards the northwest, following the existing drainage pattern. The relevant agencies do not have required setbacks or buffers for the stream that are globally set or dictated, but project design will be implemented to ensure the avoided jurisdictional features are not directly or indirectly impacted. Permits are in process to obtain approval with the relevant agencies. If necessary, modifications will be made through the permit processes and changes will be implemented in final design.

A bioretention basin is proposed to provide water quality treatment (additional information can be found in the separate Preliminary WQMP Report). The water quality flows will be pumped from the detention chambers to the basin in the northeast corner of the site. Treated flows are to be discharged into the proposed backbone storm drain line which receives the mitigated Building 3 flows.

Parcel 4 is proposed to be mass graded for future commercial development. A temporary desilting basin is to be graded, which will collect the runoff from Parcel 4 before it discharges into the proposed storm drain network in the BSS – Building 3 project site. A temporary outlet structure will be provided in order to prevent sediment, trash and debris from entering the proposed storm drain system. Parcel 4 has been included in the hydrologic analysis but will not be addressed in water quality calculations for the BSS – Building 3 project. Parcel 4 will require a separate water quality analysis once developed.

METHODOLOGY

HYDROLOGY

Hydrologic calculations were performed in accordance with the RCFC&WCD Hydrology Manual, dated April 1978. The Rational Method was utilized in determining peak flow rates.

The hydrological parameters, including rainfall values and soil types were derived from the RCFC&WCD Hydrology Manual. The isohyetal maps and soil map have been included in Section 2.

Rational Method calculations were performed using a computer program developed by CivilDesign Corporation and Joseph E. Bonadiman and Associates Inc. The computer program is commonly referred to as CivilD which incorporates the hydrological parameters outlined in the RCFC&WCD Hydrology Manual.

The Rational Method was used to determine the peak flow rates to size and design the drainage facilities need to convey onsite flows through the site to the proposed basin. The flow rates were computed by generating a hydrologic "link-node" model in which the overall area is divided into separate drainage sub-areas, each tributary to a concentration point (node) determined by the proposed layout and grading.

The Unit Hydrograph Method was used to determine the peak flow rates and volumes associated with the 2-year, 5-year,10-year, and 100-year storm events for the site. Calculations were performed for both the existing condition and developed condition to be used in the sizing of the CMP detention system. See "Beaumont Summit Station Preliminary Drainage Study" in Appendix C for additional information and results regarding the hydrologic analyses performed for this project.

HYDRAULICS

Water quality calculations were performed using spreadsheets that were created by RCFC&WCD. Final calculations and additional details can be found in the Preliminary-WQMP.

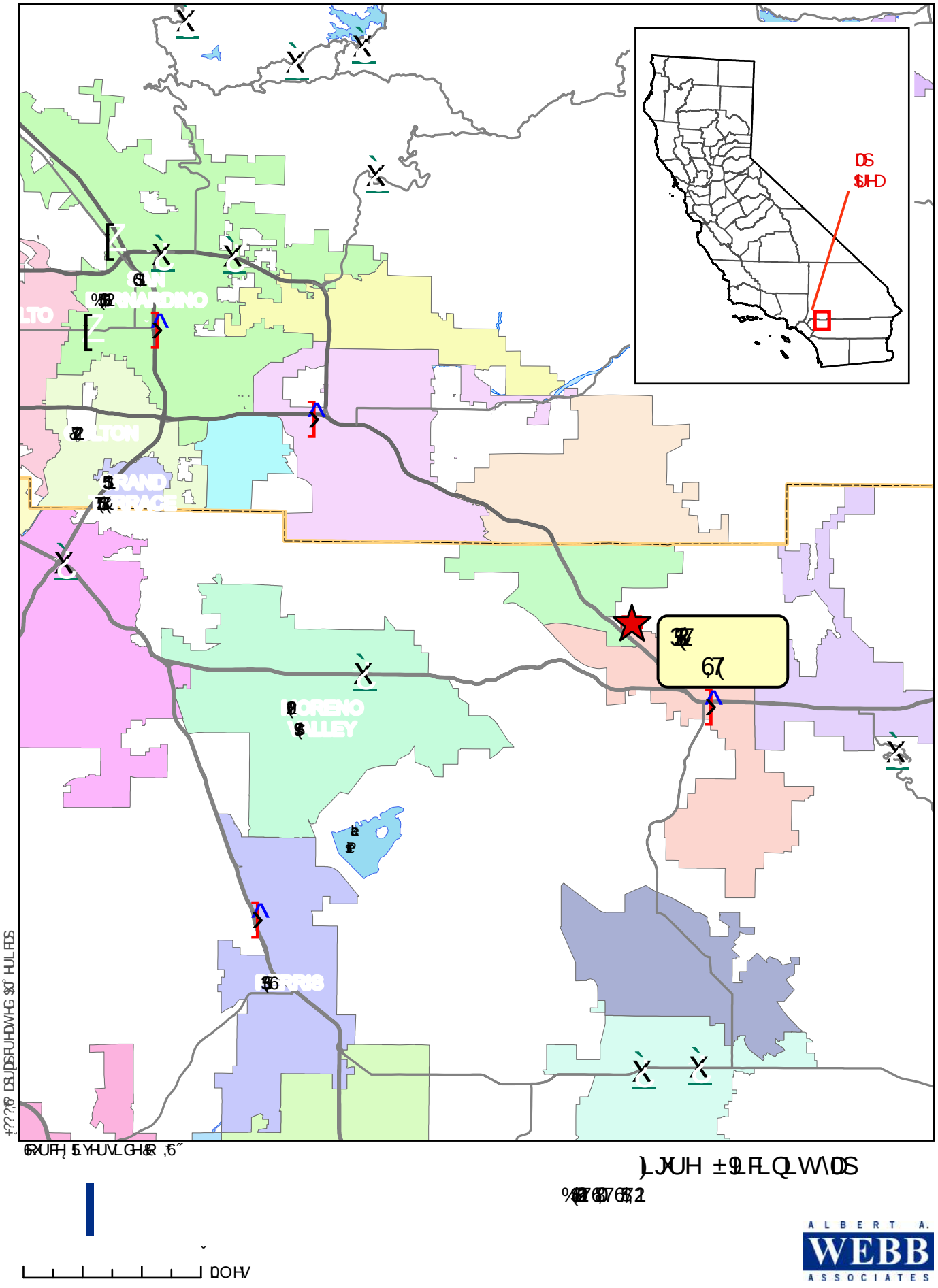
Hydraulic calculations to determine the required pipe sizes of proposed storm drain facilities will be provided in the Final Drainage Study.

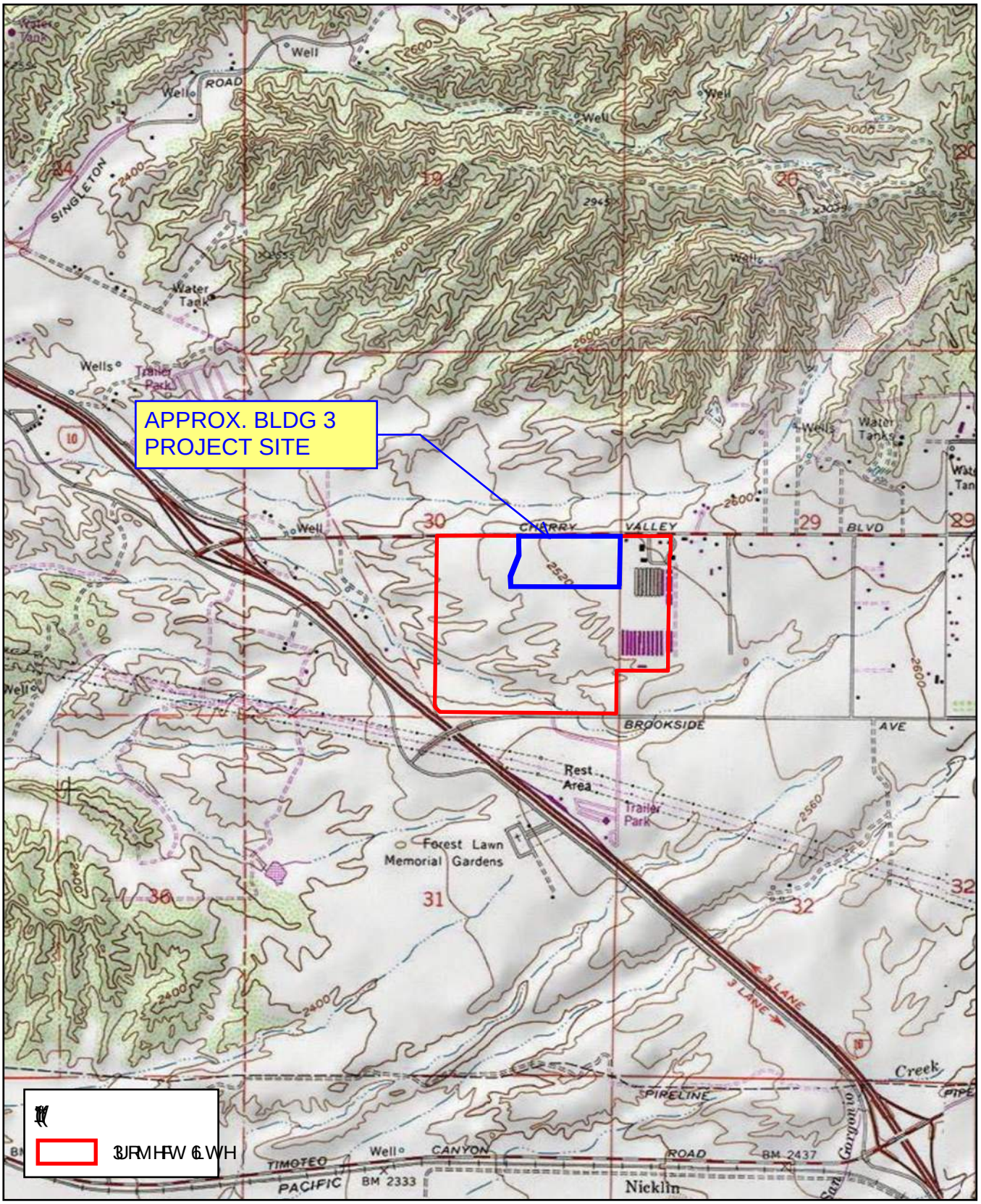
FIG. 1 VICINITY MAP

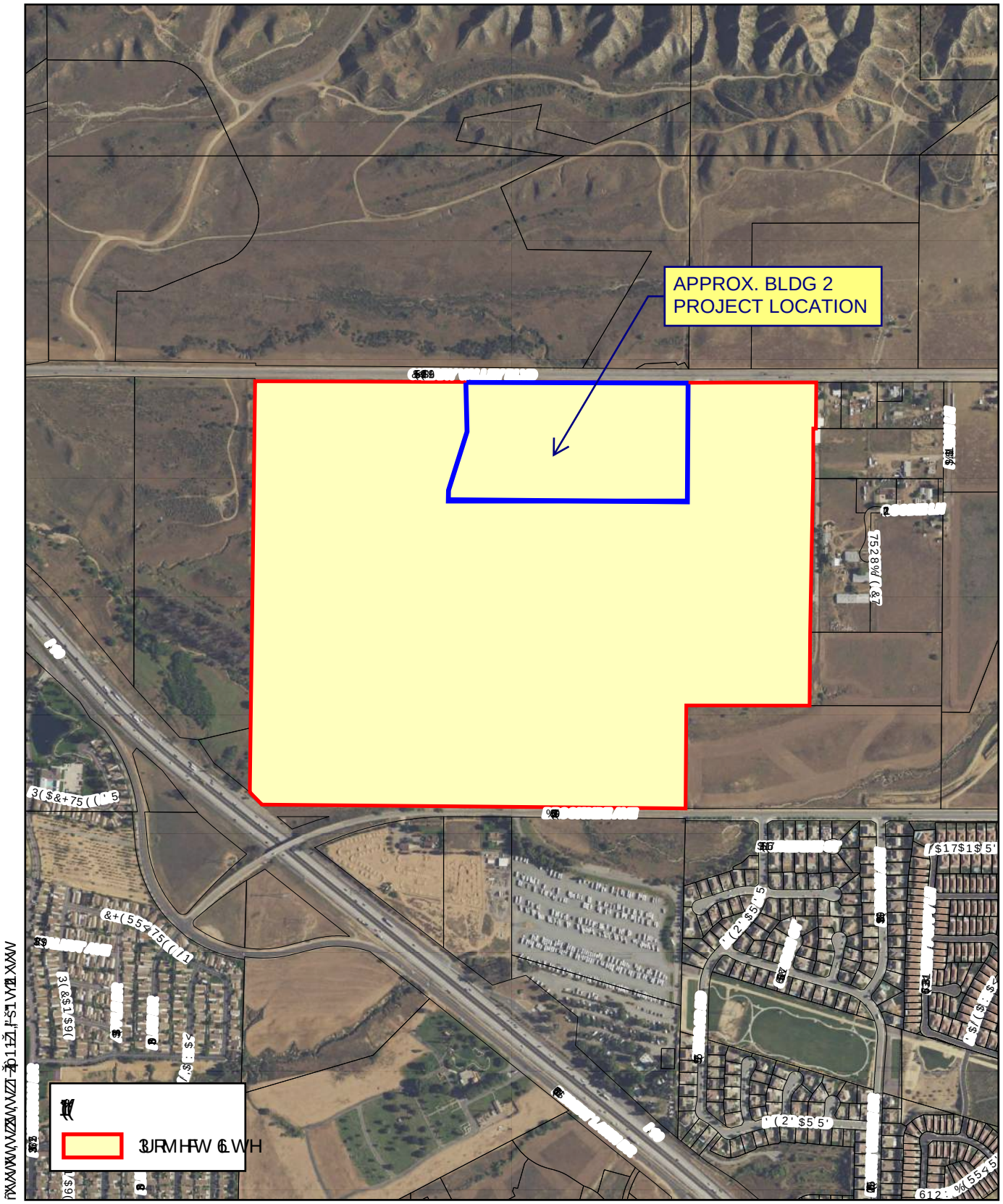
FIG. 2 USGS TOPOGRAPHY MAP

FIG. 3 AERIAL PHOTOGRAPH

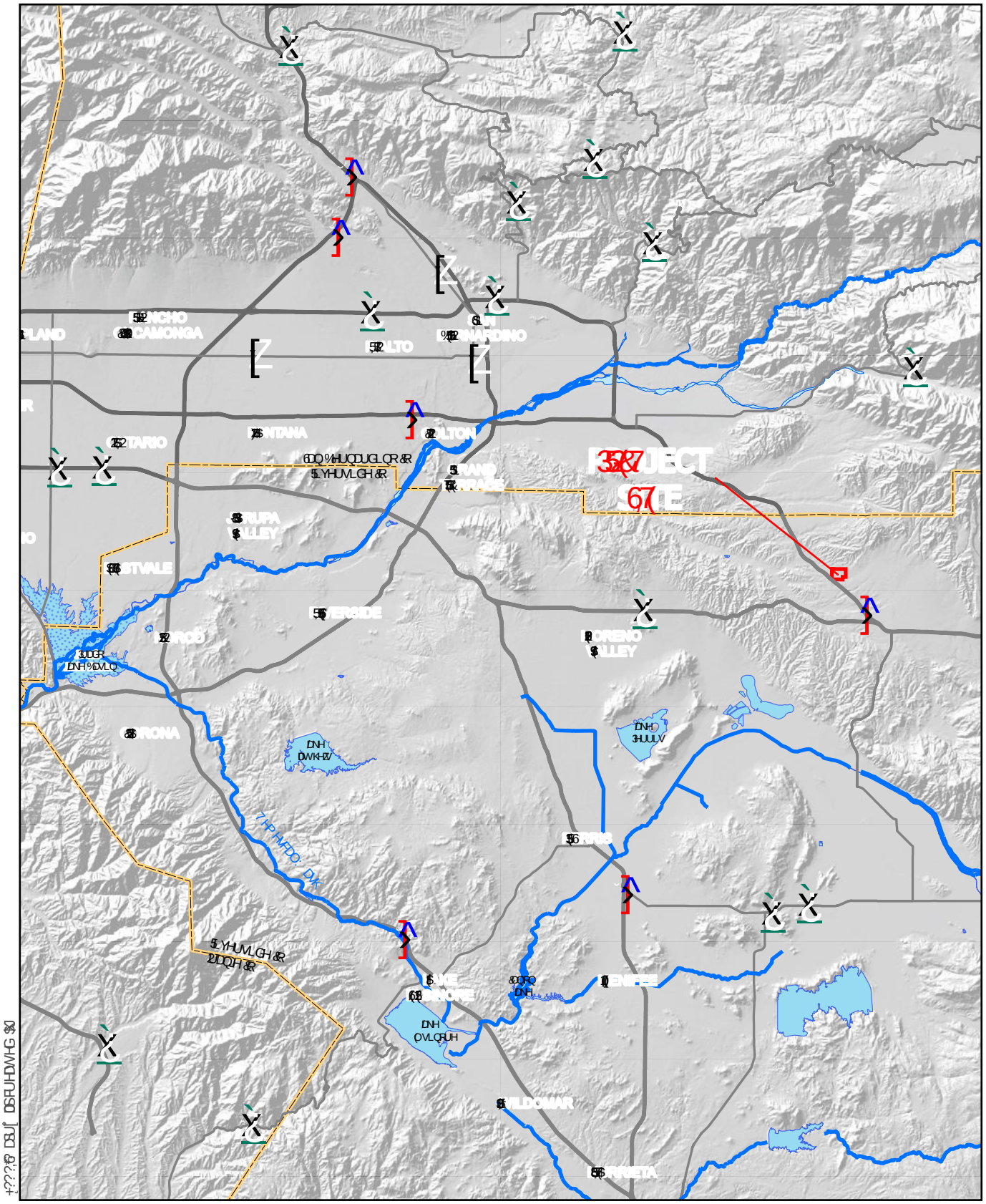
FIG. 4 RECEIVING WATERBODIES


SAN BERNARDINO
COLTON
GRAND TERRACE
MORENO VALLEY
HIGHLAND
67(
DS
$UHD
DOHV


APPROX. BLDG 3
PROJECT SITE
CHERRY
VALLEY
BLVD
BROOKSIDE
AVE
Rest
Area
Trailer
Park
Forest Lawn
Memorial Gardens
SINGLETON
ROAD
Water
Tank
Wells
Well
Trailer
Park
Water
Tanks
CANYON
TIMOTEO
PACIFIC
BM 2333
BM 2437
Nicklin
3 LANE
Creek
PIPELINE



ALBERT A. WEBB ASSOCIATES



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DOHV

ALBERT A. WEBB ASSOCIATES

SECTION 2 - HYDROLOGY ANALYSIS

HYDROLOGY PARAMETERS

The RCFC&WCD Hydrology Manual was used to determine several of the hydrological parameters. The following rainfall depths were utilized in the hydrology analyses, which were obtained from the NOAA Atlas 14:

Table 1 – Precipitation Values

	Duration
Storm Event	1-Hour (inches)
2-Year	0.581
100-Year	1.67

The NOAA Atlas 14 rainfall data can be found in Appendix A.

Based on the Plate C-1.18 (El Casco) in the RCFC&WCD Hydrology Manual, the project site is classified as soil type B and D. The soils map is included in Appendix A.

OVERALL SITE RATIONAL METHOD HYDROLOGY

The existing condition rational method was performed for the overall site for reference purposes. Mitigation of increased runoff for the developed condition is based on the unit hydrograph analysis for the 2-, 5-, 10- and 100-year storm events (See Section 4). The overall site was divided into two main areas. Approximately 106.4 areas of the north and west site are analyzed in the 700 series. Approximately 50.2 acres of the south and east site were analyzed in the 800 series. The undeveloped site primarily consists of undeveloped land with varying slopes. Therefore, it was analyzed as a natural channel type flow through the undeveloped sections. The site all drains to the existing streambed which runs to the west along the southern border of the site. The 700 series leaves the site at the western boundary while the 800 series discharges into the streambed area at the southern boundary of the site.

In the developed condition, approximately 1.5 acres between the northern BSS project boundary and proposed right-of-way are draining to Cherry Valley Boulevard. Approximately 9.5 acres of landscaped areas along the western boundary of the BSS – Building 1 site are to drain directly offsite to the west and south of the site, as in the existing condition. These approximately 11 acres were not accounted for in the developed condition rational method analysis and therefore create a difference in the total areas analyzed in the existing and developed conditions. These areas were analyzed in the unit hydrograph and routing calculations for mitigation of onsite flows.

ON-SITE RATIONAL METHOD HYDROLOGY

The rational method was used to determine peak flow rates in order to adequately size the proposed subsurface storm drains and associated inlets used to convey on-site flows to the proposed CMP detention system. Approximately 31.6 acres within the project area are tributary to the proposed storm drain facilities within the BSS – Building 3 project boundary. Approximately 20.7 acres of area consists of the onsite developments of the BSS – Building 3 project. The remaining 10.9 acres of area consists of Parcel 4, which connects to a proposed storm drain line within the BSS – Building 3 project. These areas

were broken up into two major areas (the 500-Series and the 600-Series) based on the locations of proposed inlets at low points throughout the site. Each series contains its own storm drain line which discharges into the chamber system at two inlets to the system. The subareas were further broken up into smaller areas in order to be modelled properly in the calculations. Most subareas consist of roof, landscaped areas, parking lots and drive aisles.

The 500-Series consists of approximately 10.8 acres of the northern and western project area. The 600-Series consists of approximately 19.3 acres of the eastern BSS – Building 3 project area and Parcel 4.

The following table summarizes the rational method results at key points:

Table 2 – Overall Project Watershed Rational Method Results

	Existing Condition			Developed Condition		
Point of Interest	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**
Node 705- Total Flows from North and West Areas	106.4	105.0	195.6	-	-	-
Node 803- Total Flows from South and East Areas	50.2	55.3	101.2	-	-	-
Node 110 – Total Building 1 Flows	-	-	-	43.0	84.1	139.3
Node 414 – Total Building 2 Flows	-	-	-	72.3	155.9	257.4
Node 603 - Total Building 3 and Parcel 4 Flows	-	-	-	30.2	54.7	95.9
Total	156.6	160.3	296.8	145.5	294.7	492.6

Table 3 – On-site Rational Method Results

Proposed Condition Point of Interest	**Area (ac)**	**Q_{10} (cfs)**	**Q_{100} (cfs)**
Node 506-Flows from North and West Building 3 Area	10.9	19.5	33.1
Node 602- Total Flow from Parcel 4 of TPM 38223	10.9	30.4	49.8
Node 607- Flows from East Building 3 Area	8.4	19.9	32.8
Node 603- Total Flows from Building 3 and Parcel 4	30.2	54.7	95.9
Building 3 Detention Chambers Mitigated Outflow*	-	3.18	12.18

*See Section 4 for the routing analysis details

The rational method output files and hydrology map have been included in Appendix A.

OFF-SITE RATIONAL METHOD HYDROLOGY

All flows entering the proposed storm drains and associated inlets are generated on-site. Cross gutters are proposed along "A", "B" and "C" Streets to prevent runoff from Cherry Valley Boulevard from entering the site. Approximately 39.4 acres to the east of BSS - Building 2 and Parcel 4 produce runoff which would flow onsite. In the existing condition, flows from the offsite area would ultimately flow into the existing stream to the south of the BSS project site. A concrete channel is proposed with the mass grading and construction of backbone improvements to divert flows south towards the existing stream without impacting the project site (see the separate "Beaumont Summit Station - Building 2 Preliminary Drainage Study" for channel details). The offsite rational method analysis was performed for a total of 44.1 acres. This includes the area to the east of the project and 4.7 acres of the south of the BSS - Building 2 site which will be conveyed through a culvert across the emergency access road proposed to connect the BSS site to Brookside Avenue to the south. The following tables summarize the rational method results at key points:

Table 4 – Off-site Rational Method Results

Off-site Rational Method Point of Interest	Area (ac)	Q_{10} (cfs)	Q_{100} (cfs)
Node 3- Flows from Area East of Building 2 and Parcel 3	39.4	56.8	102.0
Node 4- Total Flows Entering Proposed Culvert	44.1	63.6	114.0

The rational method output files and hydrology map have been included in Appendix A.

SECTION 3 - HYDRAULIC ANALYSIS

ON-SITE STORM DRAIN FACILITIES

Storm drain facilities throughout the site have been preliminarily designed to convey the 100-year storm event based on the rational method analysis. Runoff generated onsite is conveyed via proposed curb and gutter and ribbon gutters towards proposed water quality treatment and mitigation systems. For the Buildings 3 site, a CMP detention system is proposed which will provide mitigation for increased runoff. Hydraulic analysis and sizing of the proposed storm drain lines are to be provided with the final engineering.

Building 3 - CMP Chambers

To mitigate for increased runoff within the BSS – Building 3 project site, a CMP detention system is proposed to hold 480,000 cubic ft of runoff. Two underground chamber systems are proposed to be connected by an equalizer pipe to achieve the required detention volume. The first chamber system, which is to hold 280,000 cubic ft, will consist of 4 barrels, which are 1004 ft long each. The second chamber system, which is to hold 200,000 cubic ft, will consist of 18 barrels which are 150 ft long each. The chambers are proposed to be perforated chambers with a liner installed between the chambers and soil below as a geotechnical investigation recommended no infiltration at this location of the site. The details of the CMP chamber sizing have been included in Appendix B.

An outlet structure is proposed to ensure outflow does not exceed existing flow rates for each storm event. The outlet structure is proposed to consist of an orifice with the invert at the bottom of the chambers to mitigate the peak flow rate of the 2-year storm event. Another orifice opening is proposed at the maximum ponding level of the 2-year storm event. This orifice serves to mitigate the 5-year storm event. At the maximum ponding depth of the 5-year storm event, a weir opening is proposed to mitigate the 10-year and 100-year peak flow rates. The mitigation of the storm events results in a maximum ponding depth of 7.03 ft, therefore the ponding remains within the top of the chambers. Additional information regarding these depths can be found in Section 4. A rip rap section is proposed at the outlet storm drain line of the chambers, sized per the Riverside County Standard Drawing No. 314. The lengths and thickness of the rip rap section are based on the pipe diameter and design velocity, respectively. A 14 ft long and 4.3 ft thick rip rap section of 1 ton rock with a 1 ft thick 1" crushed rock filter is proposed based on preliminary sizing.

The CMP chambers will receive the water quality flows via the proposed underground storm drain system. A pump is proposed to direct the water quality runoff volume directly to the proposed bioretention basin in the northeast portion of the site to be treated. Therefore, the chambers will not be required to detain the water quality volume and the chamber sizing is based only on the required mitigation volume for increased runoff.

OFF-SITE STORM DRAIN FACILITIES

Cutoff Channel

A concrete cutoff channel is proposed along the eastern boundary of the BSS project site to divert flows generated on approximately 39.4 acres east of the BSS – Building 2 and Parcel 4 site towards the existing stream to the south. The channel is proposed to be 6 ft wide with 2:1 side slopes and will have a depth of 1.1 ft to convey the 100-year peak flow rate of 102 cfs. The hydraulic model for the channel is included in Appendix B. The cutoff channel is proposed to be constructed with the mass grading and backbone infrastructure of the overall BSS site and is to remain with future development of the Building 2 and Parcel 4 sites to prevent offsite flows from impacting the BSS site.

Emergency Access Road Culvert

A culvert is proposed south of the BSS – Building 2 site to convey flows across the proposed emergency access road which provides access from Brookside Avenue to the BSS project site. The culvert is a proposed 36" storm drain line which has been sized to convey the 100-year peak flow rate of 114 cfs across the access road to the existing stream. The rip rap section at the outlet of the culvert has been sized per the Riverside County Standard Drawing No. 314. The lengths and thickness of the rip rap section are based on the pipe diameter and design velocity, respectively. A 12 ft long and 5.4 ft thick rip rap section of 2 ton rock with a 1 ft thick 1" crushed rock filter layer is proposed based on preliminary culvert sizing. The hydraulic model for the culvert is included in Appendix B.

SECTION 4 - BASIN ANALYSIS

HYDROLOGY PARAMETERS

The RCFC&WCD Hydrology Manual was used to determine several of the hydrological parameters. The following rainfall depths were utilized in the hydrology analyses, which were obtained from the isohyetal maps provided in the RCFC&WCD Hydrology Manual:

Table 1 – Precipitation Values

	Duration			
Storm Event	1-Hour (inches)	3-Hour (inches)	6-Hour (inches)	24-Hour (inches)
2-Year	0.55	0.95	1.40	2.50
100-Year	1.25	2.05	3.00	6.50

The value for slope of intensity was determined to be 0.53. The isohyetal maps have been included in Appendix A.

Based on the Plate C-1.18 (El Casco) in the RCFC&WCD Hydrology Manual, the project site is classified as soil types B and D. The soils map is included in Appendix A.

The cover type was determined based on the existing land cover and proposed land use of the site. Hydrological computations for the existing condition were done using Natural Grass and Residential or Commercial. The Urban or Residential or Commercial cover type was used to represent the developed condition. The table below summarizes the runoff index values and the recommended values for percentage of impervious cover for each category:

Table 2 – Cover Type

Cover Type	Soil Group A	Soil Group B	Soil Group C	Soil Group D	Percentage of Impervious Cover
Existing Condition Natural Grass	-	78	-	89	12.0% (Area A) 33.0% (Area B)
Existing Residential or Commercial	-	56	-	75	
Developed Urban Residential or Commercial – Building 3	-	56	-	75	76.0%

ON-SITE UNIT HYDROGRAPH METHOD HYDROLOGY

The unit hydrograph method was used to determine the peak flow rates and volumes in order to adequately size the proposed chamber detention system to address increased runoff mitigation. Unit hydrographs were performed for both the 24-hour existing condition and developed condition only in the preliminary condition since it was assumed that the 24-hour condition will require the greatest mitigation volume. The existing condition is used to establish a baseline for comparative purposes. The developed condition is used for design purposes, it was utilized in the basin routing analysis in order to size and analyze the proposed CMP chamber detention system. The unit hydrograph analysis for both the existing

and developed condition was conducted for a total of 156.8 acres. This comprises the entirety of the proposed development with the BSS project site.

In the existing condition analysis, the overall project site was broken up into two areas. Approximately 106.4 acres are labelled as Area A (700-Series in the rational method analysis) and is tributary to the existing streambed area to the west of the project site. The remaining 50.4 acres are labelled as Area B (800-Series) and are tributary to a region of the streambed to the south of the project site. In the proposed condition, Area A is divided into a West Area and North Area (corresponding to Building 1 and Building 3, respectively). The West Area consists of approximately 55.3 acres while the North area is approximately 33.8 acres. In the developed condition, approximately 17.4 acres of area which was tributary to Area A in the existing condition have been included in the development of the South Area (part of the existing condition Area B). Therefore, the developed South Area will be over mitigating for flows as a greater area, and therefore greater discharge, is included in the developed condition analysis. While the existing condition Area A will be under mitigated once developed, the overall BSS site will be mass graded together as grading will require cut from the Building 2 area, in Area B, to be used in fill for mass grading of the Building 1 project site. Therefore, overall the BSS project will be fully mitigated once developed.

The following table summarizes the results of the unit hydrograph analysis:

Table 4 – Unit Hydrograph Results

EXISTING CONDITION - AREA A (WEST & NORTH)					DEVELOPED CONDITION - NORTH				
AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)
EX100YRA	100	1	5.2	*149.05*	*NORTH100YR*	100	1	3.1	*101.13*
		3	6.4	*94.83*			3	4.6	*56.59*
		6	8.2	*92.02*			6	6.6	*52.80*
		24	12.4	*36.93*			24	13.7	*25.34*
EX10YRA	10	1	5.2	*149.05*	*NORTH10YR*	10	1	1.9	*65.99*
		3	6.4	*94.83*			3	3	*36.98*
		6	8.2	*92.02*			6	4.3	*34.61*
		24	12.4	*36.93*			24	8.3	*14.44*
EX5YRA	5	1	3.1	*105.39*	*NORTH5YR*	5	1	1.6	*53.56*
		3	3.5	*59.58*			3	2.5	*29.08*
		6	4.5	*57.43*			6	3.6	*27.35*
		24	6.1	*10.83*			24	6.9	*11.30*
EX2YRA	2	1	2.1	*72.68*	*NORTH2YR*	2	1	1.2	*39.96*
		3	2.4	*38.48*			3	1.9	*21.45*
		6	3.1	*36.56*			6	2.8	*20.29*
		24	2.7	*4.33*			24	5	*8.22*

The unit hydrograph output files and hydrology map have been included in Appendix C.

BASIN ROUTING ANALYSIS

A routing analysis was completed to demonstrate that the CMP chamber system contain substantial volume needed to mitigate flows down to existing condition peak flow rates.

Basin routing calculations were conducted for each building area (west, north and south). A stage-storage-discharge table was determined for each area. The stage-storage-discharge tables provide input data at select elevations in the basin and/or chambers which will determine the storage and discharge at each point based on the mitigation configuration of the outlet structures.

In the existing condition, the entire Area A generally drains to the southwest. Approximately 16.6% of Area A drains more towards the southern boundary before being conveyed to the west along the streambed. This area corresponds to the developed North Area (Building 3). For the developed condition West Area and North Area, a ratio of the areas was used to determine the existing peak flow rates which serve as the limits for the routing analysis of each area. An exhibit showing the portion of the existing condition Area A which flows south can be found in Appendix C.

For the BSS- Building 3 area, the proposed outlet structure consists of a 3.5-inch orifice plate with an invert set at the bottom of the chambers. The water quality flows will be pumped out to be treated by the proposed bioretention basin therefore the chambers do not hold the water quality volume. This orifice mitigates the 2-year storm event. A 5-inch orifice is proposed at the maximum ponding depth for the 2-year, 24-hour storm (a depth of approximately 3.49 ft). This orifice mitigates for the 5-year storm event and creates a maximum ponding depth of 4.46 ft within the chambers. At this depth, a 0.8 ft weir is proposed to mitigate for the 10-year and 100-year storm events. The 10-year, 24-hour storm event creates a maximum ponding of 5.16 ft while the 100-year storm creates a maximum ponding of 7.03 ft, which is below 9 ft depth of the top of the gravel which provides storage above the chambers as well. The routing analysis for the BSS – Building 3 detention chambers resulted in a maximum drawdown time of approximately 228 hours. While this exceeds the 72-hour limit for above ground basins to prevent vector issues the CMP detention system consists of underground chambers and therefore vector issues are not anticipated even with a high drawdown time. This is due to this area over mitigating as the developed Building 3 project area is larger than the portion of the existing condition Area A which is used as the limit for the routing analysis of this region. While the mitigation for both Building 3 and Parcel 4 are included in the BSS – Building 3 Area, Parcel 4 will be required to treat for water quality separately from Building 3.

The following tables present the result of routing analysis for the 2-, 5-, 10- and 100-year, 24-hour storm events to demonstrate that the CMP chamber system provides the necessary storage volume needed to restrict the outflow to existing condition flow rates.

The basin routing calculations and other hydraulic calculations have been provided in Appendix C. Based on the table below, the proposed detention chambers for the BSS - Building 3 area have the capacity to mitigate for all the required HCOC and RCFC&WCD storm events. All discharge flow rates in the developed condition are lower than or within ten percent of the flow rate exiting the site in the existing condition.

Table 5 – Basin Routing Results

Storm Event		Existing Condition				Developed Condition						Basin Routing Results		
		Area A (106.4 ac)		83.4% A	16.6% A	**West Area (55.3 ac)		North Area (33.8 ac)		Combined (89.1 ac)		**West Area	North Area	Combined
		Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	*Peak Flow (cfs)
2-Year	1-Hour	2.1	72.7	**60.6**	12.1	1.9	64.4	1.2	40.0	3.1	104.3	*To be analyzed during Final Engineering*		
	3-Hour	2.4	38.5	**32.1**	6.4	3.0	34.2	1.9	21.5	4.9	55.6			
	6-Hour	3.1	36.6	**30.5**	6.1	4.4	32.1	2.8	20.3	7.2	52.4			
	24-Hour	2.7	4.3	**3.6**	0.7	7.7	12.7	5.0	8.2	12.7	20.9	*3.31*	*0.65*	*3.96*
5-Year	1-Hour	3.1	105.4	**87.9**	17.5	2.5	86.3	1.6	53.6	4.1	139.8	*To be analyzed during Final Engineering*		
	3-Hour	3.5	59.6	49.7	9.9	3.9	46.7	2.5	29.1	6.4	75.8			
	6-Hour	4.5	57.4	47.9	9.5	5.6	44.1	3.6	27.4	9.2	71.4			
	24-Hour	6.1	10.8	9.0	1.8	10.6	17.5	6.9	11.3	17.5	28.8	*9.37*	*1.44*	*10.81*
10-Year	1-Hour	5.2	149.1	**124.3**	24.7	3.2	107.3	1.9	66.0	5.1	173.3	*To be analyzed during Final Engineering*		
	3-Hour	6.4	94.8	79.1	15.7	4.8	60.4	3.0	37.0	7.8	97.4			
	6-Hour	8.2	92.0	76.7	15.3	6.9	57.3	4.3	34.6	11.2	91.9			
	24-Hour	12.4	36.9	30.8	6.1	13.0	23.8	8.3	14.4	21.3	38.2	*16.43*	*3.18*	*19.61*
100-year	1-Hour	8.9	235.28	196.0	39.1	5.0	164.4	3.1	101.1	8.1	265.5	*To be analyzed during Final Engineering*		
	3-Hour	11.7	150.79	125.6	25.0	7.5	92.4	4.6	56.6	12.1	149.0			
	6-Hour	14.5	146.20	121.8	24.3	10.6	87.6	6.6	52.8	17.2	140.4			
	24-Hour	27.3	70.90	59.1	11.8	21.8	41.6	13.7	25.3	35.5	66.9	*40.75*	*12.18*	*52.93*

Note: ** The Combined Peak Flow describes the flows exiting the site along the western and southwestern boundary of the site. This value is the sum of the peak flow rates generated by the West and North Areas in the proposed condition which have been routed to be less than the existing condition peak flow for Area A or within 10% of this value.*

*** The West Area unit hydrograph and routing results have been included in Appendix D for reference. See the separate "Beaumont Summit Station – Building 1 Preliminary Drainage Study" for a detailed discussion and analysis of the West Area.*

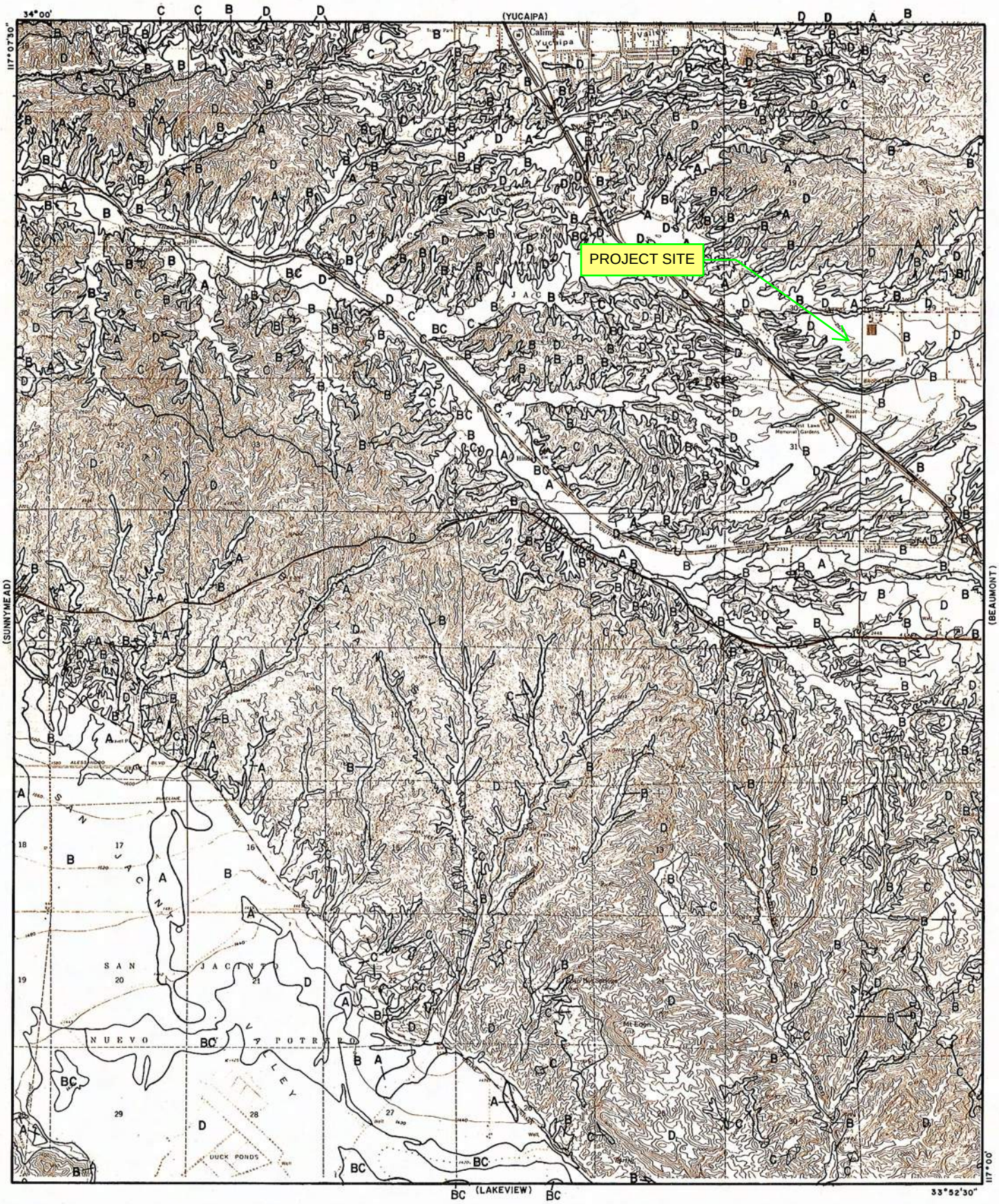
SECTION 5 - CONCLUSION

Based on the analyses and results of this report, the following conclusions were derived from the hydrology and hydraulic results:

- The proposed drainage improvements will adequately convey flows to the basin and provide flood protection for the 100-year storm event.
- The proposed bioretention basin will provide adequate water quality treatment.
- The proposed project will not impact flooding condition to upstream or downstream properties.

APPENDIX A – HYDROLOGY ANALYSIS

HYDROLOGIC SOILS GROUP MAP (PLATE C-1.18)



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC&WCD

HYDROLOGY MANUAL

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR EL CASCO

PLATE C-1.18

RAINFALL INTENSITY

NOAA Atlas 14, Volume 6, Version 2
Location name: Beaumont, California, USA*
Latitude: 33.9648°, Longitude: -117.0173°
Elevation: 2522.8 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.123 (0.102-0.149)	0.156 (0.130-0.189)	0.204 (0.170-0.249)	0.249 (0.205-0.305)	0.318 (0.252-0.403)	0.378 (0.294-0.491)	0.448 (0.340-0.597)	0.530 (0.391-0.726)	0.660 (0.466-0.943)	0.778 (0.530-1.15)
10-min	0.176 (0.147-0.213)	0.223 (0.186-0.271)	0.293 (0.243-0.357)	0.356 (0.293-0.438)	0.455 (0.362-0.578)	0.542 (0.422-0.704)	0.643 (0.488-0.855)	0.760 (0.560-1.04)	0.946 (0.668-1.35)	1.12 (0.760-1.65)
15-min	0.213 (0.177-0.258)	0.270 (0.225-0.328)	0.354 (0.294-0.431)	0.431 (0.355-0.529)	0.550 (0.438-0.699)	0.656 (0.510-0.852)	0.777 (0.590-1.03)	0.919 (0.677-1.26)	1.14 (0.808-1.64)	1.35 (0.919-2.00)
30-min	0.312 (0.260-0.379)	0.397 (0.330-0.482)	0.521 (0.432-0.634)	0.633 (0.521-0.778)	0.809 (0.643-1.03)	0.964 (0.750-1.25)	1.14 (0.866-1.52)	1.35 (0.995-1.85)	1.68 (1.19-2.40)	1.98 (1.35-2.93)
60-min	0.457 (0.381-0.555)	0.581 (0.483-0.705)	0.762 (0.632-0.928)	0.927 (0.763-1.14)	1.18 (0.941-1.50)	1.41 (1.10-1.83)	1.67 (1.27-2.23)	1.98 (1.46-2.71)	2.46 (1.74-3.52)	2.90 (1.98-4.29)
2-hr	0.654 (0.545-0.793)	0.815 (0.678-0.990)	1.05 (0.868-1.27)	1.25 (1.03-1.54)	1.56 (1.24-1.98)	1.82 (1.42-2.36)	2.11 (1.60-2.81)	2.43 (1.79-3.33)	2.92 (2.07-4.18)	3.35 (2.28-4.96)
3-hr	0.805 (0.671-0.976)	0.999 (0.831-1.21)	1.27 (1.06-1.55)	1.51 (1.24-1.85)	1.86 (1.48-2.36)	2.15 (1.68-2.80)	2.47 (1.88-3.29)	2.83 (2.08-3.87)	3.35 (2.36-4.79)	3.79 (2.58-5.61)
6-hr	1.17 (0.973-1.42)	1.45 (1.20-1.76)	1.83 (1.52-2.23)	2.16 (1.78-2.65)	2.63 (2.09-3.34)	3.01 (2.35-3.91)	3.42 (2.60-4.56)	3.86 (2.85-5.29)	4.50 (3.18-6.43)	5.01 (3.42-7.43)
12-hr	1.59 (1.33-1.93)	2.01 (1.67-2.44)	2.57 (2.13-3.13)	3.04 (2.50-3.73)	3.70 (2.94-4.70)	4.22 (3.28-5.47)	4.76 (3.61-6.34)	5.33 (3.93-7.30)	6.13 (4.33-8.76)	6.76 (4.61-10.0)
24-hr	2.12 (1.88-2.45)	2.76 (2.44-3.18)	3.60 (3.17-4.16)	4.29 (3.76-5.01)	5.26 (4.45-6.34)	6.01 (4.99-7.39)	6.79 (5.50-8.55)	7.60 (6.00-9.84)	8.73 (6.61-11.8)	9.61 (7.04-13.4)
2-day	2.59 (2.30-2.99)	3.43 (3.04-3.96)	4.59 (4.04-5.31)	5.56 (4.87-6.49)	6.95 (5.89-8.37)	8.07 (6.70-9.92)	9.25 (7.49-11.6)	10.5 (8.29-13.6)	12.3 (9.32-16.6)	13.8 (10.1-19.2)
3-day	2.81 (2.49-3.24)	3.76 (3.33-4.34)	5.10 (4.49-5.90)	6.25 (5.47-7.29)	7.93 (6.72-9.55)	9.31 (7.73-11.4)	10.8 (8.75-13.6)	12.4 (9.80-16.1)	14.8 (11.2-19.9)	16.7 (12.3-23.3)
4-day	3.06 (2.71-3.52)	4.11 (3.64-4.75)	5.60 (4.94-6.49)	6.90 (6.04-8.05)	8.80 (7.45-10.6)	10.4 (8.61-12.8)	12.1 (9.78-15.2)	13.9 (11.0-18.0)	16.6 (12.6-22.4)	18.9 (13.9-26.4)
7-day	3.53 (3.12-4.06)	4.75 (4.20-5.48)	6.46 (5.70-7.48)	7.94 (6.95-9.26)	10.1 (8.54-12.1)	11.8 (9.82-14.6)	13.7 (11.1-17.3)	15.8 (12.4-20.4)	18.7 (14.2-25.2)	21.2 (15.5-29.5)
10-day	3.87 (3.42-4.46)	5.21 (4.61-6.01)	7.08 (6.24-8.19)	8.68 (7.60-10.1)	11.0 (9.31-13.2)	12.9 (10.7-15.8)	14.9 (12.1-18.7)	17.0 (13.4-22.1)	20.2 (15.3-27.2)	22.7 (16.6-31.7)
20-day	4.78 (4.23-5.50)	6.49 (5.74-7.49)	8.85 (7.80-10.2)	10.8 (9.49-12.7)	13.7 (11.6-16.5)	16.0 (13.3-19.7)	18.4 (14.9-23.2)	21.0 (16.6-27.2)	24.7 (18.7-33.3)	27.7 (20.3-38.6)
30-day	5.61 (4.97-6.47)	7.66 (6.77-8.84)	10.4 (9.21-12.1)	12.8 (11.2-14.9)	16.2 (13.7-19.5)	18.8 (15.6-23.2)	21.6 (17.5-27.3)	24.6 (19.4-31.9)	28.9 (21.9-38.9)	32.3 (23.6-45.0)
45-day	6.73 (5.96-7.76)	9.18 (8.11-10.6)	12.5 (11.0-14.5)	15.3 (13.4-17.8)	19.2 (16.3-23.2)	22.4 (18.6-27.5)	25.7 (20.8-32.3)	29.2 (23.0-37.7)	34.1 (25.8-45.9)	38.0 (27.8-53.0)
60-day	7.85 (6.95-9.05)	10.7 (9.43-12.3)	14.5 (12.8-16.7)	17.7 (15.4-20.6)	22.1 (18.7-26.7)	25.7 (21.3-31.6)	29.4 (23.8-37.0)	33.4 (26.3-43.2)	38.9 (29.4-52.4)	43.3 (31.7-60.3)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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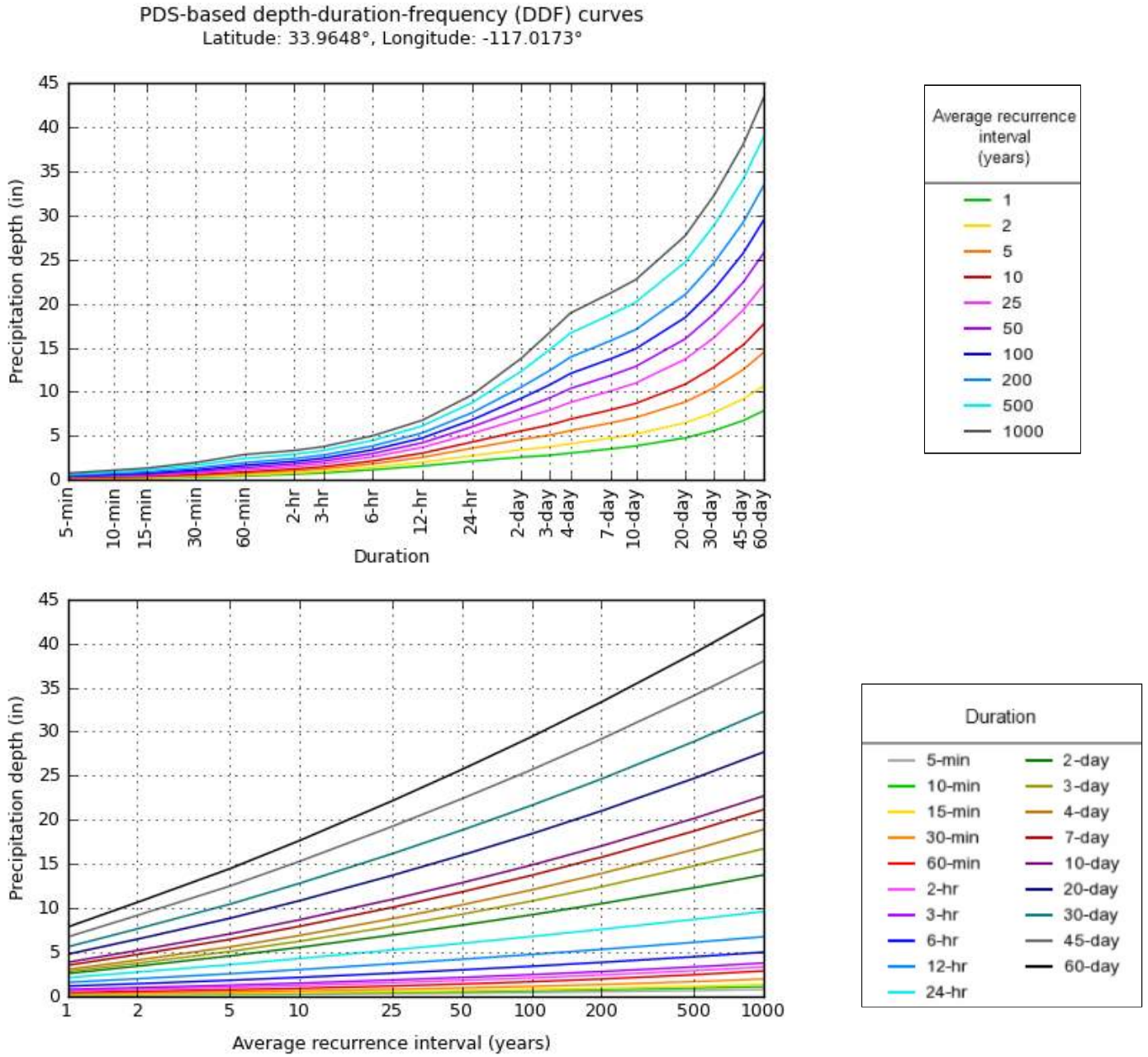
PF graphical



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Fri Dec 10 00:04:40 2021

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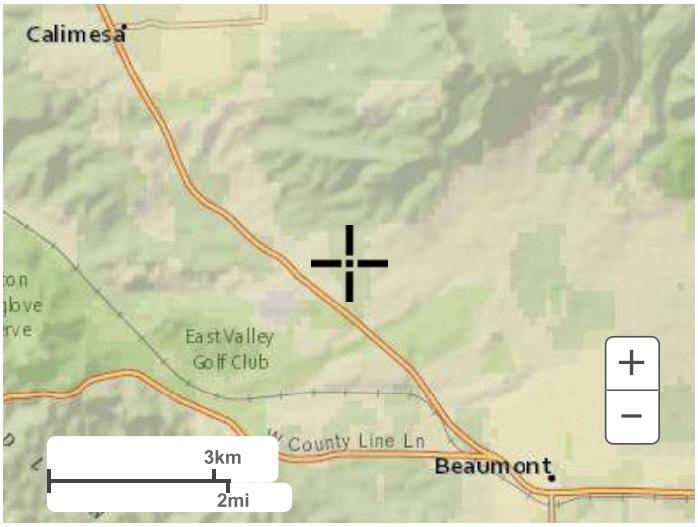
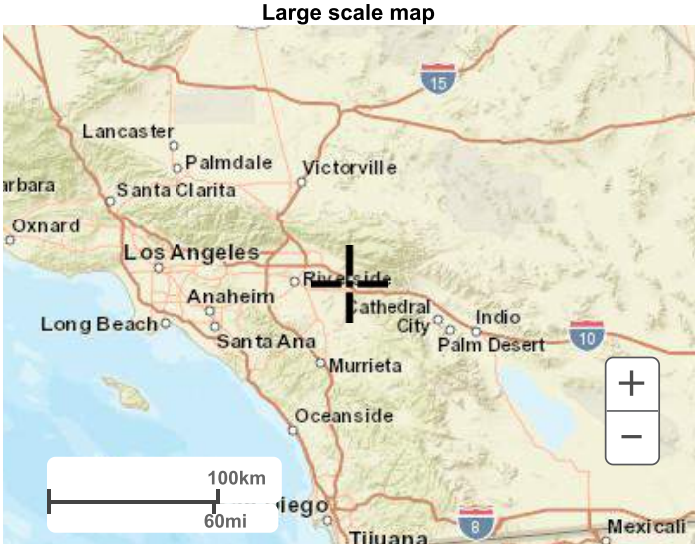
Maps & aerials

Small scale terrain

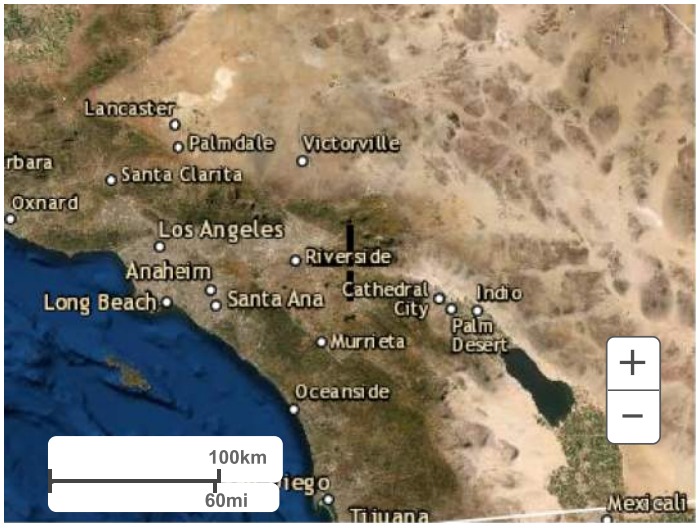


Large scale terrain

Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Approximate Project Location
(i=0.55)

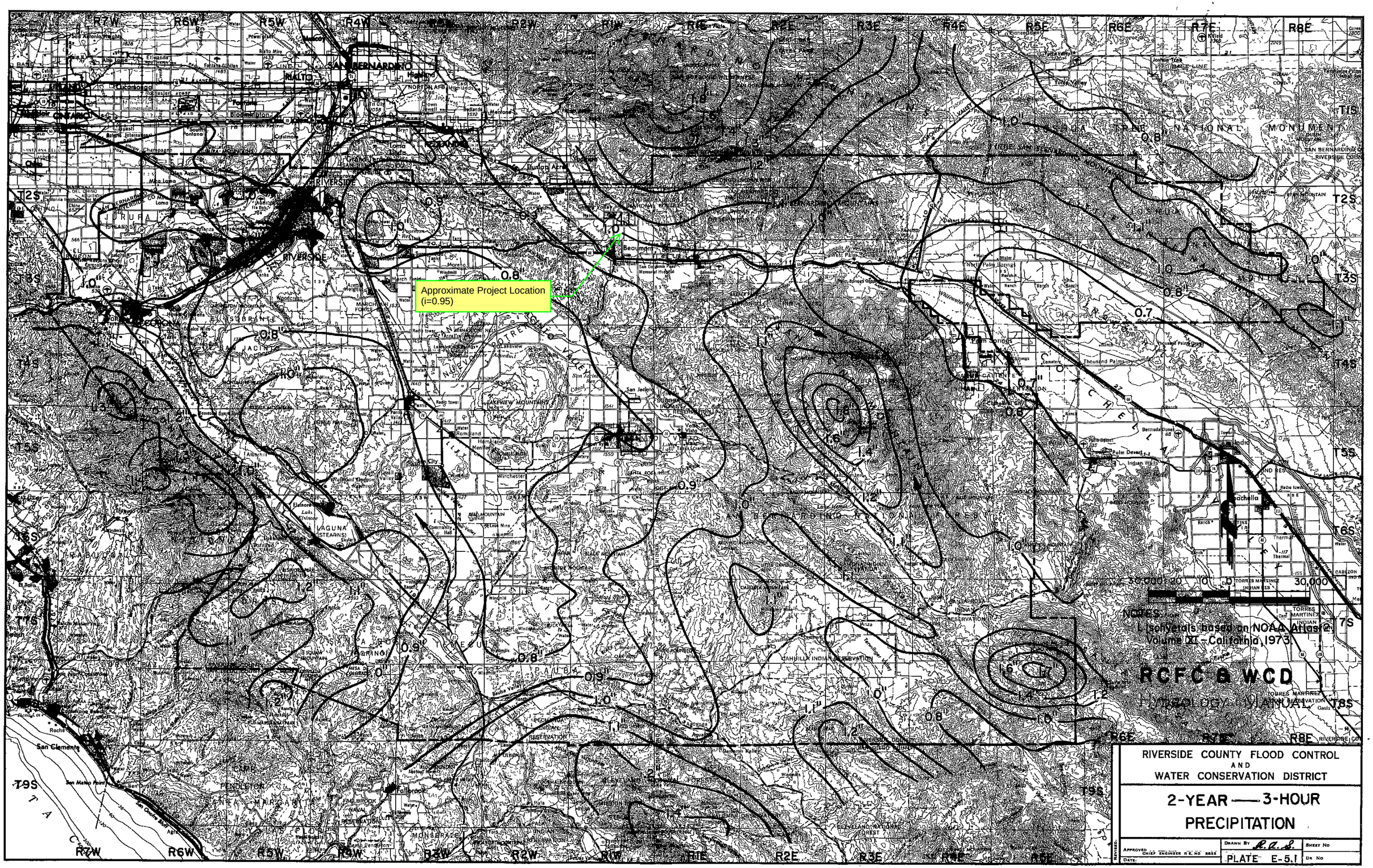
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973

RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 1-HOUR PRECIPITATION

APPROVED CHIEF ENGINEER R.E. NO. 8882	DRAWN BY R.A.S.	SHEET NO
DATE	PLATE D-4.3	DR NO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Isohyetals based on NOAA Atlas 2,
Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
2-YEAR — 3-HOUR
PRECIPITATION
DRAWN BY R.A.S.
SHEET NO
APPROVED CHIEF ENGINEER R.E. NO. 8812
PLATE E-5.1
DR NO
DATE:
REVISED:

Approximate Project Location
(i=1.4)

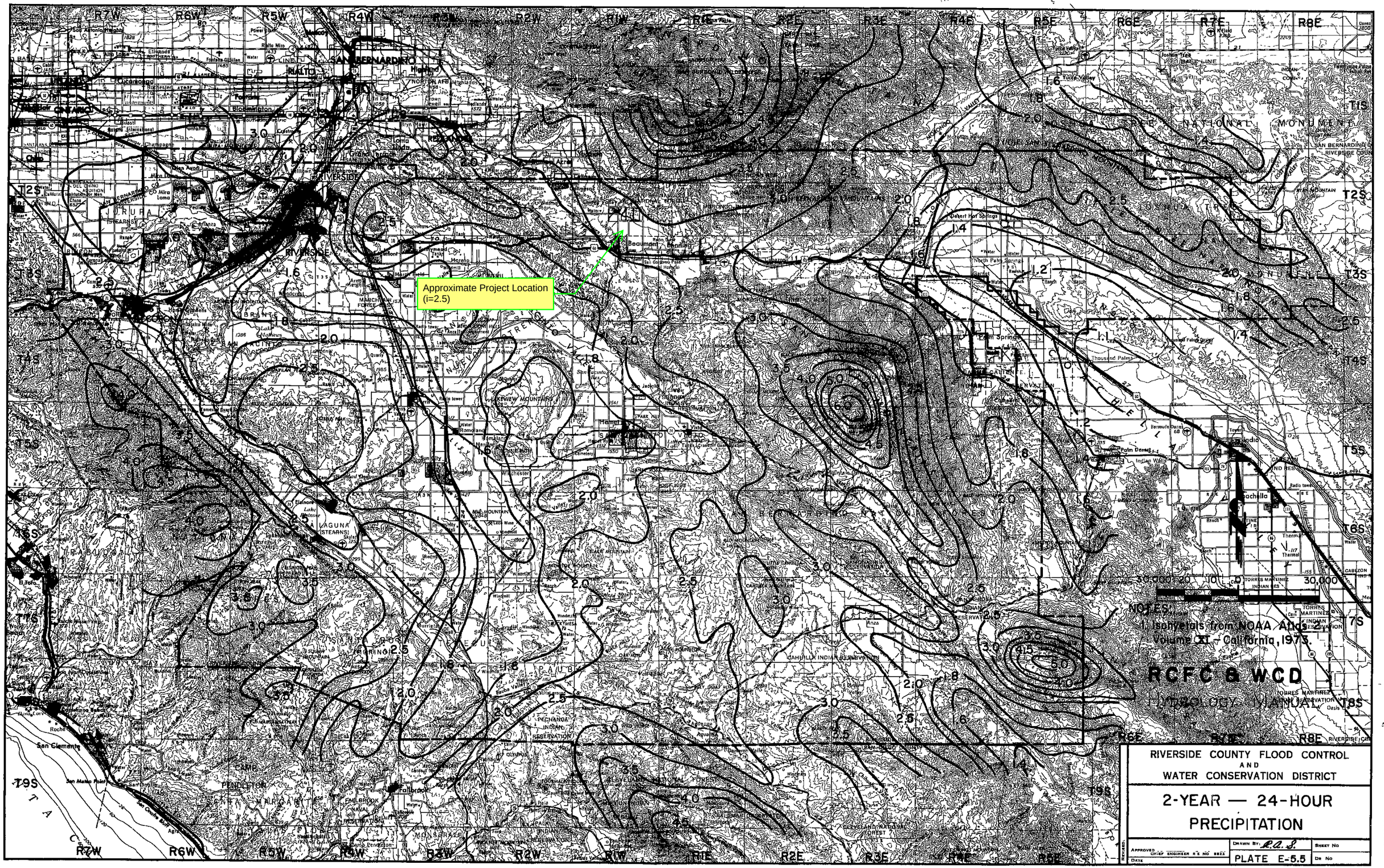
NOTES:
1. Isohyetals from NOAA Atlas 2 Volume XI - California, 1973

RCFC & WCD
HYDROLOGY MANUAL

RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 6-HOUR
PRECIPITATION

APPROVED: CHIEF ENGINEER R.E. NO. 8822	DRAWN BY:	SHEET NO
DATE:	PLATE E-5.3	DR NO

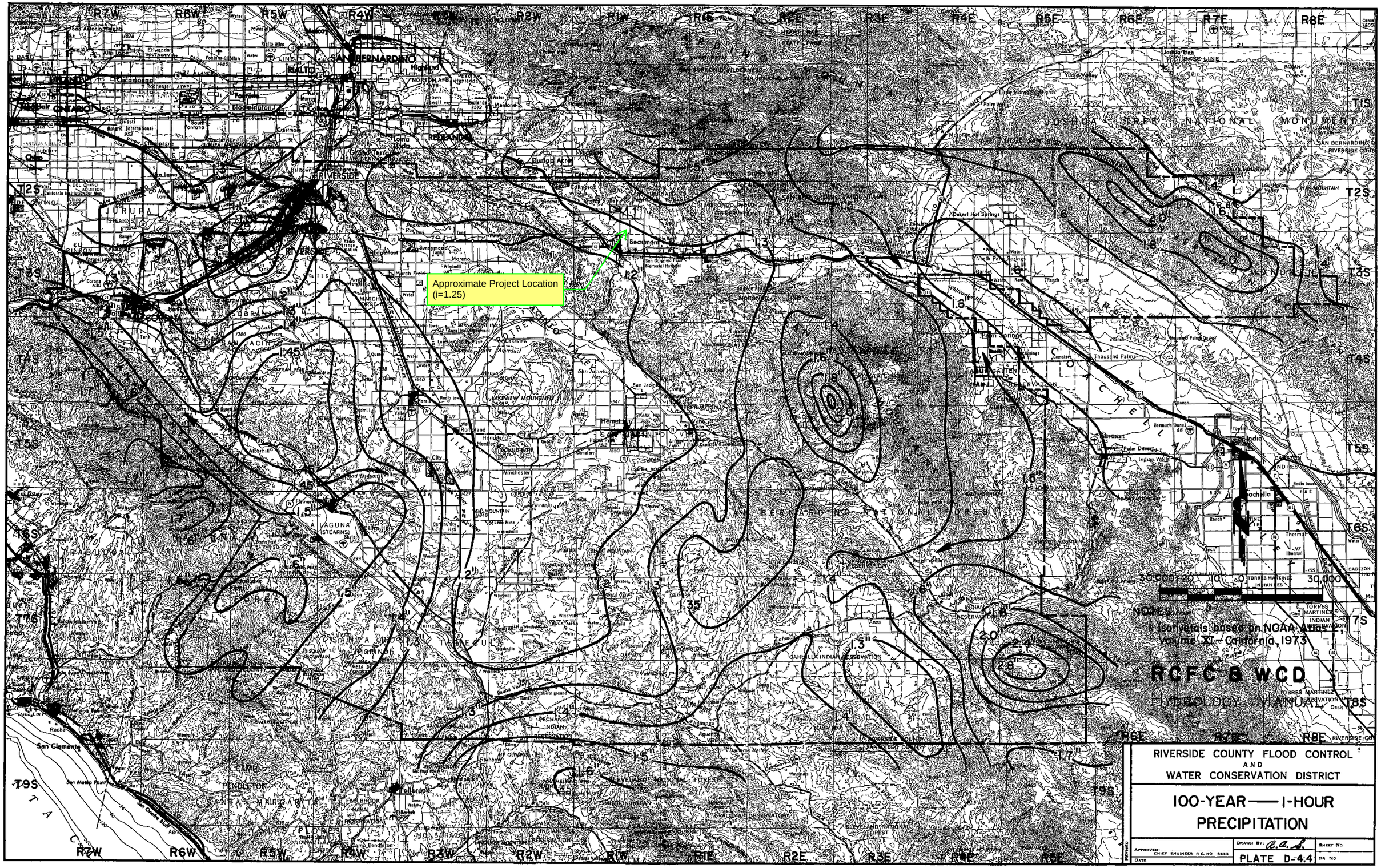


RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

2-YEAR — 24-HOUR PRECIPITATION

REVISED	APPROVED CHIEF ENGINEER R.E. NO. 8825	DRAWN BY: R.A.S.
	DATE	PLATE E-5.5

SHEET NO
DR NO

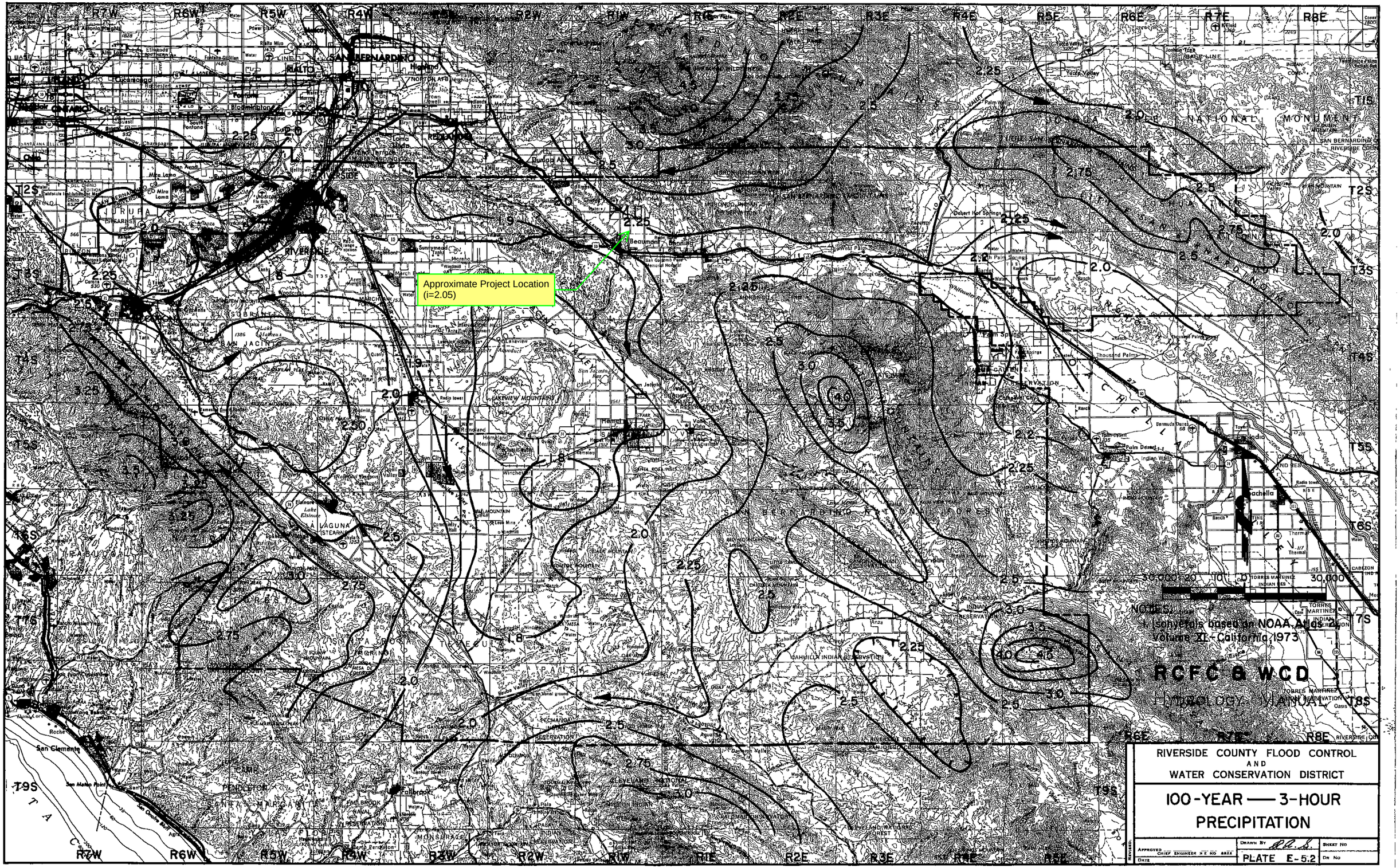


RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT

100-YEAR — 1-HOUR PRECIPITATION

APPROVED: CHIEF ENGINEER R.E. NO. 6825	DRAWN BY: A.A.L.	SHEET NO
DATE	PLATE D-4.4	DR NO

REVISED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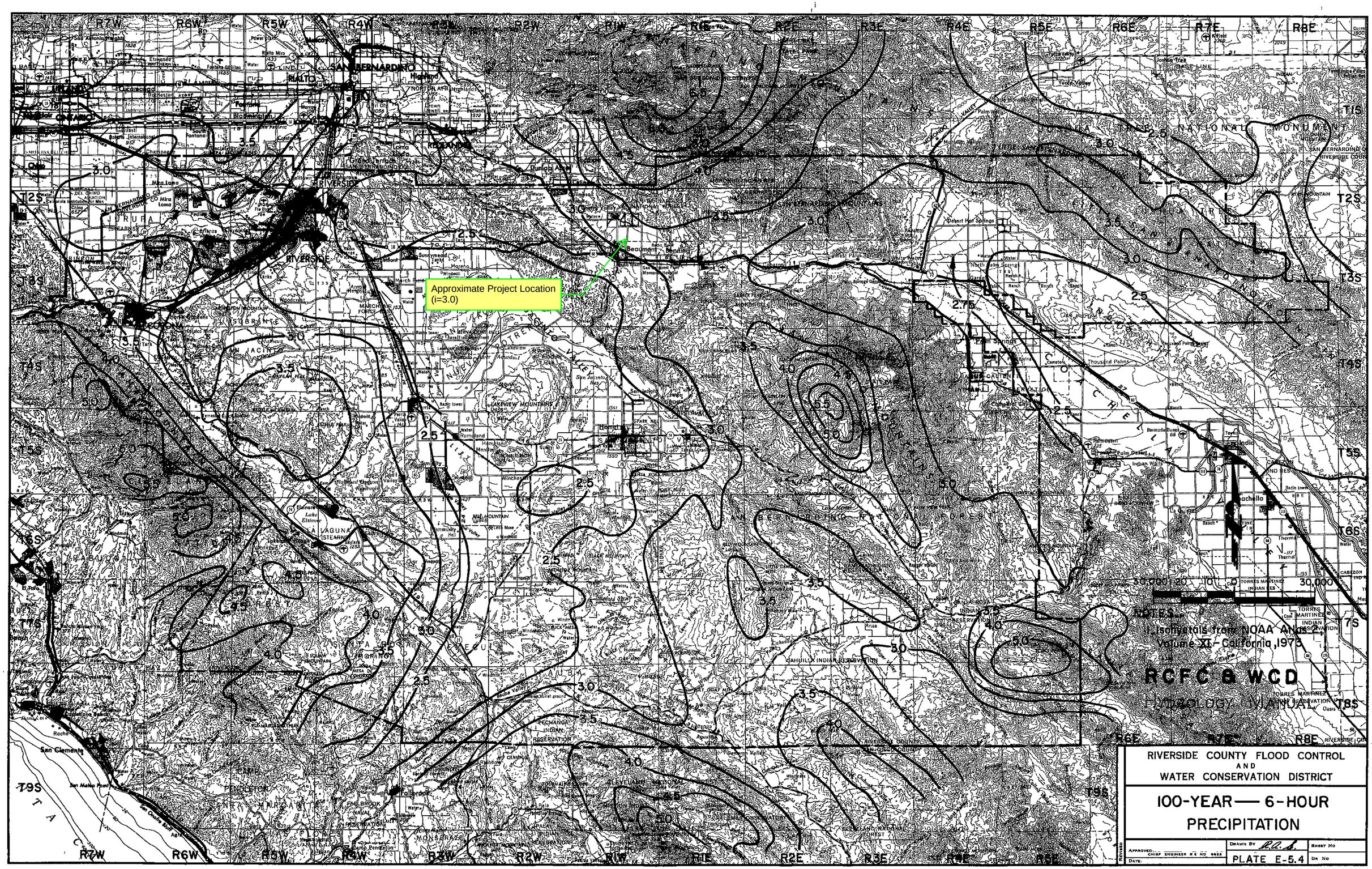
(i=2.05)
NOTES:
1. Isohyetals based on NOAA Atlas 2
Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 3-HOUR
PRECIPITATION
PLATE E-5.2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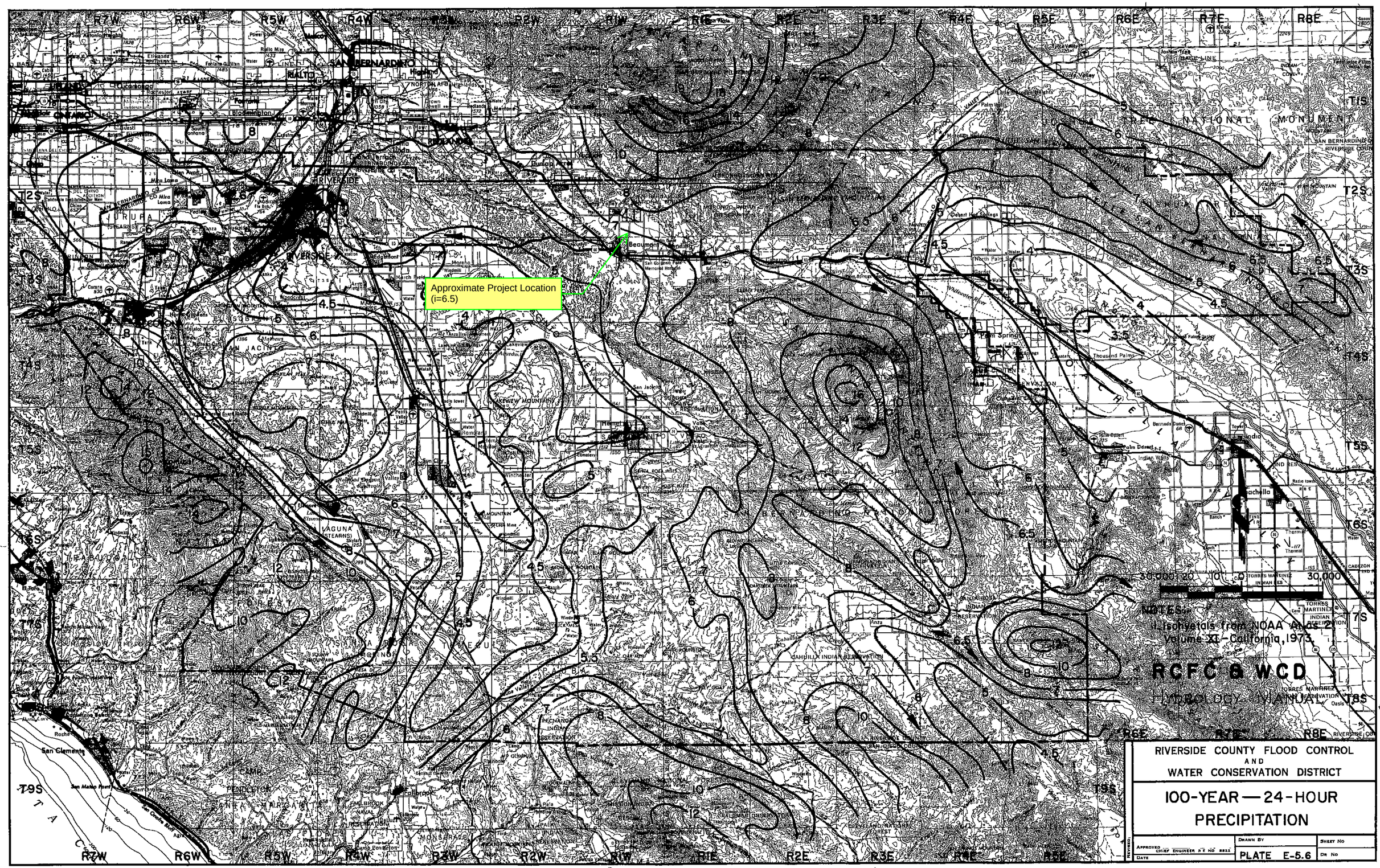
NOTES:
1. Isohyetals from NOAA Atlas 2,
Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 6-HOUR
PRECIPITATION
APPROVED: CHIEF ENGINEER R E NO 4625
DATE:
DRAWN BY R.C.S.
SHEET NO
PLATE E-5.4
DR NO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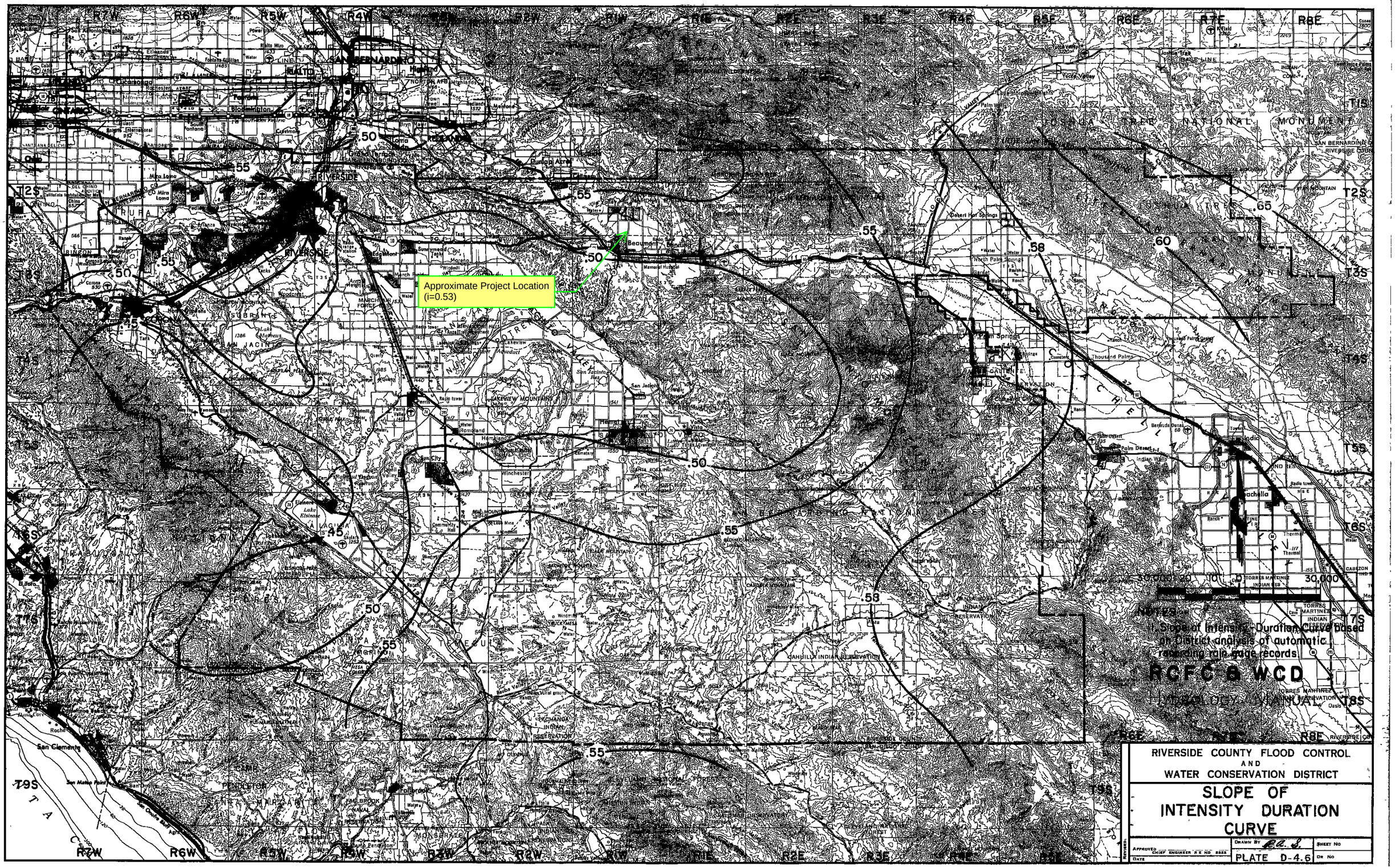
(i=6.5)
NOTES
Isohyetals from NOAA Atlas 2
Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 24-HOUR
PRECIPITATION
APPROVED
CHIEF ENGINEER R.E. NO. 8833
DATE
DRAWN BY
PLATE E-5.6
SHEET NO
DR NO
REVISED


Approximate Project Location
(i=0.53)
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.55
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.65
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SAN BERNARDINO
RIVERSIDE
COLTON
RIALTO
LOMA LINDA
REDLANDS
Beaumont
Banning
Calimesa
Yucaipa
Desert Hot Springs
North Palm Springs
Cabazon
Thousand Palms
Palm Springs
Palm Desert
Indian Wells
La Quinta
Indio
Coachella
Mecca
Bermuda Dunes
Winchester
Hemet
San Jacinto
Elsinore
Lake Elsinore
Temecula
Murrieta
Fallbrook
Bonsall
Oceanside
San Clemente
San Mateo Point
Rancho California
Pechanga Indian Reservation
Cahuilla Indian Reservation
Torres Martinez Indian Reservation
Agua Caliente Indian Reservation
Morongo Indian Reservation
Santa Rosa Mountains
Lake Cahuilla
Salton Sea
Joshua Tree National Monument
Box Canyon
Whitewater River
Coachella Valley
San Gorgonio Pass
San Jacinto Mountains
Santa Ana River
Temecula Creek
San Luis Rey River
San Onofre Bluff
Lake Matthews
Lake Elsinore
Lake Skinner
Vail Lake
Diamond Valley Lake
Lake Perris
Lake Hemet
Lake Cahuilla
Lake Cleveland
Lake Evans
Lake Mathews
Lake Fulmor
Lake Norconian
Lake Vail
Lake Temecula
Lake Elsinore
Lake Skinner

EXISTING CONDITION 10-YEAR OVERALL HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:700EXISTING.out

BEAUMONT SUMMIT STATION EXISTING CONDITION
700 SERIES 10-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 700.000 to Point/Station 701.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 940.000(Ft.)
Top (of initial area) elevation = 2581.200(Ft.)
Bottom (of initial area) elevation = 2547.600(Ft.)
Difference in elevation = 33.600(Ft.)
Slope = 0.03574 s(percent)= 3.57
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 21.373 min.
Rainfall intensity = 1.778(In/Hr) for a 10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.673
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 7.303(CFS)
Total initial stream area = 6.100(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 701.000 to Point/Station 702.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.600(Ft.)
End of natural channel elevation = 2528.000(Ft.)
Length of natural channel = 555.000(Ft.)
Estimated mean flow rate at midpoint of channel = 14.127(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   2.53(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0353
Corrected/adjusted channel slope =  0.0353
Travel time =    3.65 min.     TC =   25.02  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.659
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.636(In/Hr) for a    10.0 year storm
Subarea runoff =     12.285(CFS) for     11.400(Ac.)
Total runoff =     19.588(CFS)       Total area =      17.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      702.000 to Point/Station      703.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2528.000(Ft.)
End of natural channel elevation =   2503.000(Ft.)
Length of natural channel  =   715.000(Ft.)
Estimated mean flow rate at midpoint of channel =     31.844(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.30(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0350
Corrected/adjusted channel slope =  0.0350
Travel time =    3.61 min.     TC =   28.64  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.646
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.523(In/Hr) for a    10.0 year storm
Subarea runoff =     21.543(CFS) for     21.900(Ac.)
Total runoff =     41.131(CFS)       Total area =      39.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      703.000 to Point/Station      704.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2503.000(Ft.)
End of natural channel elevation =   2481.000(Ft.)
Length of natural channel  =   745.000(Ft.)
Estimated mean flow rate at midpoint of channel =     59.034(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.72(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
```

```
       Normal channel slope =  0.0295
Corrected/adjusted channel slope =  0.0295
Travel time =    3.34 min.     TC =   31.97  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.648
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  70.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.437(In/Hr) for a    10.0 year storm
Subarea runoff =     31.940(CFS) for     34.300(Ac.)
Total runoff =     73.071(CFS)       Total area =      73.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      704.000 to Point/Station      705.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2481.000(Ft.)
End of natural channel elevation =   2419.000(Ft.)
Length of natural channel  =  1000.000(Ft.)
Estimated mean flow rate at midpoint of channel =     89.281(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  11.42(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0620
Corrected/adjusted channel slope =  0.0620
Travel time =    1.46 min.     TC =   33.43  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.697
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  76.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.403(In/Hr) for a    10.0 year storm
Subarea runoff =     31.958(CFS) for     32.700(Ac.)
Total runoff =    105.029(CFS)       Total area =     106.400(Ac.)
End of computations, total study area =          106.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  71.8
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:800EXISTING.out

BEAUMONT SUMMIT STATION 800 SERIES
EXISTING CONDITION 10-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 800.000 to Point/Station 801.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 815.000(Ft.)
Top (of initial area) elevation = 2574.100(Ft.)
Bottom (of initial area) elevation = 2547.000(Ft.)
Difference in elevation = 27.100(Ft.)
Slope = 0.03325 s(percent)= 3.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 20.481 min.
Rainfall intensity = 1.819(In/Hr) for a 10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.677
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 12.069(CFS)
Total initial stream area = 9.800(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 801.000 to Point/Station 802.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.000(Ft.)
End of natural channel elevation = 2527.700(Ft.)
Length of natural channel = 670.000(Ft.)
Estimated mean flow rate at midpoint of channel = 21.982(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   2.65(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0288
Corrected/adjusted channel slope =  0.0288
Travel time =    4.21 min.     TC =   24.69  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.660
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.647(In/Hr) for a    10.0 year storm
Subarea runoff =     17.506(CFS) for     16.100(Ac.)
Total runoff =     29.574(CFS)       Total area =      25.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      802.000 to Point/Station      803.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2527.700(Ft.)
End of natural channel elevation =   2488.000(Ft.)
Length of natural channel  =   775.000(Ft.)
Estimated mean flow rate at midpoint of channel =     43.448(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.41(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0512
Corrected/adjusted channel slope =  0.0512
Travel time =    2.93 min.     TC =   27.62  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.681
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  72.75
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.552(In/Hr) for a    10.0 year storm
Subarea runoff =     25.687(CFS) for     24.300(Ac.)
Total runoff =     55.261(CFS)       Total area =      50.200(Ac.)
End of computations, total study area =           50.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  70.8
```

EXISTING CONDITION 100-YEAR OVERALL HYDROLOGY (RATIONAL METHOD)

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
        Rational Hydrology Study        Date: 02/22/22  File:700EXISTING.out
------------------------------------------------------------------------
BEAUMONT SUMMIT STATION EXISTING CONDITION
700 SERIES 100-YR STORM EVENT
21-0044
2022-02-22 EP
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 4010

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation =  0.581(In.)
100 year, 1 hour precipitation =  1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.670(In/Hr)
Slope of intensity duration curve = 0.5300




++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      700.000 to Point/Station      701.000
**** INITIAL AREA EVALUATION ****
____________________________________________________________________________
Initial area flow distance =   940.000(Ft.)
Top (of initial area) elevation =  2581.200(Ft.)
Bottom (of initial area) elevation =  2547.600(Ft.)
Difference in elevation =    33.600(Ft.)
Slope =    0.03574  s(percent)=       3.57
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   21.373 min.
Rainfall intensity =      2.886(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.745
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     13.121(CFS)
Total initial stream area =        6.100(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      701.000 to Point/Station      702.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
____________________________________________________________________________
Top of natural channel elevation =   2547.600(Ft.)
End of natural channel elevation =   2528.000(Ft.)
Length of natural channel  =   555.000(Ft.)
Estimated mean flow rate at midpoint of channel =     25.382(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
```

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.08(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0353
Corrected/adjusted channel slope =  0.0353
Travel time =    3.01 min.     TC =   24.38  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.736
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.692(In/Hr) for a   100.0 year storm
Subarea runoff =     22.588(CFS) for     11.400(Ac.)
Total runoff =     35.709(CFS)       Total area =      17.500(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      702.000 to Point/Station      703.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2528.000(Ft.)
End of natural channel elevation =   2503.000(Ft.)
Length of natural channel  =   715.000(Ft.)
Estimated mean flow rate at midpoint of channel =     58.053(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.02(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0350
Corrected/adjusted channel slope =  0.0350
Travel time =    2.96 min.     TC =   27.34  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.728
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.533(In/Hr) for a   100.0 year storm
Subarea runoff =     40.372(CFS) for     21.900(Ac.)
Total runoff =     76.081(CFS)       Total area =      39.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      703.000 to Point/Station      704.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2503.000(Ft.)
End of natural channel elevation =   2481.000(Ft.)
Length of natural channel  =   745.000(Ft.)
Estimated mean flow rate at midpoint of channel =    109.197(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.56(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
```

```
       Normal channel slope =  0.0295
Corrected/adjusted channel slope =  0.0295
Travel time =    2.72 min.     TC =   30.07  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.731
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.900
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.100
RI index for soil(AMC 2)  =  70.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.408(In/Hr) for a   100.0 year storm
Subarea runoff =     60.364(CFS) for     34.300(Ac.)
Total runoff =    136.445(CFS)       Total area =      73.700(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      704.000 to Point/Station      705.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   2481.000(Ft.)
End of natural channel elevation =   2419.000(Ft.)
Length of natural channel  =  1000.000(Ft.)
Estimated mean flow rate at midpoint of channel =    166.715(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =  13.81(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0620
Corrected/adjusted channel slope =  0.0620
Travel time =    1.21 min.     TC =   31.28  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.767
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.500
RI index for soil(AMC 2)  =  76.50
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.359(In/Hr) for a   100.0 year storm
Subarea runoff =     59.146(CFS) for     32.700(Ac.)
Total runoff =    195.591(CFS)       Total area =     106.400(Ac.)
End of computations, total study area =          106.40 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  71.8
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/22/22 File:800EXISTING.out

BEAUMONT SUMMIT STATION 800 SERIES
EXISTING CONDITION 100-YR STORM EVENT
21-0044
2022-02-22 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 800.000 to Point/Station 801.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 815.000(Ft.)
Top (of initial area) elevation = 2574.100(Ft.)
Bottom (of initial area) elevation = 2547.000(Ft.)
Difference in elevation = 27.100(Ft.)
Slope = 0.03325 s(percent)= 3.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 20.481 min.
Rainfall intensity = 2.952(In/Hr) for a 100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.748
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 69.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 21.644(CFS)
Total initial stream area = 9.800(Ac.)
Pervious area fraction = 1.000

++
Process from Point/Station 801.000 to Point/Station 802.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****

Top of natural channel elevation = 2547.000(Ft.)
End of natural channel elevation = 2527.700(Ft.)
Length of natural channel = 670.000(Ft.)
Estimated mean flow rate at midpoint of channel = 39.424(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:

```
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   3.22(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0288
Corrected/adjusted channel slope =  0.0288
Travel time =    3.47 min.     TC =   23.95  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.737
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.717(In/Hr) for a   100.0 year storm
Subarea runoff =     32.257(CFS) for     16.100(Ac.)
Total runoff =     53.901(CFS)       Total area =      25.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      802.000 to Point/Station      803.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2527.700(Ft.)
End of natural channel elevation =   2488.000(Ft.)
Length of natural channel  =   775.000(Ft.)
Estimated mean flow rate at midpoint of channel =     79.187(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.38(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0512
Corrected/adjusted channel slope =  0.0512
Travel time =    2.40 min.     TC =   26.36  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.754
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.750
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.250
RI index for soil(AMC 2)  =  72.75
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.583(In/Hr) for a   100.0 year storm
Subarea runoff =     47.331(CFS) for     24.300(Ac.)
Total runoff =    101.232(CFS)       Total area =      50.200(Ac.)
End of computations, total study area =           50.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  70.8
```

DEVELOPED CONDITION 10-YEAR ONSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 04/11/22 File:500.out

EXETER INDUSTRIAL BLDG 3 DEVELOPED CONDITION
10-YEAR STORM EVENT 500 SERIES
21-0044
2022-04-07 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 500.000 to Point/Station 501.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 1000.000(Ft.)
Top (of initial area) elevation = 2553.000(Ft.)
Bottom (of initial area) elevation = 2519.000(Ft.)
Difference in elevation = 34.000(Ft.)
Slope = 0.03400 s(percent)= 3.40
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 9.350 min.
Rainfall intensity = 2.756(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.875
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 6.754(CFS)
Total initial stream area = 2.800(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 501.000 to Point/Station 502.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2519.000(Ft.)
Downstream point elevation = 2508.500(Ft.)
Channel length thru subarea = 1144.000(Ft.)
Channel base width = 0.000(Ft.)
Slope or 'Z' of left channel bank = 100.000
Slope or 'Z' of right channel bank = 66.000
Estimated mean flow rate at midpoint of channel = 8.652(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    0.200(Ft.)
Flow(q) thru subarea =      8.652(CFS)
Depth of flow =   0.216(Ft.), Average velocity =   2.253(Ft/s)
!!Warning: Water is above left or right bank elevations
Channel flow top width =   33.200(Ft.)
Flow Velocity =    2.25(Ft/s)
Travel time  =    8.46 min.
Time of concentration =   17.81 min.

Sub-Channel No. 1 Critical depth =      0.229(Ft.)
  '     '       '     Critical flow top width =     33.200(Ft.)
  '     '       '     Critical flow velocity=    2.028(Ft/s)
  '     '       '     Critical flow area =      4.267(Sq.Ft)

ERROR - Channel depth exceeds maximum allowable depth
 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.869
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      1.959(In/Hr) for a    10.0 year storm
Subarea runoff =      3.743(CFS) for      2.200(Ac.)
Total runoff =     10.497(CFS)       Total area =       5.000(Ac.)
Depth of flow =   0.230(Ft.), Average velocity =   2.434(Ft/s)
!!Warning: Water is above left or right bank elevations
ERROR - Channel depth exceeds maximum allowable depth

Sub-Channel No. 1 Critical depth =      0.246(Ft.)
  '     '       '     Critical flow top width =     33.200(Ft.)
  '     '       '     Critical flow velocity=    2.164(Ft/s)
  '     '       '     Critical flow area =      4.850(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2504.500(Ft.)
Downstream point/station elevation =  2503.000(Ft.)
Pipe length  =   143.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.497(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    10.497(CFS)
Normal flow depth in pipe =   14.37(In.)
Flow top width inside pipe =   14.45(In.)
Critical Depth =   14.95(In.)
Pipe flow velocity =      6.94(Ft/s)
Travel time through pipe =    0.34 min.
Time of concentration (TC) =    18.16 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      503.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.000(Ac.)
Runoff from this stream =     10.497(CFS)
Time of concentration =   18.16 min.
Rainfall intensity =     1.939(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      505.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   757.000(Ft.)
Top (of initial area) elevation =  2520.500(Ft.)
Bottom (of initial area) elevation =  2514.000(Ft.)
```

```
Difference in elevation =     6.500(Ft.)
Slope =    0.00859  s(percent)=       0.86
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.015 min.
Rainfall intensity =      2.527(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.874
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     13.025(CFS)
Total initial stream area =        5.900(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      505.000 to Point/Station      503.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2510.000(Ft.)
Downstream point/station elevation =  2503.000(Ft.)
Pipe length  =   100.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.025(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    13.025(CFS)
Normal flow depth in pipe =    9.80(In.)
Flow top width inside pipe =   14.28(In.)
Critical depth could not be calculated.
Pipe flow velocity =     15.33(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =    11.12 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      503.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.900(Ac.)
Runoff from this stream =     13.025(CFS)
Time of concentration =   11.12 min.
Rainfall intensity =     2.514(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       10.497     18.16                1.939
2       13.025     11.12                2.514
Largest stream flow has longer or shorter time of concentration
Qp =     13.025 + sum of
          Qa          Tb/Ta
          10.497 *    0.613 =      6.431
Qp =     19.456

Total of 2 streams to confluence:
Flow rates before confluence point:
      10.497      13.025
Area of streams before confluence:
       5.000        5.900
Results of confluence:
Total flow rate =     19.456(CFS)
Time of concentration =    11.124 min.
Effective stream area after confluence =     10.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      506.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2503.000(Ft.)
```

Downstream point/station elevation = 2501.600(Ft.)
Pipe length = 37.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 19.456(CFS)
Nearest computed pipe diameter = 18.00(In.)
Calculated individual pipe flow = 19.456(CFS)
Normal flow depth in pipe = 14.04(In.)
Flow top width inside pipe = 14.91(In.)
Critical depth could not be calculated.
Pipe flow velocity = 13.16(Ft/s)
Travel time through pipe = 0.05 min.
Time of concentration (TC) = 11.17 min.
End of computations, total study area = 10.90 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number = 56.0

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 04/11/22 File:600.out

EXETER INDUSTRIAL BLDG 3 DEVELOPED CONDITION
10-YEAR STORM 600 SERIES
21-0044
2022-04-07 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 600.000 to Point/Station 601.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 695.000(Ft.)
Top (of initial area) elevation = 2579.000(Ft.)
Bottom (of initial area) elevation = 2535.000(Ft.)
Difference in elevation = 44.000(Ft.)
Slope = 0.06331 s(percent)= 6.33
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.139 min.
Rainfall intensity = 3.180(In/Hr) for a 10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.878
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 27.911(CFS)
Total initial stream area = 10.000(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 602.000 to Point/Station 602.000
**** SUBAREA FLOW ADDITION ****

COMMERCIAL subarea type
Runoff Coefficient = 0.878
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00

```
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     7.14 min.
Rainfall intensity =      3.180(In/Hr) for a    10.0 year storm
Subarea runoff =      2.512(CFS) for      0.900(Ac.)
Total runoff =     30.423(CFS)       Total area =      10.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      602.000 to Point/Station      603.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2535.000(Ft.)
Downstream point/station elevation =  2501.300(Ft.)
Pipe length  =  1110.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    30.423(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    30.423(CFS)
Normal flow depth in pipe =   15.82(In.)
Flow top width inside pipe =   22.75(In.)
Critical Depth =   22.43(In.)
Pipe flow velocity =     13.85(Ft/s)
Travel time through pipe =    1.34 min.
Time of concentration (TC) =     8.47 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.000 to Point/Station      603.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     10.900(Ac.)
Runoff from this stream =     30.423(CFS)
Time of concentration =    8.47 min.
Rainfall intensity =     2.904(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      604.000 to Point/Station      605.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   940.000(Ft.)
Top (of initial area) elevation =  2553.000(Ft.)
Bottom (of initial area) elevation =  2515.200(Ft.)
Difference in elevation =    37.800(Ft.)
Slope =    0.04021  s(percent)=       4.02
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.821 min.
Rainfall intensity =      2.843(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.876
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      7.469(CFS)
Total initial stream area =        3.000(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      605.000 to Point/Station      606.000
**** IMPROVED CHANNEL TRAVEL TIME ****
______________________________________________________________________________
Upstream point elevation =  2515.200(Ft.)
Downstream point elevation =  2514.400(Ft.)
Channel length thru subarea  =   165.000(Ft.)
Channel base width     =    0.000(Ft.)
Slope or 'Z' of left channel bank =  68.500
Slope or 'Z' of right channel bank =  85.500
Estimated mean flow rate at midpoint of channel =     13.708(CFS)
Manning's 'N'    = 0.015
```

```
Maximum depth of channel  =    0.300(Ft.)
Flow(q) thru subarea =     13.708(CFS)
Depth of flow =   0.301(Ft.), Average velocity =   1.960(Ft/s)
!!Warning: Water is above left or right bank elevations
Channel flow top width =   46.200(Ft.)
Flow Velocity =    1.96(Ft/s)
Travel time  =    1.40 min.
Time of concentration =   10.22 min.

Sub-Channel No. 1 Critical depth =      0.287(Ft.)
  '     '       '     Critical flow top width =     44.215(Ft.)
  '     '       '     Critical flow velocity=    2.160(Ft/s)
  '     '       '     Critical flow area =      6.347(Sq.Ft)

ERROR - Channel depth exceeds maximum allowable depth
 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.874
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      2.629(In/Hr) for a    10.0 year storm
Subarea runoff =     12.412(CFS) for      5.400(Ac.)
Total runoff =     19.880(CFS)       Total area =       8.400(Ac.)
Depth of flow =   0.339(Ft.), Average velocity =   2.274(Ft/s)
!!Warning: Water is above left or right bank elevations
ERROR - Channel depth exceeds maximum allowable depth

Sub-Channel No. 1 Critical depth =      0.328(Ft.)
  '     '       '     Critical flow top width =     46.200(Ft.)
  '     '       '     Critical flow velocity=    2.416(Ft/s)
  '     '       '     Critical flow area =      8.229(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      606.000 to Point/Station      607.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2510.400(Ft.)
Downstream point/station elevation =  2501.600(Ft.)
Pipe length  =   130.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    19.880(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    19.880(CFS)
Normal flow depth in pipe =   11.39(In.)
Flow top width inside pipe =   17.35(In.)
Critical depth could not be calculated.
Pipe flow velocity =     16.87(Ft/s)
Travel time through pipe =    0.13 min.
Time of concentration (TC) =    10.35 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      607.000 to Point/Station      608.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2501.600(Ft.)
Downstream point/station elevation =  2501.500(Ft.)
Pipe length  =   834.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    19.880(CFS)
Nearest computed pipe diameter  =     54.00(In.)
Calculated individual pipe flow  =    19.880(CFS)
Normal flow depth in pipe =   40.97(In.)
Flow top width inside pipe =   46.21(In.)
Critical Depth =   15.19(In.)
Pipe flow velocity =      1.54(Ft/s)
Travel time through pipe =    9.04 min.
Time of concentration (TC) =    19.40 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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Process from Point/Station      608.000 to Point/Station      608.000
**** CONFLUENCE OF MINOR STREAMS ****
____________________________________________________________________
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      8.400(Ac.)
Runoff from this stream =     19.880(CFS)
Time of concentration =   19.40 min.
Rainfall intensity =     1.872(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      506.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
____________________________________________________________________
Rainfall intensity =      2.508(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.873
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
User specified values are as follows:
TC =  11.17 min.  Rain intensity =       2.51(In/Hr)
Total area =        10.90(Ac.)  Total runoff =     19.50(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      608.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
____________________________________________________________________
Upstream point/station elevation =  2501.600(Ft.)
Downstream point/station elevation =  2501.500(Ft.)
Pipe length  =   170.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    19.500(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    19.500(CFS)
Normal flow depth in pipe =   31.08(In.)
Flow top width inside pipe =   31.38(In.)
Critical Depth =   16.58(In.)
Pipe flow velocity =      2.75(Ft/s)
Travel time through pipe =    1.03 min.
Time of concentration (TC) =    12.20 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      608.000 to Point/Station      608.000
**** CONFLUENCE OF MINOR STREAMS ****
____________________________________________________________________
Along Main Stream number: 2 in normal stream number 2
Stream flow area =     10.900(Ac.)
Runoff from this stream =     19.500(CFS)
Time of concentration =   12.20 min.
Rainfall intensity =     2.394(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       19.880     19.40                1.872
2       19.500     12.20                2.394
Largest stream flow has longer time of concentration
Qp =     19.880 + sum of
          Qb         Ia/Ib
          19.500 *    0.782 =     15.251
Qp =     35.131

Total of 2 streams to confluence:
Flow rates before confluence point:
      19.880      19.500
Area of streams before confluence:
        8.400       10.900
Results of confluence:
```

TOTAL 500 SERIES FLOWS

```
Total flow rate =     35.131(CFS)
Time of concentration =    19.397 min.
Effective stream area after confluence =     19.300(Ac.)


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Process from Point/Station      608.000 to Point/Station      603.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2501.500(Ft.)
Downstream point/station elevation =  2501.300(Ft.)
Pipe length  =    44.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    35.131(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    35.131(CFS)
Normal flow depth in pipe =   26.63(In.)
Flow top width inside pipe =   26.06(In.)
Critical Depth =   23.69(In.)
Pipe flow velocity =      6.84(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =    19.50 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.000 to Point/Station      603.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =     19.300(Ac.)
Runoff from this stream =     35.131(CFS)
Time of concentration =   19.50 min.
Rainfall intensity =     1.867(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       30.423      8.47               2.904
2       35.131     19.50               1.867
Largest stream flow has longer time of concentration
Qp =     35.131 + sum of
          Qb         Ia/Ib
          30.423 *    0.643 =     19.559
Qp =     54.690

Total of 2 main streams to confluence:
Flow rates before confluence point:
      30.423      35.131
Area of streams before confluence:
       10.900       19.300


Results of confluence:
Total flow rate =     54.690(CFS)
Time of concentration =    19.504 min.
Effective stream area after confluence  =     30.200(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.000 to Point/Station      609.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2501.300(Ft.)
Downstream point/station elevation =  2466.830(Ft.)
Pipe length  =  1785.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    54.690(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    54.690(CFS)
Normal flow depth in pipe =   23.58(In.)
Flow top width inside pipe =   24.61(In.)
Critical Depth =   28.20(In.)
Pipe flow velocity =     13.22(Ft/s)
Travel time through pipe =    2.25 min.
```

Time of concentration (TC) = 21.75 min.
End of computations, total study area = 30.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number = 56.0

DEVELOPED CONDITION 100-YEAR ONSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 04/07/22 File:500.out

EXETER INDUSTRIAL BLDG 3 DEVELOPED CONDITION
100-YEAR STORM EVENT 500 SERIES
21-0044
2021-07-29 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 500.000 to Point/Station 501.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 1000.000(Ft.)
Top (of initial area) elevation = 2553.000(Ft.)
Bottom (of initial area) elevation = 2519.000(Ft.)
Difference in elevation = 34.000(Ft.)
Slope = 0.03400 s(percent)= 3.40
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 9.350 min.
Rainfall intensity = 4.473(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.883
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 11.058(CFS)
Total initial stream area = 2.800(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 501.000 to Point/Station 502.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2519.000(Ft.)
Downstream point elevation = 2508.500(Ft.)
Channel length thru subarea = 1144.000(Ft.)
Channel base width = 0.000(Ft.)
Slope or 'Z' of left channel bank = 100.000
Slope or 'Z' of right channel bank = 66.000
Estimated mean flow rate at midpoint of channel = 14.319(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    0.200(Ft.)
Flow(q) thru subarea =     14.319(CFS)
Depth of flow =   0.256(Ft.), Average velocity =   2.756(Ft/s)
!!Warning: Water is above left or right bank elevations
Channel flow top width =   33.200(Ft.)
Flow Velocity =    2.76(Ft/s)
Travel time  =    6.92 min.
Time of concentration =   16.27 min.

Sub-Channel No. 1 Critical depth =      0.279(Ft.)
  '     '       '     Critical flow top width =     33.200(Ft.)
  '     '       '     Critical flow velocity=    2.405(Ft/s)
  '     '       '     Critical flow area =      5.953(Sq.Ft)

ERROR - Channel depth exceeds maximum allowable depth
 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.878
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      3.335(In/Hr) for a   100.0 year storm
Subarea runoff =      6.446(CFS) for      2.200(Ac.)
Total runoff =     17.504(CFS)       Total area =       5.000(Ac.)
Depth of flow =   0.277(Ft.), Average velocity =   2.987(Ft/s)
!!Warning: Water is above left or right bank elevations
ERROR - Channel depth exceeds maximum allowable depth

Sub-Channel No. 1 Critical depth =      0.305(Ft.)
  '     '       '     Critical flow top width =     33.200(Ft.)
  '     '       '     Critical flow velocity=    2.576(Ft/s)
  '     '       '     Critical flow area =      6.796(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2504.500(Ft.)
Downstream point/station elevation =  2503.000(Ft.)
Pipe length  =   143.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    17.504(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    17.504(CFS)
Normal flow depth in pipe =   15.59(In.)
Flow top width inside pipe =   22.90(In.)
Critical Depth =   18.09(In.)
Pipe flow velocity =      8.11(Ft/s)
Travel time through pipe =    0.29 min.
Time of concentration (TC) =    16.56 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      503.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.000(Ac.)
Runoff from this stream =     17.504(CFS)
Time of concentration =   16.56 min.
Rainfall intensity =     3.304(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      505.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   757.000(Ft.)
Top (of initial area) elevation =  2520.500(Ft.)
Bottom (of initial area) elevation =  2514.000(Ft.)
```

```
Difference in elevation =     6.500(Ft.)
Slope =    0.00859  s(percent)=       0.86
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.015 min.
Rainfall intensity =      4.101(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     21.333(CFS)
Total initial stream area =        5.900(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      505.000 to Point/Station      503.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2510.000(Ft.)
Downstream point/station elevation =  2503.000(Ft.)
Pipe length  =   100.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    21.333(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    21.333(CFS)
Normal flow depth in pipe =   11.82(In.)
Flow top width inside pipe =   17.09(In.)
Critical depth could not be calculated.
Pipe flow velocity =     17.34(Ft/s)
Travel time through pipe =    0.10 min.
Time of concentration (TC) =    11.11 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      503.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.900(Ac.)
Runoff from this stream =     21.333(CFS)
Time of concentration =   11.11 min.
Rainfall intensity =     4.082(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       17.504     16.56                3.304
2       21.333     11.11                4.082
Largest stream flow has longer or shorter time of concentration
Qp =     21.333 + sum of
          Qa          Tb/Ta
          17.504 *    0.671 =     11.743
Qp =     33.076

Total of 2 streams to confluence:
Flow rates before confluence point:
      17.504      21.333
Area of streams before confluence:
       5.000        5.900
Results of confluence:
Total flow rate =     33.076(CFS)
Time of concentration =    11.111 min.
Effective stream area after confluence =     10.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      506.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  2503.000(Ft.)
```

Downstream point/station elevation = 2501.600(Ft.)
Pipe length = 37.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 33.076(CFS)
Nearest computed pipe diameter = 24.00(In.)
Calculated individual pipe flow = 33.076(CFS)
Normal flow depth in pipe = 15.54(In.)
Flow top width inside pipe = 22.93(In.)
Critical depth could not be calculated.
Pipe flow velocity = 15.38(Ft/s)
Travel time through pipe = 0.04 min.
Time of concentration (TC) = 11.15 min.
End of computations, total study area = 10.90 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number = 56.0

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 04/07/22 File:600.out

EXETER INDUSTRIAL BLDG 3 DEVELOPED CONDITION
100-YEAR STORM 600 SERIES
21-0044
2021-07-28 EP

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 600.000 to Point/Station 601.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 695.000(Ft.)
Top (of initial area) elevation = 2579.000(Ft.)
Bottom (of initial area) elevation = 2535.000(Ft.)
Difference in elevation = 44.000(Ft.)
Slope = 0.06331 s(percent)= 6.33
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 7.139 min.
Rainfall intensity = 5.161(In/Hr) for a 100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 45.663(CFS)
Total initial stream area = 10.000(Ac.)
Pervious area fraction = 0.100

++
Process from Point/Station 602.000 to Point/Station 602.000
**** SUBAREA FLOW ADDITION ****

COMMERCIAL subarea type
Runoff Coefficient = 0.885
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00

```
Pervious area fraction =  0.100; Impervious fraction =  0.900
Time of concentration =     7.14 min.
Rainfall intensity =      5.161(In/Hr) for a   100.0 year storm
Subarea runoff =      4.110(CFS) for      0.900(Ac.)
Total runoff =     49.773(CFS)       Total area =      10.900(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      602.000 to Point/Station      603.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2535.000(Ft.)
Downstream point/station elevation =  2501.300(Ft.)
Pipe length  =  1110.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    49.773(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    49.773(CFS)
Normal flow depth in pipe =   20.44(In.)
Flow top width inside pipe =   23.16(In.)
Critical depth could not be calculated.
Pipe flow velocity =     15.40(Ft/s)
Travel time through pipe =    1.20 min.
Time of concentration (TC) =     8.34 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.000 to Point/Station      603.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     10.900(Ac.)
Runoff from this stream =     49.773(CFS)
Time of concentration =    8.34 min.
Rainfall intensity =     4.752(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      604.000 to Point/Station      605.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   940.000(Ft.)
Top (of initial area) elevation =  2553.000(Ft.)
Bottom (of initial area) elevation =  2515.200(Ft.)
Difference in elevation =    37.800(Ft.)
Slope =    0.04021  s(percent)=       4.02
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.821 min.
Rainfall intensity =      4.613(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.883
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =     12.226(CFS)
Total initial stream area =        3.000(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      605.000 to Point/Station      606.000
**** IMPROVED CHANNEL TRAVEL TIME ****
______________________________________________________________________________
Upstream point elevation =  2515.200(Ft.)
Downstream point elevation =  2514.400(Ft.)
Channel length thru subarea  =   165.000(Ft.)
Channel base width     =    0.000(Ft.)
Slope or 'Z' of left channel bank =  68.500
Slope or 'Z' of right channel bank =  85.500
Estimated mean flow rate at midpoint of channel =     22.572(CFS)
Manning's 'N'    = 0.015
```

```
Maximum depth of channel  =    0.300(Ft.)
Flow(q) thru subarea =     22.572(CFS)
Depth of flow =   0.354(Ft.), Average velocity =   2.392(Ft/s)
!!Warning: Water is above left or right bank elevations
Channel flow top width =   46.200(Ft.)
Flow Velocity =    2.39(Ft/s)
Travel time  =    1.15 min.
Time of concentration =    9.97 min.

Sub-Channel No. 1 Critical depth =      0.344(Ft.)
  '     '       '     Critical flow top width =     46.200(Ft.)
  '     '       '     Critical flow velocity=    2.522(Ft/s)
  '     '       '     Critical flow area =      8.951(Sq.Ft)

ERROR - Channel depth exceeds maximum allowable depth
 Adding area flow to channel
COMMERCIAL subarea type
Runoff Coefficient = 0.882
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Rainfall intensity =      4.323(In/Hr) for a   100.0 year storm
Subarea runoff =     20.602(CFS) for      5.400(Ac.)
Total runoff =     32.827(CFS)       Total area =       8.400(Ac.)
Depth of flow =   0.406(Ft.), Average velocity =   2.779(Ft/s)
!!Warning: Water is above left or right bank elevations
ERROR - Channel depth exceeds maximum allowable depth

Sub-Channel No. 1 Critical depth =      0.400(Ft.)
  '     '       '     Critical flow top width =     46.200(Ft.)
  '     '       '     Critical flow velocity=    2.838(Ft/s)
  '     '       '     Critical flow area =     11.568(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      606.000 to Point/Station      607.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2510.400(Ft.)
Downstream point/station elevation =  2501.600(Ft.)
Pipe length  =   130.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    32.827(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    32.827(CFS)
Normal flow depth in pipe =   14.16(In.)
Flow top width inside pipe =   19.69(In.)
Critical depth could not be calculated.
Pipe flow velocity =     19.02(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =    10.08 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      607.000 to Point/Station      608.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2501.600(Ft.)
Downstream point/station elevation =  2501.500(Ft.)
Pipe length  =   834.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    32.827(CFS)
Nearest computed pipe diameter  =     63.00(In.)
Calculated individual pipe flow  =    32.827(CFS)
Normal flow depth in pipe =   52.31(In.)
Flow top width inside pipe =   47.29(In.)
Critical Depth =   18.80(In.)
Pipe flow velocity =      1.71(Ft/s)
Travel time through pipe =    8.13 min.
Time of concentration (TC) =    18.21 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

```
Process from Point/Station      608.000 to Point/Station      608.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      8.400(Ac.)
Runoff from this stream =     32.827(CFS)
Time of concentration =   18.21 min.
Rainfall intensity =     3.141(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      506.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
------------------------------------------------------------------------
Rainfall intensity =      3.865(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.881
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
User specified values are as follows:
TC =  12.32 min.  Rain intensity =       3.86(In/Hr)
Total area =        10.90(Ac.)  Total runoff =     33.30(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      608.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2501.600(Ft.)
Downstream point/station elevation =  2501.500(Ft.)
Pipe length  =   170.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    33.300(CFS)
Nearest computed pipe diameter  =     48.00(In.)
Calculated individual pipe flow  =    33.300(CFS)
Normal flow depth in pipe =   37.59(In.)
Flow top width inside pipe =   39.56(In.)
Critical Depth =   20.59(In.)
Pipe flow velocity =      3.16(Ft/s)
Travel time through pipe =    0.90 min.
Time of concentration (TC) =    13.22 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      608.000 to Point/Station      608.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 2
Stream flow area =     10.900(Ac.)
Runoff from this stream =     33.300(CFS)
Time of concentration =   13.22 min.
Rainfall intensity =     3.723(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       32.827     18.21                3.141
2       33.300     13.22                3.723
Largest stream flow has longer or shorter time of concentration
Qp =     33.300 + sum of
          Qa          Tb/Ta
          32.827 *    0.726 =     23.822
Qp =     57.122

Total of 2 streams to confluence:
Flow rates before confluence point:
      32.827      33.300
Area of streams before confluence:
        8.400       10.900
Results of confluence:
```

TOTAL 500 SERIES FLOWS

```
Total flow rate =     57.122(CFS)
Time of concentration =    13.218 min.
Effective stream area after confluence =     19.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      608.000 to Point/Station      603.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2501.500(Ft.)
Downstream point/station elevation =  2501.300(Ft.)
Pipe length  =    44.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    57.122(CFS)
Nearest computed pipe diameter  =     39.00(In.)
Calculated individual pipe flow  =    57.122(CFS)
Normal flow depth in pipe =   33.00(In.)
Flow top width inside pipe =   28.14(In.)
Critical Depth =   28.98(In.)
Pipe flow velocity =      7.64(Ft/s)
Travel time through pipe =    0.10 min.
Time of concentration (TC) =    13.31 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.000 to Point/Station      603.000
**** CONFLUENCE OF MAIN STREAMS ****
----------------------------------------------------------------------------
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =     19.300(Ac.)
Runoff from this stream =     57.122(CFS)
Time of concentration =   13.31 min.
Rainfall intensity =     3.709(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       49.773      8.34               4.752
2       57.122     13.31               3.709
Largest stream flow has longer time of concentration
Qp =     57.122 + sum of
          Qb         Ia/Ib
          49.773 *    0.780 =     38.845
Qp =     95.967

Total of 2 main streams to confluence:
Flow rates before confluence point:
      49.773      57.122
Area of streams before confluence:
       10.900       19.300


Results of confluence:
Total flow rate =     95.967(CFS)
Time of concentration =    13.314 min.
Effective stream area after confluence  =     30.200(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      603.000 to Point/Station      609.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2501.300(Ft.)
Downstream point/station elevation =  2466.830(Ft.)
Pipe length  =  1785.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    95.967(CFS)
Nearest computed pipe diameter  =     36.00(In.)
Calculated individual pipe flow  =    95.967(CFS)
Normal flow depth in pipe =   30.84(In.)
Flow top width inside pipe =   25.22(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.90(Ft/s)
Travel time through pipe =    2.00 min.
```

Time of concentration (TC) = 15.31 min.
End of computations, total study area = 30.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number = 56.0

DEVELOPED CONDITION 10-YEAR OFFSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/23/22 File:OFF.out

21-0044: EXETER INDUSTRIAL
OFFSITE RUN-ON DEVELOPED CONDITION
10-YEAR STORM EVENT
TSW

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 1.029(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 1.000 to Point/Station 2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 990.000(Ft.)
Top (of initial area) elevation = 2603.100(Ft.)
Bottom (of initial area) elevation = 2560.000(Ft.)
Difference in elevation = 43.100(Ft.)
Slope = 0.04354 s(percent)= 4.35
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 14.182 min.
Rainfall intensity = 2.210(In/Hr) for a 10.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.668
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 8.569(CFS)
Total initial stream area = 5.800(Ac.)
Pervious area fraction = 0.800

++
Process from Point/Station 2.000 to Point/Station 3.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2560.000(Ft.)
Downstream point elevation = 2535.000(Ft.)
Channel length thru subarea = 1175.000(Ft.)
Channel base width = 6.000(Ft.)
Slope or 'Z' of left channel bank = 2.000
Slope or 'Z' of right channel bank = 2.000
Estimated mean flow rate at midpoint of channel = 32.737(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.500(Ft.)
Flow(q) thru subarea =     32.737(CFS)
Depth of flow =   0.541(Ft.), Average velocity =   8.548(Ft/s)
Channel flow top width =    8.163(Ft.)
Flow Velocity =    8.55(Ft/s)
Travel time  =    2.29 min.
Time of concentration =   16.47 min.

Sub-Channel No. 1 Critical depth =      0.875(Ft.)
  '     '       '     Critical flow top width =      9.500(Ft.)
  '     '       '     Critical flow velocity=    4.828(Ft/s)
  '     '       '     Critical flow area =      6.781(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.703
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.970
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.030
RI index for soil(AMC 2)  =  67.70
Pervious area fraction =  0.920; Impervious fraction =  0.080
Rainfall intensity =      2.042(In/Hr) for a    10.0 year storm
Subarea runoff =     48.243(CFS) for     33.600(Ac.)
Total runoff =     56.812(CFS)       Total area =      39.400(Ac.)
Depth of flow =   0.742(Ft.), Average velocity =  10.232(Ft/s)

Sub-Channel No. 1 Critical depth =      1.219(Ft.)
  '     '       '     Critical flow top width =     10.875(Ft.)
  '     '       '     Critical flow velocity=    5.525(Ft/s)
  '     '       '     Critical flow area =     10.283(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2535.000(Ft.)
End of natural channel elevation =   2495.040(Ft.)
Length of natural channel  =   800.000(Ft.)
Estimated mean flow rate at midpoint of channel =     60.201(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   4.85(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0500
Corrected/adjusted channel slope =  0.0500
Travel time =    2.75 min.     TC =   19.22  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.772
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.800
RI index for soil(AMC 2)  =  81.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.881(In/Hr) for a    10.0 year storm
Subarea runoff =      6.823(CFS) for      4.700(Ac.)
Total runoff =     63.635(CFS)       Total area =      44.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2495.040(Ft.)
```

Downstream point/station elevation = 2490.000(Ft.)
Pipe length = 80.00(Ft.) Manning's N = 0.013
No. of pipes = 1 Required pipe flow = 63.635(CFS)
Nearest computed pipe diameter = 27.00(In.)
Calculated individual pipe flow = 63.635(CFS)
Normal flow depth in pipe = 18.59(In.)
Flow top width inside pipe = 25.01(In.)
Critical depth could not be calculated.
Pipe flow velocity = 21.81(Ft/s)
Travel time through pipe = 0.06 min.
Time of concentration (TC) = 19.28 min.
End of computations, total study area = 44.10 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.913
Area averaged RI index number = 67.6

DEVELOPED CONDITION 100-YEAR OFFSITE HYDROLOGY (RATIONAL METHOD)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2004 Version 7.0
Rational Hydrology Study Date: 02/23/22 File:off.out

21-0044: EXETER INDUSTRIAL
OFFSITE RUN-ON DEVELOPED CONDITION
100-YEAR STORM EVENT
TSW

********* Hydrology Study Control Information **********

English (in-lb) Units used in input data file

Program License Serial Number 4010

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

2 year, 1 hour precipitation = 0.581(In.)
100 year, 1 hour precipitation = 1.670(In.)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.670(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 1.000 to Point/Station 2.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 990.000(Ft.)
Top (of initial area) elevation = 2603.100(Ft.)
Bottom (of initial area) elevation = 2560.000(Ft.)
Difference in elevation = 43.100(Ft.)
Slope = 0.04354 s(percent)= 4.35
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 14.182 min.
Rainfall intensity = 3.587(In/Hr) for a 100.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.737
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2) = 56.00
Pervious area fraction = 0.800; Impervious fraction = 0.200
Initial subarea runoff = 15.338(CFS)
Total initial stream area = 5.800(Ac.)
Pervious area fraction = 0.800

++
Process from Point/Station 2.000 to Point/Station 3.000
**** IMPROVED CHANNEL TRAVEL TIME ****

Upstream point elevation = 2560.000(Ft.)
Downstream point elevation = 2535.000(Ft.)
Channel length thru subarea = 1175.000(Ft.)
Channel base width = 6.000(Ft.)
Slope or 'Z' of left channel bank = 2.000
Slope or 'Z' of right channel bank = 2.000
Estimated mean flow rate at midpoint of channel = 58.684(CFS)

```
Manning's 'N'    = 0.015
Maximum depth of channel  =    2.500(Ft.)
Flow(q) thru subarea =     58.684(CFS)
Depth of flow =   0.756(Ft.), Average velocity =  10.339(Ft/s)
Channel flow top width =    9.023(Ft.)
Flow Velocity =   10.34(Ft/s)
Travel time  =    1.89 min.
Time of concentration =   16.08 min.

Sub-Channel No. 1 Critical depth =      1.250(Ft.)
  '     '       '     Critical flow top width =     11.000(Ft.)
  '     '       '     Critical flow velocity=    5.523(Ft/s)
  '     '       '     Critical flow area =     10.625(Sq.Ft)

 Adding area flow to channel
USER INPUT of soil data for subarea
Runoff Coefficient = 0.768
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.970
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.030
RI index for soil(AMC 2)  =  67.70
Pervious area fraction =  0.920; Impervious fraction =  0.080
Rainfall intensity =      3.356(In/Hr) for a   100.0 year storm
Subarea runoff =     86.617(CFS) for     33.600(Ac.)
Total runoff =    101.955(CFS)       Total area =      39.400(Ac.)
Depth of flow =   1.030(Ft.), Average velocity =  12.275(Ft/s)

Sub-Channel No. 1 Critical depth =      1.703(Ft.)
  '     '       '     Critical flow top width =     12.813(Ft.)
  '     '       '     Critical flow velocity=    6.364(Ft/s)
  '     '       '     Critical flow area =     16.020(Sq.Ft)



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        3.000 to Point/Station        4.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   2535.000(Ft.)
End of natural channel elevation =   2495.040(Ft.)
Length of natural channel  =   800.000(Ft.)
Estimated mean flow rate at midpoint of channel =    108.036(CFS)

Natural mountain channel type used
L.A. County flood control district formula for channel velocity:
 Velocity = 5.48(q^.33)(slope^.492)
Velocity using mean channel flow =   5.88(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0500
Corrected/adjusted channel slope =  0.0500
Travel time =    2.27 min.     TC =   18.34  min.

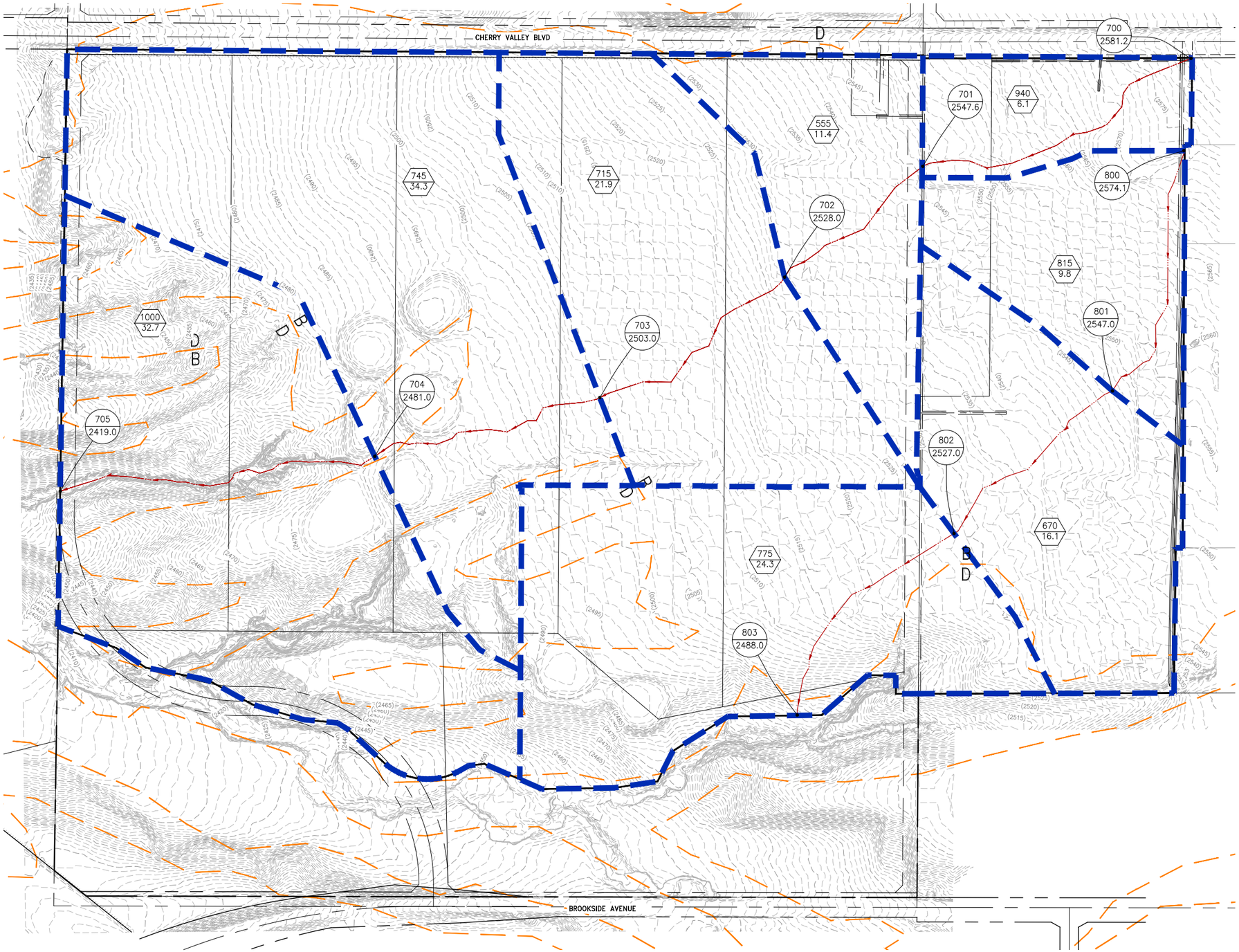

 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.818
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.800
RI index for soil(AMC 2)  =  81.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      3.130(In/Hr) for a   100.0 year storm
Subarea runoff =     12.036(CFS) for      4.700(Ac.)
Total runoff =    113.991(CFS)       Total area =      44.100(Ac.)

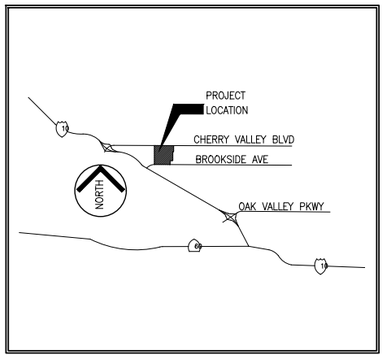

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        4.000 to Point/Station        5.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2495.040(Ft.)
```

```
Downstream point/station elevation =  2490.000(Ft.)
Pipe length  =    80.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =   113.991(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =   113.991(CFS)
Normal flow depth in pipe =   23.55(In.)
Flow top width inside pipe =   29.83(In.)
Critical depth could not be calculated.
Pipe flow velocity =     25.13(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    18.40 min.
End of computations, total study area =           44.10 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.913
Area averaged RI index number =  67.6
```

RATIONAL METHOD HYDROLOGY MAPS





VICINITY MAP
NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30

LEGEND

NODE / ELEV	– NODE NUMBER / – ELEVATION (FT)
FT / AC	– LENGTH (FT) / – AREA (AC)
	– DRAINAGE AREA BOUNDARY
	– FLOWLINE (PROPOSED)
	– PROJECT BOUNDARY
	– NRCS SOIL BOUNDARY

1" = 150'
150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION
EXHIBIT 1. OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 150'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/2/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 1
DESIGNED:	EP		OF 5 SHEETS
CHECKED:	BJV		DWG. NO.
PLN CK REF:			
F.B.			

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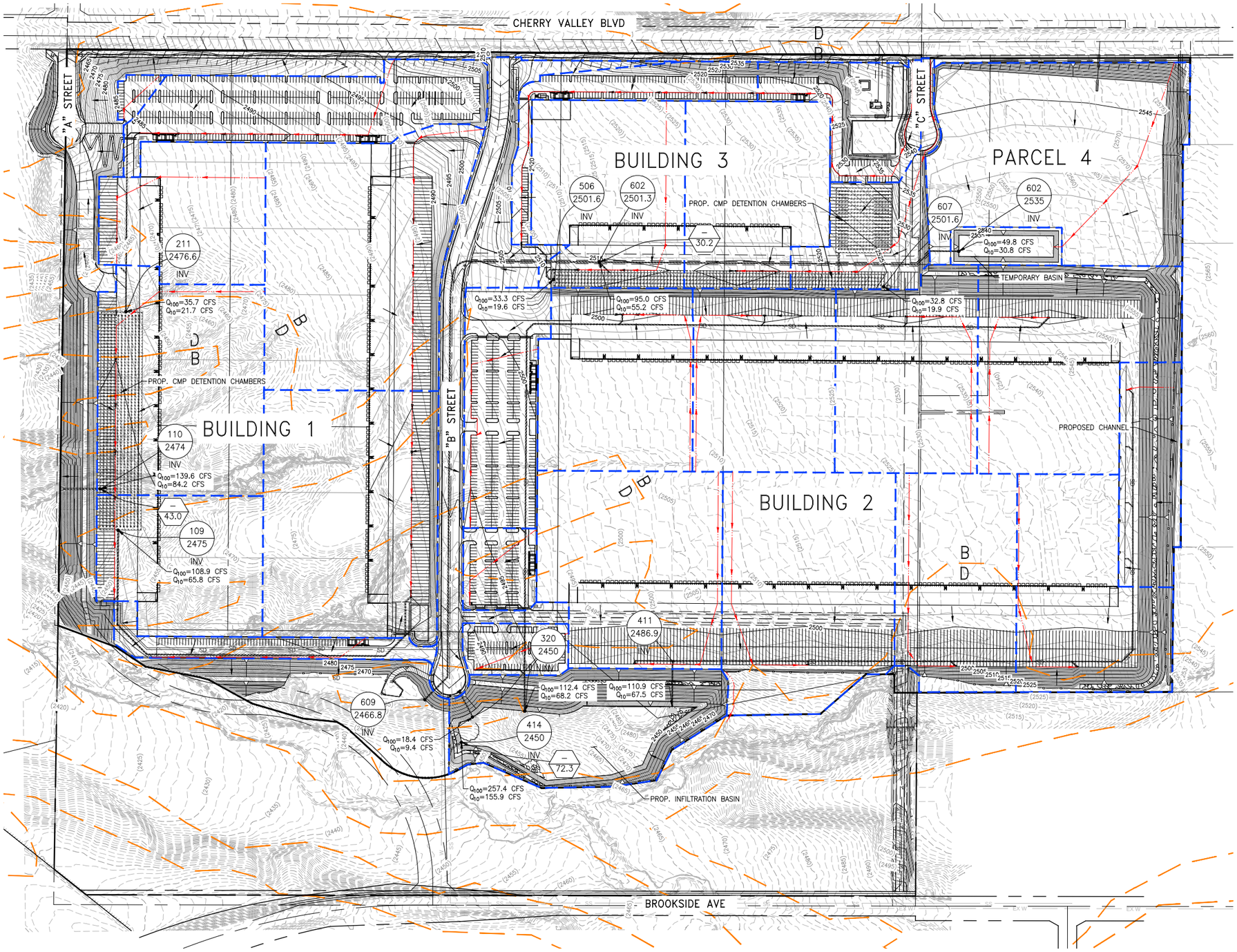

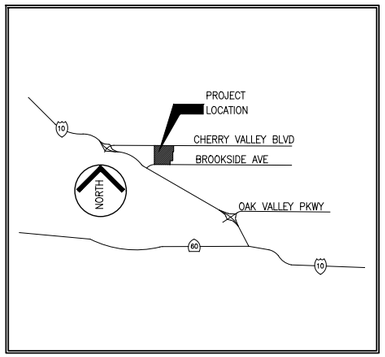

VICINITY MAP
NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- FT / AC – LENGTH (FT) / AREA (AC)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- PROJECT BOUNDARY
- NRCS SOIL BOUNDARY
- FLOW DIRECTION

N W E S WEBB

1" = 150'
150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 2. OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 150'	W.O.	21-0044
DATE:	8/2/2021	SHEET	2
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV	DWG. NO.	
PLN CK REF:			
F.B.			

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

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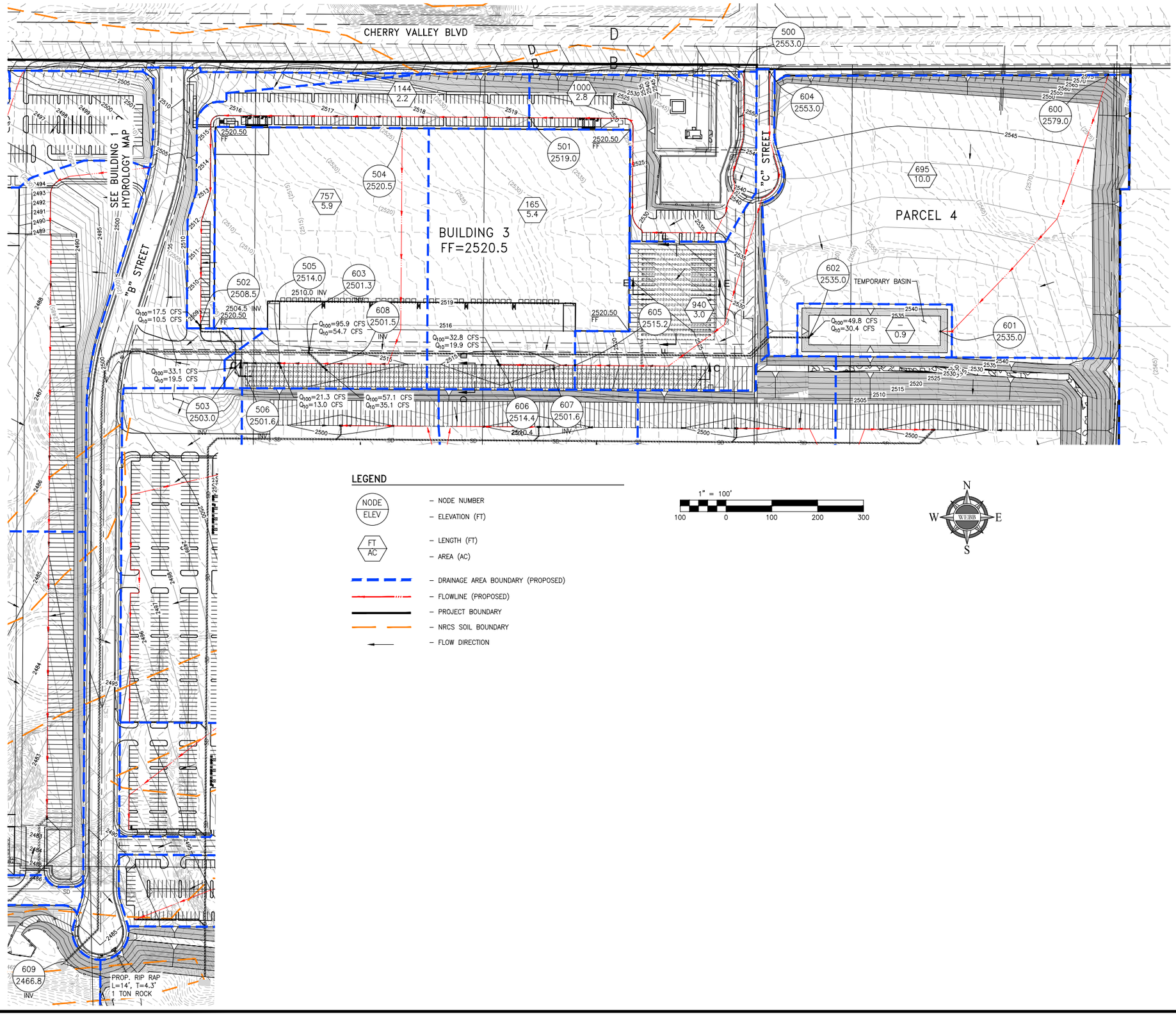

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- FT / AC – LENGTH (FT) / AREA (AC)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- PROJECT BOUNDARY
- NRCS SOIL BOUNDARY
- FLOW DIRECTION

1" = 100'

100 0 100 200 300

N W E S

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 3
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:		ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/2/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 2
DESIGNED:	EP		OF 2 SHEETS
CHECKED:	BJV		DWG. NO.
PLN CK REF:			
F.B.			

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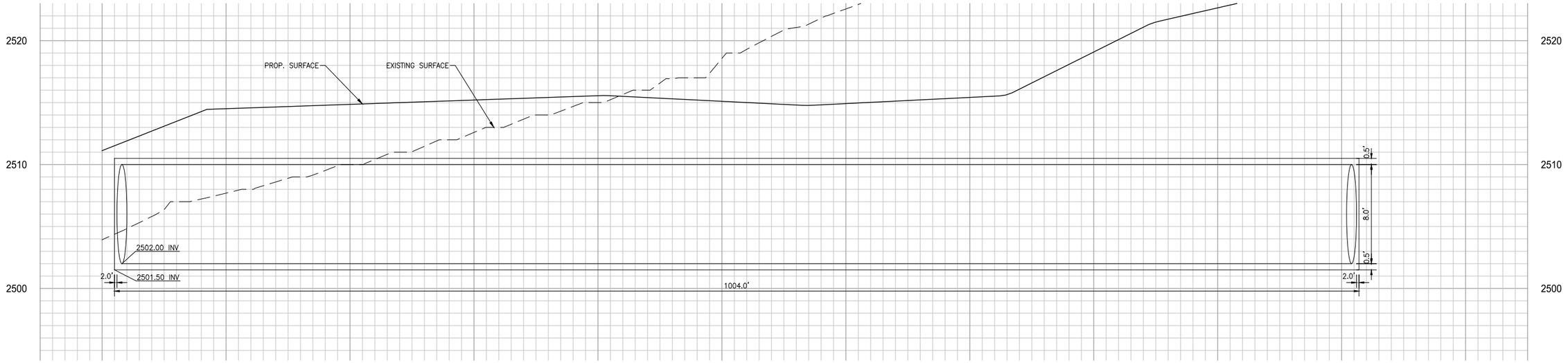
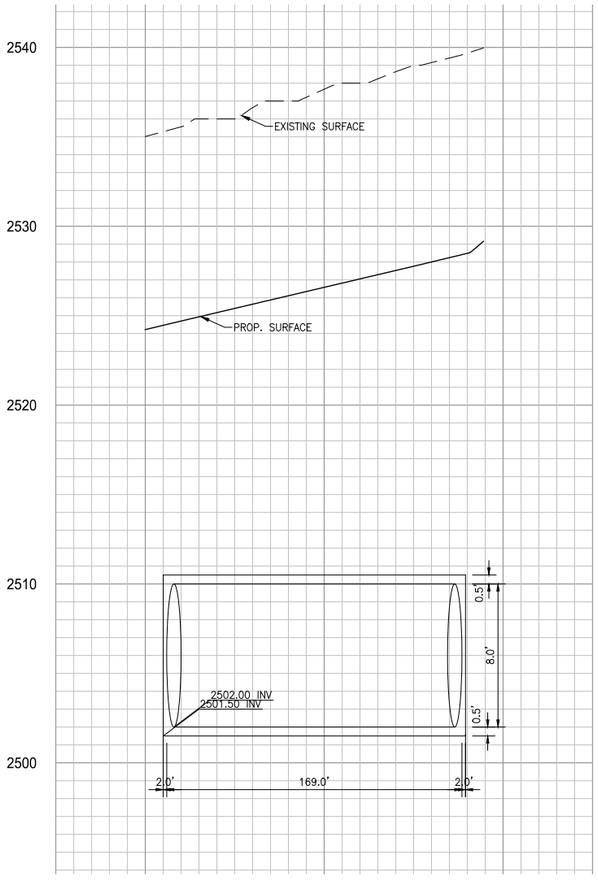
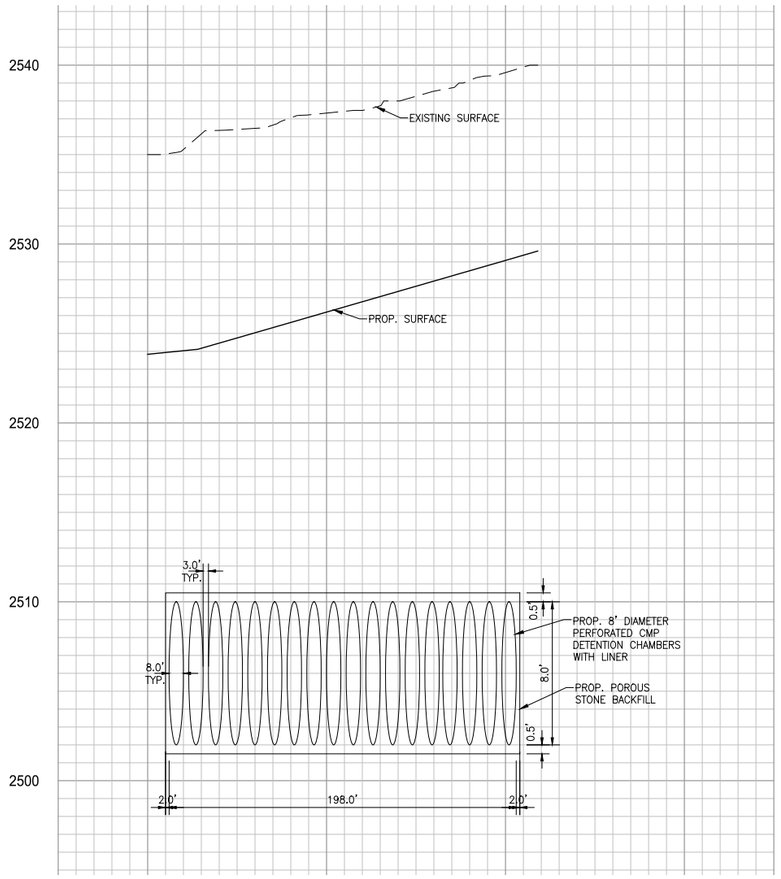


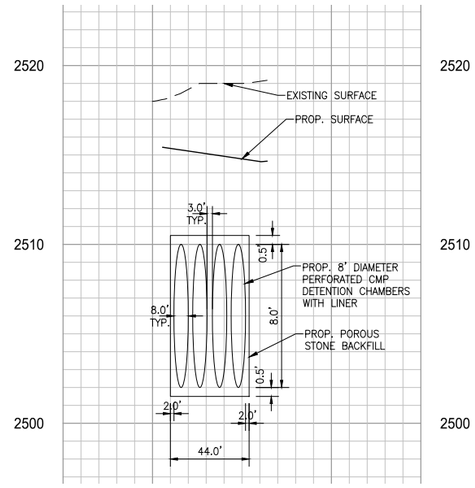
C–C
HORIZ: 1"=40'
VERT: 1"=4'



E–E
HORIZ: 1"=40'
VERT: 1"=4'



F–F
HORIZ: 1"=40'
VERT: 1"=4'



D–D
HORIZ: 1"=40'
VERT: 1"=4'

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 3
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
CMP CHAMBER DETAILS

SCALE:	1"=40'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/2/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 3
DESIGNED:	EP		OF 3 SHEETS
CHECKED:	BJV		DWG. NO.
PLN CK REF:			
F.B.			

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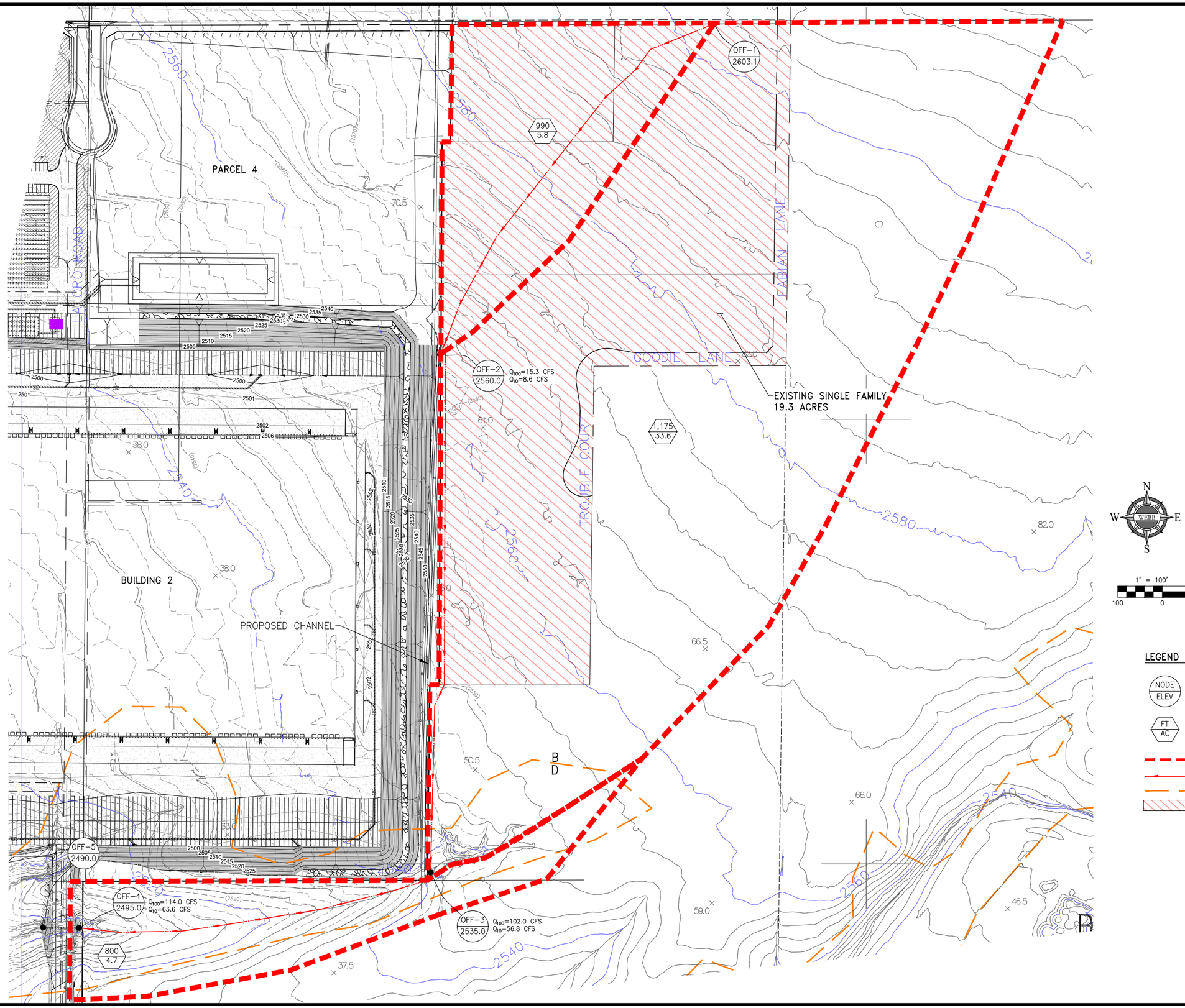

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- FT / AC – LENGTH (FT) / AREA (AC)
- DRAINAGE AREA BOUNDARY (OFFSITE)
- FLOWLINE (OFFSITE)
- NRCS SOIL BOUNDARY
- EXISTING SINGLE FAMILY (1 AC LOTS)

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 5. OFFSITE RUN-ON
INDUSTRIAL DEVELOPMENT
EASTERLY BOUNDARY
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 100'	W.O.	21-0044
DATE:	2/17/2022	SHEET	5
DESIGNED:	EP	OF	5 SHEETS
CHECKED:	BJV		
PLN CK REF:		DWG. NO.	
F.B.			

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

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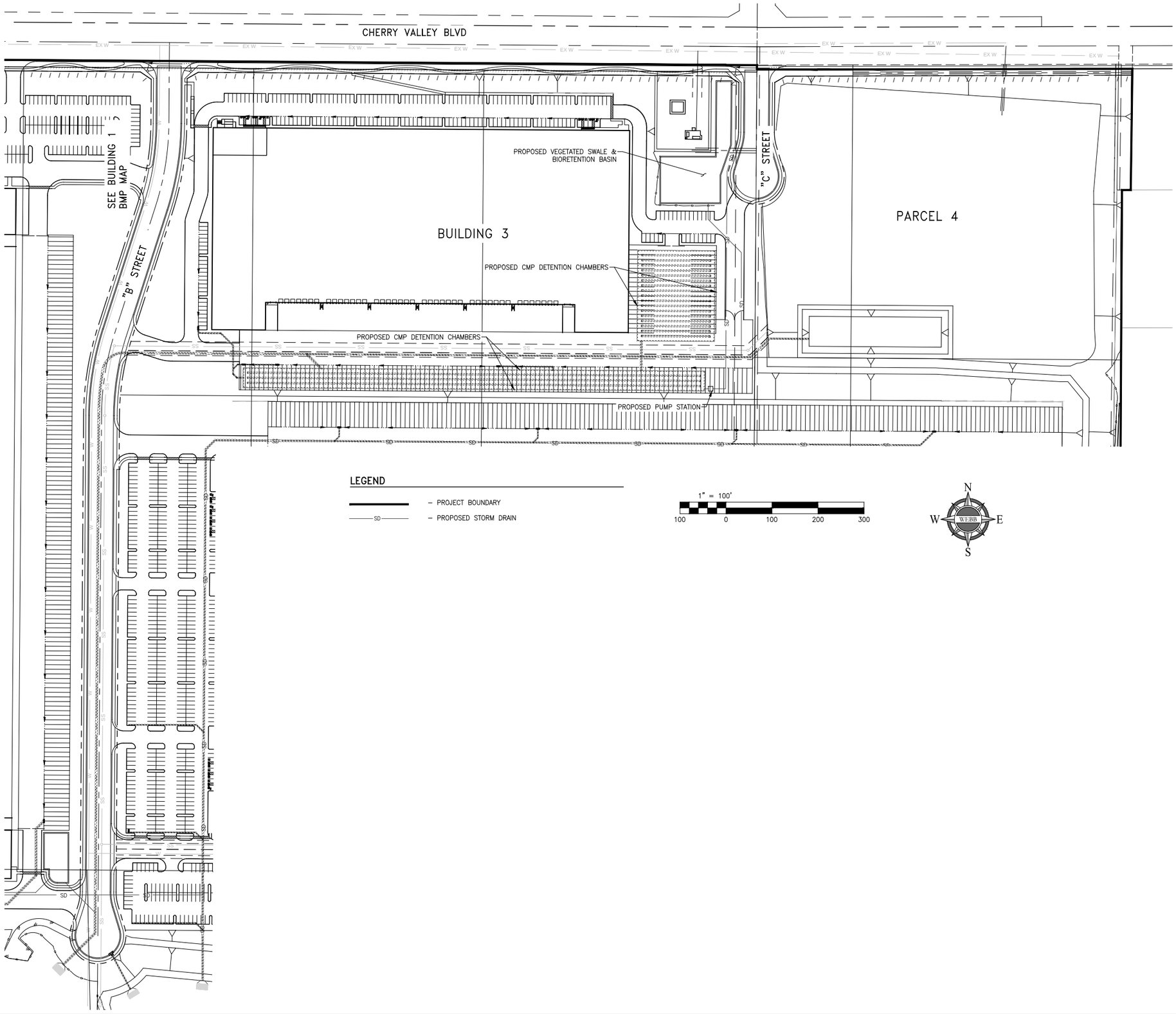


LEGEND

— PROJECT BOUNDARY

SD — PROPOSED STORM DRAIN

1" = 100'

100 0 100 200 300

N W E S

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 3
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
PRELIMINARY RATIONAL METHOD EXHIBIT

SCALE:	1" = 100'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/2/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 2
DESIGNED:	EP		OF 2 SHEETS
CHECKED:	BJV		DWG. NO.
PLN CK REF:			
F.B.			

H:\2021\21-0044\DRAINAGE\HYD\DWG FOLDER\21-0044 BMP MAP.DWG 4/11/2022 5:16:28 PM

APPENDIX B – HYDRAULIC ANALYSIS

WSPG CALCULATIONS

Hydraulic calculations to be performed with the Final Drainage Study

CMP CHAMBER DETAILS

DYODS™
Design Your Own Detention System

CONTECH CMP DETENTION SYSTEMS

CONTECH CONSTRUCTION PRODUCTS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com

Project Summary

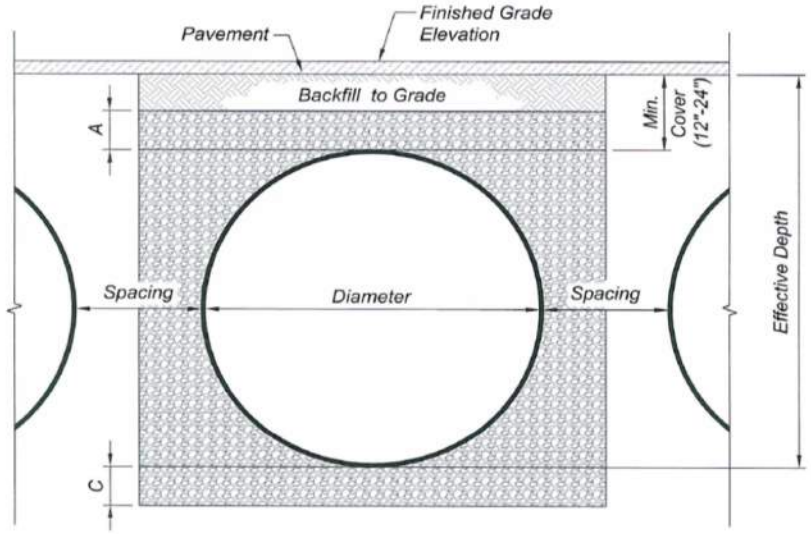
Date:	2/17/2022
Project Name:	Exeter - Building 3
City / County:	Calimesa
State:	CA
Designed By:	EP
Company:	Albert A. Webb Associates
Telephone:	

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	280,000
Limiting Width (ft):	50.00
Invert Depth Below Asphalt (ft):	10.00
Solid or Perforated Pipe:	Perforated
Shape Or Diameter (in):	96
Number Of Headers:	2
Spacing between Barrels (ft):	3.00
Stone Width Around Perimeter of System (ft):	1.5
Depth A: Porous Stone Above Pipe (in):	6
Depth C: Porous Stone Below Pipe (in):	6
Stone Porosity (0 to 40%):	40

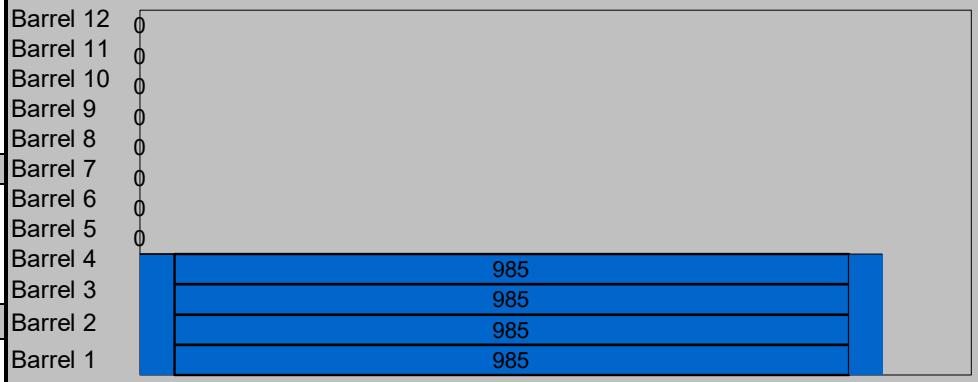
50.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	202,168	cf	
Porous Stone Storage:	78,166	cf	
Total Storage Provided:	280,334	cf	100.1% Of Required Storage
Number of Barrels:	4	barrels	
Length per Barrel:	985.0	ft	
Length Per Header:	41.0	ft	
Rectangular Footprint (W x L):	44. ft x 1004. ft		

System Layout



CONTECH Materials

Total CMP Footage:	4,022	ft
Approximate Total Pieces:	172	pcs
Approximate Coupling Bands:	174	bands
Approximate Truckloads:	86	trucks

Construction Quantities**

Total Excavation:	16362	cy
Porous Stone Backfill For Storage:	7238	cy stone
Backfill to Grade Excluding Stone:	1637	cy fill

***Construction quantities are approximate and should be verified upon final design*

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DYODS™
Design Your Own Detention System

CONTECH CMP DETENTION SYSTEMS

CONTECH CONSTRUCTION PRODUCTS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com

Project Summary

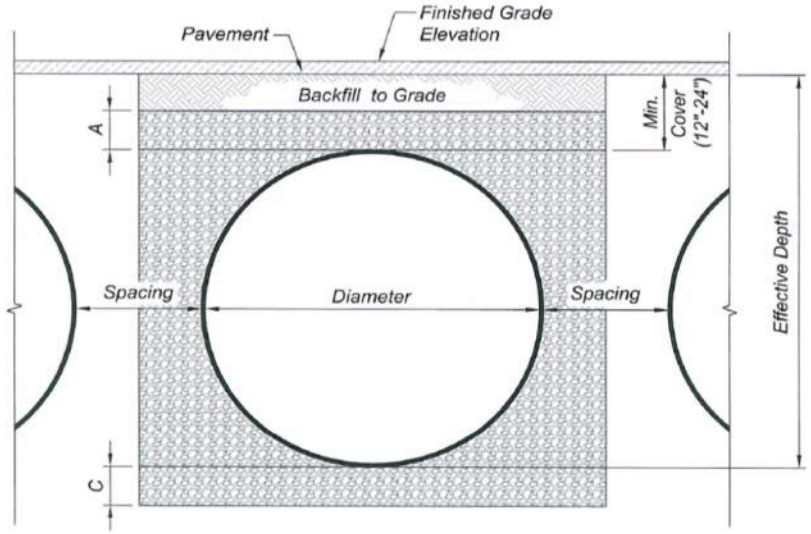
Date:	2/17/2022
Project Name:	Exeter - Building 3
City / County:	Calimesa
State:	CA
Designed By:	EP
Company:	Albert A. Webb Associates
Telephone:	

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	200,000
Limiting Width (ft):	200.00
Invert Depth Below Asphalt (ft):	10.00
Solid or Perforated Pipe:	Perforated
Shape Or Diameter (in):	96
Number Of Headers:	2
Spacing between Barrels (ft):	3.00
Stone Width Around Perimeter of System (ft):	1.5
Depth A: Porous Stone Above Pipe (in):	1
Depth C: Porous Stone Below Pipe (in):	0
Stone Porosity (0 to 40%):	40

50.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	155,320	cf	
Porous Stone Storage:	46,155	cf	
Total Storage Provided:	201,475	cf	100.7% Of Required Storage
Number of Barrels:	18	barrels	
Length per Barrel:	150.0	ft	
Length Per Header:	195.0	ft	
Rectangular Footprint (W x L):	198. ft x 169. ft		

CONTECH Materials

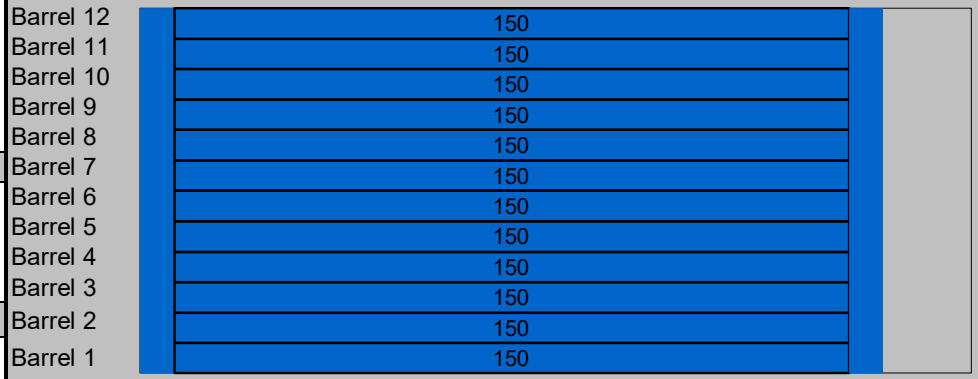
Total CMP Footage:	3,090	ft
Approximate Total Pieces:	144	pcs
Approximate Coupling Bands:	160	bands
Approximate Truckloads:	72	trucks

Construction Quantities**

Total Excavation:	12394	cy
Porous Stone Backfill For Storage:	4274	cy stone
Backfill to Grade Excluding Stone:	2368	cy fill

***Construction quantities are approximate and should be verified upon final design*

System Layout



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CULVERT SIZING

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**********************************************************************
******
                  HYDRAULIC ELEMENTS - I  PROGRAM PACKAGE
          (C) Copyright 1982-2013 Advanced Engineering Software (aes)
              Ver. 20.0  Release Date: 06/01/2013  License ID 1238

                              Analysis prepared by:




 ----------------------------------------------------------------------
-------
   TIME/DATE OF STUDY: 14:27 02/23/2022

======================================================================
======
  Problem Descriptions:
   21-0044 BSS
   EMERGENCY ROAD CULVERT
   2022-02-23 EP

**********************************************************************
******
 >>>>PIPEFLOW HYDRAULIC INPUT INFORMATION<<<<
 ----------------------------------------------------------------------
-------
     PIPE SLOPE(FEET/FEET) =  0.0630
     PIPEFLOW(CFS) =       114.00
     MANNINGS FRICTION FACTOR = 0.013000
     >>>>>SOFFIT-FLOW PIPE DIAMETER(FEET) =   2.597

======================================================================
======
```

CHANNEL SIZING

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Thursday, February 17, 2022

Project Units: U.S. Customary Units

Notes:

Channel Analysis: Cutoff Channel

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 2.0000 ft/ft

Side Slope 2 (Z2): 2.0000 ft/ft

Channel Width: 6.0000 ft

Longitudinal Slope: 0.0150 ft/ft

Manning's n: 0.0150

Flow: 102.0000 cfs

Result Parameters

Depth: 1.1354 ft

Area of Flow: 9.3909 ft^2

Wetted Perimeter: 11.0778 ft

Hydraulic Radius: 0.8477 ft

Average Velocity: 10.8616 ft/s

Top Width: 10.5417 ft

Froude Number: 2.0280

Critical Depth: 1.7062 ft

Critical Velocity: 6.3512 ft/s

Critical Slope: 0.0033 ft/ft

Critical Top Width: 12.82 ft

Calculated Max Shear Stress: 1.0628 lb/ft^2

Calculated Avg Shear Stress: 0.7935 lb/ft^2

APPENDIX C – DETENTION CHAMBER ANALYSIS

EXISTING CONDITION UNIT HYDROGRAPHS

EXISTING CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (AC)**	**Impervious Area (SF)**
Undeveloped	Poor	B	GRASS	78	Existing	0	3030075	69.6	0
Undeveloped	Good	B	RESIDENTIAL OR COMMERCIAL	56	Existing	0.9	628790	14.4	565911
Undeveloped	Poor	D	GRASS	89	Existing	0	966389	22.2	0
Undeveloped	Good	D	RESIDENTIAL OR COMMERCIAL	75	Existing	0.9	9886	0.2	8897
			AVERAGE WEIGHTED RI VALUE	**77.3**		**TOTAL**	4635140	106.4	
						TOTAL % IMPERVIOUS		**12%**	
						LOW LOSS RATE		**0.80**	

EXISTING CONDITION
2-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

2-YEAR, 1-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/19/21 File: EX2YRA12.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.55	58.52

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.25	133.00

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.90 %
Adjusted average point rain = 0.549(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

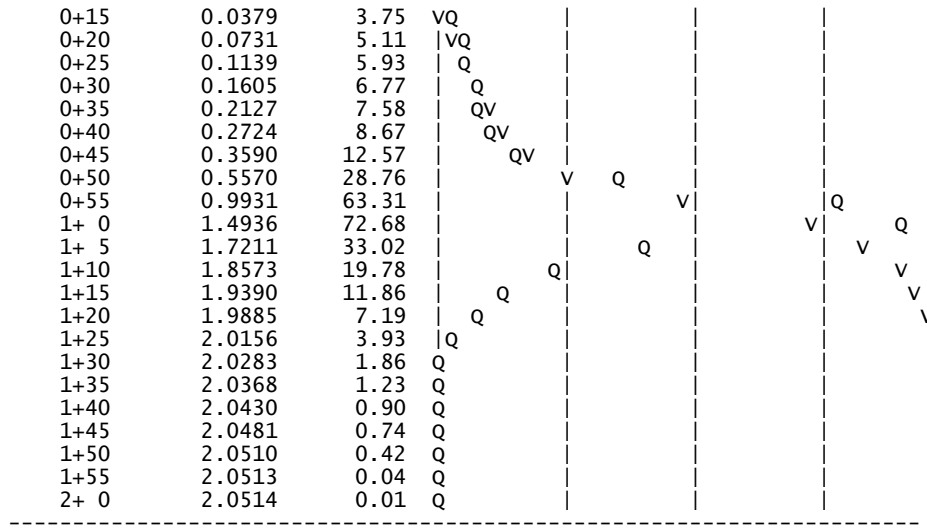
```
      77.3  59.8      0.472     0.120        0.421       1.000      0.421
                                                        Sum (F) =   0.421
      Area averaged mean soil loss (F) (In/Hr) =  0.421
      Minimum soil loss rate ((In/Hr)) =  0.211
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.800
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         53.985          4.779             5.124
          2   0.167        107.970         24.937            26.740
          3   0.250        161.956         36.901            39.569
          4   0.333        215.941         13.574            14.556
          5   0.417        269.926          7.855             8.423
          6   0.500        323.911          5.019             5.382
          7   0.583        377.896          3.120             3.345
          8   0.667        431.882          1.702             1.825
          9   0.750        485.867          0.696             0.747
         10   0.833        539.852          0.487             0.522
         11   0.917        593.837          0.367             0.393
         12   1.000        647.822          0.345             0.370
         13   1.083        701.808          0.218             0.234
                                  Sum = 100.000    Sum=     107.231
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.224       (  0.421)       0.179        0.045
   2   0.17     4.70      0.310       (  0.421)       0.248        0.062
   3   0.25     4.70      0.310       (  0.421)       0.248        0.062
   4   0.33     5.10      0.336       (  0.421)       0.269        0.067
   5   0.42     5.80      0.382       (  0.421)       0.306        0.076
   6   0.50     5.90      0.389       (  0.421)       0.311        0.078
   7   0.58     7.10      0.468       (  0.421)       0.375        0.094
   8   0.67     8.70      0.574          0.421    (  0.459)        0.152
   9   0.75    13.20      0.870          0.421    (  0.696)        0.449
  10   0.83    29.70      1.958          0.421    (  1.567)        1.537
  11   0.92     7.70      0.508       (  0.421)       0.406        0.102
  12   1.00     4.00      0.264       (  0.421)       0.211        0.053
             (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     2.8
        Flood volume = Effective rainfall      0.23(In)
         times area     106.4(Ac.)/[(In)/(Ft.)] =       2.1(Ac.Ft)
        Total soil loss =      0.32(In)
        Total soil loss =     2.821(Ac.Ft)
        Total rainfall =      0.55(In)
        Flood volume =       89358.3 Cubic Feet
        Total soil loss =      122864.5 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =     72.680(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.0      40.0      60.0      80.0
  ------------------------------------------------------------------------
    0+ 5       0.0016      0.23  Q         |         |         |         |
    0+10       0.0120      1.52  Q         |         |         |         |
```


0+15 0.0379 3.75
0+20 0.0731 5.11
0+25 0.1139 5.93
0+30 0.1605 6.77
0+35 0.2127 7.58
0+40 0.2724 8.67
0+45 0.3590 12.57
0+50 0.5570 28.76
0+55 0.9931 63.31
1+ 0 1.4936 72.68
1+ 5 1.7211 33.02
1+10 1.8573 19.78
1+15 1.9390 11.86
1+20 1.9885 7.19
1+25 2.0156 3.93
1+30 2.0283 1.86
1+35 2.0368 1.23
1+40 2.0430 0.90
1+45 2.0481 0.74
1+50 2.0510 0.42
1+55 2.0513 0.04
2+ 0 2.0514 0.01

2-YEAR, 3-HOUR STORM

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
               Study date  07/19/21 File: EX2YRA32.out

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------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           0.95                101.08

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           2.05                218.12

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    2.050(In)

Point rain (area averaged) =    0.950(In)
Areal adjustment factor =   99.95 %
Adjusted average point rain =    0.950(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.148	(0.421)	0.119	0.030
2	0.17	1.30	0.148	(0.421)	0.119	0.030
3	0.25	1.10	0.125	(0.421)	0.100	0.025
4	0.33	1.50	0.171	(0.421)	0.137	0.034
5	0.42	1.50	0.171	(0.421)	0.137	0.034
6	0.50	1.80	0.205	(0.421)	0.164	0.041
7	0.58	1.50	0.171	(0.421)	0.137	0.034
8	0.67	1.80	0.205	(0.421)	0.164	0.041
9	0.75	1.80	0.205	(0.421)	0.164	0.041
10	0.83	1.50	0.171	(0.421)	0.137	0.034
11	0.92	1.60	0.182	(0.421)	0.146	0.036
12	1.00	1.80	0.205	(0.421)	0.164	0.041
13	1.08	2.20	0.251	(0.421)	0.201	0.050
14	1.17	2.20	0.251	(0.421)	0.201	0.050
15	1.25	2.20	0.251	(0.421)	0.201	0.050
16	1.33	2.00	0.228	(0.421)	0.182	0.046
17	1.42	2.60	0.296	(0.421)	0.237	0.059
18	1.50	2.70	0.308	(0.421)	0.246	0.062
19	1.58	2.40	0.273	(0.421)	0.219	0.055
20	1.67	2.70	0.308	(0.421)	0.246	0.062
21	1.75	3.30	0.376	(0.421)	0.301	0.075
22	1.83	3.10	0.353	(0.421)	0.283	0.071
23	1.92	2.90	0.330	(0.421)	0.264	0.066
24	2.00	3.00	0.342	(0.421)	0.273	0.068
25	2.08	3.10	0.353	(0.421)	0.283	0.071
26	2.17	4.20	0.479	(0.421)	0.383	0.096
27	2.25	5.00	0.570	0.421	(0.456)	0.148
28	2.33	3.50	0.399	(0.421)	0.319	0.080
29	2.42	6.80	0.775	0.421	(0.620)	0.353
30	2.50	7.30	0.832	0.421	(0.665)	0.410
31	2.58	8.20	0.934	0.421	(0.747)	0.513
32	2.67	5.90	0.672	0.421	(0.538)	0.251
33	2.75	2.00	0.228	(0.421)	0.182	0.046
34	2.83	1.80	0.205	(0.421)	0.164	0.041
35	2.92	1.80	0.205	(0.421)	0.164	0.041
36	3.00	0.60	0.068	(0.421)	0.055	0.014
		(Loss Rate Not Used)				

```
   Sum =     100.0                                    Sum =     3.2
      Flood volume = Effective rainfall      0.27(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       2.4(Ac.Ft)
      Total soil loss =      0.68(In)
      Total soil loss =     6.056(Ac.Ft)
      Total rainfall =      0.95(In)
      Flood volume =      102938.9 Cubic Feet
      Total soil loss =      263810.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     38.479(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------------
  0+ 5       0.0010      0.15  Q         |         |         |         |
  0+10       0.0076      0.94  Q         |         |         |         |
  0+15       0.0220      2.09  V Q       |         |         |         |
  0+20       0.0388      2.45  V Q       |         |         |         |
  0+25       0.0579      2.76  V Q       |         |         |         |
  0+30       0.0803      3.25  |V Q      |         |         |         |
  0+35       0.1050      3.59  |V Q      |         |         |         |
  0+40       0.1314      3.82  | VQ      |         |         |         |
  0+45       0.1582      3.89  | VQ      |         |         |         |
  0+50       0.1865      4.12  |  VQ     |         |         |         |
  0+55       0.2145      4.05  |  VQ     |         |         |         |
  1+ 0       0.2415      3.93  |  QV     |         |         |         |
  1+ 5       0.2699      4.12  |   Q     |         |         |         |
  1+10       0.3012      4.54  |   QV    |         |         |         |
  1+15       0.3354      4.96  |   QV    |         |         |         |
  1+20       0.3705      5.11  |    QV   |         |         |         |
  1+25       0.4060      5.15  |    QV   |         |         |         |
  1+30       0.4433      5.42  |    Q V  |         |         |         |
  1+35       0.4844      5.96  |    Q  V |         |         |         |
  1+40       0.5262      6.08  |     Q V |         |         |         |
  1+45       0.5689      6.19  |     Q  V|         |         |         |
  1+50       0.6156      6.79  |     Q   V         |         |         |
  1+55       0.6658      7.28  |      Q  |V        |         |         |
  2+ 0       0.7157      7.25  |      Q  | V       |         |         |
  2+ 5       0.7654      7.22  |      Q  | V       |         |         |
  2+10       0.8169      7.48  |      Q  |  V      |         |         |
  2+15       0.8757      8.54  |       Q |   V     |         |         |
  2+20       0.9490     10.63  |         Q     V   |         |         |
  2+25       1.0362     12.67  |         | Q    V  |         |         |
  2+30       1.1641     18.56  |         |       QV|         |         |
  2+35       1.3779     31.04  |         |         |  V      |Q        |
  2+40       1.6429     38.48  |         |         |     V   |       Q |
  2+45       1.9009     37.47  |         |         |         | V    Q  |
  2+50       2.0724     24.91  |         |         |   Q     |    V    |
  2+55       2.1748     14.86  |         |   Q     |         |     V   |
  3+ 0       2.2475     10.57  |         Q         |         |       V |
  3+ 5       2.2972      7.20  |       Q |         |         |       V |
  3+10       2.3254      4.11  |   Q     |         |         |        V|
  3+15       2.3404      2.18  | Q       |         |         |        V|
  3+20       2.3495      1.32  |Q        |         |         |        V|
  3+25       2.3557      0.89  Q         |         |         |        V|
  3+30       2.3595      0.56  Q         |         |         |        V|
  3+35       2.3616      0.31  Q         |         |         |        V|
  3+40       2.3625      0.12  Q         |         |         |        V|
  3+45       2.3628      0.05  Q         |         |         |        V|
  3+50       2.3630      0.03  Q         |         |         |        V|
  3+55       2.3631      0.01  Q         |         |         |        V|
  4+ 0       2.3632      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

2-YEAR, 6-HOUR STORM

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
               Study date  07/19/21 File: EX2YRA62.out

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           1.40                148.96

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           3.00                319.20

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.000(In)

Point rain (area averaged) =    1.400(In)
Areal adjustment factor =   99.96 %
Adjusted average point rain =    1.399(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

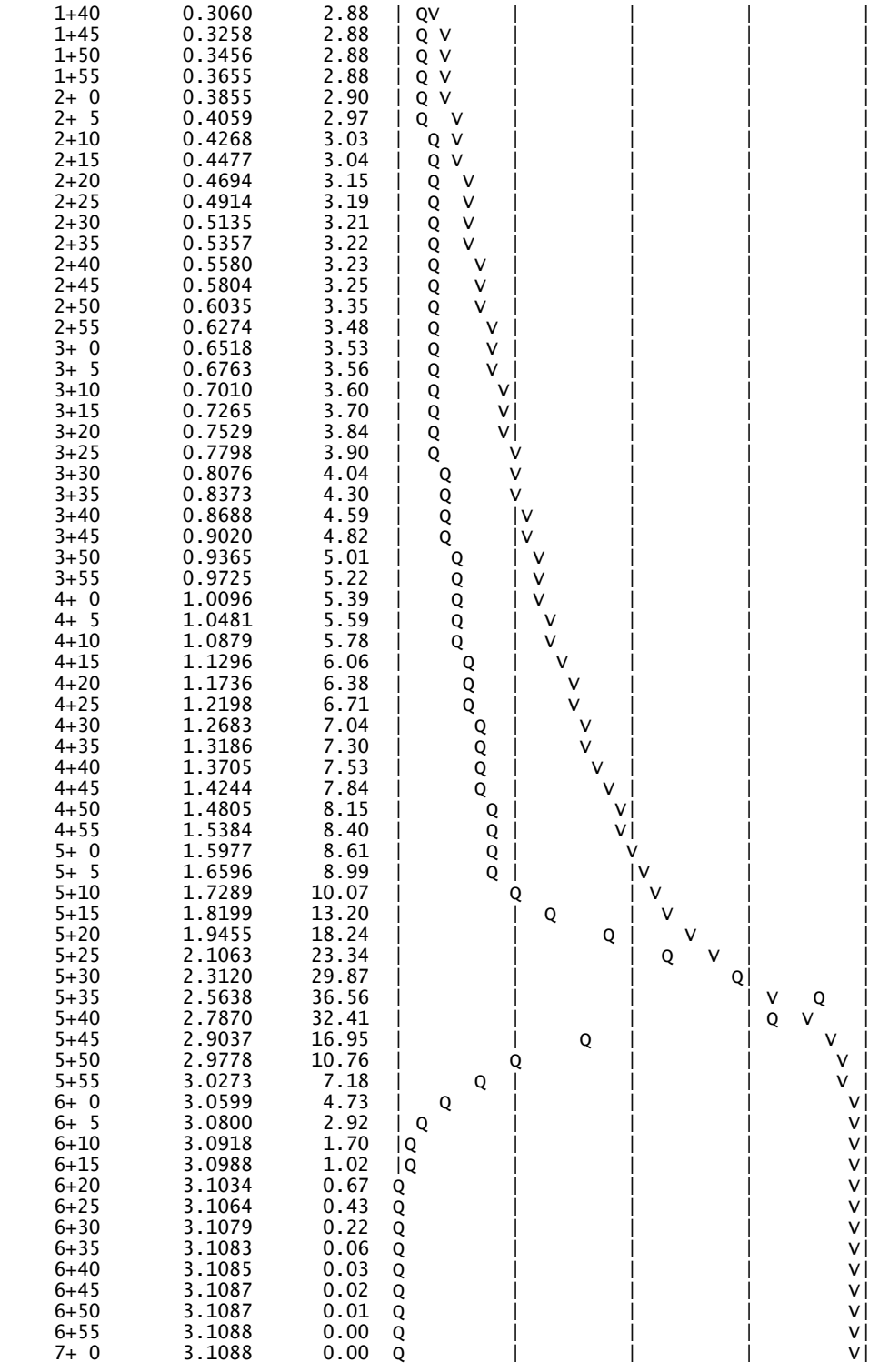
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max		Low	Effective (In/Hr)
1	0.08	0.50	0.084	(0.421)		0.067	0.017
2	0.17	0.60	0.101	(0.421)		0.081	0.020
3	0.25	0.60	0.101	(0.421)		0.081	0.020
4	0.33	0.60	0.101	(0.421)		0.081	0.020
5	0.42	0.60	0.101	(0.421)		0.081	0.020
6	0.50	0.70	0.118	(0.421)		0.094	0.024
7	0.58	0.70	0.118	(0.421)		0.094	0.024
8	0.67	0.70	0.118	(0.421)		0.094	0.024
9	0.75	0.70	0.118	(0.421)		0.094	0.024
10	0.83	0.70	0.118	(0.421)		0.094	0.024
11	0.92	0.70	0.118	(0.421)		0.094	0.024
12	1.00	0.80	0.134	(0.421)		0.107	0.027
13	1.08	0.80	0.134	(0.421)		0.107	0.027
14	1.17	0.80	0.134	(0.421)		0.107	0.027
15	1.25	0.80	0.134	(0.421)		0.107	0.027
16	1.33	0.80	0.134	(0.421)		0.107	0.027
17	1.42	0.80	0.134	(0.421)		0.107	0.027
18	1.50	0.80	0.134	(0.421)		0.107	0.027
19	1.58	0.80	0.134	(0.421)		0.107	0.027
20	1.67	0.80	0.134	(0.421)		0.107	0.027
21	1.75	0.80	0.134	(0.421)		0.107	0.027
22	1.83	0.80	0.134	(0.421)		0.107	0.027
23	1.92	0.80	0.134	(0.421)		0.107	0.027
24	2.00	0.90	0.151	(0.421)		0.121	0.030
25	2.08	0.80	0.134	(0.421)		0.107	0.027
26	2.17	0.90	0.151	(0.421)		0.121	0.030
27	2.25	0.90	0.151	(0.421)		0.121	0.030
28	2.33	0.90	0.151	(0.421)		0.121	0.030
29	2.42	0.90	0.151	(0.421)		0.121	0.030
30	2.50	0.90	0.151	(0.421)		0.121	0.030
31	2.58	0.90	0.151	(0.421)		0.121	0.030
32	2.67	0.90	0.151	(0.421)		0.121	0.030
33	2.75	1.00	0.168	(0.421)		0.134	0.034
34	2.83	1.00	0.168	(0.421)		0.134	0.034
35	2.92	1.00	0.168	(0.421)		0.134	0.034
36	3.00	1.00	0.168	(0.421)		0.134	0.034
37	3.08	1.00	0.168	(0.421)		0.134	0.034

```
38   3.17     1.10      0.185       (  0.421)       0.148        0.037
39   3.25     1.10      0.185       (  0.421)       0.148        0.037
40   3.33     1.10      0.185       (  0.421)       0.148        0.037
41   3.42     1.20      0.202       (  0.421)       0.161        0.040
42   3.50     1.30      0.218       (  0.421)       0.175        0.044
43   3.58     1.40      0.235       (  0.421)       0.188        0.047
44   3.67     1.40      0.235       (  0.421)       0.188        0.047
45   3.75     1.50      0.252       (  0.421)       0.202        0.050
46   3.83     1.50      0.252       (  0.421)       0.202        0.050
47   3.92     1.60      0.269       (  0.421)       0.215        0.054
48   4.00     1.60      0.269       (  0.421)       0.215        0.054
49   4.08     1.70      0.285       (  0.421)       0.228        0.057
50   4.17     1.80      0.302       (  0.421)       0.242        0.060
51   4.25     1.90      0.319       (  0.421)       0.255        0.064
52   4.33     2.00      0.336       (  0.421)       0.269        0.067
53   4.42     2.10      0.353       (  0.421)       0.282        0.071
54   4.50     2.10      0.353       (  0.421)       0.282        0.071
55   4.58     2.20      0.369       (  0.421)       0.296        0.074
56   4.67     2.30      0.386       (  0.421)       0.309        0.077
57   4.75     2.40      0.403       (  0.421)       0.322        0.081
58   4.83     2.40      0.403       (  0.421)       0.322        0.081
59   4.92     2.50      0.420       (  0.421)       0.336        0.084
60   5.00     2.60      0.437       (  0.421)       0.349        0.087
61   5.08     3.10      0.521       (  0.421)       0.416        0.104
62   5.17     3.60      0.605          0.421    (  0.484)        0.183
63   5.25     3.90      0.655          0.421    (  0.524)        0.234
64   5.33     4.20      0.705          0.421    (  0.564)        0.284
65   5.42     4.70      0.789          0.421    (  0.631)        0.368
66   5.50     5.60      0.940          0.421    (  0.752)        0.519
67   5.58     1.90      0.319       (  0.421)       0.255        0.064
68   5.67     0.90      0.151       (  0.421)       0.121        0.030
69   5.75     0.60      0.101       (  0.421)       0.081        0.020
70   5.83     0.50      0.084       (  0.421)       0.067        0.017
71   5.92     0.30      0.050       (  0.421)       0.040        0.010
72   6.00     0.20      0.034       (  0.421)       0.027        0.007
            (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     4.2
     Flood volume = Effective rainfall      0.35(In)
      times area     106.4(Ac.)/[(In)/(Ft.)] =       3.1(Ac.Ft)
     Total soil loss =      1.05(In)
     Total soil loss =     9.300(Ac.Ft)
     Total rainfall =      1.40(In)
     Flood volume =      135418.5 Cubic Feet
     Total soil loss =      405108.6 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     36.557(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                         6 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
     ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------------
  0+ 5       0.0006      0.09  Q         |         |         |         |
  0+10       0.0044      0.55  Q         |         |         |         |
  0+15       0.0134      1.31  VQ        |         |         |         |
  0+20       0.0250      1.68  VQ        |         |         |         |
  0+25       0.0379      1.88  VQ        |         |         |         |
  0+30       0.0518      2.01  V Q       |         |         |         |
  0+35       0.0668      2.18  V Q       |         |         |         |
  0+40       0.0829      2.35  |VQ       |         |         |         |
  0+45       0.0996      2.42  |VQ       |         |         |         |
  0+50       0.1165      2.46  |VQ       |         |         |         |
  0+55       0.1336      2.48  |VQ       |         |         |         |
  1+ 0       0.1510      2.52  |VQ       |         |         |         |
  1+ 5       0.1690      2.62  | Q       |         |         |         |
  1+10       0.1880      2.76  | Q       |         |         |         |
  1+15       0.2074      2.81  | Q       |         |         |         |
  1+20       0.2269      2.84  | Q       |         |         |         |
  1+25       0.2466      2.86  | QV      |         |         |         |
  1+30       0.2663      2.87  | QV      |         |         |         |
  1+35       0.2861      2.88  | QV      |         |         |         |
```


1+40 0.3060 2.88
1+45 0.3258 2.88
1+50 0.3456 2.88
1+55 0.3655 2.88
2+ 0 0.3855 2.90
2+ 5 0.4059 2.97
2+10 0.4268 3.03
2+15 0.4477 3.04
2+20 0.4694 3.15
2+25 0.4914 3.19
2+30 0.5135 3.21
2+35 0.5357 3.22
2+40 0.5580 3.23
2+45 0.5804 3.25
2+50 0.6035 3.35
2+55 0.6274 3.48
3+ 0 0.6518 3.53
3+ 5 0.6763 3.56
3+10 0.7010 3.60
3+15 0.7265 3.70
3+20 0.7529 3.84
3+25 0.7798 3.90
3+30 0.8076 4.04
3+35 0.8373 4.30
3+40 0.8688 4.59
3+45 0.9020 4.82
3+50 0.9365 5.01
3+55 0.9725 5.22
4+ 0 1.0096 5.39
4+ 5 1.0481 5.59
4+10 1.0879 5.78
4+15 1.1296 6.06
4+20 1.1736 6.38
4+25 1.2198 6.71
4+30 1.2683 7.04
4+35 1.3186 7.30
4+40 1.3705 7.53
4+45 1.4244 7.84
4+50 1.4805 8.15
4+55 1.5384 8.40
5+ 0 1.5977 8.61
5+ 5 1.6596 8.99
5+10 1.7289 10.07
5+15 1.8199 13.20
5+20 1.9455 18.24
5+25 2.1063 23.34
5+30 2.3120 29.87
5+35 2.5638 36.56
5+40 2.7870 32.41
5+45 2.9037 16.95
5+50 2.9778 10.76
5+55 3.0273 7.18
6+ 0 3.0599 4.73
6+ 5 3.0800 2.92
6+10 3.0918 1.70
6+15 3.0988 1.02
6+20 3.1034 0.67
6+25 3.1064 0.43
6+30 3.1079 0.22
6+35 3.1083 0.06
6+40 3.1085 0.03
6+45 3.1087 0.02
6+50 3.1087 0.01
6+55 3.1088 0.00
7+ 0 3.1088 0.00

2-YEAR, 24-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/19/21 File: EX2YRA242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.50	159.60

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 1.500(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	(0.747)	0.010	0.002
2	0.17	0.07	0.012	(0.744)	0.010	0.002
3	0.25	0.07	0.012	(0.741)	0.010	0.002
4	0.33	0.10	0.018	(0.738)	0.014	0.004
5	0.42	0.10	0.018	(0.736)	0.014	0.004
6	0.50	0.10	0.018	(0.733)	0.014	0.004
7	0.58	0.10	0.018	(0.730)	0.014	0.004
8	0.67	0.10	0.018	(0.727)	0.014	0.004
9	0.75	0.10	0.018	(0.724)	0.014	0.004
10	0.83	0.13	0.024	(0.721)	0.019	0.005
11	0.92	0.13	0.024	(0.718)	0.019	0.005
12	1.00	0.13	0.024	(0.716)	0.019	0.005
13	1.08	0.10	0.018	(0.713)	0.014	0.004
14	1.17	0.10	0.018	(0.710)	0.014	0.004
15	1.25	0.10	0.018	(0.707)	0.014	0.004
16	1.33	0.10	0.018	(0.704)	0.014	0.004
17	1.42	0.10	0.018	(0.702)	0.014	0.004
18	1.50	0.10	0.018	(0.699)	0.014	0.004
19	1.58	0.10	0.018	(0.696)	0.014	0.004
20	1.67	0.10	0.018	(0.693)	0.014	0.004
21	1.75	0.10	0.018	(0.690)	0.014	0.004
22	1.83	0.13	0.024	(0.688)	0.019	0.005
23	1.92	0.13	0.024	(0.685)	0.019	0.005
24	2.00	0.13	0.024	(0.682)	0.019	0.005
25	2.08	0.13	0.024	(0.679)	0.019	0.005
26	2.17	0.13	0.024	(0.677)	0.019	0.005
27	2.25	0.13	0.024	(0.674)	0.019	0.005
28	2.33	0.13	0.024	(0.671)	0.019	0.005
29	2.42	0.13	0.024	(0.668)	0.019	0.005
30	2.50	0.13	0.024	(0.666)	0.019	0.005
31	2.58	0.17	0.030	(0.663)	0.024	0.006
32	2.67	0.17	0.030	(0.660)	0.024	0.006
33	2.75	0.17	0.030	(0.657)	0.024	0.006
34	2.83	0.17	0.030	(0.655)	0.024	0.006
35	2.92	0.17	0.030	(0.652)	0.024	0.006
36	3.00	0.17	0.030	(0.649)	0.024	0.006
37	3.08	0.17	0.030	(0.647)	0.024	0.006

38	3.17	0.17	0.030	(0.644)	0.024	0.006
39	3.25	0.17	0.030	(0.641)	0.024	0.006
40	3.33	0.17	0.030	(0.639)	0.024	0.006
41	3.42	0.17	0.030	(0.636)	0.024	0.006
42	3.50	0.17	0.030	(0.633)	0.024	0.006
43	3.58	0.17	0.030	(0.631)	0.024	0.006
44	3.67	0.17	0.030	(0.628)	0.024	0.006
45	3.75	0.17	0.030	(0.625)	0.024	0.006
46	3.83	0.20	0.036	(0.623)	0.029	0.007
47	3.92	0.20	0.036	(0.620)	0.029	0.007
48	4.00	0.20	0.036	(0.617)	0.029	0.007
49	4.08	0.20	0.036	(0.615)	0.029	0.007
50	4.17	0.20	0.036	(0.612)	0.029	0.007
51	4.25	0.20	0.036	(0.610)	0.029	0.007
52	4.33	0.23	0.042	(0.607)	0.034	0.008
53	4.42	0.23	0.042	(0.604)	0.034	0.008
54	4.50	0.23	0.042	(0.602)	0.034	0.008
55	4.58	0.23	0.042	(0.599)	0.034	0.008
56	4.67	0.23	0.042	(0.597)	0.034	0.008
57	4.75	0.23	0.042	(0.594)	0.034	0.008
58	4.83	0.27	0.048	(0.592)	0.038	0.010
59	4.92	0.27	0.048	(0.589)	0.038	0.010
60	5.00	0.27	0.048	(0.586)	0.038	0.010
61	5.08	0.20	0.036	(0.584)	0.029	0.007
62	5.17	0.20	0.036	(0.581)	0.029	0.007
63	5.25	0.20	0.036	(0.579)	0.029	0.007
64	5.33	0.23	0.042	(0.576)	0.034	0.008
65	5.42	0.23	0.042	(0.574)	0.034	0.008
66	5.50	0.23	0.042	(0.571)	0.034	0.008
67	5.58	0.27	0.048	(0.569)	0.038	0.010
68	5.67	0.27	0.048	(0.566)	0.038	0.010
69	5.75	0.27	0.048	(0.564)	0.038	0.010
70	5.83	0.27	0.048	(0.561)	0.038	0.010
71	5.92	0.27	0.048	(0.559)	0.038	0.010
72	6.00	0.27	0.048	(0.556)	0.038	0.010
73	6.08	0.30	0.054	(0.554)	0.043	0.011
74	6.17	0.30	0.054	(0.551)	0.043	0.011
75	6.25	0.30	0.054	(0.549)	0.043	0.011
76	6.33	0.30	0.054	(0.546)	0.043	0.011
77	6.42	0.30	0.054	(0.544)	0.043	0.011
78	6.50	0.30	0.054	(0.542)	0.043	0.011
79	6.58	0.33	0.060	(0.539)	0.048	0.012
80	6.67	0.33	0.060	(0.537)	0.048	0.012
81	6.75	0.33	0.060	(0.534)	0.048	0.012
82	6.83	0.33	0.060	(0.532)	0.048	0.012
83	6.92	0.33	0.060	(0.529)	0.048	0.012
84	7.00	0.33	0.060	(0.527)	0.048	0.012
85	7.08	0.33	0.060	(0.525)	0.048	0.012
86	7.17	0.33	0.060	(0.522)	0.048	0.012
87	7.25	0.33	0.060	(0.520)	0.048	0.012
88	7.33	0.37	0.066	(0.518)	0.053	0.013
89	7.42	0.37	0.066	(0.515)	0.053	0.013
90	7.50	0.37	0.066	(0.513)	0.053	0.013
91	7.58	0.40	0.072	(0.510)	0.058	0.014
92	7.67	0.40	0.072	(0.508)	0.058	0.014
93	7.75	0.40	0.072	(0.506)	0.058	0.014
94	7.83	0.43	0.078	(0.503)	0.062	0.016
95	7.92	0.43	0.078	(0.501)	0.062	0.016
96	8.00	0.43	0.078	(0.499)	0.062	0.016
97	8.08	0.50	0.090	(0.496)	0.072	0.018
98	8.17	0.50	0.090	(0.494)	0.072	0.018
99	8.25	0.50	0.090	(0.492)	0.072	0.018
100	8.33	0.50	0.090	(0.490)	0.072	0.018
101	8.42	0.50	0.090	(0.487)	0.072	0.018
102	8.50	0.50	0.090	(0.485)	0.072	0.018
103	8.58	0.53	0.096	(0.483)	0.077	0.019
104	8.67	0.53	0.096	(0.480)	0.077	0.019
105	8.75	0.53	0.096	(0.478)	0.077	0.019
106	8.83	0.57	0.102	(0.476)	0.082	0.020
107	8.92	0.57	0.102	(0.474)	0.082	0.020
108	9.00	0.57	0.102	(0.471)	0.082	0.020
109	9.08	0.63	0.114	(0.469)	0.091	0.023
110	9.17	0.63	0.114	(0.467)	0.091	0.023
111	9.25	0.63	0.114	(0.465)	0.091	0.023
112	9.33	0.67	0.120	(0.462)	0.096	0.024

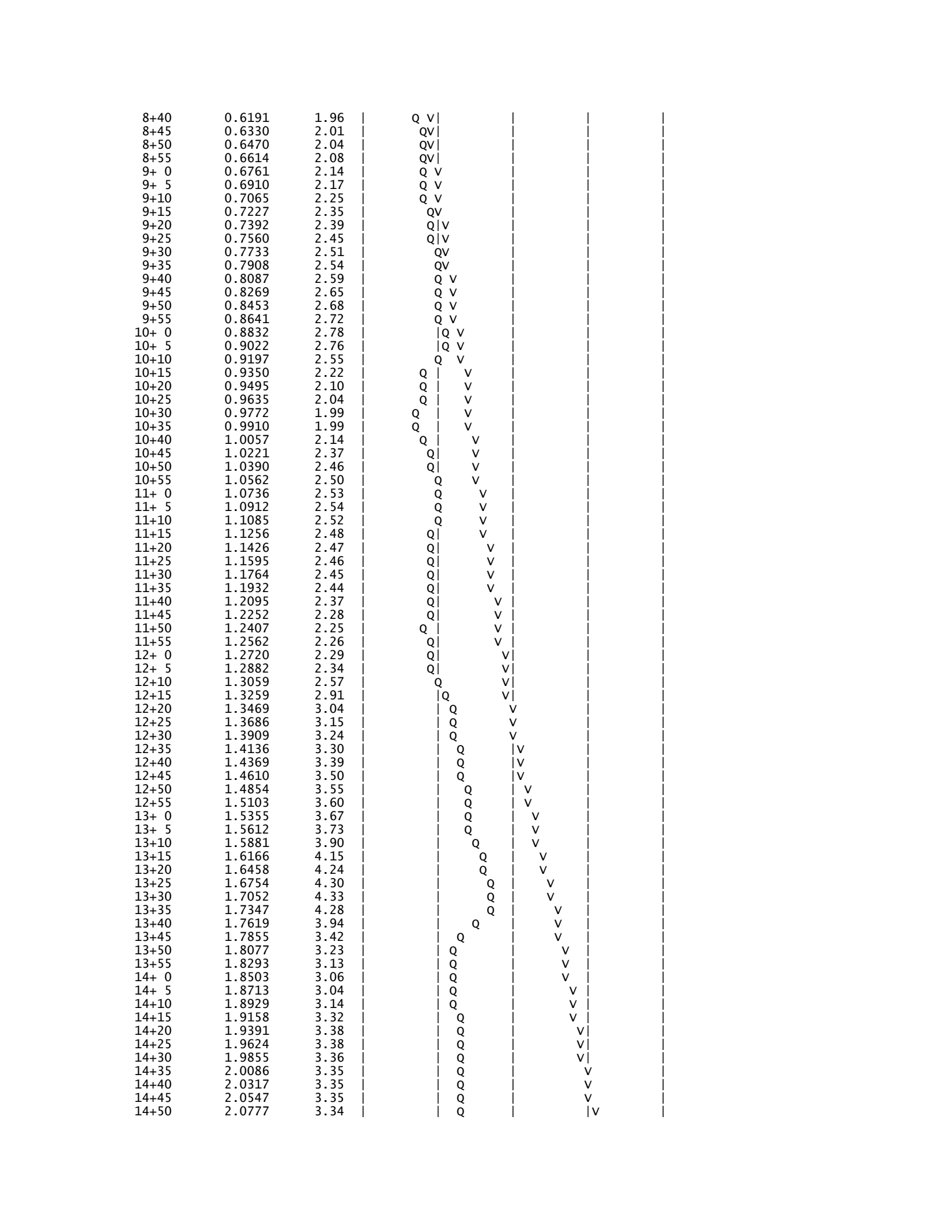
113	9.42	0.67	0.120	(0.460)	0.096	0.024
114	9.50	0.67	0.120	(0.458)	0.096	0.024
115	9.58	0.70	0.126	(0.456)	0.101	0.025
116	9.67	0.70	0.126	(0.454)	0.101	0.025
117	9.75	0.70	0.126	(0.452)	0.101	0.025
118	9.83	0.73	0.132	(0.449)	0.106	0.026
119	9.92	0.73	0.132	(0.447)	0.106	0.026
120	10.00	0.73	0.132	(0.445)	0.106	0.026
121	10.08	0.50	0.090	(0.443)	0.072	0.018
122	10.17	0.50	0.090	(0.441)	0.072	0.018
123	10.25	0.50	0.090	(0.439)	0.072	0.018
124	10.33	0.50	0.090	(0.436)	0.072	0.018
125	10.42	0.50	0.090	(0.434)	0.072	0.018
126	10.50	0.50	0.090	(0.432)	0.072	0.018
127	10.58	0.67	0.120	(0.430)	0.096	0.024
128	10.67	0.67	0.120	(0.428)	0.096	0.024
129	10.75	0.67	0.120	(0.426)	0.096	0.024
130	10.83	0.67	0.120	(0.424)	0.096	0.024
131	10.92	0.67	0.120	(0.422)	0.096	0.024
132	11.00	0.67	0.120	(0.420)	0.096	0.024
133	11.08	0.63	0.114	(0.418)	0.091	0.023
134	11.17	0.63	0.114	(0.416)	0.091	0.023
135	11.25	0.63	0.114	(0.413)	0.091	0.023
136	11.33	0.63	0.114	(0.411)	0.091	0.023
137	11.42	0.63	0.114	(0.409)	0.091	0.023
138	11.50	0.63	0.114	(0.407)	0.091	0.023
139	11.58	0.57	0.102	(0.405)	0.082	0.020
140	11.67	0.57	0.102	(0.403)	0.082	0.020
141	11.75	0.57	0.102	(0.401)	0.082	0.020
142	11.83	0.60	0.108	(0.399)	0.086	0.022
143	11.92	0.60	0.108	(0.397)	0.086	0.022
144	12.00	0.60	0.108	(0.395)	0.086	0.022
145	12.08	0.83	0.150	(0.393)	0.120	0.030
146	12.17	0.83	0.150	(0.391)	0.120	0.030
147	12.25	0.83	0.150	(0.389)	0.120	0.030
148	12.33	0.87	0.156	(0.388)	0.125	0.031
149	12.42	0.87	0.156	(0.386)	0.125	0.031
150	12.50	0.87	0.156	(0.384)	0.125	0.031
151	12.58	0.93	0.168	(0.382)	0.134	0.034
152	12.67	0.93	0.168	(0.380)	0.134	0.034
153	12.75	0.93	0.168	(0.378)	0.134	0.034
154	12.83	0.97	0.174	(0.376)	0.139	0.035
155	12.92	0.97	0.174	(0.374)	0.139	0.035
156	13.00	0.97	0.174	(0.372)	0.139	0.035
157	13.08	1.13	0.204	(0.370)	0.163	0.041
158	13.17	1.13	0.204	(0.368)	0.163	0.041
159	13.25	1.13	0.204	(0.367)	0.163	0.041
160	13.33	1.13	0.204	(0.365)	0.163	0.041
161	13.42	1.13	0.204	(0.363)	0.163	0.041
162	13.50	1.13	0.204	(0.361)	0.163	0.041
163	13.58	0.77	0.138	(0.359)	0.110	0.028
164	13.67	0.77	0.138	(0.357)	0.110	0.028
165	13.75	0.77	0.138	(0.355)	0.110	0.028
166	13.83	0.77	0.138	(0.354)	0.110	0.028
167	13.92	0.77	0.138	(0.352)	0.110	0.028
168	14.00	0.77	0.138	(0.350)	0.110	0.028
169	14.08	0.90	0.162	(0.348)	0.130	0.032
170	14.17	0.90	0.162	(0.346)	0.130	0.032
171	14.25	0.90	0.162	(0.345)	0.130	0.032
172	14.33	0.87	0.156	(0.343)	0.125	0.031
173	14.42	0.87	0.156	(0.341)	0.125	0.031
174	14.50	0.87	0.156	(0.339)	0.125	0.031
175	14.58	0.87	0.156	(0.338)	0.125	0.031
176	14.67	0.87	0.156	(0.336)	0.125	0.031
177	14.75	0.87	0.156	(0.334)	0.125	0.031
178	14.83	0.83	0.150	(0.333)	0.120	0.030
179	14.92	0.83	0.150	(0.331)	0.120	0.030
180	15.00	0.83	0.150	(0.329)	0.120	0.030
181	15.08	0.80	0.144	(0.327)	0.115	0.029
182	15.17	0.80	0.144	(0.326)	0.115	0.029
183	15.25	0.80	0.144	(0.324)	0.115	0.029
184	15.33	0.77	0.138	(0.322)	0.110	0.028
185	15.42	0.77	0.138	(0.321)	0.110	0.028
186	15.50	0.77	0.138	(0.319)	0.110	0.028
187	15.58	0.63	0.114	(0.318)	0.091	0.023

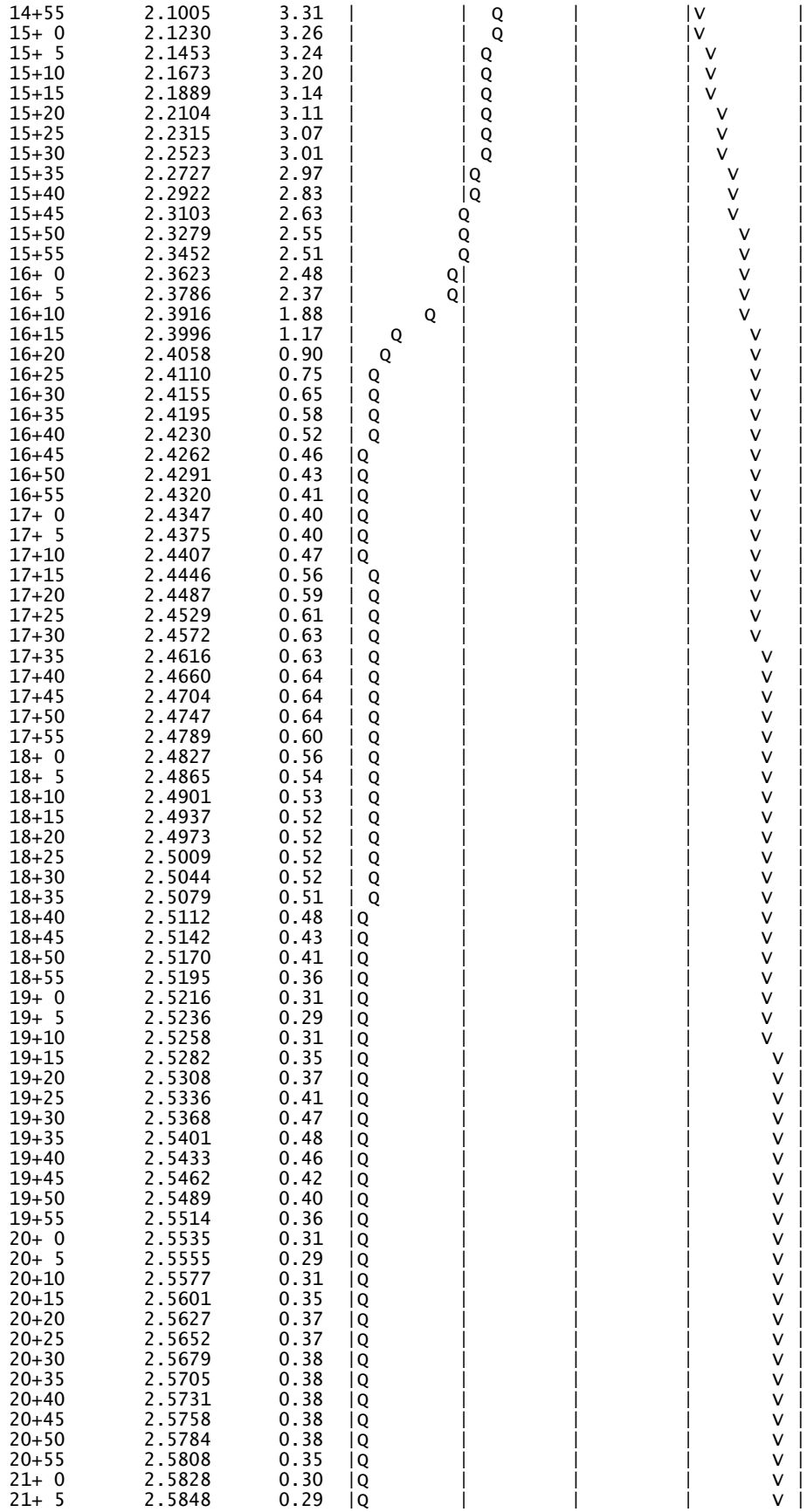
188	15.67	0.63	0.114	(0.316)	0.091	0.023
189	15.75	0.63	0.114	(0.314)	0.091	0.023
190	15.83	0.63	0.114	(0.313)	0.091	0.023
191	15.92	0.63	0.114	(0.311)	0.091	0.023
192	16.00	0.63	0.114	(0.309)	0.091	0.023
193	16.08	0.13	0.024	(0.308)	0.019	0.005
194	16.17	0.13	0.024	(0.306)	0.019	0.005
195	16.25	0.13	0.024	(0.305)	0.019	0.005
196	16.33	0.13	0.024	(0.303)	0.019	0.005
197	16.42	0.13	0.024	(0.302)	0.019	0.005
198	16.50	0.13	0.024	(0.300)	0.019	0.005
199	16.58	0.10	0.018	(0.299)	0.014	0.004
200	16.67	0.10	0.018	(0.297)	0.014	0.004
201	16.75	0.10	0.018	(0.296)	0.014	0.004
202	16.83	0.10	0.018	(0.294)	0.014	0.004
203	16.92	0.10	0.018	(0.293)	0.014	0.004
204	17.00	0.10	0.018	(0.291)	0.014	0.004
205	17.08	0.17	0.030	(0.290)	0.024	0.006
206	17.17	0.17	0.030	(0.288)	0.024	0.006
207	17.25	0.17	0.030	(0.287)	0.024	0.006
208	17.33	0.17	0.030	(0.285)	0.024	0.006
209	17.42	0.17	0.030	(0.284)	0.024	0.006
210	17.50	0.17	0.030	(0.282)	0.024	0.006
211	17.58	0.17	0.030	(0.281)	0.024	0.006
212	17.67	0.17	0.030	(0.280)	0.024	0.006
213	17.75	0.17	0.030	(0.278)	0.024	0.006
214	17.83	0.13	0.024	(0.277)	0.019	0.005
215	17.92	0.13	0.024	(0.275)	0.019	0.005
216	18.00	0.13	0.024	(0.274)	0.019	0.005
217	18.08	0.13	0.024	(0.273)	0.019	0.005
218	18.17	0.13	0.024	(0.271)	0.019	0.005
219	18.25	0.13	0.024	(0.270)	0.019	0.005
220	18.33	0.13	0.024	(0.269)	0.019	0.005
221	18.42	0.13	0.024	(0.267)	0.019	0.005
222	18.50	0.13	0.024	(0.266)	0.019	0.005
223	18.58	0.10	0.018	(0.265)	0.014	0.004
224	18.67	0.10	0.018	(0.264)	0.014	0.004
225	18.75	0.10	0.018	(0.262)	0.014	0.004
226	18.83	0.07	0.012	(0.261)	0.010	0.002
227	18.92	0.07	0.012	(0.260)	0.010	0.002
228	19.00	0.07	0.012	(0.259)	0.010	0.002
229	19.08	0.10	0.018	(0.257)	0.014	0.004
230	19.17	0.10	0.018	(0.256)	0.014	0.004
231	19.25	0.10	0.018	(0.255)	0.014	0.004
232	19.33	0.13	0.024	(0.254)	0.019	0.005
233	19.42	0.13	0.024	(0.253)	0.019	0.005
234	19.50	0.13	0.024	(0.251)	0.019	0.005
235	19.58	0.10	0.018	(0.250)	0.014	0.004
236	19.67	0.10	0.018	(0.249)	0.014	0.004
237	19.75	0.10	0.018	(0.248)	0.014	0.004
238	19.83	0.07	0.012	(0.247)	0.010	0.002
239	19.92	0.07	0.012	(0.246)	0.010	0.002
240	20.00	0.07	0.012	(0.245)	0.010	0.002
241	20.08	0.10	0.018	(0.244)	0.014	0.004
242	20.17	0.10	0.018	(0.243)	0.014	0.004
243	20.25	0.10	0.018	(0.242)	0.014	0.004
244	20.33	0.10	0.018	(0.240)	0.014	0.004
245	20.42	0.10	0.018	(0.239)	0.014	0.004
246	20.50	0.10	0.018	(0.238)	0.014	0.004
247	20.58	0.10	0.018	(0.237)	0.014	0.004
248	20.67	0.10	0.018	(0.236)	0.014	0.004
249	20.75	0.10	0.018	(0.235)	0.014	0.004
250	20.83	0.07	0.012	(0.234)	0.010	0.002
251	20.92	0.07	0.012	(0.234)	0.010	0.002
252	21.00	0.07	0.012	(0.233)	0.010	0.002
253	21.08	0.10	0.018	(0.232)	0.014	0.004
254	21.17	0.10	0.018	(0.231)	0.014	0.004
255	21.25	0.10	0.018	(0.230)	0.014	0.004
256	21.33	0.07	0.012	(0.229)	0.010	0.002
257	21.42	0.07	0.012	(0.228)	0.010	0.002
258	21.50	0.07	0.012	(0.227)	0.010	0.002
259	21.58	0.10	0.018	(0.226)	0.014	0.004
260	21.67	0.10	0.018	(0.226)	0.014	0.004
261	21.75	0.10	0.018	(0.225)	0.014	0.004
262	21.83	0.07	0.012	(0.224)	0.010	0.002

```
263  21.92     0.07      0.012       (  0.223)       0.010        0.002
264  22.00     0.07      0.012       (  0.223)       0.010        0.002
265  22.08     0.10      0.018       (  0.222)       0.014        0.004
266  22.17     0.10      0.018       (  0.221)       0.014        0.004
267  22.25     0.10      0.018       (  0.220)       0.014        0.004
268  22.33     0.07      0.012       (  0.220)       0.010        0.002
269  22.42     0.07      0.012       (  0.219)       0.010        0.002
270  22.50     0.07      0.012       (  0.218)       0.010        0.002
271  22.58     0.07      0.012       (  0.218)       0.010        0.002
272  22.67     0.07      0.012       (  0.217)       0.010        0.002
273  22.75     0.07      0.012       (  0.217)       0.010        0.002
274  22.83     0.07      0.012       (  0.216)       0.010        0.002
275  22.92     0.07      0.012       (  0.215)       0.010        0.002
276  23.00     0.07      0.012       (  0.215)       0.010        0.002
277  23.08     0.07      0.012       (  0.214)       0.010        0.002
278  23.17     0.07      0.012       (  0.214)       0.010        0.002
279  23.25     0.07      0.012       (  0.213)       0.010        0.002
280  23.33     0.07      0.012       (  0.213)       0.010        0.002
281  23.42     0.07      0.012       (  0.213)       0.010        0.002
282  23.50     0.07      0.012       (  0.212)       0.010        0.002
283  23.58     0.07      0.012       (  0.212)       0.010        0.002
284  23.67     0.07      0.012       (  0.212)       0.010        0.002
285  23.75     0.07      0.012       (  0.211)       0.010        0.002
286  23.83     0.07      0.012       (  0.211)       0.010        0.002
287  23.92     0.07      0.012       (  0.211)       0.010        0.002
288  24.00     0.07      0.012       (  0.211)       0.010        0.002
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     3.6
      Flood volume = Effective rainfall      0.30(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       2.7(Ac.Ft)
      Total soil loss =      1.20(In)
      Total soil loss =    10.638(Ac.Ft)
      Total rainfall =      1.50(In)
      Flood volume =      115845.5 Cubic Feet
      Total soil loss =      463382.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      4.329(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ------------------------------------------------------------------------
   0+ 5       0.0001      0.01  Q         |         |         |         |
   0+10       0.0006      0.08  Q         |         |         |         |
   0+15       0.0018      0.17  Q         |         |         |         |
   0+20       0.0033      0.21  Q         |         |         |         |
   0+25       0.0051      0.26  VQ        |         |         |         |
   0+30       0.0073      0.33  VQ        |         |         |         |
   0+35       0.0097      0.35  VQ        |         |         |         |
   0+40       0.0123      0.37  VQ        |         |         |         |
   0+45       0.0148      0.37  VQ        |         |         |         |
   0+50       0.0175      0.38  VQ        |         |         |         |
   0+55       0.0204      0.42  VQ        |         |         |         |
   1+ 0       0.0236      0.47  VQ        |         |         |         |
   1+ 5       0.0269      0.48  VQ        |         |         |         |
   1+10       0.0301      0.46  VQ        |         |         |         |
   1+15       0.0330      0.42  VQ        |         |         |         |
   1+20       0.0358      0.41  VQ        |         |         |         |
   1+25       0.0385      0.40  VQ        |         |         |         |
   1+30       0.0412      0.39  VQ        |         |         |         |
   1+35       0.0439      0.39  VQ        |         |         |         |
   1+40       0.0466      0.39  VQ        |         |         |         |
   1+45       0.0493      0.39  VQ        |         |         |         |
   1+50       0.0520      0.39  VQ        |         |         |         |
   1+55       0.0549      0.43  VQ        |         |         |         |
   2+ 0       0.0582      0.47  VQ        |         |         |         |
   2+ 5       0.0615      0.49  VQ        |         |         |         |
   2+10       0.0650      0.50  VQ        |         |         |         |
   2+15       0.0685      0.51  |VQ       |         |         |         |
   2+20       0.0720      0.51  |VQ       |         |         |         |
```

2+25	0.0755	0.51	VQ			
2+30	0.0790	0.51	VQ			
2+35	0.0826	0.52	VQ			
2+40	0.0864	0.55	VQ			
2+45	0.0905	0.60	VQ			
2+50	0.0948	0.62	VQ			
2+55	0.0991	0.63	VQ			
3+ 0	0.1035	0.63	VQ			
3+ 5	0.1079	0.64	VQ			
3+10	0.1123	0.64	VQ			
3+15	0.1167	0.64	VQ			
3+20	0.1212	0.64	VQ			
3+25	0.1256	0.64	VQ			
3+30	0.1300	0.64	VQ			
3+35	0.1345	0.64	Q			
3+40	0.1389	0.64	Q			
3+45	0.1433	0.64	Q			
3+50	0.1478	0.65	Q			
3+55	0.1525	0.68	Q			
4+ 0	0.1575	0.73	Q			
4+ 5	0.1627	0.75	Q			
4+10	0.1679	0.76	VQ			
4+15	0.1731	0.76	VQ			
4+20	0.1785	0.77	VQ			
4+25	0.1840	0.81	VQ			
4+30	0.1899	0.86	VQ			
4+35	0.1959	0.87	VQ			
4+40	0.2020	0.88	Q			
4+45	0.2082	0.89	Q			
4+50	0.2144	0.90	Q			
4+55	0.2208	0.94	Q			
5+ 0	0.2276	0.98	Q			
5+ 5	0.2344	0.99	Q			
5+10	0.2409	0.94	Q			
5+15	0.2467	0.85	Q			
5+20	0.2524	0.82	Q			
5+25	0.2582	0.84	Q			
5+30	0.2642	0.87	Q			
5+35	0.2703	0.89	QV			
5+40	0.2767	0.93	QV			
5+45	0.2835	0.98	QV			
5+50	0.2904	1.00	Q			
5+55	0.2974	1.01	Q			
6+ 0	0.3044	1.02	Q			
6+ 5	0.3115	1.03	Q			
6+10	0.3188	1.06	Q			
6+15	0.3265	1.11	Q			
6+20	0.3343	1.13	QV			
6+25	0.3422	1.14	QV			
6+30	0.3501	1.15	QV			
6+35	0.3581	1.16	QV			
6+40	0.3663	1.19	QV			
6+45	0.3748	1.24	QV			
6+50	0.3835	1.26	Q			
6+55	0.3923	1.27	Q			
7+ 0	0.4011	1.28	QV			
7+ 5	0.4099	1.28	QV			
7+10	0.4187	1.28	QV			
7+15	0.4276	1.29	QV			
7+20	0.4365	1.29	QV			
7+25	0.4456	1.32	QV			
7+30	0.4551	1.37	QV			
7+35	0.4647	1.40	QV			
7+40	0.4746	1.44	Q V			
7+45	0.4849	1.49	Q V			
7+50	0.4954	1.52	QV			
7+55	0.5061	1.56	QV			
8+ 0	0.5173	1.62	QV			
8+ 5	0.5287	1.65	QV			
8+10	0.5406	1.73	Q V			
8+15	0.5532	1.83	QV			
8+20	0.5661	1.87	QV			
8+25	0.5792	1.90	QV			
8+30	0.5923	1.91	QV			
8+35	0.6056	1.93	Q V			





```
   21+10       2.5870      0.31  |Q        |         |         |       V |
   21+15       2.5894      0.35  |Q        |         |         |       V |
   21+20       2.5919      0.36  |Q        |         |         |       V |
   21+25       2.5942      0.34  |Q        |         |         |        V|
   21+30       2.5962      0.29  |Q        |         |         |        V|
   21+35       2.5982      0.29  |Q        |         |         |        V|
   21+40       2.6003      0.31  |Q        |         |         |        V|
   21+45       2.6027      0.35  |Q        |         |         |        V|
   21+50       2.6052      0.36  |Q        |         |         |        V|
   21+55       2.6075      0.33  |Q        |         |         |        V|
   22+ 0       2.6095      0.29  |Q        |         |         |        V|
   22+ 5       2.6115      0.29  |Q        |         |         |        V|
   22+10       2.6136      0.31  |Q        |         |         |        V|
   22+15       2.6160      0.35  |Q        |         |         |        V|
   22+20       2.6185      0.36  |Q        |         |         |        V|
   22+25       2.6208      0.33  |Q        |         |         |        V|
   22+30       2.6228      0.29  |Q        |         |         |        V|
   22+35       2.6247      0.28  |Q        |         |         |        V|
   22+40       2.6266      0.27  |Q        |         |         |        V|
   22+45       2.6284      0.26  |Q        |         |         |        V|
   22+50       2.6302      0.26  |Q        |         |         |        V|
   22+55       2.6320      0.26  |Q        |         |         |        V|
   23+ 0       2.6338      0.26  |Q        |         |         |        V|
   23+ 5       2.6356      0.26  |Q        |         |         |        V|
   23+10       2.6373      0.26  |Q        |         |         |        V|
   23+15       2.6391      0.26  |Q        |         |         |        V|
   23+20       2.6409      0.26  |Q        |         |         |        V|
   23+25       2.6427      0.26  |Q        |         |         |        V|
   23+30       2.6444      0.26  |Q        |         |         |        V|
   23+35       2.6462      0.26  |Q        |         |         |        V|
   23+40       2.6480      0.26  |Q        |         |         |        V|
   23+45       2.6498      0.26  |Q        |         |         |        V|
   23+50       2.6515      0.26  |Q        |         |         |        V|
   23+55       2.6533      0.26  |Q        |         |         |        V|
   24+ 0       2.6551      0.26  |Q        |         |         |        V|
   24+ 5       2.6568      0.25  Q         |         |         |        V|
   24+10       2.6580      0.18  Q         |         |         |        V|
   24+15       2.6586      0.09  Q         |         |         |        V|
   24+20       2.6590      0.05  Q         |         |         |        V|
   24+25       2.6592      0.03  Q         |         |         |        V|
   24+30       2.6593      0.02  Q         |         |         |        V|
   24+35       2.6594      0.01  Q         |         |         |        V|
   24+40       2.6594      0.01  Q         |         |         |        V|
   24+45       2.6594      0.00  Q         |         |         |        V|
   24+50       2.6594      0.00  Q         |         |         |        V|
   24+55       2.6594      0.00  Q         |         |         |        V|
   25+ 0       2.6594      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

EXISTING CONDITION
5-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

5-YEAR, 1-HOUR STORM

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
               Study date  07/20/21 File: EX5YRA15.out

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------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           0.55                 58.52

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           1.25                133.00

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.550(In)
Area Averaged 100-Year Rainfall =    1.250(In)

Point rain (area averaged) =    0.714(In)
Areal adjustment factor =   99.90 %
Adjusted average point rain =    0.713(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

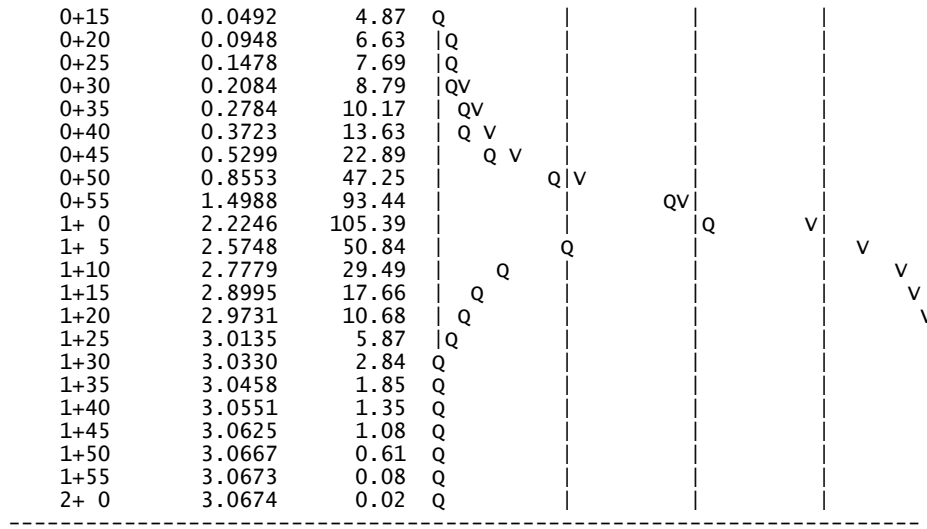
```
      77.3  59.8      0.472     0.120        0.421       1.000      0.421
                                                        Sum (F) =   0.421
      Area averaged mean soil loss (F) (In/Hr) =  0.421
      Minimum soil loss rate ((In/Hr)) =  0.211
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.800
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         53.985          4.779             5.124
          2   0.167        107.970         24.937            26.740
          3   0.250        161.956         36.901            39.569
          4   0.333        215.941         13.574            14.556
          5   0.417        269.926          7.855             8.423
          6   0.500        323.911          5.019             5.382
          7   0.583        377.896          3.120             3.345
          8   0.667        431.882          1.702             1.825
          9   0.750        485.867          0.696             0.747
         10   0.833        539.852          0.487             0.522
         11   0.917        593.837          0.367             0.393
         12   1.000        647.822          0.345             0.370
         13   1.083        701.808          0.218             0.234
                                  Sum = 100.000    Sum=     107.231
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.291       (  0.421)       0.233        0.058
   2   0.17     4.70      0.402       (  0.421)       0.322        0.080
   3   0.25     4.70      0.402       (  0.421)       0.322        0.080
   4   0.33     5.10      0.437       (  0.421)       0.349        0.087
   5   0.42     5.80      0.496       (  0.421)       0.397        0.099
   6   0.50     5.90      0.505       (  0.421)       0.404        0.101
   7   0.58     7.10      0.608          0.421    (  0.486)        0.186
   8   0.67     8.70      0.745          0.421    (  0.596)        0.323
   9   0.75    13.20      1.130          0.421    (  0.904)        0.708
  10   0.83    29.70      2.542          0.421    (  2.034)        2.121
  11   0.92     7.70      0.659          0.421    (  0.527)        0.238
  12   1.00     4.00      0.342       (  0.421)       0.274        0.068
              (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     4.2
        Flood volume = Effective rainfall      0.35(In)
         times area     106.4(Ac.)/[(In)/(Ft.)] =       3.1(Ac.Ft)
        Total soil loss =      0.37(In)
        Total soil loss =     3.257(Ac.Ft)
        Total rainfall =      0.71(In)
        Flood volume =      133616.5 Cubic Feet
        Total soil loss =      141870.6 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =    105.388(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ------------------------------------------------------------------------
    0+ 5       0.0021      0.30  Q         |         |         |         |
    0+10       0.0156      1.97  Q         |         |         |         |
```


0+15 0.0492 4.87
0+20 0.0948 6.63
0+25 0.1478 7.69
0+30 0.2084 8.79
0+35 0.2784 10.17
0+40 0.3723 13.63
0+45 0.5299 22.89
0+50 0.8553 47.25
0+55 1.4988 93.44
1+ 0 2.2246 105.39
1+ 5 2.5748 50.84
1+10 2.7779 29.49
1+15 2.8995 17.66
1+20 2.9731 10.68
1+25 3.0135 5.87
1+30 3.0330 2.84
1+35 3.0458 1.85
1+40 3.0551 1.35
1+45 3.0625 1.08
1+50 3.0667 0.61
1+55 3.0673 0.08
2+ 0 3.0674 0.02

5-YEAR, 3-HOUR STORM

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  07/20/21 File: EX5YRA35.out

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           0.95                101.08

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           2.05                218.12

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    0.950(In)
Area Averaged 100-Year Rainfall =    2.050(In)

Point rain (area averaged) =    1.208(In)
Areal adjustment factor =   99.95 %
Adjusted average point rain =    1.207(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.188	(0.421)	0.151	0.038
2	0.17	1.30	0.188	(0.421)	0.151	0.038
3	0.25	1.10	0.159	(0.421)	0.127	0.032
4	0.33	1.50	0.217	(0.421)	0.174	0.043
5	0.42	1.50	0.217	(0.421)	0.174	0.043
6	0.50	1.80	0.261	(0.421)	0.209	0.052
7	0.58	1.50	0.217	(0.421)	0.174	0.043
8	0.67	1.80	0.261	(0.421)	0.209	0.052
9	0.75	1.80	0.261	(0.421)	0.209	0.052
10	0.83	1.50	0.217	(0.421)	0.174	0.043
11	0.92	1.60	0.232	(0.421)	0.185	0.046
12	1.00	1.80	0.261	(0.421)	0.209	0.052
13	1.08	2.20	0.319	(0.421)	0.255	0.064
14	1.17	2.20	0.319	(0.421)	0.255	0.064
15	1.25	2.20	0.319	(0.421)	0.255	0.064
16	1.33	2.00	0.290	(0.421)	0.232	0.058
17	1.42	2.60	0.377	(0.421)	0.301	0.075
18	1.50	2.70	0.391	(0.421)	0.313	0.078
19	1.58	2.40	0.348	(0.421)	0.278	0.070
20	1.67	2.70	0.391	(0.421)	0.313	0.078
21	1.75	3.30	0.478	(0.421)	0.382	0.096
22	1.83	3.10	0.449	(0.421)	0.359	0.090
23	1.92	2.90	0.420	(0.421)	0.336	0.084
24	2.00	3.00	0.435	(0.421)	0.348	0.087
25	2.08	3.10	0.449	(0.421)	0.359	0.090
26	2.17	4.20	0.608	0.421	(0.487)	0.187
27	2.25	5.00	0.724	0.421	(0.579)	0.303
28	2.33	3.50	0.507	(0.421)	0.406	0.101
29	2.42	6.80	0.985	0.421	(0.788)	0.564
30	2.50	7.30	1.057	0.421	(0.846)	0.636
31	2.58	8.20	1.188	0.421	(0.950)	0.766
32	2.67	5.90	0.855	0.421	(0.684)	0.433
33	2.75	2.00	0.290	(0.421)	0.232	0.058
34	2.83	1.80	0.261	(0.421)	0.209	0.052
35	2.92	1.80	0.261	(0.421)	0.209	0.052
36	3.00	0.60	0.087	(0.421)	0.070	0.017
		(Loss Rate Not Used)				

```
   Sum =     100.0                                    Sum =     4.7
      Flood volume = Effective rainfall      0.39(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       3.5(Ac.Ft)
      Total soil loss =      0.82(In)
      Total soil loss =     7.228(Ac.Ft)
      Total rainfall =      1.21(In)
      Flood volume =      151350.7 Cubic Feet
      Total soil loss =      314864.0 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     59.582(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0013      0.19  Q         |         |         |         |
  0+10       0.0096      1.20  Q         |         |         |         |
  0+15       0.0279      2.66  VQ        |         |         |         |
  0+20       0.0494      3.11  V Q       |         |         |         |
  0+25       0.0736      3.51  V Q       |         |         |         |
  0+30       0.1021      4.13  |VQ       |         |         |         |
  0+35       0.1335      4.57  |V Q      |         |         |         |
  0+40       0.1670      4.86  |V Q      |         |         |         |
  0+45       0.2010      4.95  | VQ      |         |         |         |
  0+50       0.2371      5.24  | VQ      |         |         |         |
  0+55       0.2726      5.15  |  Q      |         |         |         |
  1+ 0       0.3070      4.99  |  Q      |         |         |         |
  1+ 5       0.3431      5.24  |  Q      |         |         |         |
  1+10       0.3829      5.77  |  QV     |         |         |         |
  1+15       0.4263      6.31  |   Q     |         |         |         |
  1+20       0.4710      6.49  |   QV    |         |         |         |
  1+25       0.5162      6.55  |   QV    |         |         |         |
  1+30       0.5636      6.89  |   Q V   |         |         |         |
  1+35       0.6157      7.57  |    Q V  |         |         |         |
  1+40       0.6689      7.73  |    Q V  |         |         |         |
  1+45       0.7232      7.87  |    Q  V |         |         |         |
  1+50       0.7826      8.63  |    Q   V|         |         |         |
  1+55       0.8464      9.26  |     Q  V|         |         |         |
  2+ 0       0.9098      9.21  |     Q   V         |         |         |
  2+ 5       0.9730      9.17  |     Q   |V        |         |         |
  2+10       1.0408      9.84  |     Q   |V        |         |         |
  2+15       1.1316     13.19  |       Q |  V      |         |         |
  2+20       1.2636     19.16  |         | Q V     |         |         |
  2+25       1.4162     22.17  |         |   Q V   |         |         |
  2+30       1.6191     29.46  |         |       VQ|         |         |
  2+35       1.9562     48.94  |         |         | V       | Q       |
  2+40       2.3665     59.58  |         |         |     V   |        Q|
  2+45       2.7683     58.34  |         |         |       V |V      Q |
  2+50       3.0416     39.69  |         |         |    Q    |   V     |
  2+55       3.1975     22.63  |         |   Q     |         |    V    |
  3+ 0       3.3055     15.69  |         Q         |         |       V |
  3+ 5       3.3780     10.52  |       Q |         |         |       V |
  3+10       3.4194      6.01  |   Q     |         |         |        V|
  3+15       3.4414      3.19  | Q       |         |         |        V|
  3+20       3.4546      1.91  |Q        |         |         |        V|
  3+25       3.4636      1.30  Q         |         |         |        V|
  3+30       3.4692      0.83  Q         |         |         |        V|
  3+35       3.4724      0.46  Q         |         |         |        V|
  3+40       3.4737      0.18  Q         |         |         |        V|
  3+45       3.4741      0.06  Q         |         |         |        V|
  3+50       3.4744      0.04  Q         |         |         |        V|
  3+55       3.4745      0.02  Q         |         |         |        V|
  4+ 0       3.4745      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

5-YEAR, 6-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX5YRA65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.40	148.96

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	3.00	319.20

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.775(In)
Areal adjustment factor = 99.96 %
Adjusted average point rain = 1.774(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

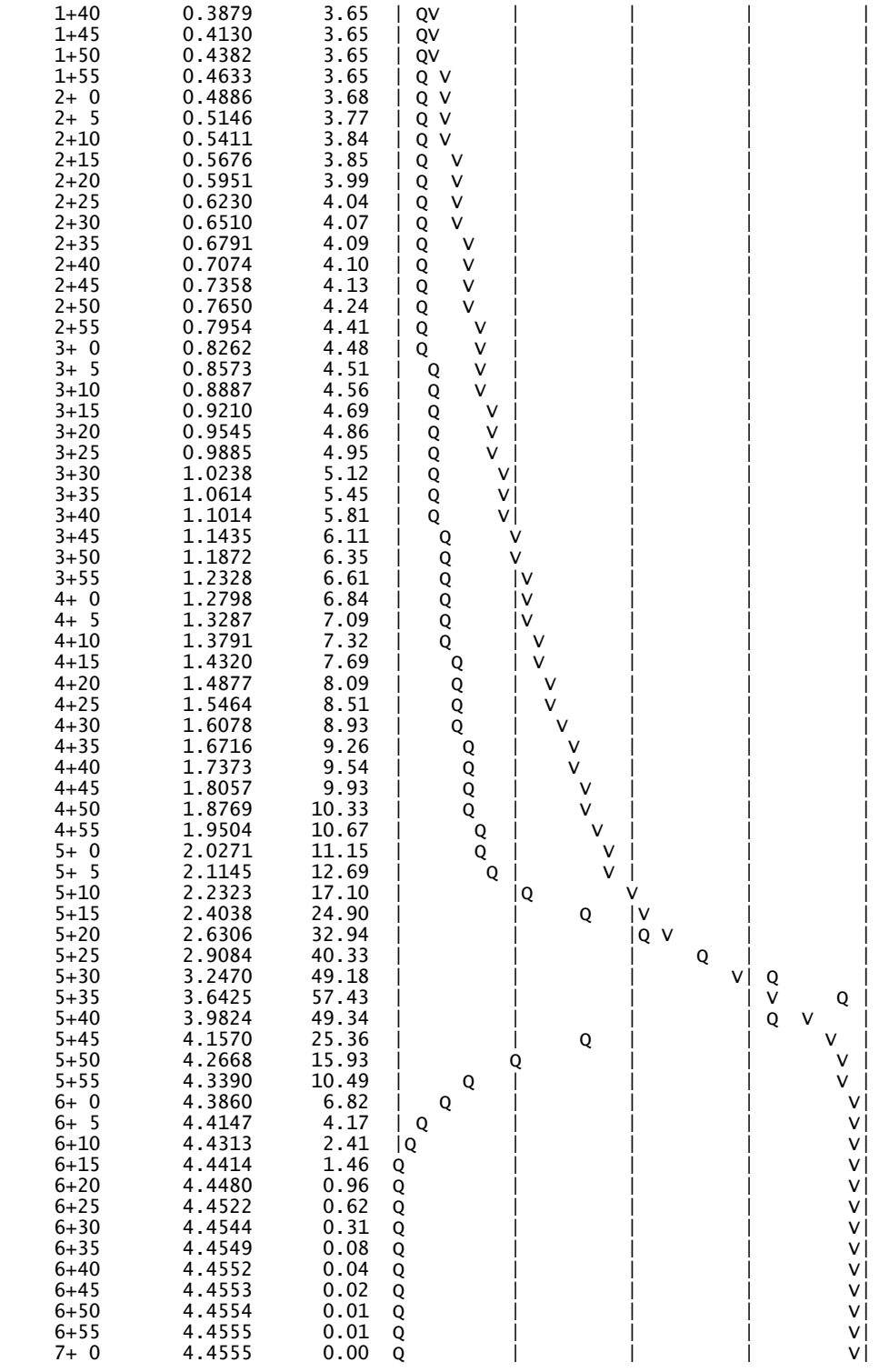
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.106	(0.421)	0.085	0.021
2	0.17	0.60	0.128	(0.421)	0.102	0.026
3	0.25	0.60	0.128	(0.421)	0.102	0.026
4	0.33	0.60	0.128	(0.421)	0.102	0.026
5	0.42	0.60	0.128	(0.421)	0.102	0.026
6	0.50	0.70	0.149	(0.421)	0.119	0.030
7	0.58	0.70	0.149	(0.421)	0.119	0.030
8	0.67	0.70	0.149	(0.421)	0.119	0.030
9	0.75	0.70	0.149	(0.421)	0.119	0.030
10	0.83	0.70	0.149	(0.421)	0.119	0.030
11	0.92	0.70	0.149	(0.421)	0.119	0.030
12	1.00	0.80	0.170	(0.421)	0.136	0.034
13	1.08	0.80	0.170	(0.421)	0.136	0.034
14	1.17	0.80	0.170	(0.421)	0.136	0.034
15	1.25	0.80	0.170	(0.421)	0.136	0.034
16	1.33	0.80	0.170	(0.421)	0.136	0.034
17	1.42	0.80	0.170	(0.421)	0.136	0.034
18	1.50	0.80	0.170	(0.421)	0.136	0.034
19	1.58	0.80	0.170	(0.421)	0.136	0.034
20	1.67	0.80	0.170	(0.421)	0.136	0.034
21	1.75	0.80	0.170	(0.421)	0.136	0.034
22	1.83	0.80	0.170	(0.421)	0.136	0.034
23	1.92	0.80	0.170	(0.421)	0.136	0.034
24	2.00	0.90	0.192	(0.421)	0.153	0.038
25	2.08	0.80	0.170	(0.421)	0.136	0.034
26	2.17	0.90	0.192	(0.421)	0.153	0.038
27	2.25	0.90	0.192	(0.421)	0.153	0.038
28	2.33	0.90	0.192	(0.421)	0.153	0.038
29	2.42	0.90	0.192	(0.421)	0.153	0.038
30	2.50	0.90	0.192	(0.421)	0.153	0.038
31	2.58	0.90	0.192	(0.421)	0.153	0.038
32	2.67	0.90	0.192	(0.421)	0.153	0.038
33	2.75	1.00	0.213	(0.421)	0.170	0.043
34	2.83	1.00	0.213	(0.421)	0.170	0.043
35	2.92	1.00	0.213	(0.421)	0.170	0.043
36	3.00	1.00	0.213	(0.421)	0.170	0.043
37	3.08	1.00	0.213	(0.421)	0.170	0.043

```
38   3.17     1.10      0.234       (  0.421)       0.187        0.047
39   3.25     1.10      0.234       (  0.421)       0.187        0.047
40   3.33     1.10      0.234       (  0.421)       0.187        0.047
41   3.42     1.20      0.255       (  0.421)       0.204        0.051
42   3.50     1.30      0.277       (  0.421)       0.221        0.055
43   3.58     1.40      0.298       (  0.421)       0.238        0.060
44   3.67     1.40      0.298       (  0.421)       0.238        0.060
45   3.75     1.50      0.319       (  0.421)       0.255        0.064
46   3.83     1.50      0.319       (  0.421)       0.255        0.064
47   3.92     1.60      0.341       (  0.421)       0.273        0.068
48   4.00     1.60      0.341       (  0.421)       0.273        0.068
49   4.08     1.70      0.362       (  0.421)       0.290        0.072
50   4.17     1.80      0.383       (  0.421)       0.307        0.077
51   4.25     1.90      0.404       (  0.421)       0.324        0.081
52   4.33     2.00      0.426       (  0.421)       0.341        0.085
53   4.42     2.10      0.447       (  0.421)       0.358        0.089
54   4.50     2.10      0.447       (  0.421)       0.358        0.089
55   4.58     2.20      0.468       (  0.421)       0.375        0.094
56   4.67     2.30      0.490       (  0.421)       0.392        0.098
57   4.75     2.40      0.511       (  0.421)       0.409        0.102
58   4.83     2.40      0.511       (  0.421)       0.409        0.102
59   4.92     2.50      0.532          0.421    (  0.426)       0.111
60   5.00     2.60      0.554          0.421    (  0.443)       0.132
61   5.08     3.10      0.660          0.421    (  0.528)       0.239
62   5.17     3.60      0.766          0.421    (  0.613)       0.345
63   5.25     3.90      0.830          0.421    (  0.664)       0.409
64   5.33     4.20      0.894          0.421    (  0.715)       0.473
65   5.42     4.70      1.001          0.421    (  0.800)       0.579
66   5.50     5.60      1.192          0.421    (  0.954)       0.771
67   5.58     1.90      0.404       (  0.421)       0.324        0.081
68   5.67     0.90      0.192       (  0.421)       0.153        0.038
69   5.75     0.60      0.128       (  0.421)       0.102        0.026
70   5.83     0.50      0.106       (  0.421)       0.085        0.021
71   5.92     0.30      0.064       (  0.421)       0.051        0.013
72   6.00     0.20      0.043       (  0.421)       0.034        0.009
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =     6.0
      Flood volume = Effective rainfall      0.50(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       4.5(Ac.Ft)
      Total soil loss =      1.27(In)
      Total soil loss =    11.275(Ac.Ft)
      Total rainfall =      1.77(In)
      Flood volume =      194080.7 Cubic Feet
      Total soil loss =      491137.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     57.427(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0008      0.11  Q         |         |         |         |
  0+10       0.0056      0.70  Q         |         |         |         |
  0+15       0.0170      1.66  VQ        |         |         |         |
  0+20       0.0317      2.14  VQ        |         |         |         |
  0+25       0.0481      2.38  VQ        |         |         |         |
  0+30       0.0656      2.55  VQ        |         |         |         |
  0+35       0.0846      2.76  VQ        |         |         |         |
  0+40       0.1051      2.98  VQ        |         |         |         |
  0+45       0.1263      3.07  |VQ       |         |         |         |
  0+50       0.1477      3.12  |VQ       |         |         |         |
  0+55       0.1694      3.15  |VQ       |         |         |         |
  1+ 0       0.1914      3.19  |VQ       |         |         |         |
  1+ 5       0.2143      3.32  |VQ       |         |         |         |
  1+10       0.2384      3.50  | Q       |         |         |         |
  1+15       0.2629      3.56  | Q       |         |         |         |
  1+20       0.2876      3.60  | Q       |         |         |         |
  1+25       0.3126      3.62  | Q       |         |         |         |
  1+30       0.3376      3.64  | QV      |         |         |         |
  1+35       0.3627      3.64  | QV      |         |         |         |
```


1+40 0.3879 3.65
1+45 0.4130 3.65
1+50 0.4382 3.65
1+55 0.4633 3.65
2+ 0 0.4886 3.68
2+ 5 0.5146 3.77
2+10 0.5411 3.84
2+15 0.5676 3.85
2+20 0.5951 3.99
2+25 0.6230 4.04
2+30 0.6510 4.07
2+35 0.6791 4.09
2+40 0.7074 4.10
2+45 0.7358 4.13
2+50 0.7650 4.24
2+55 0.7954 4.41
3+ 0 0.8262 4.48
3+ 5 0.8573 4.51
3+10 0.8887 4.56
3+15 0.9210 4.69
3+20 0.9545 4.86
3+25 0.9885 4.95
3+30 1.0238 5.12
3+35 1.0614 5.45
3+40 1.1014 5.81
3+45 1.1435 6.11
3+50 1.1872 6.35
3+55 1.2328 6.61
4+ 0 1.2798 6.84
4+ 5 1.3287 7.09
4+10 1.3791 7.32
4+15 1.4320 7.69
4+20 1.4877 8.09
4+25 1.5464 8.51
4+30 1.6078 8.93
4+35 1.6716 9.26
4+40 1.7373 9.54
4+45 1.8057 9.93
4+50 1.8769 10.33
4+55 1.9504 10.67
5+ 0 2.0271 11.15
5+ 5 2.1145 12.69
5+10 2.2323 17.10
5+15 2.4038 24.90
5+20 2.6306 32.94
5+25 2.9084 40.33
5+30 3.2470 49.18
5+35 3.6425 57.43
5+40 3.9824 49.34
5+45 4.1570 25.36
5+50 4.2668 15.93
5+55 4.3390 10.49
6+ 0 4.3860 6.82
6+ 5 4.4147 4.17
6+10 4.4313 2.41
6+15 4.4414 1.46
6+20 4.4480 0.96
6+25 4.4522 0.62
6+30 4.4544 0.31
6+35 4.4549 0.08
6+40 4.4552 0.04
6+45 4.4553 0.02
6+50 4.4554 0.01
6+55 4.4555 0.01
7+ 0 4.4555 0.00

5-YEAR, 24-HOUR STORM

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
              Study date  07/20/21 File: EX5YRA245.out

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------------
EXETER AREA A EXISTING CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP
------------------------------------------------------------------------
Drainage Area =     106.40(Ac.)  =      0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =     106.40(Ac.)  =      0.166 Sq. Mi.
Length along longest watercourse =    3950.00(Ft.)
Length along longest watercourse measured to centroid =    1805.00(Ft.)
Length along longest watercourse =      0.748 Mi.
Length along longest watercourse measured to centroid =      0.342 Mi.
Difference in elevation =     162.00(Ft.)
Slope along watercourse =    216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.154 Hr.
Lag time =     9.26 Min.
25% of lag time =     2.32 Min.
40% of lag time =     3.70 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           2.50                266.00

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
      106.40           6.50                691.60

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    2.500(In)
Area Averaged 100-Year Rainfall =    6.500(In)

Point rain (area averaged) =    3.437(In)
Areal adjustment factor =   99.98 %
Adjusted average point rain =    3.436(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
   106.400           77.30         0.120
 Total Area Entered =    106.40(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
```

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	(0.747)	0.022	0.005
2	0.17	0.07	0.027	(0.744)	0.022	0.005
3	0.25	0.07	0.027	(0.741)	0.022	0.005
4	0.33	0.10	0.041	(0.738)	0.033	0.008
5	0.42	0.10	0.041	(0.736)	0.033	0.008
6	0.50	0.10	0.041	(0.733)	0.033	0.008
7	0.58	0.10	0.041	(0.730)	0.033	0.008
8	0.67	0.10	0.041	(0.727)	0.033	0.008
9	0.75	0.10	0.041	(0.724)	0.033	0.008
10	0.83	0.13	0.055	(0.721)	0.044	0.011
11	0.92	0.13	0.055	(0.718)	0.044	0.011
12	1.00	0.13	0.055	(0.716)	0.044	0.011
13	1.08	0.10	0.041	(0.713)	0.033	0.008
14	1.17	0.10	0.041	(0.710)	0.033	0.008
15	1.25	0.10	0.041	(0.707)	0.033	0.008
16	1.33	0.10	0.041	(0.704)	0.033	0.008
17	1.42	0.10	0.041	(0.702)	0.033	0.008
18	1.50	0.10	0.041	(0.699)	0.033	0.008
19	1.58	0.10	0.041	(0.696)	0.033	0.008
20	1.67	0.10	0.041	(0.693)	0.033	0.008
21	1.75	0.10	0.041	(0.690)	0.033	0.008
22	1.83	0.13	0.055	(0.688)	0.044	0.011
23	1.92	0.13	0.055	(0.685)	0.044	0.011
24	2.00	0.13	0.055	(0.682)	0.044	0.011
25	2.08	0.13	0.055	(0.679)	0.044	0.011
26	2.17	0.13	0.055	(0.677)	0.044	0.011
27	2.25	0.13	0.055	(0.674)	0.044	0.011
28	2.33	0.13	0.055	(0.671)	0.044	0.011
29	2.42	0.13	0.055	(0.668)	0.044	0.011
30	2.50	0.13	0.055	(0.666)	0.044	0.011
31	2.58	0.17	0.069	(0.663)	0.055	0.014
32	2.67	0.17	0.069	(0.660)	0.055	0.014
33	2.75	0.17	0.069	(0.657)	0.055	0.014
34	2.83	0.17	0.069	(0.655)	0.055	0.014
35	2.92	0.17	0.069	(0.652)	0.055	0.014
36	3.00	0.17	0.069	(0.649)	0.055	0.014
37	3.08	0.17	0.069	(0.647)	0.055	0.014

38	3.17	0.17	0.069	(0.644)	0.055	0.014
39	3.25	0.17	0.069	(0.641)	0.055	0.014
40	3.33	0.17	0.069	(0.639)	0.055	0.014
41	3.42	0.17	0.069	(0.636)	0.055	0.014
42	3.50	0.17	0.069	(0.633)	0.055	0.014
43	3.58	0.17	0.069	(0.631)	0.055	0.014
44	3.67	0.17	0.069	(0.628)	0.055	0.014
45	3.75	0.17	0.069	(0.625)	0.055	0.014
46	3.83	0.20	0.082	(0.623)	0.066	0.016
47	3.92	0.20	0.082	(0.620)	0.066	0.016
48	4.00	0.20	0.082	(0.617)	0.066	0.016
49	4.08	0.20	0.082	(0.615)	0.066	0.016
50	4.17	0.20	0.082	(0.612)	0.066	0.016
51	4.25	0.20	0.082	(0.610)	0.066	0.016
52	4.33	0.23	0.096	(0.607)	0.077	0.019
53	4.42	0.23	0.096	(0.604)	0.077	0.019
54	4.50	0.23	0.096	(0.602)	0.077	0.019
55	4.58	0.23	0.096	(0.599)	0.077	0.019
56	4.67	0.23	0.096	(0.597)	0.077	0.019
57	4.75	0.23	0.096	(0.594)	0.077	0.019
58	4.83	0.27	0.110	(0.592)	0.088	0.022
59	4.92	0.27	0.110	(0.589)	0.088	0.022
60	5.00	0.27	0.110	(0.586)	0.088	0.022
61	5.08	0.20	0.082	(0.584)	0.066	0.016
62	5.17	0.20	0.082	(0.581)	0.066	0.016
63	5.25	0.20	0.082	(0.579)	0.066	0.016
64	5.33	0.23	0.096	(0.576)	0.077	0.019
65	5.42	0.23	0.096	(0.574)	0.077	0.019
66	5.50	0.23	0.096	(0.571)	0.077	0.019
67	5.58	0.27	0.110	(0.569)	0.088	0.022
68	5.67	0.27	0.110	(0.566)	0.088	0.022
69	5.75	0.27	0.110	(0.564)	0.088	0.022
70	5.83	0.27	0.110	(0.561)	0.088	0.022
71	5.92	0.27	0.110	(0.559)	0.088	0.022
72	6.00	0.27	0.110	(0.556)	0.088	0.022
73	6.08	0.30	0.124	(0.554)	0.099	0.025
74	6.17	0.30	0.124	(0.551)	0.099	0.025
75	6.25	0.30	0.124	(0.549)	0.099	0.025
76	6.33	0.30	0.124	(0.546)	0.099	0.025
77	6.42	0.30	0.124	(0.544)	0.099	0.025
78	6.50	0.30	0.124	(0.542)	0.099	0.025
79	6.58	0.33	0.137	(0.539)	0.110	0.027
80	6.67	0.33	0.137	(0.537)	0.110	0.027
81	6.75	0.33	0.137	(0.534)	0.110	0.027
82	6.83	0.33	0.137	(0.532)	0.110	0.027
83	6.92	0.33	0.137	(0.529)	0.110	0.027
84	7.00	0.33	0.137	(0.527)	0.110	0.027
85	7.08	0.33	0.137	(0.525)	0.110	0.027
86	7.17	0.33	0.137	(0.522)	0.110	0.027
87	7.25	0.33	0.137	(0.520)	0.110	0.027
88	7.33	0.37	0.151	(0.518)	0.121	0.030
89	7.42	0.37	0.151	(0.515)	0.121	0.030
90	7.50	0.37	0.151	(0.513)	0.121	0.030
91	7.58	0.40	0.165	(0.510)	0.132	0.033
92	7.67	0.40	0.165	(0.508)	0.132	0.033
93	7.75	0.40	0.165	(0.506)	0.132	0.033
94	7.83	0.43	0.179	(0.503)	0.143	0.036
95	7.92	0.43	0.179	(0.501)	0.143	0.036
96	8.00	0.43	0.179	(0.499)	0.143	0.036
97	8.08	0.50	0.206	(0.496)	0.165	0.041
98	8.17	0.50	0.206	(0.494)	0.165	0.041
99	8.25	0.50	0.206	(0.492)	0.165	0.041
100	8.33	0.50	0.206	(0.490)	0.165	0.041
101	8.42	0.50	0.206	(0.487)	0.165	0.041
102	8.50	0.50	0.206	(0.485)	0.165	0.041
103	8.58	0.53	0.220	(0.483)	0.176	0.044
104	8.67	0.53	0.220	(0.480)	0.176	0.044
105	8.75	0.53	0.220	(0.478)	0.176	0.044
106	8.83	0.57	0.234	(0.476)	0.187	0.047
107	8.92	0.57	0.234	(0.474)	0.187	0.047
108	9.00	0.57	0.234	(0.471)	0.187	0.047
109	9.08	0.63	0.261	(0.469)	0.209	0.052
110	9.17	0.63	0.261	(0.467)	0.209	0.052
111	9.25	0.63	0.261	(0.465)	0.209	0.052
112	9.33	0.67	0.275	(0.462)	0.220	0.055

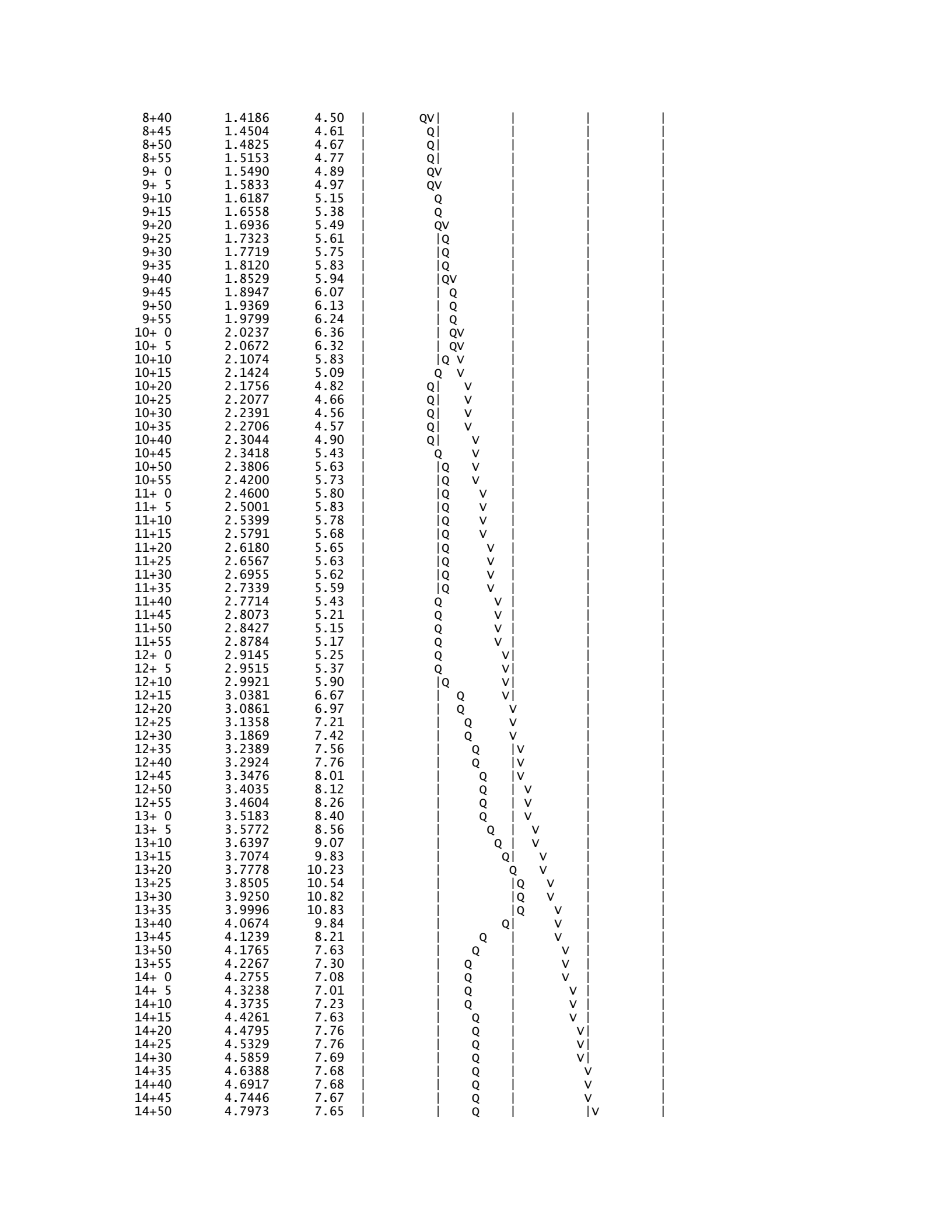
113	9.42	0.67	0.275	(0.460)	0.220	0.055
114	9.50	0.67	0.275	(0.458)	0.220	0.055
115	9.58	0.70	0.289	(0.456)	0.231	0.058
116	9.67	0.70	0.289	(0.454)	0.231	0.058
117	9.75	0.70	0.289	(0.452)	0.231	0.058
118	9.83	0.73	0.302	(0.449)	0.242	0.060
119	9.92	0.73	0.302	(0.447)	0.242	0.060
120	10.00	0.73	0.302	(0.445)	0.242	0.060
121	10.08	0.50	0.206	(0.443)	0.165	0.041
122	10.17	0.50	0.206	(0.441)	0.165	0.041
123	10.25	0.50	0.206	(0.439)	0.165	0.041
124	10.33	0.50	0.206	(0.436)	0.165	0.041
125	10.42	0.50	0.206	(0.434)	0.165	0.041
126	10.50	0.50	0.206	(0.432)	0.165	0.041
127	10.58	0.67	0.275	(0.430)	0.220	0.055
128	10.67	0.67	0.275	(0.428)	0.220	0.055
129	10.75	0.67	0.275	(0.426)	0.220	0.055
130	10.83	0.67	0.275	(0.424)	0.220	0.055
131	10.92	0.67	0.275	(0.422)	0.220	0.055
132	11.00	0.67	0.275	(0.420)	0.220	0.055
133	11.08	0.63	0.261	(0.418)	0.209	0.052
134	11.17	0.63	0.261	(0.416)	0.209	0.052
135	11.25	0.63	0.261	(0.413)	0.209	0.052
136	11.33	0.63	0.261	(0.411)	0.209	0.052
137	11.42	0.63	0.261	(0.409)	0.209	0.052
138	11.50	0.63	0.261	(0.407)	0.209	0.052
139	11.58	0.57	0.234	(0.405)	0.187	0.047
140	11.67	0.57	0.234	(0.403)	0.187	0.047
141	11.75	0.57	0.234	(0.401)	0.187	0.047
142	11.83	0.60	0.247	(0.399)	0.198	0.049
143	11.92	0.60	0.247	(0.397)	0.198	0.049
144	12.00	0.60	0.247	(0.395)	0.198	0.049
145	12.08	0.83	0.344	(0.393)	0.275	0.069
146	12.17	0.83	0.344	(0.391)	0.275	0.069
147	12.25	0.83	0.344	(0.389)	0.275	0.069
148	12.33	0.87	0.357	(0.388)	0.286	0.071
149	12.42	0.87	0.357	(0.386)	0.286	0.071
150	12.50	0.87	0.357	(0.384)	0.286	0.071
151	12.58	0.93	0.385	(0.382)	0.308	0.077
152	12.67	0.93	0.385	(0.380)	0.308	0.077
153	12.75	0.93	0.385	(0.378)	0.308	0.077
154	12.83	0.97	0.399	(0.376)	0.319	0.080
155	12.92	0.97	0.399	(0.374)	0.319	0.080
156	13.00	0.97	0.399	(0.372)	0.319	0.080
157	13.08	1.13	0.467	0.370	(0.374)	0.097
158	13.17	1.13	0.467	0.368	(0.374)	0.099
159	13.25	1.13	0.467	0.367	(0.374)	0.101
160	13.33	1.13	0.467	0.365	(0.374)	0.103
161	13.42	1.13	0.467	0.363	(0.374)	0.105
162	13.50	1.13	0.467	0.361	(0.374)	0.106
163	13.58	0.77	0.316	(0.359)	0.253	0.063
164	13.67	0.77	0.316	(0.357)	0.253	0.063
165	13.75	0.77	0.316	(0.355)	0.253	0.063
166	13.83	0.77	0.316	(0.354)	0.253	0.063
167	13.92	0.77	0.316	(0.352)	0.253	0.063
168	14.00	0.77	0.316	(0.350)	0.253	0.063
169	14.08	0.90	0.371	(0.348)	0.297	0.074
170	14.17	0.90	0.371	(0.346)	0.297	0.074
171	14.25	0.90	0.371	(0.345)	0.297	0.074
172	14.33	0.87	0.357	(0.343)	0.286	0.071
173	14.42	0.87	0.357	(0.341)	0.286	0.071
174	14.50	0.87	0.357	(0.339)	0.286	0.071
175	14.58	0.87	0.357	(0.338)	0.286	0.071
176	14.67	0.87	0.357	(0.336)	0.286	0.071
177	14.75	0.87	0.357	(0.334)	0.286	0.071
178	14.83	0.83	0.344	(0.333)	0.275	0.069
179	14.92	0.83	0.344	(0.331)	0.275	0.069
180	15.00	0.83	0.344	(0.329)	0.275	0.069
181	15.08	0.80	0.330	(0.327)	0.264	0.066
182	15.17	0.80	0.330	(0.326)	0.264	0.066
183	15.25	0.80	0.330	(0.324)	0.264	0.066
184	15.33	0.77	0.316	(0.322)	0.253	0.063
185	15.42	0.77	0.316	(0.321)	0.253	0.063
186	15.50	0.77	0.316	(0.319)	0.253	0.063
187	15.58	0.63	0.261	(0.318)	0.209	0.052

188	15.67	0.63	0.261	(0.316)	0.209	0.052
189	15.75	0.63	0.261	(0.314)	0.209	0.052
190	15.83	0.63	0.261	(0.313)	0.209	0.052
191	15.92	0.63	0.261	(0.311)	0.209	0.052
192	16.00	0.63	0.261	(0.309)	0.209	0.052
193	16.08	0.13	0.055	(0.308)	0.044	0.011
194	16.17	0.13	0.055	(0.306)	0.044	0.011
195	16.25	0.13	0.055	(0.305)	0.044	0.011
196	16.33	0.13	0.055	(0.303)	0.044	0.011
197	16.42	0.13	0.055	(0.302)	0.044	0.011
198	16.50	0.13	0.055	(0.300)	0.044	0.011
199	16.58	0.10	0.041	(0.299)	0.033	0.008
200	16.67	0.10	0.041	(0.297)	0.033	0.008
201	16.75	0.10	0.041	(0.296)	0.033	0.008
202	16.83	0.10	0.041	(0.294)	0.033	0.008
203	16.92	0.10	0.041	(0.293)	0.033	0.008
204	17.00	0.10	0.041	(0.291)	0.033	0.008
205	17.08	0.17	0.069	(0.290)	0.055	0.014
206	17.17	0.17	0.069	(0.288)	0.055	0.014
207	17.25	0.17	0.069	(0.287)	0.055	0.014
208	17.33	0.17	0.069	(0.285)	0.055	0.014
209	17.42	0.17	0.069	(0.284)	0.055	0.014
210	17.50	0.17	0.069	(0.282)	0.055	0.014
211	17.58	0.17	0.069	(0.281)	0.055	0.014
212	17.67	0.17	0.069	(0.280)	0.055	0.014
213	17.75	0.17	0.069	(0.278)	0.055	0.014
214	17.83	0.13	0.055	(0.277)	0.044	0.011
215	17.92	0.13	0.055	(0.275)	0.044	0.011
216	18.00	0.13	0.055	(0.274)	0.044	0.011
217	18.08	0.13	0.055	(0.273)	0.044	0.011
218	18.17	0.13	0.055	(0.271)	0.044	0.011
219	18.25	0.13	0.055	(0.270)	0.044	0.011
220	18.33	0.13	0.055	(0.269)	0.044	0.011
221	18.42	0.13	0.055	(0.267)	0.044	0.011
222	18.50	0.13	0.055	(0.266)	0.044	0.011
223	18.58	0.10	0.041	(0.265)	0.033	0.008
224	18.67	0.10	0.041	(0.264)	0.033	0.008
225	18.75	0.10	0.041	(0.262)	0.033	0.008
226	18.83	0.07	0.027	(0.261)	0.022	0.005
227	18.92	0.07	0.027	(0.260)	0.022	0.005
228	19.00	0.07	0.027	(0.259)	0.022	0.005
229	19.08	0.10	0.041	(0.257)	0.033	0.008
230	19.17	0.10	0.041	(0.256)	0.033	0.008
231	19.25	0.10	0.041	(0.255)	0.033	0.008
232	19.33	0.13	0.055	(0.254)	0.044	0.011
233	19.42	0.13	0.055	(0.253)	0.044	0.011
234	19.50	0.13	0.055	(0.251)	0.044	0.011
235	19.58	0.10	0.041	(0.250)	0.033	0.008
236	19.67	0.10	0.041	(0.249)	0.033	0.008
237	19.75	0.10	0.041	(0.248)	0.033	0.008
238	19.83	0.07	0.027	(0.247)	0.022	0.005
239	19.92	0.07	0.027	(0.246)	0.022	0.005
240	20.00	0.07	0.027	(0.245)	0.022	0.005
241	20.08	0.10	0.041	(0.244)	0.033	0.008
242	20.17	0.10	0.041	(0.243)	0.033	0.008
243	20.25	0.10	0.041	(0.242)	0.033	0.008
244	20.33	0.10	0.041	(0.240)	0.033	0.008
245	20.42	0.10	0.041	(0.239)	0.033	0.008
246	20.50	0.10	0.041	(0.238)	0.033	0.008
247	20.58	0.10	0.041	(0.237)	0.033	0.008
248	20.67	0.10	0.041	(0.236)	0.033	0.008
249	20.75	0.10	0.041	(0.235)	0.033	0.008
250	20.83	0.07	0.027	(0.234)	0.022	0.005
251	20.92	0.07	0.027	(0.234)	0.022	0.005
252	21.00	0.07	0.027	(0.233)	0.022	0.005
253	21.08	0.10	0.041	(0.232)	0.033	0.008
254	21.17	0.10	0.041	(0.231)	0.033	0.008
255	21.25	0.10	0.041	(0.230)	0.033	0.008
256	21.33	0.07	0.027	(0.229)	0.022	0.005
257	21.42	0.07	0.027	(0.228)	0.022	0.005
258	21.50	0.07	0.027	(0.227)	0.022	0.005
259	21.58	0.10	0.041	(0.226)	0.033	0.008
260	21.67	0.10	0.041	(0.226)	0.033	0.008
261	21.75	0.10	0.041	(0.225)	0.033	0.008
262	21.83	0.07	0.027	(0.224)	0.022	0.005

```
263  21.92     0.07      0.027       (  0.223)       0.022        0.005
264  22.00     0.07      0.027       (  0.223)       0.022        0.005
265  22.08     0.10      0.041       (  0.222)       0.033        0.008
266  22.17     0.10      0.041       (  0.221)       0.033        0.008
267  22.25     0.10      0.041       (  0.220)       0.033        0.008
268  22.33     0.07      0.027       (  0.220)       0.022        0.005
269  22.42     0.07      0.027       (  0.219)       0.022        0.005
270  22.50     0.07      0.027       (  0.218)       0.022        0.005
271  22.58     0.07      0.027       (  0.218)       0.022        0.005
272  22.67     0.07      0.027       (  0.217)       0.022        0.005
273  22.75     0.07      0.027       (  0.217)       0.022        0.005
274  22.83     0.07      0.027       (  0.216)       0.022        0.005
275  22.92     0.07      0.027       (  0.215)       0.022        0.005
276  23.00     0.07      0.027       (  0.215)       0.022        0.005
277  23.08     0.07      0.027       (  0.214)       0.022        0.005
278  23.17     0.07      0.027       (  0.214)       0.022        0.005
279  23.25     0.07      0.027       (  0.213)       0.022        0.005
280  23.33     0.07      0.027       (  0.213)       0.022        0.005
281  23.42     0.07      0.027       (  0.213)       0.022        0.005
282  23.50     0.07      0.027       (  0.212)       0.022        0.005
283  23.58     0.07      0.027       (  0.212)       0.022        0.005
284  23.67     0.07      0.027       (  0.212)       0.022        0.005
285  23.75     0.07      0.027       (  0.211)       0.022        0.005
286  23.83     0.07      0.027       (  0.211)       0.022        0.005
287  23.92     0.07      0.027       (  0.211)       0.022        0.005
288  24.00     0.07      0.027       (  0.211)       0.022        0.005
              (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     8.3
      Flood volume = Effective rainfall      0.69(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       6.1(Ac.Ft)
      Total soil loss =      2.74(In)
      Total soil loss =    24.337(Ac.Ft)
      Total rainfall =      3.44(In)
      Flood volume =      267027.8 Cubic Feet
      Total soil loss =     1060136.0 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     10.833(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0002      0.03  Q         |         |         |         |
   0+10       0.0014      0.18  Q         |         |         |         |
   0+15       0.0041      0.39  Q         |         |         |         |
   0+20       0.0075      0.49  Q         |         |         |         |
   0+25       0.0116      0.61  VQ        |         |         |         |
   0+30       0.0168      0.75  VQ        |         |         |         |
   0+35       0.0223      0.80  VQ        |         |         |         |
   0+40       0.0281      0.84  VQ        |         |         |         |
   0+45       0.0340      0.86  VQ        |         |         |         |
   0+50       0.0400      0.88  VQ        |         |         |         |
   0+55       0.0467      0.96  VQ        |         |         |         |
   1+ 0       0.0541      1.08  V Q       |         |         |         |
   1+ 5       0.0617      1.10  V Q       |         |         |         |
   1+10       0.0690      1.06  V Q       |         |         |         |
   1+15       0.0756      0.96  VQ        |         |         |         |
   1+20       0.0820      0.93  VQ        |         |         |         |
   1+25       0.0883      0.91  VQ        |         |         |         |
   1+30       0.0945      0.90  VQ        |         |         |         |
   1+35       0.1007      0.89  VQ        |         |         |         |
   1+40       0.1068      0.89  VQ        |         |         |         |
   1+45       0.1129      0.89  VQ        |         |         |         |
   1+50       0.1191      0.90  VQ        |         |         |         |
   1+55       0.1258      0.97  VQ        |         |         |         |
   2+ 0       0.1333      1.08  V Q       |         |         |         |
   2+ 5       0.1410      1.12  V Q       |         |         |         |
   2+10       0.1489      1.14  V Q       |         |         |         |
   2+15       0.1569      1.16  |VQ       |         |         |         |
   2+20       0.1649      1.17  |VQ       |         |         |         |
```

2+25	0.1730	1.17	VQ			
2+30	0.1811	1.18	VQ			
2+35	0.1893	1.19	VQ			
2+40	0.1980	1.27	VQ			
2+45	0.2075	1.38	VQ			
2+50	0.2172	1.42	VQ			
2+55	0.2271	1.44	VQ			
3+ 0	0.2372	1.45	VQ			
3+ 5	0.2472	1.46	VQ			
3+10	0.2573	1.47	VQ			
3+15	0.2675	1.47	VQ			
3+20	0.2776	1.47	VQ			
3+25	0.2878	1.47	VQ			
3+30	0.2979	1.47	VQ			
3+35	0.3081	1.47	Q			
3+40	0.3182	1.47	Q			
3+45	0.3284	1.47	Q			
3+50	0.3386	1.49	Q			
3+55	0.3494	1.56	VQ			
4+ 0	0.3609	1.67	VQ			
4+ 5	0.3727	1.71	VQ			
4+10	0.3846	1.73	VQ			
4+15	0.3967	1.75	VQ			
4+20	0.4089	1.77	VQ			
4+25	0.4216	1.85	VQ			
4+30	0.4351	1.96	VQ			
4+35	0.4489	2.00	V Q			
4+40	0.4629	2.03	VQ			
4+45	0.4770	2.04	VQ			
4+50	0.4912	2.07	VQ			
4+55	0.5060	2.15	VQ			
5+ 0	0.5215	2.26	VQ			
5+ 5	0.5372	2.27	VQ			
5+10	0.5519	2.15	VQ			
5+15	0.5653	1.95	Q			
5+20	0.5784	1.89	Q			
5+25	0.5916	1.92	Q			
5+30	0.6054	2.00	VQ			
5+35	0.6194	2.04	Q			
5+40	0.6341	2.13	Q			
5+45	0.6496	2.25	Q			
5+50	0.6654	2.30	Q			
5+55	0.6814	2.32	Q			
6+ 0	0.6975	2.34	Q			
6+ 5	0.7137	2.36	Q			
6+10	0.7305	2.44	Q			
6+15	0.7481	2.55	VQ			
6+20	0.7659	2.59	VQ			
6+25	0.7840	2.62	Q			
6+30	0.8021	2.63	Q			
6+35	0.8204	2.66	Q			
6+40	0.8392	2.74	Q			
6+45	0.8588	2.85	Q			
6+50	0.8787	2.89	Q			
6+55	0.8988	2.91	Q			
7+ 0	0.9190	2.93	Q			
7+ 5	0.9392	2.94	QV			
7+10	0.9595	2.94	QV			
7+15	0.9797	2.95	QV			
7+20	1.0001	2.96	QV			
7+25	1.0210	3.04	Q			
7+30	1.0427	3.15	Q			
7+35	1.0647	3.20	Q			
7+40	1.0874	3.30	QV			
7+45	1.1110	3.42	QV			
7+50	1.1350	3.48	QV			
7+55	1.1597	3.59	Q			
8+ 0	1.1852	3.71	Q			
8+ 5	1.2113	3.79	Q			
8+10	1.2386	3.97	QV			
8+15	1.2676	4.20	Q			
8+20	1.2971	4.29	Q			
8+25	1.3271	4.35	Q			
8+30	1.3572	4.38	Q			
8+35	1.3876	4.41	QV			



14+55	4.8495	7.58	|	Q	|	V |
15+ 0	4.9009	7.47	|	Q	|	V |
15+ 5	4.9520	7.42	|	Q	|	V |
15+10	5.0025	7.32	|	Q	|	V |
15+15	5.0520	7.20	|	Q	|	V |
15+20	5.1012	7.13	|	Q	|	V |
15+25	5.1496	7.03	|	Q	|	V |
15+30	5.1972	6.91	|	Q	|	V |
15+35	5.2440	6.80	|	Q	|	V |
15+40	5.2886	6.48	|	Q	|	V |
15+45	5.3301	6.02	|	Q	|	V |
15+50	5.3704	5.85	|	Q	|	V |
15+55	5.4100	5.75	|	Q	|	V |
16+ 0	5.4492	5.69	|	Q	|	V |
16+ 5	5.4866	5.44	|	Q	|	V |
16+10	5.5164	4.32	|	Q	|	V |
16+15	5.5348	2.67	|	Q	|	V |
16+20	5.5490	2.07	|	Q	|	V |
16+25	5.5608	1.72	|	Q	|	V |
16+30	5.5711	1.49	| Q	|	|	V |
16+35	5.5803	1.33	| Q	|	|	V |
16+40	5.5884	1.19	| Q	|	|	V |
16+45	5.5956	1.05	| Q	|	|	V |
16+50	5.6024	0.98	|Q	|	|	V |
16+55	5.6089	0.94	|Q	|	|	V |
17+ 0	5.6152	0.91	|Q	|	|	V |
17+ 5	5.6216	0.92	|Q	|	|	V |
17+10	5.6289	1.07	| Q	|	|	V |
17+15	5.6378	1.28	| Q	|	|	V |
17+20	5.6471	1.36	| Q	|	|	V |
17+25	5.6568	1.41	| Q	|	|	V |
17+30	5.6667	1.43	| Q	|	|	V |
17+35	5.6767	1.45	| Q	|	|	V |
17+40	5.6868	1.46	| Q	|	|	V |
17+45	5.6969	1.47	| Q	|	|	V |
17+50	5.7069	1.46	| Q	|	|	V |
17+55	5.7164	1.38	| Q	|	|	V |
18+ 0	5.7252	1.28	| Q	|	|	V |
18+ 5	5.7337	1.24	| Q	|	|	V |
18+10	5.7421	1.21	| Q	|	|	V |
18+15	5.7504	1.20	| Q	|	|	V |
18+20	5.7586	1.19	| Q	|	|	V |
18+25	5.7667	1.19	| Q	|	|	V |
18+30	5.7749	1.18	| Q	|	|	V |
18+35	5.7829	1.17	| Q	|	|	V |
18+40	5.7905	1.09	| Q	|	|	V |
18+45	5.7973	0.98	|Q	|	|	V |
18+50	5.8037	0.93	|Q	|	|	V |
18+55	5.8094	0.83	|Q	|	|	V |
19+ 0	5.8143	0.71	|Q	|	|	V |
19+ 5	5.8189	0.67	|Q	|	|	V |
19+10	5.8239	0.72	|Q	|	|	V |
19+15	5.8294	0.81	|Q	|	|	V |
19+20	5.8353	0.85	|Q	|	|	V |
19+25	5.8418	0.95	|Q	|	|	V |
19+30	5.8492	1.07	| Q	|	|	V |
19+35	5.8567	1.10	| Q	|	|	V |
19+40	5.8640	1.05	| Q	|	|	V |
19+45	5.8706	0.96	|Q	|	|	V |
19+50	5.8769	0.92	|Q	|	|	V |
19+55	5.8826	0.82	|Q	|	|	V |
20+ 0	5.8874	0.70	|Q	|	|	V |
20+ 5	5.8920	0.67	|Q	|	|	V |
20+10	5.8970	0.72	|Q	|	|	V |
20+15	5.9026	0.81	|Q	|	|	V |
20+20	5.9084	0.84	|Q	|	|	V |
20+25	5.9143	0.86	|Q	|	|	V |
20+30	5.9202	0.87	|Q	|	|	V |
20+35	5.9263	0.88	|Q	|	|	V |
20+40	5.9323	0.88	|Q	|	|	V |
20+45	5.9384	0.88	|Q	|	|	V |
20+50	5.9444	0.87	|Q	|	|	V |
20+55	5.9499	0.80	|Q	|	|	V |
21+ 0	5.9546	0.69	|Q	|	|	V |
21+ 5	5.9592	0.66	|Q	|	|	V |

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  21+10       5.9641      0.71  |Q        |         |         |       V |
  21+15       5.9696      0.81  |Q        |         |         |       V |
  21+20       5.9753      0.82  |Q        |         |         |       V |
  21+25       5.9806      0.77  |Q        |         |         |        V|
  21+30       5.9852      0.67  |Q        |         |         |        V|
  21+35       5.9897      0.65  |Q        |         |         |        V|
  21+40       5.9946      0.71  |Q        |         |         |        V|
  21+45       6.0001      0.80  |Q        |         |         |        V|
  21+50       6.0058      0.82  |Q        |         |         |        V|
  21+55       6.0111      0.77  |Q        |         |         |        V|
  22+ 0       6.0157      0.67  |Q        |         |         |        V|
  22+ 5       6.0202      0.65  |Q        |         |         |        V|
  22+10       6.0251      0.71  |Q        |         |         |        V|
  22+15       6.0306      0.80  |Q        |         |         |        V|
  22+20       6.0362      0.82  |Q        |         |         |        V|
  22+25       6.0415      0.77  |Q        |         |         |        V|
  22+30       6.0462      0.67  |Q        |         |         |        V|
  22+35       6.0506      0.64  |Q        |         |         |        V|
  22+40       6.0548      0.62  |Q        |         |         |        V|
  22+45       6.0590      0.61  |Q        |         |         |        V|
  22+50       6.0631      0.60  |Q        |         |         |        V|
  22+55       6.0672      0.59  |Q        |         |         |        V|
  23+ 0       6.0713      0.59  |Q        |         |         |        V|
  23+ 5       6.0754      0.59  |Q        |         |         |        V|
  23+10       6.0795      0.59  |Q        |         |         |        V|
  23+15       6.0835      0.59  |Q        |         |         |        V|
  23+20       6.0876      0.59  |Q        |         |         |        V|
  23+25       6.0917      0.59  |Q        |         |         |        V|
  23+30       6.0957      0.59  |Q        |         |         |        V|
  23+35       6.0998      0.59  |Q        |         |         |        V|
  23+40       6.1038      0.59  |Q        |         |         |        V|
  23+45       6.1079      0.59  |Q        |         |         |        V|
  23+50       6.1120      0.59  |Q        |         |         |        V|
  23+55       6.1160      0.59  |Q        |         |         |        V|
  24+ 0       6.1201      0.59  |Q        |         |         |        V|
  24+ 5       6.1240      0.56  |Q        |         |         |        V|
  24+10       6.1268      0.41  Q         |         |         |        V|
  24+15       6.1282      0.20  Q         |         |         |        V|
  24+20       6.1290      0.12  Q         |         |         |        V|
  24+25       6.1295      0.07  Q         |         |         |        V|
  24+30       6.1297      0.04  Q         |         |         |        V|
  24+35       6.1299      0.02  Q         |         |         |        V|
  24+40       6.1300      0.01  Q         |         |         |        V|
  24+45       6.1300      0.01  Q         |         |         |        V|
  24+50       6.1301      0.01  Q         |         |         |        V|
  24+55       6.1301      0.00  Q         |         |         |        V|
  25+ 0       6.1301      0.00  Q         |         |         |         V
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EXISTING CONDITION
10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

10-YEAR, 1-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRA110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.55	58.52

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.25	133.00

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.838(In)
Areal adjustment factor = 99.90 %
Adjusted average point rain = 0.837(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

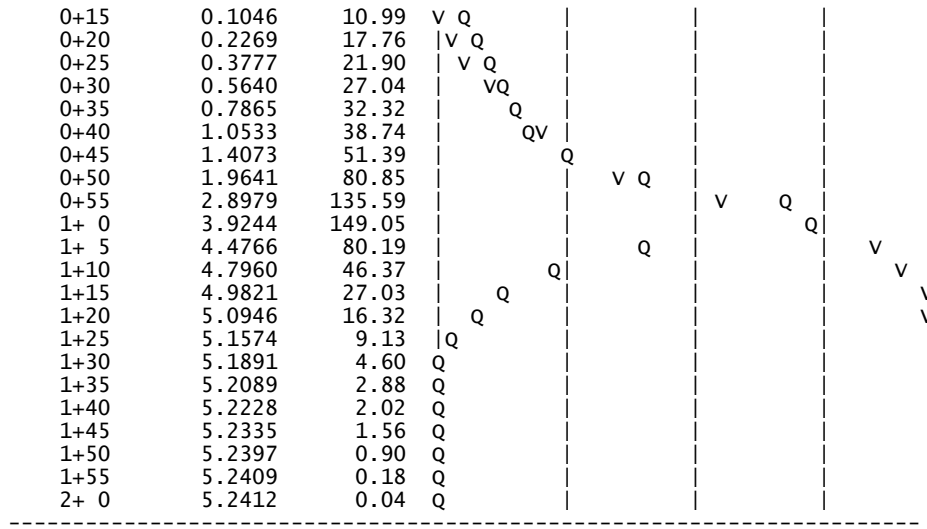
```
      77.3  77.3      0.276     0.120        0.246       1.000      0.246
                                                        Sum (F) =   0.246
      Area averaged mean soil loss (F) (In/Hr) =  0.246
      Minimum soil loss rate ((In/Hr)) =  0.123
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.800
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                   U n i t  H y d r o g r a p h
                          FOOTHILL S-Curve
      ------------------------------------------------------------------------
                   Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         53.985          4.779             5.124
          2   0.167        107.970         24.937            26.740
          3   0.250        161.956         36.901            39.569
          4   0.333        215.941         13.574            14.556
          5   0.417        269.926          7.855             8.423
          6   0.500        323.911          5.019             5.382
          7   0.583        377.896          3.120             3.345
          8   0.667        431.882          1.702             1.825
          9   0.750        485.867          0.696             0.747
         10   0.833        539.852          0.487             0.522
         11   0.917        593.837          0.367             0.393
         12   1.000        647.822          0.345             0.370
         13   1.083        701.808          0.218             0.234
                                  Sum = 100.000    Sum=     107.231
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.342          0.246    (  0.273)        0.096
   2   0.17     4.70      0.472          0.246    (  0.378)        0.226
   3   0.25     4.70      0.472          0.246    (  0.378)        0.226
   4   0.33     5.10      0.512          0.246    (  0.410)        0.266
   5   0.42     5.80      0.583          0.246    (  0.466)        0.337
   6   0.50     5.90      0.593          0.246    (  0.474)        0.347
   7   0.58     7.10      0.713          0.246    (  0.571)        0.467
   8   0.67     8.70      0.874          0.246    (  0.699)        0.628
   9   0.75    13.20      1.326          0.246    (  1.061)        1.080
  10   0.83    29.70      2.984          0.246    (  2.387)        2.738
  11   0.92     7.70      0.774          0.246    (  0.619)        0.527
  12   1.00     4.00      0.402          0.246    (  0.321)        0.156
             (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     7.1
        Flood volume = Effective rainfall      0.59(In)
         times area     106.4(Ac.)/[(In)/(Ft.)] =       5.2(Ac.Ft)
        Total soil loss =      0.25(In)
        Total soil loss =     2.182(Ac.Ft)
        Total rainfall =      0.84(In)
        Flood volume =      228305.8 Cubic Feet
        Total soil loss =       95039.0 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =    149.045(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ------------------------------------------------------------------------
    0+ 5       0.0034      0.49  Q         |         |         |         |
    0+10       0.0290      3.71  Q         |         |         |         |
```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0+30 0.5640 27.04
0+35 0.7865 32.32
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0+45 1.4073 51.39
0+50 1.9641 80.85
0+55 2.8979 135.59
1+ 0 3.9244 149.05
1+ 5 4.4766 80.19
1+10 4.7960 46.37
1+15 4.9821 27.03
1+20 5.0946 16.32
1+25 5.1574 9.13
1+30 5.1891 4.60
1+35 5.2089 2.88
1+40 5.2228 2.02
1+45 5.2335 1.56
1+50 5.2397 0.90
1+55 5.2409 0.18
2+ 0 5.2412 0.04

10-YEAR, 3-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRA310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.95	101.08

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	2.05	218.12

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.403(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 1.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.219	(0.246)	0.175	0.044
2	0.17	1.30	0.219	(0.246)	0.175	0.044
3	0.25	1.10	0.185	(0.246)	0.148	0.037
4	0.33	1.50	0.252	(0.246)	0.202	0.050
5	0.42	1.50	0.252	(0.246)	0.202	0.050
6	0.50	1.80	0.303	(0.246)	0.242	0.061
7	0.58	1.50	0.252	(0.246)	0.202	0.050
8	0.67	1.80	0.303	(0.246)	0.242	0.061
9	0.75	1.80	0.303	(0.246)	0.242	0.061
10	0.83	1.50	0.252	(0.246)	0.202	0.050
11	0.92	1.60	0.269	(0.246)	0.215	0.054
12	1.00	1.80	0.303	(0.246)	0.242	0.061
13	1.08	2.20	0.370	0.246	(0.296)	0.124
14	1.17	2.20	0.370	0.246	(0.296)	0.124
15	1.25	2.20	0.370	0.246	(0.296)	0.124
16	1.33	2.00	0.336	0.246	(0.269)	0.090
17	1.42	2.60	0.437	0.246	(0.350)	0.191
18	1.50	2.70	0.454	0.246	(0.363)	0.208
19	1.58	2.40	0.404	0.246	(0.323)	0.158
20	1.67	2.70	0.454	0.246	(0.363)	0.208
21	1.75	3.30	0.555	0.246	(0.444)	0.309
22	1.83	3.10	0.522	0.246	(0.417)	0.275
23	1.92	2.90	0.488	0.246	(0.390)	0.242
24	2.00	3.00	0.505	0.246	(0.404)	0.259
25	2.08	3.10	0.522	0.246	(0.417)	0.275
26	2.17	4.20	0.707	0.246	(0.565)	0.460
27	2.25	5.00	0.841	0.246	(0.673)	0.595
28	2.33	3.50	0.589	0.246	(0.471)	0.343
29	2.42	6.80	1.144	0.246	(0.915)	0.898
30	2.50	7.30	1.228	0.246	(0.982)	0.982
31	2.58	8.20	1.379	0.246	(1.104)	1.133
32	2.67	5.90	0.993	0.246	(0.794)	0.746
33	2.75	2.00	0.336	0.246	(0.269)	0.090
34	2.83	1.80	0.303	(0.246)	0.242	0.061
35	2.92	1.80	0.303	(0.246)	0.242	0.061
36	3.00	0.60	0.101	(0.246)	0.081	0.020
		(Loss Rate Not Used)				

```
   Sum =     100.0                                    Sum =     8.6
      Flood volume = Effective rainfall      0.72(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       6.4(Ac.Ft)
      Total soil loss =      0.69(In)
      Total soil loss =     6.075(Ac.Ft)
      Total rainfall =      1.40(In)
      Flood volume =      276810.2 Cubic Feet
      Total soil loss =      264646.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     94.831(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       25.0      50.0      75.0     100.0
-------------------------------------------------------------------------
  0+ 5       0.0015      0.22  Q         |         |         |         |
  0+10       0.0111      1.39  Q         |         |         |         |
  0+15       0.0324      3.09  VQ        |         |         |         |
  0+20       0.0574      3.62  VQ        |         |         |         |
  0+25       0.0855      4.08  VQ        |         |         |         |
  0+30       0.1185      4.80  VQ        |         |         |         |
  0+35       0.1551      5.31  V Q       |         |         |         |
  0+40       0.1939      5.64  |VQ       |         |         |         |
  0+45       0.2335      5.74  |VQ       |         |         |         |
  0+50       0.2754      6.09  |VQ       |         |         |         |
  0+55       0.3166      5.99  |VQ       |         |         |         |
  1+ 0       0.3566      5.80  | Q       |         |         |         |
  1+ 5       0.4003      6.34  | Q       |         |         |         |
  1+10       0.4574      8.30  | VQ      |         |         |         |
  1+15       0.5325     10.90  |  VQ     |         |         |         |
  1+20       0.6131     11.70  |  VQ     |         |         |         |
  1+25       0.6950     11.89  |   Q     |         |         |         |
  1+30       0.7894     13.71  |   VQ    |         |         |         |
  1+35       0.9108     17.63  |    V Q  |         |         |         |
  1+40       1.0383     18.51  |     VQ  |         |         |         |
  1+45       1.1716     19.35  |      Q  |         |         |         |
  1+50       1.3351     23.74  |       VQ|         |         |         |
  1+55       1.5236     27.37  |        VQ         |         |         |
  2+ 0       1.7102     27.09  |         Q         |         |         |
  2+ 5       1.8952     26.86  |         QV        |         |         |
  2+10       2.0937     28.83  |         |Q V      |         |         |
  2+15       2.3371     35.34  |         |   Q     |         |         |
  2+20       2.6491     45.30  |         |     V Q |         |         |
  2+25       2.9906     49.59  |         |       VQ|         |         |
  2+30       3.3936     58.52  |         |         |V Q      |         |
  2+35       3.9589     82.07  |         |         |   V     | Q       |
  2+40       4.6120     94.83  |         |         |        V|      Q  |
  2+45       5.2488     92.46  |         |         |         |  V  Q   |
  2+50       5.6956     64.88  |         |         |    Q    |    V    |
  2+55       5.9421     35.80  |         |   Q     |         |      V  |
  3+ 0       6.1051     23.67  |        Q|         |         |       V |
  3+ 5       6.2119     15.51  |      Q  |         |         |        V|
  3+10       6.2733      8.91  |  Q      |         |         |        V|
  3+15       6.3062      4.78  |Q        |         |         |        V|
  3+20       6.3255      2.81  |Q        |         |         |        V|
  3+25       6.3386      1.90  Q         |         |         |        V|
  3+30       6.3470      1.21  Q         |         |         |        V|
  3+35       6.3517      0.69  Q         |         |         |        V|
  3+40       6.3537      0.28  Q         |         |         |        V|
  3+45       6.3542      0.08  Q         |         |         |        V|
  3+50       6.3545      0.04  Q         |         |         |        V|
  3+55       6.3547      0.02  Q         |         |         |        V|
  4+ 0       6.3547      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

10-YEAR, 6-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRA610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.40	148.96

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	3.00	319.20

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 2.058(In)
Areal adjustment factor = 99.96 %
Adjusted average point rain = 2.058(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

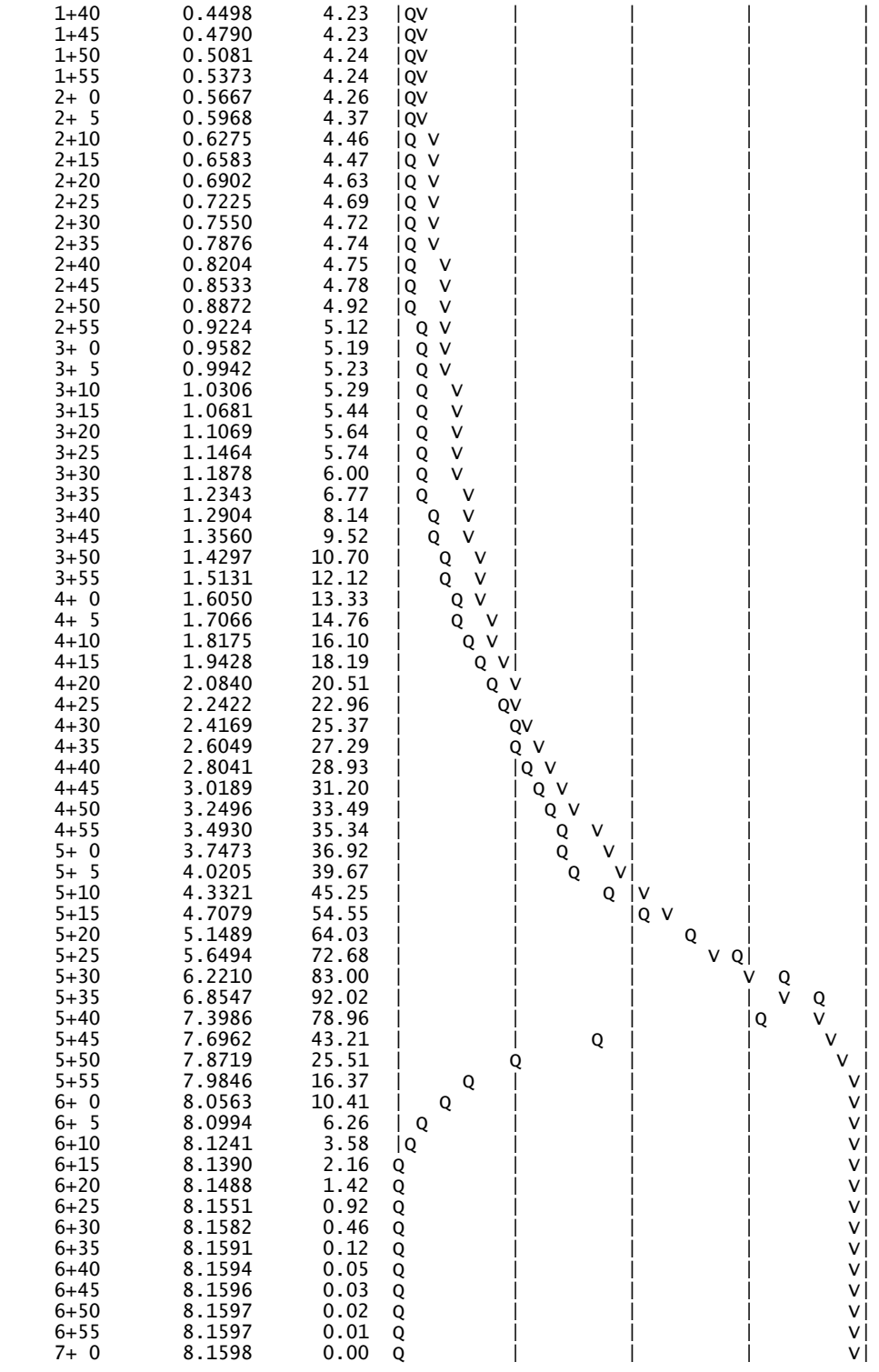
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.123	(0.246)	0.099	0.025
2	0.17	0.60	0.148	(0.246)	0.119	0.030
3	0.25	0.60	0.148	(0.246)	0.119	0.030
4	0.33	0.60	0.148	(0.246)	0.119	0.030
5	0.42	0.60	0.148	(0.246)	0.119	0.030
6	0.50	0.70	0.173	(0.246)	0.138	0.035
7	0.58	0.70	0.173	(0.246)	0.138	0.035
8	0.67	0.70	0.173	(0.246)	0.138	0.035
9	0.75	0.70	0.173	(0.246)	0.138	0.035
10	0.83	0.70	0.173	(0.246)	0.138	0.035
11	0.92	0.70	0.173	(0.246)	0.138	0.035
12	1.00	0.80	0.198	(0.246)	0.158	0.040
13	1.08	0.80	0.198	(0.246)	0.158	0.040
14	1.17	0.80	0.198	(0.246)	0.158	0.040
15	1.25	0.80	0.198	(0.246)	0.158	0.040
16	1.33	0.80	0.198	(0.246)	0.158	0.040
17	1.42	0.80	0.198	(0.246)	0.158	0.040
18	1.50	0.80	0.198	(0.246)	0.158	0.040
19	1.58	0.80	0.198	(0.246)	0.158	0.040
20	1.67	0.80	0.198	(0.246)	0.158	0.040
21	1.75	0.80	0.198	(0.246)	0.158	0.040
22	1.83	0.80	0.198	(0.246)	0.158	0.040
23	1.92	0.80	0.198	(0.246)	0.158	0.040
24	2.00	0.90	0.222	(0.246)	0.178	0.044
25	2.08	0.80	0.198	(0.246)	0.158	0.040
26	2.17	0.90	0.222	(0.246)	0.178	0.044
27	2.25	0.90	0.222	(0.246)	0.178	0.044
28	2.33	0.90	0.222	(0.246)	0.178	0.044
29	2.42	0.90	0.222	(0.246)	0.178	0.044
30	2.50	0.90	0.222	(0.246)	0.178	0.044
31	2.58	0.90	0.222	(0.246)	0.178	0.044
32	2.67	0.90	0.222	(0.246)	0.178	0.044
33	2.75	1.00	0.247	(0.246)	0.198	0.049
34	2.83	1.00	0.247	(0.246)	0.198	0.049
35	2.92	1.00	0.247	(0.246)	0.198	0.049
36	3.00	1.00	0.247	(0.246)	0.198	0.049
37	3.08	1.00	0.247	(0.246)	0.198	0.049

```
38   3.17     1.10     0.272       (  0.246)       0.217        0.054
39   3.25     1.10     0.272       (  0.246)       0.217        0.054
40   3.33     1.10     0.272       (  0.246)       0.217        0.054
41   3.42     1.20     0.296       (  0.246)       0.237        0.059
42   3.50     1.30     0.321          0.246    (  0.257)        0.075
43   3.58     1.40     0.346          0.246    (  0.277)        0.100
44   3.67     1.40     0.346          0.246    (  0.277)        0.100
45   3.75     1.50     0.370          0.246    (  0.296)        0.124
46   3.83     1.50     0.370          0.246    (  0.296)        0.124
47   3.92     1.60     0.395          0.246    (  0.316)        0.149
48   4.00     1.60     0.395          0.246    (  0.316)        0.149
49   4.08     1.70     0.420          0.246    (  0.336)        0.174
50   4.17     1.80     0.444          0.246    (  0.356)        0.198
51   4.25     1.90     0.469          0.246    (  0.375)        0.223
52   4.33     2.00     0.494          0.246    (  0.395)        0.248
53   4.42     2.10     0.518          0.246    (  0.415)        0.272
54   4.50     2.10     0.518          0.246    (  0.415)        0.272
55   4.58     2.20     0.543          0.246    (  0.435)        0.297
56   4.67     2.30     0.568          0.246    (  0.454)        0.322
57   4.75     2.40     0.593          0.246    (  0.474)        0.346
58   4.83     2.40     0.593          0.246    (  0.474)        0.346
59   4.92     2.50     0.617          0.246    (  0.494)        0.371
60   5.00     2.60     0.642          0.246    (  0.514)        0.396
61   5.08     3.10     0.765          0.246    (  0.612)        0.519
62   5.17     3.60     0.889          0.246    (  0.711)        0.643
63   5.25     3.90     0.963          0.246    (  0.770)        0.717
64   5.33     4.20     1.037          0.246    (  0.830)        0.791
65   5.42     4.70     1.160          0.246    (  0.928)        0.914
66   5.50     5.60     1.383          0.246    (  1.106)        1.137
67   5.58     1.90     0.469          0.246    (  0.375)        0.223
68   5.67     0.90     0.222       (  0.246)       0.178        0.044
69   5.75     0.60     0.148       (  0.246)       0.119        0.030
70   5.83     0.50     0.123       (  0.246)       0.099        0.025
71   5.92     0.30     0.074       (  0.246)       0.059        0.015
72   6.00     0.20     0.049       (  0.246)       0.040        0.010
            (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    11.0
     Flood volume = Effective rainfall      0.92(In)
      times area     106.4(Ac.)/[(In)/(Ft.)] =       8.2(Ac.Ft)
     Total soil loss =      1.14(In)
     Total soil loss =    10.083(Ac.Ft)
     Total rainfall =      2.06(In)
     Flood volume =      355438.8 Cubic Feet
     Total soil loss =      439233.6 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     92.016(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                         6 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
     ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       25.0      50.0      75.0     100.0
-------------------------------------------------------------------------
  0+ 5       0.0009      0.13  Q         |         |         |         |
  0+10       0.0065      0.81  Q         |         |         |         |
  0+15       0.0197      1.92  Q         |         |         |         |
  0+20       0.0368      2.48  Q         |         |         |         |
  0+25       0.0558      2.76  VQ        |         |         |         |
  0+30       0.0761      2.96  VQ        |         |         |         |
  0+35       0.0981      3.20  VQ        |         |         |         |
  0+40       0.1219      3.46  VQ        |         |         |         |
  0+45       0.1464      3.55  VQ        |         |         |         |
  0+50       0.1713      3.61  VQ        |         |         |         |
  0+55       0.1965      3.65  VQ        |         |         |         |
  1+ 0       0.2220      3.70  |Q        |         |         |         |
  1+ 5       0.2485      3.85  |Q        |         |         |         |
  1+10       0.2764      4.05  |Q        |         |         |         |
  1+15       0.3049      4.13  |Q        |         |         |         |
  1+20       0.3336      4.17  |Q        |         |         |         |
  1+25       0.3625      4.20  |Q        |         |         |         |
  1+30       0.3916      4.22  |Q        |         |         |         |
  1+35       0.4207      4.23  |QV       |         |         |         |
```



10-YEAR, 24-HOUR STORM

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX10YRA2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	2.50	266.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 4.145(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	(0.436)	0.027	0.007
2	0.17	0.07	0.033	(0.435)	0.027	0.007
3	0.25	0.07	0.033	(0.433)	0.027	0.007
4	0.33	0.10	0.050	(0.431)	0.040	0.010
5	0.42	0.10	0.050	(0.429)	0.040	0.010
6	0.50	0.10	0.050	(0.428)	0.040	0.010
7	0.58	0.10	0.050	(0.426)	0.040	0.010
8	0.67	0.10	0.050	(0.424)	0.040	0.010
9	0.75	0.10	0.050	(0.423)	0.040	0.010
10	0.83	0.13	0.066	(0.421)	0.053	0.013
11	0.92	0.13	0.066	(0.419)	0.053	0.013
12	1.00	0.13	0.066	(0.418)	0.053	0.013
13	1.08	0.10	0.050	(0.416)	0.040	0.010
14	1.17	0.10	0.050	(0.415)	0.040	0.010
15	1.25	0.10	0.050	(0.413)	0.040	0.010
16	1.33	0.10	0.050	(0.411)	0.040	0.010
17	1.42	0.10	0.050	(0.410)	0.040	0.010
18	1.50	0.10	0.050	(0.408)	0.040	0.010
19	1.58	0.10	0.050	(0.406)	0.040	0.010
20	1.67	0.10	0.050	(0.405)	0.040	0.010
21	1.75	0.10	0.050	(0.403)	0.040	0.010
22	1.83	0.13	0.066	(0.401)	0.053	0.013
23	1.92	0.13	0.066	(0.400)	0.053	0.013
24	2.00	0.13	0.066	(0.398)	0.053	0.013
25	2.08	0.13	0.066	(0.397)	0.053	0.013
26	2.17	0.13	0.066	(0.395)	0.053	0.013
27	2.25	0.13	0.066	(0.393)	0.053	0.013
28	2.33	0.13	0.066	(0.392)	0.053	0.013
29	2.42	0.13	0.066	(0.390)	0.053	0.013
30	2.50	0.13	0.066	(0.389)	0.053	0.013
31	2.58	0.17	0.083	(0.387)	0.066	0.017
32	2.67	0.17	0.083	(0.385)	0.066	0.017
33	2.75	0.17	0.083	(0.384)	0.066	0.017
34	2.83	0.17	0.083	(0.382)	0.066	0.017
35	2.92	0.17	0.083	(0.381)	0.066	0.017
36	3.00	0.17	0.083	(0.379)	0.066	0.017
37	3.08	0.17	0.083	(0.378)	0.066	0.017

38	3.17	0.17	0.083	(0.376)	0.066	0.017
39	3.25	0.17	0.083	(0.374)	0.066	0.017
40	3.33	0.17	0.083	(0.373)	0.066	0.017
41	3.42	0.17	0.083	(0.371)	0.066	0.017
42	3.50	0.17	0.083	(0.370)	0.066	0.017
43	3.58	0.17	0.083	(0.368)	0.066	0.017
44	3.67	0.17	0.083	(0.367)	0.066	0.017
45	3.75	0.17	0.083	(0.365)	0.066	0.017
46	3.83	0.20	0.099	(0.364)	0.080	0.020
47	3.92	0.20	0.099	(0.362)	0.080	0.020
48	4.00	0.20	0.099	(0.361)	0.080	0.020
49	4.08	0.20	0.099	(0.359)	0.080	0.020
50	4.17	0.20	0.099	(0.357)	0.080	0.020
51	4.25	0.20	0.099	(0.356)	0.080	0.020
52	4.33	0.23	0.116	(0.354)	0.093	0.023
53	4.42	0.23	0.116	(0.353)	0.093	0.023
54	4.50	0.23	0.116	(0.351)	0.093	0.023
55	4.58	0.23	0.116	(0.350)	0.093	0.023
56	4.67	0.23	0.116	(0.348)	0.093	0.023
57	4.75	0.23	0.116	(0.347)	0.093	0.023
58	4.83	0.27	0.133	(0.345)	0.106	0.027
59	4.92	0.27	0.133	(0.344)	0.106	0.027
60	5.00	0.27	0.133	(0.342)	0.106	0.027
61	5.08	0.20	0.099	(0.341)	0.080	0.020
62	5.17	0.20	0.099	(0.339)	0.080	0.020
63	5.25	0.20	0.099	(0.338)	0.080	0.020
64	5.33	0.23	0.116	(0.336)	0.093	0.023
65	5.42	0.23	0.116	(0.335)	0.093	0.023
66	5.50	0.23	0.116	(0.334)	0.093	0.023
67	5.58	0.27	0.133	(0.332)	0.106	0.027
68	5.67	0.27	0.133	(0.331)	0.106	0.027
69	5.75	0.27	0.133	(0.329)	0.106	0.027
70	5.83	0.27	0.133	(0.328)	0.106	0.027
71	5.92	0.27	0.133	(0.326)	0.106	0.027
72	6.00	0.27	0.133	(0.325)	0.106	0.027
73	6.08	0.30	0.149	(0.323)	0.119	0.030
74	6.17	0.30	0.149	(0.322)	0.119	0.030
75	6.25	0.30	0.149	(0.320)	0.119	0.030
76	6.33	0.30	0.149	(0.319)	0.119	0.030
77	6.42	0.30	0.149	(0.318)	0.119	0.030
78	6.50	0.30	0.149	(0.316)	0.119	0.030
79	6.58	0.33	0.166	(0.315)	0.133	0.033
80	6.67	0.33	0.166	(0.313)	0.133	0.033
81	6.75	0.33	0.166	(0.312)	0.133	0.033
82	6.83	0.33	0.166	(0.311)	0.133	0.033
83	6.92	0.33	0.166	(0.309)	0.133	0.033
84	7.00	0.33	0.166	(0.308)	0.133	0.033
85	7.08	0.33	0.166	(0.306)	0.133	0.033
86	7.17	0.33	0.166	(0.305)	0.133	0.033
87	7.25	0.33	0.166	(0.304)	0.133	0.033
88	7.33	0.37	0.182	(0.302)	0.146	0.036
89	7.42	0.37	0.182	(0.301)	0.146	0.036
90	7.50	0.37	0.182	(0.299)	0.146	0.036
91	7.58	0.40	0.199	(0.298)	0.159	0.040
92	7.67	0.40	0.199	(0.297)	0.159	0.040
93	7.75	0.40	0.199	(0.295)	0.159	0.040
94	7.83	0.43	0.216	(0.294)	0.172	0.043
95	7.92	0.43	0.216	(0.293)	0.172	0.043
96	8.00	0.43	0.216	(0.291)	0.172	0.043
97	8.08	0.50	0.249	(0.290)	0.199	0.050
98	8.17	0.50	0.249	(0.289)	0.199	0.050
99	8.25	0.50	0.249	(0.287)	0.199	0.050
100	8.33	0.50	0.249	(0.286)	0.199	0.050
101	8.42	0.50	0.249	(0.284)	0.199	0.050
102	8.50	0.50	0.249	(0.283)	0.199	0.050
103	8.58	0.53	0.265	(0.282)	0.212	0.053
104	8.67	0.53	0.265	(0.281)	0.212	0.053
105	8.75	0.53	0.265	(0.279)	0.212	0.053
106	8.83	0.57	0.282	(0.278)	0.225	0.056
107	8.92	0.57	0.282	(0.277)	0.225	0.056
108	9.00	0.57	0.282	(0.275)	0.225	0.056
109	9.08	0.63	0.315	(0.274)	0.252	0.063
110	9.17	0.63	0.315	(0.273)	0.252	0.063
111	9.25	0.63	0.315	(0.271)	0.252	0.063
112	9.33	0.67	0.332	(0.270)	0.265	0.066

113	9.42	0.67	0.332	(	0.269)	0.265	0.066
114	9.50	0.67	0.332	(	0.267)	0.265	0.066
115	9.58	0.70	0.348		0.266	(0.279)	0.082
116	9.67	0.70	0.348		0.265	(0.279)	0.083
117	9.75	0.70	0.348		0.264	(0.279)	0.085
118	9.83	0.73	0.365		0.262	(0.292)	0.102
119	9.92	0.73	0.365		0.261	(0.292)	0.104
120	10.00	0.73	0.365		0.260	(0.292)	0.105
121	10.08	0.50	0.249	(	0.259)	0.199	0.050
122	10.17	0.50	0.249	(	0.257)	0.199	0.050
123	10.25	0.50	0.249	(	0.256)	0.199	0.050
124	10.33	0.50	0.249	(	0.255)	0.199	0.050
125	10.42	0.50	0.249	(	0.254)	0.199	0.050
126	10.50	0.50	0.249	(	0.252)	0.199	0.050
127	10.58	0.67	0.332		0.251	(0.265)	0.080
128	10.67	0.67	0.332		0.250	(0.265)	0.082
129	10.75	0.67	0.332		0.249	(0.265)	0.083
130	10.83	0.67	0.332		0.247	(0.265)	0.084
131	10.92	0.67	0.332		0.246	(0.265)	0.085
132	11.00	0.67	0.332		0.245	(0.265)	0.087
133	11.08	0.63	0.315		0.244	(0.252)	0.071
134	11.17	0.63	0.315		0.243	(0.252)	0.072
135	11.25	0.63	0.315		0.241	(0.252)	0.074
136	11.33	0.63	0.315		0.240	(0.252)	0.075
137	11.42	0.63	0.315		0.239	(0.252)	0.076
138	11.50	0.63	0.315		0.238	(0.252)	0.077
139	11.58	0.57	0.282	(	0.237)	0.225	0.056
140	11.67	0.57	0.282	(	0.236)	0.225	0.056
141	11.75	0.57	0.282	(	0.234)	0.225	0.056
142	11.83	0.60	0.298		0.233	(0.239)	0.065
143	11.92	0.60	0.298		0.232	(0.239)	0.066
144	12.00	0.60	0.298		0.231	(0.239)	0.068
145	12.08	0.83	0.414		0.230	(0.332)	0.185
146	12.17	0.83	0.414		0.229	(0.332)	0.186
147	12.25	0.83	0.414		0.227	(0.332)	0.187
148	12.33	0.87	0.431		0.226	(0.345)	0.205
149	12.42	0.87	0.431		0.225	(0.345)	0.206
150	12.50	0.87	0.431		0.224	(0.345)	0.207
151	12.58	0.93	0.464		0.223	(0.371)	0.241
152	12.67	0.93	0.464		0.222	(0.371)	0.242
153	12.75	0.93	0.464		0.221	(0.371)	0.244
154	12.83	0.97	0.481		0.220	(0.385)	0.261
155	12.92	0.97	0.481		0.218	(0.385)	0.262
156	13.00	0.97	0.481		0.217	(0.385)	0.263
157	13.08	1.13	0.564		0.216	(0.451)	0.347
158	13.17	1.13	0.564		0.215	(0.451)	0.349
159	13.25	1.13	0.564		0.214	(0.451)	0.350
160	13.33	1.13	0.564		0.213	(0.451)	0.351
161	13.42	1.13	0.564		0.212	(0.451)	0.352
162	13.50	1.13	0.564		0.211	(0.451)	0.353
163	13.58	0.77	0.381		0.210	(0.305)	0.172
164	13.67	0.77	0.381		0.209	(0.305)	0.173
165	13.75	0.77	0.381		0.208	(0.305)	0.174
166	13.83	0.77	0.381		0.206	(0.305)	0.175
167	13.92	0.77	0.381		0.205	(0.305)	0.176
168	14.00	0.77	0.381		0.204	(0.305)	0.177
169	14.08	0.90	0.448		0.203	(0.358)	0.244
170	14.17	0.90	0.448		0.202	(0.358)	0.245
171	14.25	0.90	0.448		0.201	(0.358)	0.246
172	14.33	0.87	0.431		0.200	(0.345)	0.231
173	14.42	0.87	0.431		0.199	(0.345)	0.232
174	14.50	0.87	0.431		0.198	(0.345)	0.233
175	14.58	0.87	0.431		0.197	(0.345)	0.234
176	14.67	0.87	0.431		0.196	(0.345)	0.235
177	14.75	0.87	0.431		0.195	(0.345)	0.236
178	14.83	0.83	0.414		0.194	(0.332)	0.220
179	14.92	0.83	0.414		0.193	(0.332)	0.221
180	15.00	0.83	0.414		0.192	(0.332)	0.222
181	15.08	0.80	0.398		0.191	(0.318)	0.207
182	15.17	0.80	0.398		0.190	(0.318)	0.208
183	15.25	0.80	0.398		0.189	(0.318)	0.209
184	15.33	0.77	0.381		0.188	(0.305)	0.193
185	15.42	0.77	0.381		0.187	(0.305)	0.194
186	15.50	0.77	0.381		0.186	(0.305)	0.195
187	15.58	0.63	0.315		0.185	(0.252)	0.130

188	15.67	0.63	0.315	0.184	(0.252)	0.131
189	15.75	0.63	0.315	0.184	(0.252)	0.132
190	15.83	0.63	0.315	0.183	(0.252)	0.132
191	15.92	0.63	0.315	0.182	(0.252)	0.133
192	16.00	0.63	0.315	0.181	(0.252)	0.134
193	16.08	0.13	0.066	(0.180)	0.053	0.013
194	16.17	0.13	0.066	(0.179)	0.053	0.013
195	16.25	0.13	0.066	(0.178)	0.053	0.013
196	16.33	0.13	0.066	(0.177)	0.053	0.013
197	16.42	0.13	0.066	(0.176)	0.053	0.013
198	16.50	0.13	0.066	(0.175)	0.053	0.013
199	16.58	0.10	0.050	(0.174)	0.040	0.010
200	16.67	0.10	0.050	(0.173)	0.040	0.010
201	16.75	0.10	0.050	(0.173)	0.040	0.010
202	16.83	0.10	0.050	(0.172)	0.040	0.010
203	16.92	0.10	0.050	(0.171)	0.040	0.010
204	17.00	0.10	0.050	(0.170)	0.040	0.010
205	17.08	0.17	0.083	(0.169)	0.066	0.017
206	17.17	0.17	0.083	(0.168)	0.066	0.017
207	17.25	0.17	0.083	(0.167)	0.066	0.017
208	17.33	0.17	0.083	(0.167)	0.066	0.017
209	17.42	0.17	0.083	(0.166)	0.066	0.017
210	17.50	0.17	0.083	(0.165)	0.066	0.017
211	17.58	0.17	0.083	(0.164)	0.066	0.017
212	17.67	0.17	0.083	(0.163)	0.066	0.017
213	17.75	0.17	0.083	(0.162)	0.066	0.017
214	17.83	0.13	0.066	(0.162)	0.053	0.013
215	17.92	0.13	0.066	(0.161)	0.053	0.013
216	18.00	0.13	0.066	(0.160)	0.053	0.013
217	18.08	0.13	0.066	(0.159)	0.053	0.013
218	18.17	0.13	0.066	(0.158)	0.053	0.013
219	18.25	0.13	0.066	(0.158)	0.053	0.013
220	18.33	0.13	0.066	(0.157)	0.053	0.013
221	18.42	0.13	0.066	(0.156)	0.053	0.013
222	18.50	0.13	0.066	(0.155)	0.053	0.013
223	18.58	0.10	0.050	(0.155)	0.040	0.010
224	18.67	0.10	0.050	(0.154)	0.040	0.010
225	18.75	0.10	0.050	(0.153)	0.040	0.010
226	18.83	0.07	0.033	(0.152)	0.027	0.007
227	18.92	0.07	0.033	(0.152)	0.027	0.007
228	19.00	0.07	0.033	(0.151)	0.027	0.007
229	19.08	0.10	0.050	(0.150)	0.040	0.010
230	19.17	0.10	0.050	(0.150)	0.040	0.010
231	19.25	0.10	0.050	(0.149)	0.040	0.010
232	19.33	0.13	0.066	(0.148)	0.053	0.013
233	19.42	0.13	0.066	(0.147)	0.053	0.013
234	19.50	0.13	0.066	(0.147)	0.053	0.013
235	19.58	0.10	0.050	(0.146)	0.040	0.010
236	19.67	0.10	0.050	(0.145)	0.040	0.010
237	19.75	0.10	0.050	(0.145)	0.040	0.010
238	19.83	0.07	0.033	(0.144)	0.027	0.007
239	19.92	0.07	0.033	(0.144)	0.027	0.007
240	20.00	0.07	0.033	(0.143)	0.027	0.007
241	20.08	0.10	0.050	(0.142)	0.040	0.010
242	20.17	0.10	0.050	(0.142)	0.040	0.010
243	20.25	0.10	0.050	(0.141)	0.040	0.010
244	20.33	0.10	0.050	(0.140)	0.040	0.010
245	20.42	0.10	0.050	(0.140)	0.040	0.010
246	20.50	0.10	0.050	(0.139)	0.040	0.010
247	20.58	0.10	0.050	(0.139)	0.040	0.010
248	20.67	0.10	0.050	(0.138)	0.040	0.010
249	20.75	0.10	0.050	(0.137)	0.040	0.010
250	20.83	0.07	0.033	(0.137)	0.027	0.007
251	20.92	0.07	0.033	(0.136)	0.027	0.007
252	21.00	0.07	0.033	(0.136)	0.027	0.007
253	21.08	0.10	0.050	(0.135)	0.040	0.010
254	21.17	0.10	0.050	(0.135)	0.040	0.010
255	21.25	0.10	0.050	(0.134)	0.040	0.010
256	21.33	0.07	0.033	(0.134)	0.027	0.007
257	21.42	0.07	0.033	(0.133)	0.027	0.007
258	21.50	0.07	0.033	(0.133)	0.027	0.007
259	21.58	0.10	0.050	(0.132)	0.040	0.010
260	21.67	0.10	0.050	(0.132)	0.040	0.010
261	21.75	0.10	0.050	(0.131)	0.040	0.010
262	21.83	0.07	0.033	(0.131)	0.027	0.007

```
263  21.92     0.07      0.033       (  0.130)       0.027        0.007
264  22.00     0.07      0.033       (  0.130)       0.027        0.007
265  22.08     0.10      0.050       (  0.129)       0.040        0.010
266  22.17     0.10      0.050       (  0.129)       0.040        0.010
267  22.25     0.10      0.050       (  0.129)       0.040        0.010
268  22.33     0.07      0.033       (  0.128)       0.027        0.007
269  22.42     0.07      0.033       (  0.128)       0.027        0.007
270  22.50     0.07      0.033       (  0.127)       0.027        0.007
271  22.58     0.07      0.033       (  0.127)       0.027        0.007
272  22.67     0.07      0.033       (  0.127)       0.027        0.007
273  22.75     0.07      0.033       (  0.126)       0.027        0.007
274  22.83     0.07      0.033       (  0.126)       0.027        0.007
275  22.92     0.07      0.033       (  0.126)       0.027        0.007
276  23.00     0.07      0.033       (  0.125)       0.027        0.007
277  23.08     0.07      0.033       (  0.125)       0.027        0.007
278  23.17     0.07      0.033       (  0.125)       0.027        0.007
279  23.25     0.07      0.033       (  0.125)       0.027        0.007
280  23.33     0.07      0.033       (  0.124)       0.027        0.007
281  23.42     0.07      0.033       (  0.124)       0.027        0.007
282  23.50     0.07      0.033       (  0.124)       0.027        0.007
283  23.58     0.07      0.033       (  0.124)       0.027        0.007
284  23.67     0.07      0.033       (  0.124)       0.027        0.007
285  23.75     0.07      0.033       (  0.123)       0.027        0.007
286  23.83     0.07      0.033       (  0.123)       0.027        0.007
287  23.92     0.07      0.033       (  0.123)       0.027        0.007
288  24.00     0.07      0.033       (  0.123)       0.027        0.007
              (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    16.8
      Flood volume = Effective rainfall      1.40(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =      12.4(Ac.Ft)
      Total soil loss =      2.74(In)
      Total soil loss =    24.325(Ac.Ft)
      Total rainfall =      4.14(In)
      Flood volume =      541243.3 Cubic Feet
      Total soil loss =     1059599.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     36.928(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
---------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0017      0.21  Q         |         |         |         |
  0+15       0.0050      0.47  Q         |         |         |         |
  0+20       0.0090      0.59  Q         |         |         |         |
  0+25       0.0140      0.73  Q         |         |         |         |
  0+30       0.0202      0.90  Q         |         |         |         |
  0+35       0.0269      0.97  Q         |         |         |         |
  0+40       0.0339      1.01  VQ        |         |         |         |
  0+45       0.0410      1.03  VQ        |         |         |         |
  0+50       0.0483      1.06  VQ        |         |         |         |
  0+55       0.0563      1.16  VQ        |         |         |         |
  1+ 0       0.0652      1.30  VQ        |         |         |         |
  1+ 5       0.0744      1.33  VQ        |         |         |         |
  1+10       0.0832      1.27  VQ        |         |         |         |
  1+15       0.0912      1.16  VQ        |         |         |         |
  1+20       0.0989      1.12  VQ        |         |         |         |
  1+25       0.1065      1.10  VQ        |         |         |         |
  1+30       0.1140      1.09  VQ        |         |         |         |
  1+35       0.1214      1.08  VQ        |         |         |         |
  1+40       0.1288      1.07  VQ        |         |         |         |
  1+45       0.1362      1.07  VQ        |         |         |         |
  1+50       0.1437      1.09  VQ        |         |         |         |
  1+55       0.1518      1.17  VQ        |         |         |         |
  2+ 0       0.1607      1.30  VQ        |         |         |         |
  2+ 5       0.1701      1.35  VQ        |         |         |         |
  2+10       0.1796      1.38  VQ        |         |         |         |
  2+15       0.1892      1.40  VQ        |         |         |         |
  2+20       0.1989      1.41  VQ        |         |         |         |
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2+25       0.2087      1.42  VQ        |         |         |         |
2+30       0.2184      1.42  VQ        |         |         |         |
2+35       0.2283      1.44  VQ        |         |         |         |
2+40       0.2388      1.53  VQ        |         |         |         |
2+45       0.2503      1.66  VQ        |         |         |         |
2+50       0.2620      1.71  VQ        |         |         |         |
2+55       0.2740      1.74  VQ        |         |         |         |
3+ 0       0.2861      1.75  VQ        |         |         |         |
3+ 5       0.2982      1.77  VQ        |         |         |         |
3+10       0.3104      1.77  VQ        |         |         |         |
3+15       0.3226      1.77  |Q        |         |         |         |
3+20       0.3349      1.78  |Q        |         |         |         |
3+25       0.3471      1.78  |Q        |         |         |         |
3+30       0.3593      1.78  |Q        |         |         |         |
3+35       0.3716      1.78  |Q        |         |         |         |
3+40       0.3838      1.78  |Q        |         |         |         |
3+45       0.3961      1.78  |Q        |         |         |         |
3+50       0.4085      1.80  |Q        |         |         |         |
3+55       0.4214      1.88  |Q        |         |         |         |
4+ 0       0.4353      2.02  |VQ       |         |         |         |
4+ 5       0.4495      2.06  |VQ       |         |         |         |
4+10       0.4639      2.09  |VQ       |         |         |         |
4+15       0.4785      2.11  |VQ       |         |         |         |
4+20       0.4932      2.14  |VQ       |         |         |         |
4+25       0.5086      2.23  |VQ       |         |         |         |
4+30       0.5249      2.37  |VQ       |         |         |         |
4+35       0.5415      2.42  |VQ       |         |         |         |
4+40       0.5584      2.45  |VQ       |         |         |         |
4+45       0.5753      2.46  |VQ       |         |         |         |
4+50       0.5925      2.49  |VQ       |         |         |         |
4+55       0.6103      2.59  |VQ       |         |         |         |
5+ 0       0.6291      2.72  | Q       |         |         |         |
5+ 5       0.6479      2.74  | Q       |         |         |         |
5+10       0.6658      2.59  | Q       |         |         |         |
5+15       0.6819      2.35  | Q       |         |         |         |
5+20       0.6976      2.28  | Q       |         |         |         |
5+25       0.7136      2.32  | Q       |         |         |         |
5+30       0.7302      2.42  | Q       |         |         |         |
5+35       0.7472      2.46  | Q       |         |         |         |
5+40       0.7648      2.57  | Q       |         |         |         |
5+45       0.7835      2.71  | Q       |         |         |         |
5+50       0.8026      2.77  | Q       |         |         |         |
5+55       0.8219      2.80  | Q       |         |         |         |
6+ 0       0.8413      2.82  | Q       |         |         |         |
6+ 5       0.8609      2.85  | Q       |         |         |         |
6+10       0.8811      2.94  | Q       |         |         |         |
6+15       0.9023      3.08  | VQ      |         |         |         |
6+20       0.9239      3.13  | VQ      |         |         |         |
6+25       0.9456      3.16  |  Q      |         |         |         |
6+30       0.9675      3.18  |  Q      |         |         |         |
6+35       0.9896      3.21  |  Q      |         |         |         |
6+40       1.0123      3.30  |  Q      |         |         |         |
6+45       1.0359      3.43  |  Q      |         |         |         |
6+50       1.0599      3.48  |  Q      |         |         |         |
6+55       1.0841      3.51  |  Q      |         |         |         |
7+ 0       1.1085      3.53  |  Q      |         |         |         |
7+ 5       1.1329      3.54  |  Q      |         |         |         |
7+10       1.1573      3.55  |  Q      |         |         |         |
7+15       1.1818      3.55  |  Q      |         |         |         |
7+20       1.2064      3.57  |  Q      |         |         |         |
7+25       1.2316      3.66  |  Q      |         |         |         |
7+30       1.2577      3.79  |  QV     |         |         |         |
7+35       1.2843      3.86  |  QV     |         |         |         |
7+40       1.3117      3.98  |  QV     |         |         |         |
7+45       1.3401      4.13  |   Q     |         |         |         |
7+50       1.3690      4.20  |   Q     |         |         |         |
7+55       1.3988      4.32  |   Q     |         |         |         |
8+ 0       1.4296      4.48  |   Q     |         |         |         |
8+ 5       1.4611      4.57  |   Q     |         |         |         |
8+10       1.4941      4.78  |   Q     |         |         |         |
8+15       1.5290      5.07  |   VQ    |         |         |         |
8+20       1.5646      5.18  |    Q    |         |         |         |
8+25       1.6007      5.24  |    Q    |         |         |         |
8+30       1.6371      5.28  |    Q    |         |         |         |
8+35       1.6738      5.32  |    Q    |         |         |         |
```

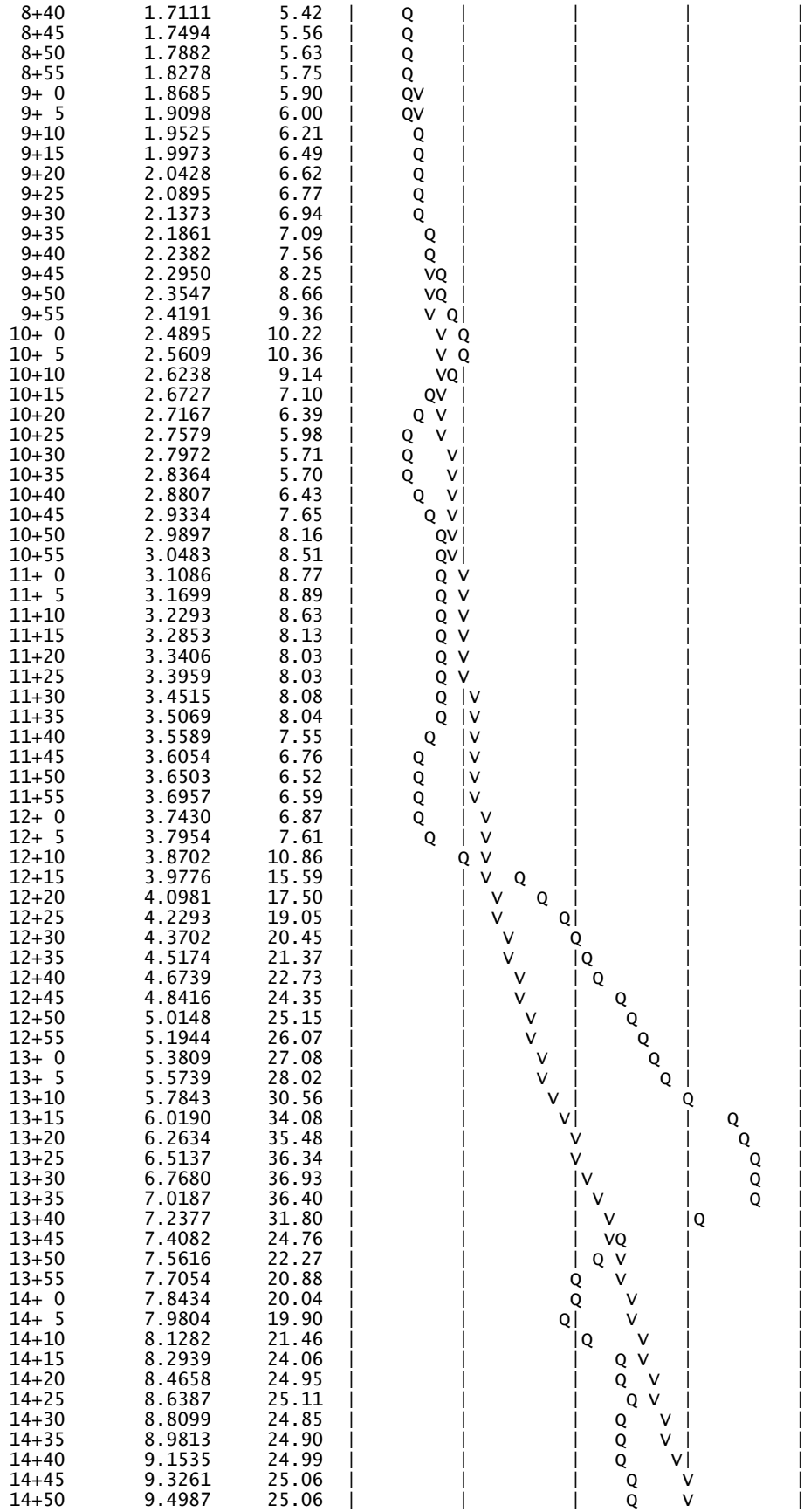

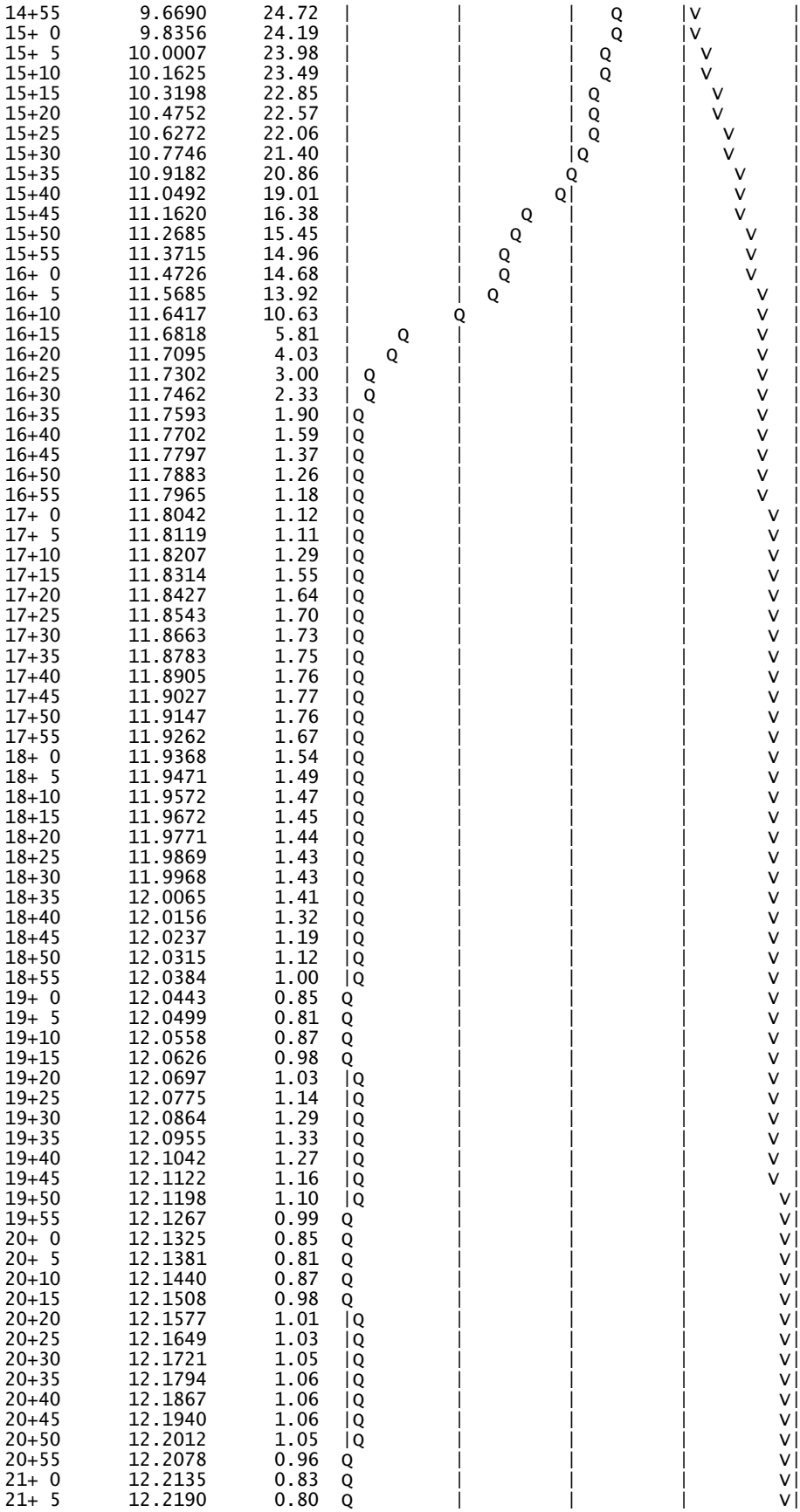

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  21+10      12.2250      0.86  Q          |          |          |         v|
  21+15      12.2317      0.97  Q          |          |          |         v|
  21+20      12.2385      0.99  Q          |          |          |         v|
  21+25      12.2449      0.93  Q          |          |          |         v|
  21+30      12.2505      0.81  Q          |          |          |         v|
  21+35      12.2559      0.79  Q          |          |          |         v|
  21+40      12.2618      0.85  Q          |          |          |         v|
  21+45      12.2684      0.97  Q          |          |          |         v|
  21+50      12.2753      0.99  Q          |          |          |         v|
  21+55      12.2816      0.92  Q          |          |          |         v|
  22+ 0      12.2872      0.81  Q          |          |          |         v|
  22+ 5      12.2926      0.79  Q          |          |          |         v|
  22+10      12.2985      0.85  Q          |          |          |         v|
  22+15      12.3052      0.97  Q          |          |          |         v|
  22+20      12.3120      0.99  Q          |          |          |         v|
  22+25      12.3184      0.92  Q          |          |          |         v|
  22+30      12.3240      0.81  Q          |          |          |         v|
  22+35      12.3293      0.77  Q          |          |          |         v|
  22+40      12.3344      0.75  Q          |          |          |         v|
  22+45      12.3395      0.73  Q          |          |          |         v|
  22+50      12.3444      0.72  Q          |          |          |         v|
  22+55      12.3494      0.72  Q          |          |          |         v|
  23+ 0      12.3543      0.72  Q          |          |          |         v|
  23+ 5      12.3592      0.71  Q          |          |          |         v|
  23+10      12.3641      0.71  Q          |          |          |         v|
  23+15      12.3691      0.71  Q          |          |          |         v|
  23+20      12.3740      0.71  Q          |          |          |         v|
  23+25      12.3789      0.71  Q          |          |          |         v|
  23+30      12.3838      0.71  Q          |          |          |         v|
  23+35      12.3887      0.71  Q          |          |          |         v|
  23+40      12.3936      0.71  Q          |          |          |         v|
  23+45      12.3985      0.71  Q          |          |          |         v|
  23+50      12.4034      0.71  Q          |          |          |         v|
  23+55      12.4083      0.71  Q          |          |          |         v|
  24+ 0      12.4132      0.71  Q          |          |          |         v|
  24+ 5      12.4178      0.68  Q          |          |          |         v|
  24+10      12.4213      0.50  Q          |          |          |         v|
  24+15      12.4229      0.24  Q          |          |          |         v|
  24+20      12.4239      0.14  Q          |          |          |         v|
  24+25      12.4245      0.09  Q          |          |          |         v|
  24+30      12.4248      0.05  Q          |          |          |         v|
  24+35      12.4250      0.03  Q          |          |          |         v|
  24+40      12.4251      0.02  Q          |          |          |         v|
  24+45      12.4252      0.01  Q          |          |          |         v|
  24+50      12.4252      0.01  Q          |          |          |         v|
  24+55      12.4252      0.00  Q          |          |          |         v|
  25+ 0      12.4252      0.00  Q          |          |          |          v
-------------------------------------------------------------------------------
```

EXISTING CONDITION
100-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: EX100YRA1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING CONDITION AREA A
100-YR STORM EVENT
21-0044
2022-02-10 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.55	58.52

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.25	133.00

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 1.250(In)
Areal adjustment factor = 99.90 %
Adjusted average point rain = 1.249(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

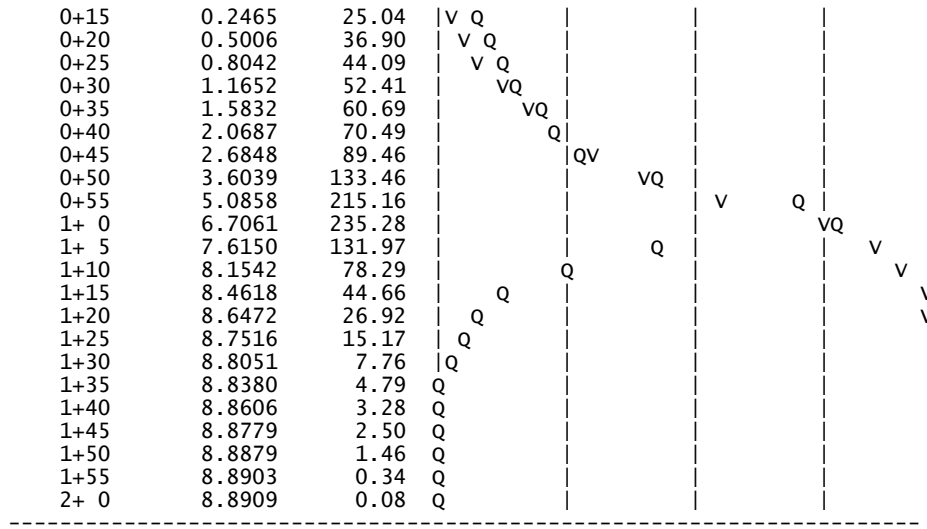
```
      77.3  77.3      0.276     0.120        0.246       1.000      0.246
                                                        Sum (F) =   0.246
      Area averaged mean soil loss (F) (In/Hr) =  0.246
      Minimum soil loss rate ((In/Hr)) =  0.123
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.800
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         53.985          4.779             5.124
          2   0.167        107.970         24.937            26.740
          3   0.250        161.956         36.901            39.569
          4   0.333        215.941         13.574            14.556
          5   0.417        269.926          7.855             8.423
          6   0.500        323.911          5.019             5.382
          7   0.583        377.896          3.120             3.345
          8   0.667        431.882          1.702             1.825
          9   0.750        485.867          0.696             0.747
         10   0.833        539.852          0.487             0.522
         11   0.917        593.837          0.367             0.393
         12   1.000        647.822          0.345             0.370
         13   1.083        701.808          0.218             0.234
                                  Sum = 100.000    Sum=     107.231
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.510          0.246    (  0.408)        0.263
   2   0.17     4.70      0.704          0.246    (  0.563)        0.458
   3   0.25     4.70      0.704          0.246    (  0.563)        0.458
   4   0.33     5.10      0.764          0.246    (  0.611)        0.518
   5   0.42     5.80      0.869          0.246    (  0.695)        0.623
   6   0.50     5.90      0.884          0.246    (  0.707)        0.638
   7   0.58     7.10      1.064          0.246    (  0.851)        0.818
   8   0.67     8.70      1.304          0.246    (  1.043)        1.058
   9   0.75    13.20      1.978          0.246    (  1.582)        1.732
  10   0.83    29.70      4.451          0.246    (  3.561)        4.205
  11   0.92     7.70      1.154          0.246    (  0.923)        0.908
  12   1.00     4.00      0.599          0.246    (  0.480)        0.353
             (Loss Rate Not Used)
     Sum =     100.0                                  Sum =    12.0
       Flood volume = Effective rainfall      1.00(In)
        times area     106.4(Ac.)/[(In)/(Ft.)] =       8.9(Ac.Ft)
       Total soil loss =      0.25(In)
       Total soil loss =     2.182(Ac.Ft)
       Total rainfall =      1.25(In)
       Flood volume =      387285.5 Cubic Feet
       Total soil loss =       95039.0 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =    235.278(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
       ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       75.0     150.0     225.0     300.0
  ------------------------------------------------------------------------
    0+ 5       0.0093      1.35  Q         |         |         |         |
    0+10       0.0740      9.40  VQ        |         |         |         |
```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0+20 0.5006 36.90
0+25 0.8042 44.09
0+30 1.1652 52.41
0+35 1.5832 60.69
0+40 2.0687 70.49
0+45 2.6848 89.46
0+50 3.6039 133.46
0+55 5.0858 215.16
1+ 0 6.7061 235.28
1+ 5 7.6150 131.97
1+10 8.1542 78.29
1+15 8.4618 44.66
1+20 8.6472 26.92
1+25 8.7516 15.17
1+30 8.8051 7.76
1+35 8.8380 4.79
1+40 8.8606 3.28
1+45 8.8779 2.50
1+50 8.8879 1.46
1+55 8.8903 0.34
2+ 0 8.8909 0.08

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: EX100YRA3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING CONDITION AREA A
100-YR STORM EVENT
21-0044
2022-02-10 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	0.95	101.08

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	2.05	218.12

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 2.050(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 2.049(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.320	0.246	(0.256)	0.074
2	0.17	1.30	0.320	0.246	(0.256)	0.074
3	0.25	1.10	0.270	(0.246)	0.216	0.054
4	0.33	1.50	0.369	0.246	(0.295)	0.123
5	0.42	1.50	0.369	0.246	(0.295)	0.123
6	0.50	1.80	0.443	0.246	(0.354)	0.197
7	0.58	1.50	0.369	0.246	(0.295)	0.123
8	0.67	1.80	0.443	0.246	(0.354)	0.197
9	0.75	1.80	0.443	0.246	(0.354)	0.197
10	0.83	1.50	0.369	0.246	(0.295)	0.123
11	0.92	1.60	0.393	0.246	(0.315)	0.147
12	1.00	1.80	0.443	0.246	(0.354)	0.197
13	1.08	2.20	0.541	0.246	(0.433)	0.295
14	1.17	2.20	0.541	0.246	(0.433)	0.295
15	1.25	2.20	0.541	0.246	(0.433)	0.295
16	1.33	2.00	0.492	0.246	(0.393)	0.246
17	1.42	2.60	0.639	0.246	(0.511)	0.393
18	1.50	2.70	0.664	0.246	(0.531)	0.418
19	1.58	2.40	0.590	0.246	(0.472)	0.344
20	1.67	2.70	0.664	0.246	(0.531)	0.418
21	1.75	3.30	0.811	0.246	(0.649)	0.565
22	1.83	3.10	0.762	0.246	(0.610)	0.516
23	1.92	2.90	0.713	0.246	(0.570)	0.467
24	2.00	3.00	0.738	0.246	(0.590)	0.492
25	2.08	3.10	0.762	0.246	(0.610)	0.516
26	2.17	4.20	1.033	0.246	(0.826)	0.787
27	2.25	5.00	1.229	0.246	(0.984)	0.983
28	2.33	3.50	0.861	0.246	(0.688)	0.615
29	2.42	6.80	1.672	0.246	(1.338)	1.426
30	2.50	7.30	1.795	0.246	(1.436)	1.549
31	2.58	8.20	2.016	0.246	(1.613)	1.770
32	2.67	5.90	1.451	0.246	(1.161)	1.205
33	2.75	2.00	0.492	0.246	(0.393)	0.246
34	2.83	1.80	0.443	0.246	(0.354)	0.197
35	2.92	1.80	0.443	0.246	(0.354)	0.197
36	3.00	0.60	0.148	(0.246)	0.118	0.030
		(Loss Rate Not Used)				

```
   Sum =     100.0                                    Sum =    15.9
      Flood volume = Effective rainfall      1.32(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =      11.7(Ac.Ft)
      Total soil loss =      0.73(In)
      Total soil loss =     6.429(Ac.Ft)
      Total rainfall =      2.05(In)
      Flood volume =      511366.7 Cubic Feet
      Total soil loss =      280040.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =    150.794(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
-------------------------------------------------------------------------
  0+ 5       0.0026      0.38  Q         |         |         |         |
  0+10       0.0188      2.35  Q         |         |         |         |
  0+15       0.0543      5.16  VQ        |         |         |         |
  0+20       0.0960      6.06  VQ        |         |         |         |
  0+25       0.1494      7.75  VQ        |         |         |         |
  0+30       0.2248     10.96  V Q       |         |         |         |
  0+35       0.3187     13.63  |VQ       |         |         |         |
  0+40       0.4259     15.57  |V Q      |         |         |         |
  0+45       0.5365     16.05  |V Q      |         |         |         |
  0+50       0.6631     18.38  | VQ      |         |         |         |
  0+55       0.7837     17.52  | VQ      |         |         |         |
  1+ 0       0.8942     16.05  |  Q      |         |         |         |
  1+ 5       1.0189     18.10  |  Q      |         |         |         |
  1+10       1.1745     22.60  |   Q     |         |         |         |
  1+15       1.3615     27.16  |   VQ    |         |         |         |
  1+20       1.5592     28.70  |    Q    |         |         |         |
  1+25       1.7604     29.22  |    Q    |         |         |         |
  1+30       1.9811     32.05  |     Q   |         |         |         |
  1+35       2.2419     37.86  |      Q  |         |         |         |
  1+40       2.5118     39.19  |      QV |         |         |         |
  1+45       2.7901     40.42  |       QV|         |         |         |
  1+50       3.1129     46.86  |        QV         |         |         |
  1+55       3.4723     52.18  |         QV        |         |         |
  2+ 0       3.8289     51.78  |         Q  V      |         |         |
  2+ 5       4.1832     51.45  |         Q   V     |         |         |
  2+10       4.5573     54.32  |         Q    V    |         |         |
  2+15       4.9970     63.84  |          | Q    V |         |         |
  2+20       5.5369     78.40  |          |    Q  V |         |         |
  2+25       6.1200     84.66  |          |     Q   V         |         |
  2+30       6.7930     97.72  |          |         Q|  V      |         |
  2+35       7.7031    132.14  |          |          |     Q   |         |
  2+40       8.7416    150.79  |          |          |        VQ         |
  2+45       9.7563    147.33  |          |          |        Q|  V      |
  2+50      10.4931    106.98  |          |          |Q         |    V    |
  2+55      10.9361     64.33  |          | Q        |          |      V  |
  3+ 0      11.2517     45.83  |        Q|          |          |       V |
  3+ 5      11.4648     30.93  |      Q   |          |          |        V|
  3+10      11.5816     16.97  |  Q       |          |          |        V|
  3+15      11.6458      9.32  |Q         |          |          |        V|
  3+20      11.6838      5.52  |Q         |          |          |        V|
  3+25      11.7085      3.59  Q          |          |          |        V|
  3+30      11.7238      2.23  Q          |          |          |        V|
  3+35      11.7325      1.26  Q          |          |          |        V|
  3+40      11.7365      0.57  Q          |          |          |        V|
  3+45      11.7380      0.22  Q          |          |          |        V|
  3+50      11.7389      0.13  Q          |          |          |        V|
  3+55      11.7393      0.06  Q          |          |          |        V|
  4+ 0      11.7394      0.01  Q          |          |          |        V|
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: EX100YRA6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING CONDITION AREA A
100-YR STORM EVENT
21-0044
2022-02-10 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.40	148.96

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	3.00	319.20

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 99.96 %
Adjusted average point rain = 2.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

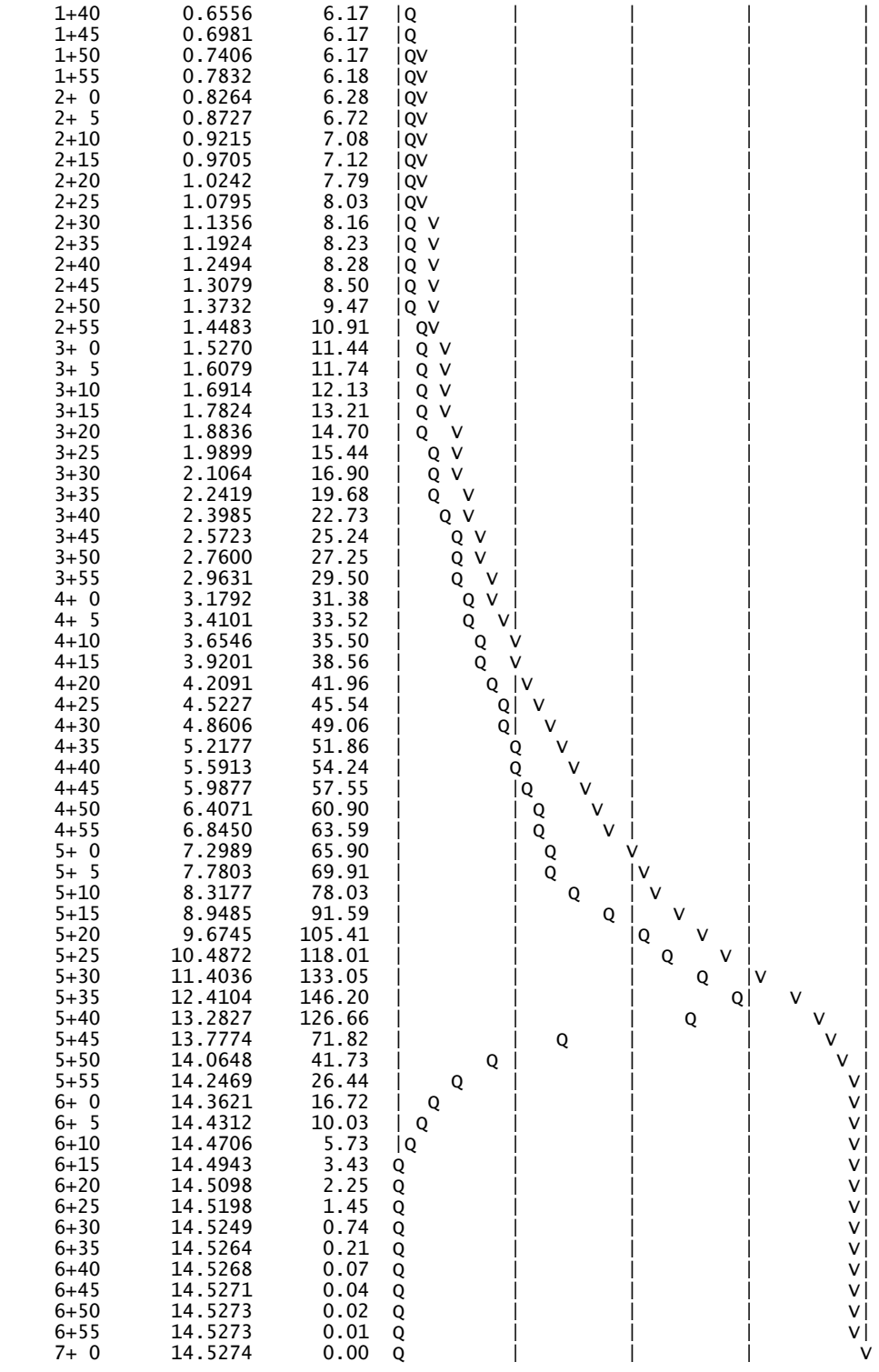
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max		Low	Effective (In/Hr)
1	0.08	0.50	0.180	(0.246)		0.144	0.036
2	0.17	0.60	0.216	(0.246)		0.173	0.043
3	0.25	0.60	0.216	(0.246)		0.173	0.043
4	0.33	0.60	0.216	(0.246)		0.173	0.043
5	0.42	0.60	0.216	(0.246)		0.173	0.043
6	0.50	0.70	0.252	(0.246)		0.202	0.050
7	0.58	0.70	0.252	(0.246)		0.202	0.050
8	0.67	0.70	0.252	(0.246)		0.202	0.050
9	0.75	0.70	0.252	(0.246)		0.202	0.050
10	0.83	0.70	0.252	(0.246)		0.202	0.050
11	0.92	0.70	0.252	(0.246)		0.202	0.050
12	1.00	0.80	0.288	(0.246)		0.230	0.058
13	1.08	0.80	0.288	(0.246)		0.230	0.058
14	1.17	0.80	0.288	(0.246)		0.230	0.058
15	1.25	0.80	0.288	(0.246)		0.230	0.058
16	1.33	0.80	0.288	(0.246)		0.230	0.058
17	1.42	0.80	0.288	(0.246)		0.230	0.058
18	1.50	0.80	0.288	(0.246)		0.230	0.058
19	1.58	0.80	0.288	(0.246)		0.230	0.058
20	1.67	0.80	0.288	(0.246)		0.230	0.058
21	1.75	0.80	0.288	(0.246)		0.230	0.058
22	1.83	0.80	0.288	(0.246)		0.230	0.058
23	1.92	0.80	0.288	(0.246)		0.230	0.058
24	2.00	0.90	0.324	0.246	(	0.259)	0.078
25	2.08	0.80	0.288	(0.246)		0.230	0.058
26	2.17	0.90	0.324	0.246	(	0.259)	0.078
27	2.25	0.90	0.324	0.246	(	0.259)	0.078
28	2.33	0.90	0.324	0.246	(	0.259)	0.078
29	2.42	0.90	0.324	0.246	(	0.259)	0.078
30	2.50	0.90	0.324	0.246	(	0.259)	0.078
31	2.58	0.90	0.324	0.246	(	0.259)	0.078
32	2.67	0.90	0.324	0.246	(	0.259)	0.078
33	2.75	1.00	0.360	0.246	(	0.288)	0.114
34	2.83	1.00	0.360	0.246	(	0.288)	0.114
35	2.92	1.00	0.360	0.246	(	0.288)	0.114
36	3.00	1.00	0.360	0.246	(	0.288)	0.114
37	3.08	1.00	0.360	0.246	(	0.288)	0.114

```
38   3.17     1.10      0.396          0.246    (  0.317)        0.150
39   3.25     1.10      0.396          0.246    (  0.317)        0.150
40   3.33     1.10      0.396          0.246    (  0.317)        0.150
41   3.42     1.20      0.432          0.246    (  0.345)        0.186
42   3.50     1.30      0.468          0.246    (  0.374)        0.222
43   3.58     1.40      0.504          0.246    (  0.403)        0.258
44   3.67     1.40      0.504          0.246    (  0.403)        0.258
45   3.75     1.50      0.540          0.246    (  0.432)        0.294
46   3.83     1.50      0.540          0.246    (  0.432)        0.294
47   3.92     1.60      0.576          0.246    (  0.461)        0.330
48   4.00     1.60      0.576          0.246    (  0.461)        0.330
49   4.08     1.70      0.612          0.246    (  0.489)        0.366
50   4.17     1.80      0.648          0.246    (  0.518)        0.402
51   4.25     1.90      0.684          0.246    (  0.547)        0.438
52   4.33     2.00      0.720          0.246    (  0.576)        0.474
53   4.42     2.10      0.756          0.246    (  0.605)        0.510
54   4.50     2.10      0.756          0.246    (  0.605)        0.510
55   4.58     2.20      0.792          0.246    (  0.633)        0.546
56   4.67     2.30      0.828          0.246    (  0.662)        0.582
57   4.75     2.40      0.864          0.246    (  0.691)        0.618
58   4.83     2.40      0.864          0.246    (  0.691)        0.618
59   4.92     2.50      0.900          0.246    (  0.720)        0.654
60   5.00     2.60      0.936          0.246    (  0.749)        0.690
61   5.08     3.10      1.116          0.246    (  0.892)        0.870
62   5.17     3.60      1.296          0.246    (  1.036)        1.049
63   5.25     3.90      1.403          0.246    (  1.123)        1.157
64   5.33     4.20      1.511          0.246    (  1.209)        1.265
65   5.42     4.70      1.691          0.246    (  1.353)        1.445
66   5.50     5.60      2.015          0.246    (  1.612)        1.769
67   5.58     1.90      0.684          0.246    (  0.547)        0.438
68   5.67     0.90      0.324          0.246    (  0.259)        0.078
69   5.75     0.60      0.216       (  0.246)       0.173        0.043
70   5.83     0.50      0.180       (  0.246)       0.144        0.036
71   5.92     0.30      0.108       (  0.246)       0.086        0.022
72   6.00     0.20      0.072       (  0.246)       0.058        0.014
              (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    19.7
      Flood volume = Effective rainfall      1.64(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =      14.5(Ac.Ft)
      Total soil loss =      1.36(In)
      Total soil loss =    12.063(Ac.Ft)
      Total rainfall =      3.00(In)
      Flood volume =      632811.9 Cubic Feet
      Total soil loss =      525460.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =    146.196(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
-------------------------------------------------------------------------
  0+ 5       0.0013      0.18  Q         |         |         |         |
  0+10       0.0094      1.18  Q         |         |         |         |
  0+15       0.0287      2.80  Q         |         |         |         |
  0+20       0.0536      3.61  Q         |         |         |         |
  0+25       0.0813      4.02  Q         |         |         |         |
  0+30       0.1109      4.31  Q         |         |         |         |
  0+35       0.1430      4.66  Q         |         |         |         |
  0+40       0.1777      5.04  VQ        |         |         |         |
  0+45       0.2134      5.18  VQ        |         |         |         |
  0+50       0.2497      5.27  VQ        |         |         |         |
  0+55       0.2863      5.32  VQ        |         |         |         |
  1+ 0       0.3235      5.40  VQ        |         |         |         |
  1+ 5       0.3622      5.62  VQ        |         |         |         |
  1+10       0.4029      5.91  |Q        |         |         |         |
  1+15       0.4444      6.02  |Q        |         |         |         |
  1+20       0.4862      6.08  |Q        |         |         |         |
  1+25       0.5284      6.12  |Q        |         |         |         |
  1+30       0.5707      6.15  |Q        |         |         |         |
  1+35       0.6132      6.16  |Q        |         |         |         |
```



U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: EX100YRA24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXISTING CONDITION AREA A
100-YR STORM EVENT
21-0044
2022-02-10 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	2.50	266.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 6.500(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 6.499(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	77.3	0.276	0.120	0.246	1.000	0.246
					Sum (F) =	0.246

Area averaged mean soil loss (F) (In/Hr) = 0.246
Minimum soil loss rate ((In/Hr)) = 0.123
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.052	(0.436)	0.042	0.010
2	0.17	0.07	0.052	(0.435)	0.042	0.010
3	0.25	0.07	0.052	(0.433)	0.042	0.010
4	0.33	0.10	0.078	(0.431)	0.062	0.016
5	0.42	0.10	0.078	(0.429)	0.062	0.016
6	0.50	0.10	0.078	(0.428)	0.062	0.016
7	0.58	0.10	0.078	(0.426)	0.062	0.016
8	0.67	0.10	0.078	(0.424)	0.062	0.016
9	0.75	0.10	0.078	(0.423)	0.062	0.016
10	0.83	0.13	0.104	(0.421)	0.083	0.021
11	0.92	0.13	0.104	(0.419)	0.083	0.021
12	1.00	0.13	0.104	(0.418)	0.083	0.021
13	1.08	0.10	0.078	(0.416)	0.062	0.016
14	1.17	0.10	0.078	(0.415)	0.062	0.016
15	1.25	0.10	0.078	(0.413)	0.062	0.016
16	1.33	0.10	0.078	(0.411)	0.062	0.016
17	1.42	0.10	0.078	(0.410)	0.062	0.016
18	1.50	0.10	0.078	(0.408)	0.062	0.016
19	1.58	0.10	0.078	(0.406)	0.062	0.016
20	1.67	0.10	0.078	(0.405)	0.062	0.016
21	1.75	0.10	0.078	(0.403)	0.062	0.016
22	1.83	0.13	0.104	(0.401)	0.083	0.021
23	1.92	0.13	0.104	(0.400)	0.083	0.021
24	2.00	0.13	0.104	(0.398)	0.083	0.021
25	2.08	0.13	0.104	(0.397)	0.083	0.021
26	2.17	0.13	0.104	(0.395)	0.083	0.021
27	2.25	0.13	0.104	(0.393)	0.083	0.021
28	2.33	0.13	0.104	(0.392)	0.083	0.021
29	2.42	0.13	0.104	(0.390)	0.083	0.021
30	2.50	0.13	0.104	(0.389)	0.083	0.021
31	2.58	0.17	0.130	(0.387)	0.104	0.026
32	2.67	0.17	0.130	(0.385)	0.104	0.026
33	2.75	0.17	0.130	(0.384)	0.104	0.026
34	2.83	0.17	0.130	(0.382)	0.104	0.026
35	2.92	0.17	0.130	(0.381)	0.104	0.026
36	3.00	0.17	0.130	(0.379)	0.104	0.026
37	3.08	0.17	0.130	(0.378)	0.104	0.026

38	3.17	0.17	0.130	(	0.376)	0.104		0.026
39	3.25	0.17	0.130	(	0.374)	0.104		0.026
40	3.33	0.17	0.130	(	0.373)	0.104		0.026
41	3.42	0.17	0.130	(	0.371)	0.104		0.026
42	3.50	0.17	0.130	(	0.370)	0.104		0.026
43	3.58	0.17	0.130	(	0.368)	0.104		0.026
44	3.67	0.17	0.130	(	0.367)	0.104		0.026
45	3.75	0.17	0.130	(	0.365)	0.104		0.026
46	3.83	0.20	0.156	(	0.364)	0.125		0.031
47	3.92	0.20	0.156	(	0.362)	0.125		0.031
48	4.00	0.20	0.156	(	0.361)	0.125		0.031
49	4.08	0.20	0.156	(	0.359)	0.125		0.031
50	4.17	0.20	0.156	(	0.357)	0.125		0.031
51	4.25	0.20	0.156	(	0.356)	0.125		0.031
52	4.33	0.23	0.182	(	0.354)	0.146		0.036
53	4.42	0.23	0.182	(	0.353)	0.146		0.036
54	4.50	0.23	0.182	(	0.351)	0.146		0.036
55	4.58	0.23	0.182	(	0.350)	0.146		0.036
56	4.67	0.23	0.182	(	0.348)	0.146		0.036
57	4.75	0.23	0.182	(	0.347)	0.146		0.036
58	4.83	0.27	0.208	(	0.345)	0.166		0.042
59	4.92	0.27	0.208	(	0.344)	0.166		0.042
60	5.00	0.27	0.208	(	0.342)	0.166		0.042
61	5.08	0.20	0.156	(	0.341)	0.125		0.031
62	5.17	0.20	0.156	(	0.339)	0.125		0.031
63	5.25	0.20	0.156	(	0.338)	0.125		0.031
64	5.33	0.23	0.182	(	0.336)	0.146		0.036
65	5.42	0.23	0.182	(	0.335)	0.146		0.036
66	5.50	0.23	0.182	(	0.334)	0.146		0.036
67	5.58	0.27	0.208	(	0.332)	0.166		0.042
68	5.67	0.27	0.208	(	0.331)	0.166		0.042
69	5.75	0.27	0.208	(	0.329)	0.166		0.042
70	5.83	0.27	0.208	(	0.328)	0.166		0.042
71	5.92	0.27	0.208	(	0.326)	0.166		0.042
72	6.00	0.27	0.208	(	0.325)	0.166		0.042
73	6.08	0.30	0.234	(	0.323)	0.187		0.047
74	6.17	0.30	0.234	(	0.322)	0.187		0.047
75	6.25	0.30	0.234	(	0.320)	0.187		0.047
76	6.33	0.30	0.234	(	0.319)	0.187		0.047
77	6.42	0.30	0.234	(	0.318)	0.187		0.047
78	6.50	0.30	0.234	(	0.316)	0.187		0.047
79	6.58	0.33	0.260	(	0.315)	0.208		0.052
80	6.67	0.33	0.260	(	0.313)	0.208		0.052
81	6.75	0.33	0.260	(	0.312)	0.208		0.052
82	6.83	0.33	0.260	(	0.311)	0.208		0.052
83	6.92	0.33	0.260	(	0.309)	0.208		0.052
84	7.00	0.33	0.260	(	0.308)	0.208		0.052
85	7.08	0.33	0.260	(	0.306)	0.208		0.052
86	7.17	0.33	0.260	(	0.305)	0.208		0.052
87	7.25	0.33	0.260	(	0.304)	0.208		0.052
88	7.33	0.37	0.286	(	0.302)	0.229		0.057
89	7.42	0.37	0.286	(	0.301)	0.229		0.057
90	7.50	0.37	0.286	(	0.299)	0.229		0.057
91	7.58	0.40	0.312	(	0.298)	0.250		0.062
92	7.67	0.40	0.312	(	0.297)	0.250		0.062
93	7.75	0.40	0.312	(	0.295)	0.250		0.062
94	7.83	0.43	0.338	(	0.294)	0.270		0.068
95	7.92	0.43	0.338	(	0.293)	0.270		0.068
96	8.00	0.43	0.338	(	0.291)	0.270		0.068
97	8.08	0.50	0.390		0.290	(	0.312)	0.100
98	8.17	0.50	0.390		0.289	(	0.312)	0.101
99	8.25	0.50	0.390		0.287	(	0.312)	0.103
100	8.33	0.50	0.390		0.286	(	0.312)	0.104
101	8.42	0.50	0.390		0.284	(	0.312)	0.105
102	8.50	0.50	0.390		0.283	(	0.312)	0.107
103	8.58	0.53	0.416		0.282	(	0.333)	0.134
104	8.67	0.53	0.416		0.281	(	0.333)	0.135
105	8.75	0.53	0.416		0.279	(	0.333)	0.137
106	8.83	0.57	0.442		0.278	(	0.354)	0.164
107	8.92	0.57	0.442		0.277	(	0.354)	0.165
108	9.00	0.57	0.442		0.275	(	0.354)	0.167
109	9.08	0.63	0.494		0.274	(	0.395)	0.220
110	9.17	0.63	0.494		0.273	(	0.395)	0.221
111	9.25	0.63	0.494		0.271	(	0.395)	0.223
112	9.33	0.67	0.520		0.270	(	0.416)	0.250

113	9.42	0.67	0.520	0.269	(	0.416)	0.251
114	9.50	0.67	0.520	0.267	(	0.416)	0.252
115	9.58	0.70	0.546	0.266	(	0.437)	0.280
116	9.67	0.70	0.546	0.265	(	0.437)	0.281
117	9.75	0.70	0.546	0.264	(	0.437)	0.282
118	9.83	0.73	0.572	0.262	(	0.458)	0.310
119	9.92	0.73	0.572	0.261	(	0.458)	0.311
120	10.00	0.73	0.572	0.260	(	0.458)	0.312
121	10.08	0.50	0.390	0.259	(	0.312)	0.131
122	10.17	0.50	0.390	0.257	(	0.312)	0.133
123	10.25	0.50	0.390	0.256	(	0.312)	0.134
124	10.33	0.50	0.390	0.255	(	0.312)	0.135
125	10.42	0.50	0.390	0.254	(	0.312)	0.136
126	10.50	0.50	0.390	0.252	(	0.312)	0.138
127	10.58	0.67	0.520	0.251	(	0.416)	0.269
128	10.67	0.67	0.520	0.250	(	0.416)	0.270
129	10.75	0.67	0.520	0.249	(	0.416)	0.271
130	10.83	0.67	0.520	0.247	(	0.416)	0.272
131	10.92	0.67	0.520	0.246	(	0.416)	0.274
132	11.00	0.67	0.520	0.245	(	0.416)	0.275
133	11.08	0.63	0.494	0.244	(	0.395)	0.250
134	11.17	0.63	0.494	0.243	(	0.395)	0.251
135	11.25	0.63	0.494	0.241	(	0.395)	0.252
136	11.33	0.63	0.494	0.240	(	0.395)	0.254
137	11.42	0.63	0.494	0.239	(	0.395)	0.255
138	11.50	0.63	0.494	0.238	(	0.395)	0.256
139	11.58	0.57	0.442	0.237	(	0.354)	0.205
140	11.67	0.57	0.442	0.236	(	0.354)	0.206
141	11.75	0.57	0.442	0.234	(	0.354)	0.208
142	11.83	0.60	0.468	0.233	(	0.374)	0.235
143	11.92	0.60	0.468	0.232	(	0.374)	0.236
144	12.00	0.60	0.468	0.231	(	0.374)	0.237
145	12.08	0.83	0.650	0.230	(	0.520)	0.420
146	12.17	0.83	0.650	0.229	(	0.520)	0.421
147	12.25	0.83	0.650	0.227	(	0.520)	0.422
148	12.33	0.87	0.676	0.226	(	0.541)	0.450
149	12.42	0.87	0.676	0.225	(	0.541)	0.451
150	12.50	0.87	0.676	0.224	(	0.541)	0.452
151	12.58	0.93	0.728	0.223	(	0.582)	0.505
152	12.67	0.93	0.728	0.222	(	0.582)	0.506
153	12.75	0.93	0.728	0.221	(	0.582)	0.507
154	12.83	0.97	0.754	0.220	(	0.603)	0.534
155	12.92	0.97	0.754	0.218	(	0.603)	0.535
156	13.00	0.97	0.754	0.217	(	0.603)	0.537
157	13.08	1.13	0.884	0.216	(	0.707)	0.668
158	13.17	1.13	0.884	0.215	(	0.707)	0.669
159	13.25	1.13	0.884	0.214	(	0.707)	0.670
160	13.33	1.13	0.884	0.213	(	0.707)	0.671
161	13.42	1.13	0.884	0.212	(	0.707)	0.672
162	13.50	1.13	0.884	0.211	(	0.707)	0.673
163	13.58	0.77	0.598	0.210	(	0.478)	0.388
164	13.67	0.77	0.598	0.209	(	0.478)	0.389
165	13.75	0.77	0.598	0.208	(	0.478)	0.390
166	13.83	0.77	0.598	0.206	(	0.478)	0.391
167	13.92	0.77	0.598	0.205	(	0.478)	0.392
168	14.00	0.77	0.598	0.204	(	0.478)	0.393
169	14.08	0.90	0.702	0.203	(	0.561)	0.499
170	14.17	0.90	0.702	0.202	(	0.561)	0.500
171	14.25	0.90	0.702	0.201	(	0.561)	0.501
172	14.33	0.87	0.676	0.200	(	0.541)	0.476
173	14.42	0.87	0.676	0.199	(	0.541)	0.477
174	14.50	0.87	0.676	0.198	(	0.541)	0.478
175	14.58	0.87	0.676	0.197	(	0.541)	0.479
176	14.67	0.87	0.676	0.196	(	0.541)	0.480
177	14.75	0.87	0.676	0.195	(	0.541)	0.481
178	14.83	0.83	0.650	0.194	(	0.520)	0.456
179	14.92	0.83	0.650	0.193	(	0.520)	0.457
180	15.00	0.83	0.650	0.192	(	0.520)	0.458
181	15.08	0.80	0.624	0.191	(	0.499)	0.433
182	15.17	0.80	0.624	0.190	(	0.499)	0.434
183	15.25	0.80	0.624	0.189	(	0.499)	0.435
184	15.33	0.77	0.598	0.188	(	0.478)	0.410
185	15.42	0.77	0.598	0.187	(	0.478)	0.411
186	15.50	0.77	0.598	0.186	(	0.478)	0.412
187	15.58	0.63	0.494	0.185	(	0.395)	0.309

188	15.67	0.63	0.494	0.184	(0.395)	0.309
189	15.75	0.63	0.494	0.184	(0.395)	0.310
190	15.83	0.63	0.494	0.183	(0.395)	0.311
191	15.92	0.63	0.494	0.182	(0.395)	0.312
192	16.00	0.63	0.494	0.181	(0.395)	0.313
193	16.08	0.13	0.104	(0.180)	0.083	0.021
194	16.17	0.13	0.104	(0.179)	0.083	0.021
195	16.25	0.13	0.104	(0.178)	0.083	0.021
196	16.33	0.13	0.104	(0.177)	0.083	0.021
197	16.42	0.13	0.104	(0.176)	0.083	0.021
198	16.50	0.13	0.104	(0.175)	0.083	0.021
199	16.58	0.10	0.078	(0.174)	0.062	0.016
200	16.67	0.10	0.078	(0.173)	0.062	0.016
201	16.75	0.10	0.078	(0.173)	0.062	0.016
202	16.83	0.10	0.078	(0.172)	0.062	0.016
203	16.92	0.10	0.078	(0.171)	0.062	0.016
204	17.00	0.10	0.078	(0.170)	0.062	0.016
205	17.08	0.17	0.130	(0.169)	0.104	0.026
206	17.17	0.17	0.130	(0.168)	0.104	0.026
207	17.25	0.17	0.130	(0.167)	0.104	0.026
208	17.33	0.17	0.130	(0.167)	0.104	0.026
209	17.42	0.17	0.130	(0.166)	0.104	0.026
210	17.50	0.17	0.130	(0.165)	0.104	0.026
211	17.58	0.17	0.130	(0.164)	0.104	0.026
212	17.67	0.17	0.130	(0.163)	0.104	0.026
213	17.75	0.17	0.130	(0.162)	0.104	0.026
214	17.83	0.13	0.104	(0.162)	0.083	0.021
215	17.92	0.13	0.104	(0.161)	0.083	0.021
216	18.00	0.13	0.104	(0.160)	0.083	0.021
217	18.08	0.13	0.104	(0.159)	0.083	0.021
218	18.17	0.13	0.104	(0.158)	0.083	0.021
219	18.25	0.13	0.104	(0.158)	0.083	0.021
220	18.33	0.13	0.104	(0.157)	0.083	0.021
221	18.42	0.13	0.104	(0.156)	0.083	0.021
222	18.50	0.13	0.104	(0.155)	0.083	0.021
223	18.58	0.10	0.078	(0.155)	0.062	0.016
224	18.67	0.10	0.078	(0.154)	0.062	0.016
225	18.75	0.10	0.078	(0.153)	0.062	0.016
226	18.83	0.07	0.052	(0.152)	0.042	0.010
227	18.92	0.07	0.052	(0.152)	0.042	0.010
228	19.00	0.07	0.052	(0.151)	0.042	0.010
229	19.08	0.10	0.078	(0.150)	0.062	0.016
230	19.17	0.10	0.078	(0.150)	0.062	0.016
231	19.25	0.10	0.078	(0.149)	0.062	0.016
232	19.33	0.13	0.104	(0.148)	0.083	0.021
233	19.42	0.13	0.104	(0.147)	0.083	0.021
234	19.50	0.13	0.104	(0.147)	0.083	0.021
235	19.58	0.10	0.078	(0.146)	0.062	0.016
236	19.67	0.10	0.078	(0.145)	0.062	0.016
237	19.75	0.10	0.078	(0.145)	0.062	0.016
238	19.83	0.07	0.052	(0.144)	0.042	0.010
239	19.92	0.07	0.052	(0.144)	0.042	0.010
240	20.00	0.07	0.052	(0.143)	0.042	0.010
241	20.08	0.10	0.078	(0.142)	0.062	0.016
242	20.17	0.10	0.078	(0.142)	0.062	0.016
243	20.25	0.10	0.078	(0.141)	0.062	0.016
244	20.33	0.10	0.078	(0.140)	0.062	0.016
245	20.42	0.10	0.078	(0.140)	0.062	0.016
246	20.50	0.10	0.078	(0.139)	0.062	0.016
247	20.58	0.10	0.078	(0.139)	0.062	0.016
248	20.67	0.10	0.078	(0.138)	0.062	0.016
249	20.75	0.10	0.078	(0.137)	0.062	0.016
250	20.83	0.07	0.052	(0.137)	0.042	0.010
251	20.92	0.07	0.052	(0.136)	0.042	0.010
252	21.00	0.07	0.052	(0.136)	0.042	0.010
253	21.08	0.10	0.078	(0.135)	0.062	0.016
254	21.17	0.10	0.078	(0.135)	0.062	0.016
255	21.25	0.10	0.078	(0.134)	0.062	0.016
256	21.33	0.07	0.052	(0.134)	0.042	0.010
257	21.42	0.07	0.052	(0.133)	0.042	0.010
258	21.50	0.07	0.052	(0.133)	0.042	0.010
259	21.58	0.10	0.078	(0.132)	0.062	0.016
260	21.67	0.10	0.078	(0.132)	0.062	0.016
261	21.75	0.10	0.078	(0.131)	0.062	0.016
262	21.83	0.07	0.052	(0.131)	0.042	0.010

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263  21.92     0.07      0.052       (  0.130)       0.042        0.010
264  22.00     0.07      0.052       (  0.130)       0.042        0.010
265  22.08     0.10      0.078       (  0.129)       0.062        0.016
266  22.17     0.10      0.078       (  0.129)       0.062        0.016
267  22.25     0.10      0.078       (  0.129)       0.062        0.016
268  22.33     0.07      0.052       (  0.128)       0.042        0.010
269  22.42     0.07      0.052       (  0.128)       0.042        0.010
270  22.50     0.07      0.052       (  0.127)       0.042        0.010
271  22.58     0.07      0.052       (  0.127)       0.042        0.010
272  22.67     0.07      0.052       (  0.127)       0.042        0.010
273  22.75     0.07      0.052       (  0.126)       0.042        0.010
274  22.83     0.07      0.052       (  0.126)       0.042        0.010
275  22.92     0.07      0.052       (  0.126)       0.042        0.010
276  23.00     0.07      0.052       (  0.125)       0.042        0.010
277  23.08     0.07      0.052       (  0.125)       0.042        0.010
278  23.17     0.07      0.052       (  0.125)       0.042        0.010
279  23.25     0.07      0.052       (  0.125)       0.042        0.010
280  23.33     0.07      0.052       (  0.124)       0.042        0.010
281  23.42     0.07      0.052       (  0.124)       0.042        0.010
282  23.50     0.07      0.052       (  0.124)       0.042        0.010
283  23.58     0.07      0.052       (  0.124)       0.042        0.010
284  23.67     0.07      0.052       (  0.124)       0.042        0.010
285  23.75     0.07      0.052       (  0.123)       0.042        0.010
286  23.83     0.07      0.052       (  0.123)       0.042        0.010
287  23.92     0.07      0.052       (  0.123)       0.042        0.010
288  24.00     0.07      0.052       (  0.123)       0.042        0.010
              (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    36.9
      Flood volume = Effective rainfall      3.08(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =      27.3(Ac.Ft)
      Total soil loss =      3.42(In)
      Total soil loss =    30.330(Ac.Ft)
      Total rainfall =      6.50(In)
      Flood volume =     1188816.4 Cubic Feet
      Total soil loss =     1321169.9 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     70.904(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.0      40.0      60.0      80.0
---------------------------------------------------------------------------
  0+ 5       0.0004      0.05  Q         |         |         |         |
  0+10       0.0027      0.33  Q         |         |         |         |
  0+15       0.0078      0.74  Q         |         |         |         |
  0+20       0.0141      0.92  Q         |         |         |         |
  0+25       0.0220      1.15  Q         |         |         |         |
  0+30       0.0317      1.41  Q         |         |         |         |
  0+35       0.0422      1.52  Q         |         |         |         |
  0+40       0.0531      1.58  Q         |         |         |         |
  0+45       0.0642      1.62  Q         |         |         |         |
  0+50       0.0757      1.67  Q         |         |         |         |
  0+55       0.0883      1.82  Q         |         |         |         |
  1+ 0       0.1023      2.03  VQ        |         |         |         |
  1+ 5       0.1167      2.09  VQ        |         |         |         |
  1+10       0.1304      2.00  Q         |         |         |         |
  1+15       0.1430      1.82  Q         |         |         |         |
  1+20       0.1551      1.76  Q         |         |         |         |
  1+25       0.1670      1.73  Q         |         |         |         |
  1+30       0.1787      1.70  Q         |         |         |         |
  1+35       0.1904      1.69  Q         |         |         |         |
  1+40       0.2019      1.68  Q         |         |         |         |
  1+45       0.2135      1.68  Q         |         |         |         |
  1+50       0.2253      1.71  Q         |         |         |         |
  1+55       0.2380      1.84  Q         |         |         |         |
  2+ 0       0.2520      2.05  VQ        |         |         |         |
  2+ 5       0.2666      2.12  VQ        |         |         |         |
  2+10       0.2816      2.16  VQ        |         |         |         |
  2+15       0.2967      2.19  VQ        |         |         |         |
  2+20       0.3119      2.21  VQ        |         |         |         |
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2+25       0.3272      2.22  VQ        |         |         |         |
2+30       0.3425      2.22  VQ        |         |         |         |
2+35       0.3580      2.25  VQ        |         |         |         |
2+40       0.3745      2.39  VQ        |         |         |         |
2+45       0.3924      2.60  VQ        |         |         |         |
2+50       0.4108      2.68  VQ        |         |         |         |
2+55       0.4296      2.72  VQ        |         |         |         |
3+ 0       0.4485      2.75  VQ        |         |         |         |
3+ 5       0.4676      2.77  VQ        |         |         |         |
3+10       0.4867      2.78  VQ        |         |         |         |
3+15       0.5059      2.78  VQ        |         |         |         |
3+20       0.5250      2.78  VQ        |         |         |         |
3+25       0.5442      2.79  VQ        |         |         |         |
3+30       0.5634      2.79  VQ        |         |         |         |
3+35       0.5826      2.79  VQ        |         |         |         |
3+40       0.6018      2.79  VQ        |         |         |         |
3+45       0.6210      2.79  VQ        |         |         |         |
3+50       0.6404      2.82  VQ        |         |         |         |
3+55       0.6608      2.95  VQ        |         |         |         |
4+ 0       0.6825      3.16  |Q        |         |         |         |
4+ 5       0.7048      3.24  |Q        |         |         |         |
4+10       0.7274      3.28  |Q        |         |         |         |
4+15       0.7502      3.31  |Q        |         |         |         |
4+20       0.7733      3.35  |Q        |         |         |         |
4+25       0.7974      3.50  |Q        |         |         |         |
4+30       0.8229      3.71  |Q        |         |         |         |
4+35       0.8490      3.79  |Q        |         |         |         |
4+40       0.8754      3.83  |Q        |         |         |         |
4+45       0.9021      3.86  |Q        |         |         |         |
4+50       0.9290      3.91  |Q        |         |         |         |
4+55       0.9569      4.06  |VQ       |         |         |         |
5+ 0       0.9863      4.27  |VQ       |         |         |         |
5+ 5       1.0159      4.29  |VQ       |         |         |         |
5+10       1.0439      4.06  |VQ       |         |         |         |
5+15       1.0692      3.68  |Q        |         |         |         |
5+20       1.0938      3.57  |Q        |         |         |         |
5+25       1.1188      3.63  |Q        |         |         |         |
5+30       1.1449      3.79  |Q        |         |         |         |
5+35       1.1715      3.86  |Q        |         |         |         |
5+40       1.1992      4.02  |VQ       |         |         |         |
5+45       1.2285      4.25  |VQ       |         |         |         |
5+50       1.2584      4.34  |VQ       |         |         |         |
5+55       1.2886      4.39  |VQ       |         |         |         |
6+ 0       1.3191      4.42  |VQ       |         |         |         |
6+ 5       1.3498      4.46  |VQ       |         |         |         |
6+10       1.3816      4.61  | Q       |         |         |         |
6+15       1.4148      4.82  | Q       |         |         |         |
6+20       1.4486      4.90  | Q       |         |         |         |
6+25       1.4827      4.95  | Q       |         |         |         |
6+30       1.5169      4.98  | Q       |         |         |         |
6+35       1.5516      5.03  | Q       |         |         |         |
6+40       1.5872      5.17  | Q       |         |         |         |
6+45       1.6243      5.38  | Q       |         |         |         |
6+50       1.6619      5.46  | Q       |         |         |         |
6+55       1.6998      5.51  | Q       |         |         |         |
7+ 0       1.7380      5.54  | Q       |         |         |         |
7+ 5       1.7762      5.56  | Q       |         |         |         |
7+10       1.8146      5.57  | Q       |         |         |         |
7+15       1.8529      5.57  | Q       |         |         |         |
7+20       1.8915      5.60  | Q       |         |         |         |
7+25       1.9310      5.74  | Q       |         |         |         |
7+30       1.9720      5.95  | Q       |         |         |         |
7+35       2.0137      6.05  | VQ      |         |         |         |
7+40       2.0566      6.23  |  Q      |         |         |         |
7+45       2.1011      6.47  |  Q      |         |         |         |
7+50       2.1465      6.59  |  Q      |         |         |         |
7+55       2.1932      6.78  |  Q      |         |         |         |
8+ 0       2.2416      7.02  |  Q      |         |         |         |
8+ 5       2.2917      7.28  |  Q      |         |         |         |
8+10       2.3482      8.21  |  VQ     |         |         |         |
8+15       2.4142      9.57  |  VQ     |         |         |         |
8+20       2.4842     10.16  |  V Q    |         |         |         |
8+25       2.5570     10.57  |  V Q    |         |         |         |
8+30       2.6318     10.87  |  V Q    |         |         |         |
8+35       2.7093     11.25  |  V Q    |         |         |         |
```

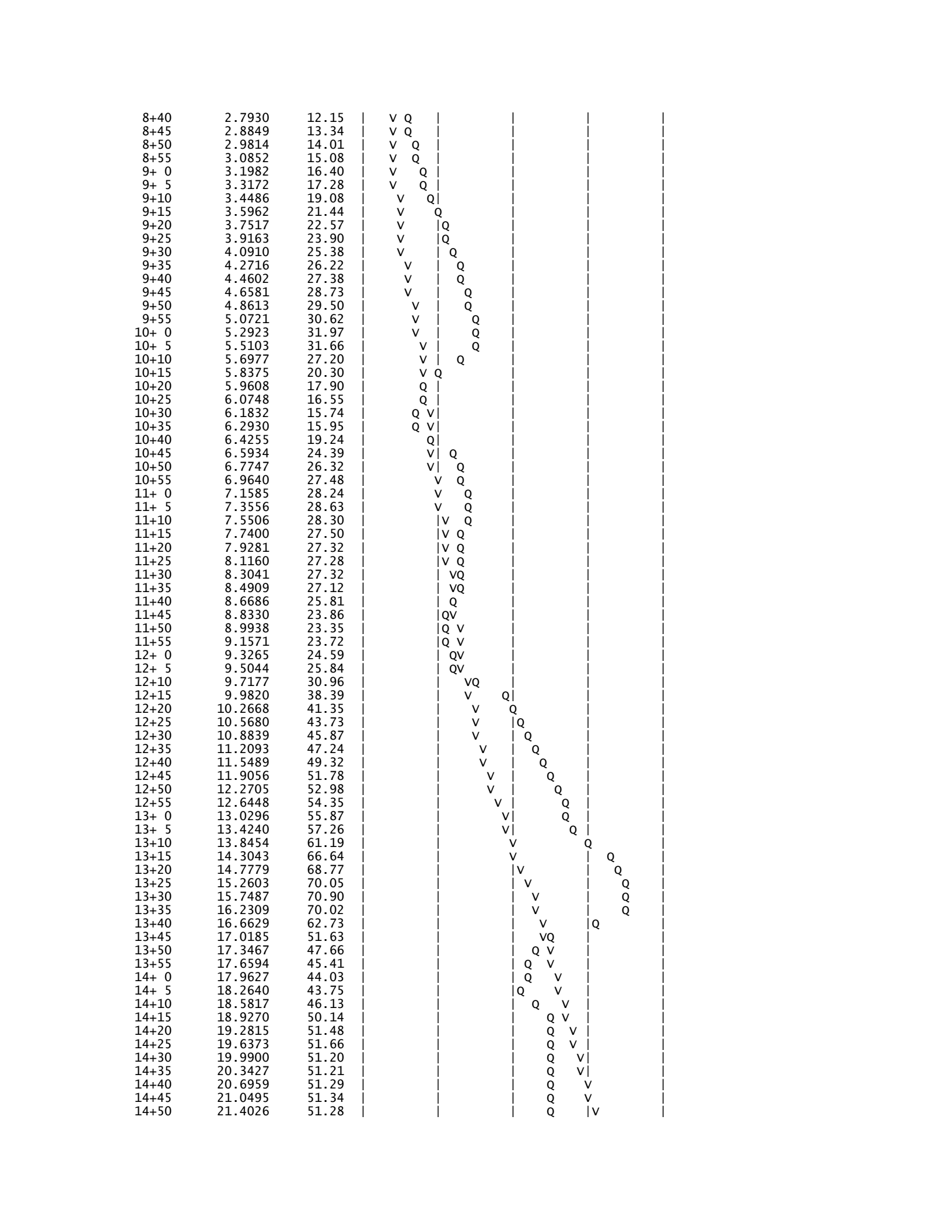

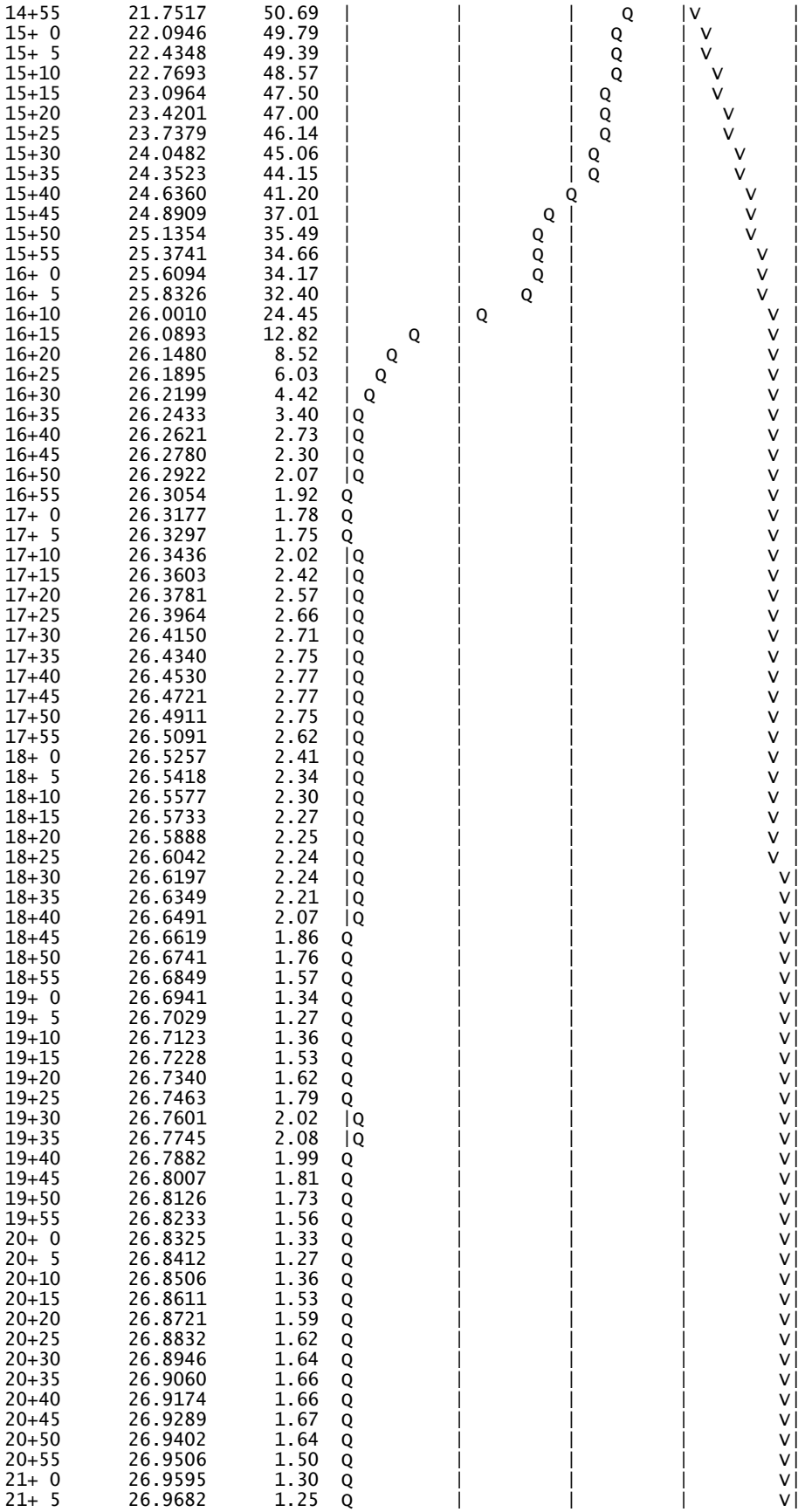

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  21+10      26.9774      1.35  Q         |         |         |         V|
  21+15      26.9879      1.53  Q         |         |         |         V|
  21+20      26.9987      1.56  Q         |         |         |         V|
  21+25      27.0087      1.45  Q         |         |         |         V|
  21+30      27.0174      1.27  Q         |         |         |         V|
  21+35      27.0260      1.24  Q         |         |         |         V|
  21+40      27.0352      1.34  Q         |         |         |         V|
  21+45      27.0456      1.52  Q         |         |         |         V|
  21+50      27.0563      1.55  Q         |         |         |         V|
  21+55      27.0663      1.45  Q         |         |         |         V|
  22+ 0      27.0751      1.27  Q         |         |         |         V|
  22+ 5      27.0836      1.24  Q         |         |         |         V|
  22+10      27.0928      1.34  Q         |         |         |         V|
  22+15      27.1033      1.52  Q         |         |         |         V|
  22+20      27.1139      1.55  Q         |         |         |         V|
  22+25      27.1239      1.45  Q         |         |         |         V|
  22+30      27.1327      1.27  Q         |         |         |         V|
  22+35      27.1410      1.21  Q         |         |         |         V|
  22+40      27.1491      1.17  Q         |         |         |         V|
  22+45      27.1570      1.15  Q         |         |         |         V|
  22+50      27.1648      1.13  Q         |         |         |         V|
  22+55      27.1725      1.12  Q         |         |         |         V|
  23+ 0      27.1803      1.12  Q         |         |         |         V|
  23+ 5      27.1880      1.12  Q         |         |         |         V|
  23+10      27.1957      1.12  Q         |         |         |         V|
  23+15      27.2034      1.12  Q         |         |         |         V|
  23+20      27.2111      1.12  Q         |         |         |         V|
  23+25      27.2187      1.12  Q         |         |         |         V|
  23+30      27.2264      1.12  Q         |         |         |         V|
  23+35      27.2341      1.12  Q         |         |         |         V|
  23+40      27.2418      1.12  Q         |         |         |         V|
  23+45      27.2495      1.12  Q         |         |         |         V|
  23+50      27.2572      1.12  Q         |         |         |         V|
  23+55      27.2648      1.12  Q         |         |         |         V|
  24+ 0      27.2725      1.12  Q         |         |         |         V|
  24+ 5      27.2798      1.06  Q         |         |         |         V|
  24+10      27.2852      0.78  Q         |         |         |         V|
  24+15      27.2878      0.37  Q         |         |         |         V|
  24+20      27.2893      0.22  Q         |         |         |         V|
  24+25      27.2902      0.13  Q         |         |         |         V|
  24+30      27.2908      0.08  Q         |         |         |         V|
  24+35      27.2911      0.04  Q         |         |         |         V|
  24+40      27.2912      0.02  Q         |         |         |         V|
  24+45      27.2913      0.02  Q         |         |         |         V|
  24+50      27.2914      0.01  Q         |         |         |         V|
  24+55      27.2915      0.01  Q         |         |         |         V|
  25+ 0      27.2915      0.00  Q         |         |         |          V
-------------------------------------------------------------------------
```

PROPOSED CONDITION UNIT HYDROGRAPHS

BUILDING 3 AREA (ONSITE) - DEVELOPED CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (AC)**	**Impervious Area (SF)**
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Streets/Conc	0.9	847805	19.46	763025
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Landscape	0	231831	5.32	0
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Roof	0.9	358370	8.23	322533
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Basin	1	30142	0.69	30142
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Streets/Conc	0.9	3400	0.08	3060
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Landscape	0	115	0.00	0
			AVERAGE WEIGHTED RI VALUE	**56.0**		**TOTAL**	1471663	33.8	
						TOTAL % IMPERVIOUS		**76.0%**	
						LOW LOSS RATE		**0.292**	

PROPOSED CONDITION
2-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH2YR32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.95	32.11

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.05	69.29

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 0.950(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 0.950(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)			Effective
	(Hr.)	Percent	(In/Hr)	Max		Low	(In/Hr)
1	0.08	1.30	0.148	(0.223)		0.043	0.105
2	0.17	1.30	0.148	(0.223)		0.043	0.105
3	0.25	1.10	0.125	(0.223)		0.036	0.089
4	0.33	1.50	0.171	(0.223)		0.050	0.121
5	0.42	1.50	0.171	(0.223)		0.050	0.121
6	0.50	1.80	0.205	(0.223)		0.059	0.146
7	0.58	1.50	0.171	(0.223)		0.050	0.121
8	0.67	1.80	0.205	(0.223)		0.059	0.146
9	0.75	1.80	0.205	(0.223)		0.059	0.146
10	0.83	1.50	0.171	(0.223)		0.050	0.121
11	0.92	1.60	0.182	(0.223)		0.053	0.129
12	1.00	1.80	0.205	(0.223)		0.059	0.146
13	1.08	2.20	0.251	(0.223)		0.073	0.178
14	1.17	2.20	0.251	(0.223)		0.073	0.178
15	1.25	2.20	0.251	(0.223)		0.073	0.178
16	1.33	2.00	0.228	(0.223)		0.066	0.162
17	1.42	2.60	0.296	(0.223)		0.086	0.210
18	1.50	2.70	0.308	(0.223)		0.089	0.219
19	1.58	2.40	0.274	(0.223)		0.079	0.194
20	1.67	2.70	0.308	(0.223)		0.089	0.219
21	1.75	3.30	0.376	(0.223)		0.109	0.267
22	1.83	3.10	0.353	(0.223)		0.102	0.251
23	1.92	2.90	0.331	(0.223)		0.096	0.235
24	2.00	3.00	0.342	(0.223)		0.099	0.243
25	2.08	3.10	0.353	(0.223)		0.102	0.251
26	2.17	4.20	0.479	(0.223)		0.139	0.340
27	2.25	5.00	0.570	(0.223)		0.165	0.405
28	2.33	3.50	0.399	(0.223)		0.116	0.283
29	2.42	6.80	0.775	0.223	(	0.225)	0.552
30	2.50	7.30	0.832	0.223	(	0.241)	0.609
31	2.58	8.20	0.935	0.223	(	0.271)	0.712
32	2.67	5.90	0.673	(0.223)		0.195	0.477
33	2.75	2.00	0.228	(0.223)		0.066	0.162
34	2.83	1.80	0.205	(0.223)		0.059	0.146
35	2.92	1.80	0.205	(0.223)		0.059	0.146
36	3.00	0.60	0.068	(0.223)		0.020	0.049
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	8.2

Flood volume = Effective rainfall 0.68(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 1.9(Ac.Ft)
Total soil loss = 0.27(In)
Total soil loss = 0.760(Ac.Ft)

```
      Total rainfall =      0.95(In)
      Flood volume =       83438.5 Cubic Feet
      Total soil loss =       33103.6 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     21.451(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
 ------------------------------------------------------------------------
   0+ 5       0.0031      0.45  Q         |         |         |         |
   0+10       0.0197      2.41  V  Q      |         |         |         |
   0+15       0.0407      3.05  V   Q     |         |         |         |
   0+20       0.0625      3.17  |V  Q     |         |         |         |
   0+25       0.0886      3.78  |V   Q    |         |         |         |
   0+30       0.1168      4.09  | V  Q    |         |         |         |
   0+35       0.1480      4.54  |  V  Q   |         |         |         |
   0+40       0.1782      4.39  |  V Q    |         |         |         |
   0+45       0.2109      4.75  |   V Q   |         |         |         |
   0+50       0.2438      4.78  |    VQ   |         |         |         |
   0+55       0.2742      4.41  |    Q    |         |         |         |
   1+ 0       0.3051      4.49  |    QV   |         |         |         |
   1+ 5       0.3390      4.92  |     QV  |         |         |         |
   1+10       0.3778      5.63  |      Q  |         |         |         |
   1+15       0.4184      5.90  |      QV |         |         |         |
   1+20       0.4593      5.93  |      Q V|         |         |         |
   1+25       0.4998      5.88  |      Q  V         |         |         |
   1+30       0.5461      6.72  |       Q |V        |         |         |
   1+35       0.5947      7.06  |        Q| V       |         |         |
   1+40       0.6422      6.89  |        Q|  V      |         |         |
   1+45       0.6935      7.45  |         Q|   V    |         |         |
   1+50       0.7514      8.41  |          |Q   V   |         |         |
   1+55       0.8093      8.41  |          |Q    V  |         |         |
   2+ 0       0.8657      8.19  |          Q       V|         |         |
   2+ 5       0.9228      8.28  |          |Q       V|         |         |
   2+10       0.9835      8.82  |          |Q        V         |         |
   2+15       1.0581     10.83  |          |   Q     | V       |         |
   2+20       1.1418     12.14  |          |     Q   |  V      |         |
   2+25       1.2224     11.70  |          |    Q    |    V    |         |
   2+30       1.3355     16.43  |          |         |Q     V  |         |
   2+35       1.4698     19.49  |          |         |    Q    V         |
   2+40       1.6175     21.45  |          |         |       Q |  V      |
   2+45       1.7335     16.85  |          |         | Q       |    V    |
   2+50       1.8005      9.73  |          | Q       |         |     V   |
   2+55       1.8477      6.84  |         Q|         |         |      V  |
   3+ 0       1.8840      5.27  |       Q  |         |         |       V |
   3+ 5       1.9034      2.82  |  Q       |         |         |        V|
   3+10       1.9110      1.10  |Q         |         |         |        V|
   3+15       1.9139      0.42  Q          |         |         |        V|
   3+20       1.9149      0.15  Q          |         |         |        V|
   3+25       1.9153      0.06  Q          |         |         |        V|
   3+30       1.9155      0.02  Q          |         |         |        V|
   3+35       1.9155      0.00  Q          |         |         |         V
------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH2YR62.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
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2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

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Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.40	47.32

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	3.00	101.40

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.400(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.400(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

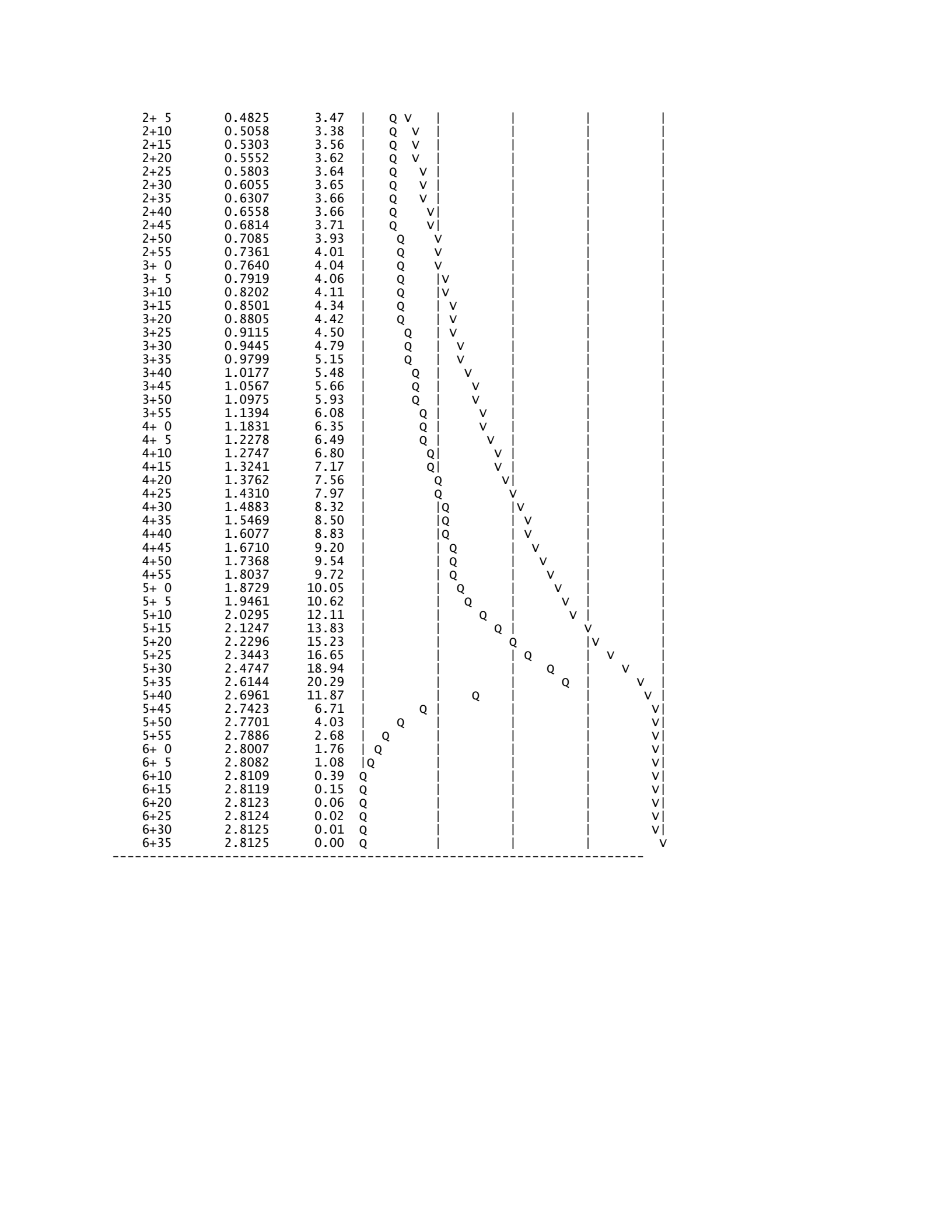
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.50	0.084	(0.223)	0.024	0.060
2	0.17	0.60	0.101	(0.223)	0.029	0.072
3	0.25	0.60	0.101	(0.223)	0.029	0.072
4	0.33	0.60	0.101	(0.223)	0.029	0.072
5	0.42	0.60	0.101	(0.223)	0.029	0.072
6	0.50	0.70	0.118	(0.223)	0.034	0.083
7	0.58	0.70	0.118	(0.223)	0.034	0.083
8	0.67	0.70	0.118	(0.223)	0.034	0.083
9	0.75	0.70	0.118	(0.223)	0.034	0.083
10	0.83	0.70	0.118	(0.223)	0.034	0.083
11	0.92	0.70	0.118	(0.223)	0.034	0.083
12	1.00	0.80	0.134	(0.223)	0.039	0.095
13	1.08	0.80	0.134	(0.223)	0.039	0.095
14	1.17	0.80	0.134	(0.223)	0.039	0.095
15	1.25	0.80	0.134	(0.223)	0.039	0.095
16	1.33	0.80	0.134	(0.223)	0.039	0.095
17	1.42	0.80	0.134	(0.223)	0.039	0.095
18	1.50	0.80	0.134	(0.223)	0.039	0.095
19	1.58	0.80	0.134	(0.223)	0.039	0.095
20	1.67	0.80	0.134	(0.223)	0.039	0.095
21	1.75	0.80	0.134	(0.223)	0.039	0.095
22	1.83	0.80	0.134	(0.223)	0.039	0.095
23	1.92	0.80	0.134	(0.223)	0.039	0.095
24	2.00	0.90	0.151	(0.223)	0.044	0.107
25	2.08	0.80	0.134	(0.223)	0.039	0.095
26	2.17	0.90	0.151	(0.223)	0.044	0.107
27	2.25	0.90	0.151	(0.223)	0.044	0.107
28	2.33	0.90	0.151	(0.223)	0.044	0.107
29	2.42	0.90	0.151	(0.223)	0.044	0.107
30	2.50	0.90	0.151	(0.223)	0.044	0.107
31	2.58	0.90	0.151	(0.223)	0.044	0.107
32	2.67	0.90	0.151	(0.223)	0.044	0.107
33	2.75	1.00	0.168	(0.223)	0.049	0.119
34	2.83	1.00	0.168	(0.223)	0.049	0.119
35	2.92	1.00	0.168	(0.223)	0.049	0.119
36	3.00	1.00	0.168	(0.223)	0.049	0.119
37	3.08	1.00	0.168	(0.223)	0.049	0.119
38	3.17	1.10	0.185	(0.223)	0.054	0.131
39	3.25	1.10	0.185	(0.223)	0.054	0.131
40	3.33	1.10	0.185	(0.223)	0.054	0.131
41	3.42	1.20	0.202	(0.223)	0.058	0.143
42	3.50	1.30	0.218	(0.223)	0.063	0.155

```
43   3.58     1.40      0.235       (  0.223)       0.068        0.167
44   3.67     1.40      0.235       (  0.223)       0.068        0.167
45   3.75     1.50      0.252       (  0.223)       0.073        0.179
46   3.83     1.50      0.252       (  0.223)       0.073        0.179
47   3.92     1.60      0.269       (  0.223)       0.078        0.191
48   4.00     1.60      0.269       (  0.223)       0.078        0.191
49   4.08     1.70      0.286       (  0.223)       0.083        0.203
50   4.17     1.80      0.302       (  0.223)       0.088        0.215
51   4.25     1.90      0.319       (  0.223)       0.093        0.227
52   4.33     2.00      0.336       (  0.223)       0.097        0.239
53   4.42     2.10      0.353       (  0.223)       0.102        0.250
54   4.50     2.10      0.353       (  0.223)       0.102        0.250
55   4.58     2.20      0.370       (  0.223)       0.107        0.262
56   4.67     2.30      0.386       (  0.223)       0.112        0.274
57   4.75     2.40      0.403       (  0.223)       0.117        0.286
58   4.83     2.40      0.403       (  0.223)       0.117        0.286
59   4.92     2.50      0.420       (  0.223)       0.122        0.298
60   5.00     2.60      0.437       (  0.223)       0.127        0.310
61   5.08     3.10      0.521       (  0.223)       0.151        0.370
62   5.17     3.60      0.605       (  0.223)       0.175        0.429
63   5.25     3.90      0.655       (  0.223)       0.190        0.465
64   5.33     4.20      0.706       (  0.223)       0.205        0.501
65   5.42     4.70      0.790          0.223    (  0.229)       0.566
66   5.50     5.60      0.941          0.223    (  0.273)       0.718
67   5.58     1.90      0.319       (  0.223)       0.093        0.227
68   5.67     0.90      0.151       (  0.223)       0.044        0.107
69   5.75     0.60      0.101       (  0.223)       0.029        0.072
70   5.83     0.50      0.084       (  0.223)       0.024        0.060
71   5.92     0.30      0.050       (  0.223)       0.015        0.036
72   6.00     0.20      0.034       (  0.223)       0.010        0.024
              (Loss Rate Not Used)
   Sum =     100.0                                   Sum =    12.0
      Flood volume = Effective rainfall      1.00(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       2.8(Ac.Ft)
      Total soil loss =      0.40(In)
      Total soil loss =     1.130(Ac.Ft)
      Total rainfall =      1.40(In)
      Flood volume =      122511.8 Cubic Feet
      Total soil loss =       49239.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     20.285(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0017      0.25  Q          |          |          |          |
  0+10       0.0115      1.42  VQ         |          |          |          |
  0+15       0.0256      2.04  V Q        |          |          |          |
  0+20       0.0413      2.28  V  Q       |          |          |          |
  0+25       0.0577      2.38  V  Q       |          |          |          |
  0+30       0.0747      2.46  |V Q       |          |          |          |
  0+35       0.0933      2.70  |V Q       |          |          |          |
  0+40       0.1125      2.79  |V Q       |          |          |          |
  0+45       0.1320      2.83  |V Q       |          |          |          |
  0+50       0.1515      2.84  | VQ       |          |          |          |
  0+55       0.1711      2.84  | VQ       |          |          |          |
  1+ 0       0.1910      2.89  | VQ       |          |          |          |
  1+ 5       0.2125      3.12  |  VQ      |          |          |          |
  1+10       0.2345      3.20  |  VQ      |          |          |          |
  1+15       0.2568      3.23  |  VQ      |          |          |          |
  1+20       0.2791      3.24  |  VQ      |          |          |          |
  1+25       0.3015      3.25  |   Q      |          |          |          |
  1+30       0.3239      3.25  |   Q      |          |          |          |
  1+35       0.3463      3.25  |   Q      |          |          |          |
  1+40       0.3687      3.25  |   QV     |          |          |          |
  1+45       0.3911      3.25  |   QV     |          |          |          |
  1+50       0.4135      3.25  |   QV     |          |          |          |
  1+55       0.4358      3.25  |   Q V    |          |          |          |
  2+ 0       0.4586      3.30  |   Q V    |          |          |          |
```


2+ 5 0.4825 3.47
2+10 0.5058 3.38
2+15 0.5303 3.56
2+20 0.5552 3.62
2+25 0.5803 3.64
2+30 0.6055 3.65
2+35 0.6307 3.66
2+40 0.6558 3.66
2+45 0.6814 3.71
2+50 0.7085 3.93
2+55 0.7361 4.01
3+ 0 0.7640 4.04
3+ 5 0.7919 4.06
3+10 0.8202 4.11
3+15 0.8501 4.34
3+20 0.8805 4.42
3+25 0.9115 4.50
3+30 0.9445 4.79
3+35 0.9799 5.15
3+40 1.0177 5.48
3+45 1.0567 5.66
3+50 1.0975 5.93
3+55 1.1394 6.08
4+ 0 1.1831 6.35
4+ 5 1.2278 6.49
4+10 1.2747 6.80
4+15 1.3241 7.17
4+20 1.3762 7.56
4+25 1.4310 7.97
4+30 1.4883 8.32
4+35 1.5469 8.50
4+40 1.6077 8.83
4+45 1.6710 9.20
4+50 1.7368 9.54
4+55 1.8037 9.72
5+ 0 1.8729 10.05
5+ 5 1.9461 10.62
5+10 2.0295 12.11
5+15 2.1247 13.83
5+20 2.2296 15.23
5+25 2.3443 16.65
5+30 2.4747 18.94
5+35 2.6144 20.29
5+40 2.6961 11.87
5+45 2.7423 6.71
5+50 2.7701 4.03
5+55 2.7886 2.68
6+ 0 2.8007 1.76
6+ 5 2.8082 1.08
6+10 2.8109 0.39
6+15 2.8119 0.15
6+20 2.8123 0.06
6+25 2.8124 0.02
6+30 2.8125 0.01
6+35 2.8125 0.00

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH2YR12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.55	18.59

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.25	42.25

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

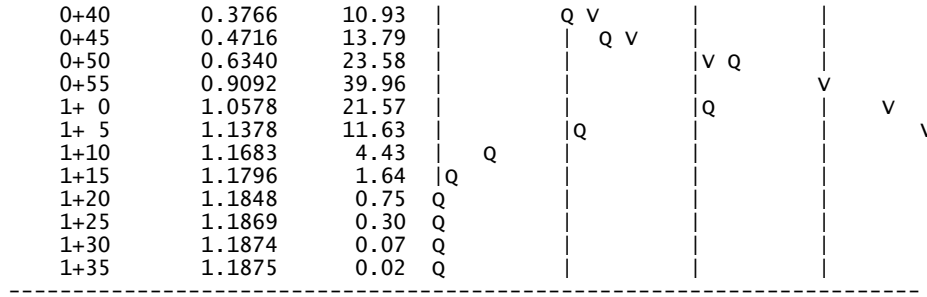
```
      56.0  36.0      0.706     0.760        0.223       1.000      0.223
                                                        Sum (F) =   0.223
      Area averaged mean soil loss (F) (In/Hr) =  0.223
      Minimum soil loss rate ((In/Hr)) =  0.112
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.290
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         94.204         12.469             4.247
          2   0.167        188.409         54.814            18.672
          3   0.250        282.613         19.639             6.690
          4   0.333        376.818          8.096             2.758
          5   0.417        471.022          3.119             1.063
          6   0.500        565.227          0.957             0.326
          7   0.583        659.431          0.629             0.214
          8   0.667        753.636          0.277             0.094
                                   Sum = 100.000   Sum=      34.064
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.224       (  0.223)       0.065        0.159
   2   0.17     4.70      0.310       (  0.223)       0.090        0.220
   3   0.25     4.70      0.310       (  0.223)       0.090        0.220
   4   0.33     5.10      0.336       (  0.223)       0.098        0.239
   5   0.42     5.80      0.383       (  0.223)       0.111        0.272
   6   0.50     5.90      0.389       (  0.223)       0.113        0.276
   7   0.58     7.10      0.468       (  0.223)       0.136        0.333
   8   0.67     8.70      0.574       (  0.223)       0.166        0.408
   9   0.75    13.20      0.871          0.223    (  0.253)        0.648
  10   0.83    29.70      1.960          0.223    (  0.568)        1.737
  11   0.92     7.70      0.508       (  0.223)       0.147        0.361
  12   1.00     4.00      0.264       (  0.223)       0.077        0.187
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     5.1
        Flood volume = Effective rainfall      0.42(In)
         times area      33.8(Ac.)/[(In)/(Ft.)] =       1.2(Ac.Ft)
        Total soil loss =      0.13(In)
        Total soil loss =     0.361(Ac.Ft)
        Total rainfall =      0.55(In)
        Flood volume =       51728.1 Cubic Feet
        Total soil loss =       15733.0 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =     39.959(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f      H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
  ------------------------------------------------------------------------
    0+ 5       0.0047      0.68  Q         |         |         |         |
    0+10       0.0316      3.91  |V Q      |         |         |         |
    0+15       0.0737      6.11  | V   Q   |         |         |         |
    0+20       0.1222      7.04  |   V  Q  |         |         |         |
    0+25       0.1764      7.87  |    V Q  |         |         |         |
    0+30       0.2366      8.74  |      VQ |         |         |         |
    0+35       0.3013      9.39  |        QV         |         |         |
```


0+40 0.3766 10.93
0+45 0.4716 13.79
0+50 0.6340 23.58
0+55 0.9092 39.96
1+ 0 1.0578 21.57
1+ 5 1.1378 11.63
1+10 1.1683 4.43
1+15 1.1796 1.64
1+20 1.1848 0.75
1+25 1.1869 0.30
1+30 1.1874 0.07
1+35 1.1875 0.02

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.395)	0.006	0.014
2	0.17	0.07	0.020	(0.394)	0.006	0.014
3	0.25	0.07	0.020	(0.392)	0.006	0.014
4	0.33	0.10	0.030	(0.391)	0.009	0.021
5	0.42	0.10	0.030	(0.389)	0.009	0.021
6	0.50	0.10	0.030	(0.388)	0.009	0.021
7	0.58	0.10	0.030	(0.386)	0.009	0.021
8	0.67	0.10	0.030	(0.385)	0.009	0.021
9	0.75	0.10	0.030	(0.383)	0.009	0.021
10	0.83	0.13	0.040	(0.382)	0.012	0.028
11	0.92	0.13	0.040	(0.380)	0.012	0.028
12	1.00	0.13	0.040	(0.379)	0.012	0.028
13	1.08	0.10	0.030	(0.377)	0.009	0.021
14	1.17	0.10	0.030	(0.376)	0.009	0.021
15	1.25	0.10	0.030	(0.374)	0.009	0.021
16	1.33	0.10	0.030	(0.373)	0.009	0.021
17	1.42	0.10	0.030	(0.371)	0.009	0.021
18	1.50	0.10	0.030	(0.370)	0.009	0.021
19	1.58	0.10	0.030	(0.368)	0.009	0.021
20	1.67	0.10	0.030	(0.367)	0.009	0.021
21	1.75	0.10	0.030	(0.365)	0.009	0.021
22	1.83	0.13	0.040	(0.364)	0.012	0.028
23	1.92	0.13	0.040	(0.363)	0.012	0.028
24	2.00	0.13	0.040	(0.361)	0.012	0.028
25	2.08	0.13	0.040	(0.360)	0.012	0.028
26	2.17	0.13	0.040	(0.358)	0.012	0.028
27	2.25	0.13	0.040	(0.357)	0.012	0.028
28	2.33	0.13	0.040	(0.355)	0.012	0.028
29	2.42	0.13	0.040	(0.354)	0.012	0.028
30	2.50	0.13	0.040	(0.352)	0.012	0.028
31	2.58	0.17	0.050	(0.351)	0.014	0.035
32	2.67	0.17	0.050	(0.349)	0.014	0.035
33	2.75	0.17	0.050	(0.348)	0.014	0.035
34	2.83	0.17	0.050	(0.347)	0.014	0.035
35	2.92	0.17	0.050	(0.345)	0.014	0.035
36	3.00	0.17	0.050	(0.344)	0.014	0.035
37	3.08	0.17	0.050	(0.342)	0.014	0.035
38	3.17	0.17	0.050	(0.341)	0.014	0.035
39	3.25	0.17	0.050	(0.339)	0.014	0.035
40	3.33	0.17	0.050	(0.338)	0.014	0.035
41	3.42	0.17	0.050	(0.337)	0.014	0.035
42	3.50	0.17	0.050	(0.335)	0.014	0.035

43	3.58	0.17	0.050	(0.334)	0.014	0.035
44	3.67	0.17	0.050	(0.332)	0.014	0.035
45	3.75	0.17	0.050	(0.331)	0.014	0.035
46	3.83	0.20	0.060	(0.330)	0.017	0.043
47	3.92	0.20	0.060	(0.328)	0.017	0.043
48	4.00	0.20	0.060	(0.327)	0.017	0.043
49	4.08	0.20	0.060	(0.325)	0.017	0.043
50	4.17	0.20	0.060	(0.324)	0.017	0.043
51	4.25	0.20	0.060	(0.323)	0.017	0.043
52	4.33	0.23	0.070	(0.321)	0.020	0.050
53	4.42	0.23	0.070	(0.320)	0.020	0.050
54	4.50	0.23	0.070	(0.319)	0.020	0.050
55	4.58	0.23	0.070	(0.317)	0.020	0.050
56	4.67	0.23	0.070	(0.316)	0.020	0.050
57	4.75	0.23	0.070	(0.314)	0.020	0.050
58	4.83	0.27	0.080	(0.313)	0.023	0.057
59	4.92	0.27	0.080	(0.312)	0.023	0.057
60	5.00	0.27	0.080	(0.310)	0.023	0.057
61	5.08	0.20	0.060	(0.309)	0.017	0.043
62	5.17	0.20	0.060	(0.308)	0.017	0.043
63	5.25	0.20	0.060	(0.306)	0.017	0.043
64	5.33	0.23	0.070	(0.305)	0.020	0.050
65	5.42	0.23	0.070	(0.304)	0.020	0.050
66	5.50	0.23	0.070	(0.302)	0.020	0.050
67	5.58	0.27	0.080	(0.301)	0.023	0.057
68	5.67	0.27	0.080	(0.300)	0.023	0.057
69	5.75	0.27	0.080	(0.298)	0.023	0.057
70	5.83	0.27	0.080	(0.297)	0.023	0.057
71	5.92	0.27	0.080	(0.296)	0.023	0.057
72	6.00	0.27	0.080	(0.294)	0.023	0.057
73	6.08	0.30	0.090	(0.293)	0.026	0.064
74	6.17	0.30	0.090	(0.292)	0.026	0.064
75	6.25	0.30	0.090	(0.291)	0.026	0.064
76	6.33	0.30	0.090	(0.289)	0.026	0.064
77	6.42	0.30	0.090	(0.288)	0.026	0.064
78	6.50	0.30	0.090	(0.287)	0.026	0.064
79	6.58	0.33	0.100	(0.285)	0.029	0.071
80	6.67	0.33	0.100	(0.284)	0.029	0.071
81	6.75	0.33	0.100	(0.283)	0.029	0.071
82	6.83	0.33	0.100	(0.282)	0.029	0.071
83	6.92	0.33	0.100	(0.280)	0.029	0.071
84	7.00	0.33	0.100	(0.279)	0.029	0.071
85	7.08	0.33	0.100	(0.278)	0.029	0.071
86	7.17	0.33	0.100	(0.276)	0.029	0.071
87	7.25	0.33	0.100	(0.275)	0.029	0.071
88	7.33	0.37	0.110	(0.274)	0.032	0.078
89	7.42	0.37	0.110	(0.273)	0.032	0.078
90	7.50	0.37	0.110	(0.271)	0.032	0.078
91	7.58	0.40	0.120	(0.270)	0.035	0.085
92	7.67	0.40	0.120	(0.269)	0.035	0.085
93	7.75	0.40	0.120	(0.268)	0.035	0.085
94	7.83	0.43	0.130	(0.266)	0.038	0.092
95	7.92	0.43	0.130	(0.265)	0.038	0.092
96	8.00	0.43	0.130	(0.264)	0.038	0.092
97	8.08	0.50	0.150	(0.263)	0.043	0.106
98	8.17	0.50	0.150	(0.262)	0.043	0.106
99	8.25	0.50	0.150	(0.260)	0.043	0.106
100	8.33	0.50	0.150	(0.259)	0.043	0.106
101	8.42	0.50	0.150	(0.258)	0.043	0.106
102	8.50	0.50	0.150	(0.257)	0.043	0.106
103	8.58	0.53	0.160	(0.256)	0.046	0.114
104	8.67	0.53	0.160	(0.254)	0.046	0.114
105	8.75	0.53	0.160	(0.253)	0.046	0.114
106	8.83	0.57	0.170	(0.252)	0.049	0.121
107	8.92	0.57	0.170	(0.251)	0.049	0.121
108	9.00	0.57	0.170	(0.250)	0.049	0.121
109	9.08	0.63	0.190	(0.248)	0.055	0.135
110	9.17	0.63	0.190	(0.247)	0.055	0.135
111	9.25	0.63	0.190	(0.246)	0.055	0.135
112	9.33	0.67	0.200	(0.245)	0.058	0.142
113	9.42	0.67	0.200	(0.244)	0.058	0.142
114	9.50	0.67	0.200	(0.243)	0.058	0.142
115	9.58	0.70	0.210	(0.241)	0.061	0.149
116	9.67	0.70	0.210	(0.240)	0.061	0.149
117	9.75	0.70	0.210	(0.239)	0.061	0.149

118	9.83	0.73	0.220	(0.238)	0.064	0.156
119	9.92	0.73	0.220	(0.237)	0.064	0.156
120	10.00	0.73	0.220	(0.236)	0.064	0.156
121	10.08	0.50	0.150	(0.234)	0.043	0.106
122	10.17	0.50	0.150	(0.233)	0.043	0.106
123	10.25	0.50	0.150	(0.232)	0.043	0.106
124	10.33	0.50	0.150	(0.231)	0.043	0.106
125	10.42	0.50	0.150	(0.230)	0.043	0.106
126	10.50	0.50	0.150	(0.229)	0.043	0.106
127	10.58	0.67	0.200	(0.228)	0.058	0.142
128	10.67	0.67	0.200	(0.227)	0.058	0.142
129	10.75	0.67	0.200	(0.225)	0.058	0.142
130	10.83	0.67	0.200	(0.224)	0.058	0.142
131	10.92	0.67	0.200	(0.223)	0.058	0.142
132	11.00	0.67	0.200	(0.222)	0.058	0.142
133	11.08	0.63	0.190	(0.221)	0.055	0.135
134	11.17	0.63	0.190	(0.220)	0.055	0.135
135	11.25	0.63	0.190	(0.219)	0.055	0.135
136	11.33	0.63	0.190	(0.218)	0.055	0.135
137	11.42	0.63	0.190	(0.217)	0.055	0.135
138	11.50	0.63	0.190	(0.216)	0.055	0.135
139	11.58	0.57	0.170	(0.215)	0.049	0.121
140	11.67	0.57	0.170	(0.214)	0.049	0.121
141	11.75	0.57	0.170	(0.212)	0.049	0.121
142	11.83	0.60	0.180	(0.211)	0.052	0.128
143	11.92	0.60	0.180	(0.210)	0.052	0.128
144	12.00	0.60	0.180	(0.209)	0.052	0.128
145	12.08	0.83	0.250	(0.208)	0.072	0.177
146	12.17	0.83	0.250	(0.207)	0.072	0.177
147	12.25	0.83	0.250	(0.206)	0.072	0.177
148	12.33	0.87	0.260	(0.205)	0.075	0.185
149	12.42	0.87	0.260	(0.204)	0.075	0.185
150	12.50	0.87	0.260	(0.203)	0.075	0.185
151	12.58	0.93	0.280	(0.202)	0.081	0.199
152	12.67	0.93	0.280	(0.201)	0.081	0.199
153	12.75	0.93	0.280	(0.200)	0.081	0.199
154	12.83	0.97	0.290	(0.199)	0.084	0.206
155	12.92	0.97	0.290	(0.198)	0.084	0.206
156	13.00	0.97	0.290	(0.197)	0.084	0.206
157	13.08	1.13	0.340	(0.196)	0.099	0.241
158	13.17	1.13	0.340	(0.195)	0.099	0.241
159	13.25	1.13	0.340	(0.194)	0.099	0.241
160	13.33	1.13	0.340	(0.193)	0.099	0.241
161	13.42	1.13	0.340	(0.192)	0.099	0.241
162	13.50	1.13	0.340	(0.191)	0.099	0.241
163	13.58	0.77	0.230	(0.190)	0.067	0.163
164	13.67	0.77	0.230	(0.189)	0.067	0.163
165	13.75	0.77	0.230	(0.188)	0.067	0.163
166	13.83	0.77	0.230	(0.187)	0.067	0.163
167	13.92	0.77	0.230	(0.186)	0.067	0.163
168	14.00	0.77	0.230	(0.185)	0.067	0.163
169	14.08	0.90	0.270	(0.184)	0.078	0.192
170	14.17	0.90	0.270	(0.183)	0.078	0.192
171	14.25	0.90	0.270	(0.182)	0.078	0.192
172	14.33	0.87	0.260	(0.182)	0.075	0.185
173	14.42	0.87	0.260	(0.181)	0.075	0.185
174	14.50	0.87	0.260	(0.180)	0.075	0.185
175	14.58	0.87	0.260	(0.179)	0.075	0.185
176	14.67	0.87	0.260	(0.178)	0.075	0.185
177	14.75	0.87	0.260	(0.177)	0.075	0.185
178	14.83	0.83	0.250	(0.176)	0.072	0.177
179	14.92	0.83	0.250	(0.175)	0.072	0.177
180	15.00	0.83	0.250	(0.174)	0.072	0.177
181	15.08	0.80	0.240	(0.173)	0.070	0.170
182	15.17	0.80	0.240	(0.172)	0.070	0.170
183	15.25	0.80	0.240	(0.172)	0.070	0.170
184	15.33	0.77	0.230	(0.171)	0.067	0.163
185	15.42	0.77	0.230	(0.170)	0.067	0.163
186	15.50	0.77	0.230	(0.169)	0.067	0.163
187	15.58	0.63	0.190	(0.168)	0.055	0.135
188	15.67	0.63	0.190	(0.167)	0.055	0.135
189	15.75	0.63	0.190	(0.166)	0.055	0.135
190	15.83	0.63	0.190	(0.166)	0.055	0.135
191	15.92	0.63	0.190	(0.165)	0.055	0.135
192	16.00	0.63	0.190	(0.164)	0.055	0.135

193	16.08	0.13	0.040	(0.163)	0.012	0.028
194	16.17	0.13	0.040	(0.162)	0.012	0.028
195	16.25	0.13	0.040	(0.161)	0.012	0.028
196	16.33	0.13	0.040	(0.161)	0.012	0.028
197	16.42	0.13	0.040	(0.160)	0.012	0.028
198	16.50	0.13	0.040	(0.159)	0.012	0.028
199	16.58	0.10	0.030	(0.158)	0.009	0.021
200	16.67	0.10	0.030	(0.157)	0.009	0.021
201	16.75	0.10	0.030	(0.156)	0.009	0.021
202	16.83	0.10	0.030	(0.156)	0.009	0.021
203	16.92	0.10	0.030	(0.155)	0.009	0.021
204	17.00	0.10	0.030	(0.154)	0.009	0.021
205	17.08	0.17	0.050	(0.153)	0.014	0.035
206	17.17	0.17	0.050	(0.153)	0.014	0.035
207	17.25	0.17	0.050	(0.152)	0.014	0.035
208	17.33	0.17	0.050	(0.151)	0.014	0.035
209	17.42	0.17	0.050	(0.150)	0.014	0.035
210	17.50	0.17	0.050	(0.150)	0.014	0.035
211	17.58	0.17	0.050	(0.149)	0.014	0.035
212	17.67	0.17	0.050	(0.148)	0.014	0.035
213	17.75	0.17	0.050	(0.147)	0.014	0.035
214	17.83	0.13	0.040	(0.147)	0.012	0.028
215	17.92	0.13	0.040	(0.146)	0.012	0.028
216	18.00	0.13	0.040	(0.145)	0.012	0.028
217	18.08	0.13	0.040	(0.144)	0.012	0.028
218	18.17	0.13	0.040	(0.144)	0.012	0.028
219	18.25	0.13	0.040	(0.143)	0.012	0.028
220	18.33	0.13	0.040	(0.142)	0.012	0.028
221	18.42	0.13	0.040	(0.142)	0.012	0.028
222	18.50	0.13	0.040	(0.141)	0.012	0.028
223	18.58	0.10	0.030	(0.140)	0.009	0.021
224	18.67	0.10	0.030	(0.140)	0.009	0.021
225	18.75	0.10	0.030	(0.139)	0.009	0.021
226	18.83	0.07	0.020	(0.138)	0.006	0.014
227	18.92	0.07	0.020	(0.138)	0.006	0.014
228	19.00	0.07	0.020	(0.137)	0.006	0.014
229	19.08	0.10	0.030	(0.136)	0.009	0.021
230	19.17	0.10	0.030	(0.136)	0.009	0.021
231	19.25	0.10	0.030	(0.135)	0.009	0.021
232	19.33	0.13	0.040	(0.134)	0.012	0.028
233	19.42	0.13	0.040	(0.134)	0.012	0.028
234	19.50	0.13	0.040	(0.133)	0.012	0.028
235	19.58	0.10	0.030	(0.133)	0.009	0.021
236	19.67	0.10	0.030	(0.132)	0.009	0.021
237	19.75	0.10	0.030	(0.131)	0.009	0.021
238	19.83	0.07	0.020	(0.131)	0.006	0.014
239	19.92	0.07	0.020	(0.130)	0.006	0.014
240	20.00	0.07	0.020	(0.130)	0.006	0.014
241	20.08	0.10	0.030	(0.129)	0.009	0.021
242	20.17	0.10	0.030	(0.128)	0.009	0.021
243	20.25	0.10	0.030	(0.128)	0.009	0.021
244	20.33	0.10	0.030	(0.127)	0.009	0.021
245	20.42	0.10	0.030	(0.127)	0.009	0.021
246	20.50	0.10	0.030	(0.126)	0.009	0.021
247	20.58	0.10	0.030	(0.126)	0.009	0.021
248	20.67	0.10	0.030	(0.125)	0.009	0.021
249	20.75	0.10	0.030	(0.125)	0.009	0.021
250	20.83	0.07	0.020	(0.124)	0.006	0.014
251	20.92	0.07	0.020	(0.124)	0.006	0.014
252	21.00	0.07	0.020	(0.123)	0.006	0.014
253	21.08	0.10	0.030	(0.123)	0.009	0.021
254	21.17	0.10	0.030	(0.122)	0.009	0.021
255	21.25	0.10	0.030	(0.122)	0.009	0.021
256	21.33	0.07	0.020	(0.121)	0.006	0.014
257	21.42	0.07	0.020	(0.121)	0.006	0.014
258	21.50	0.07	0.020	(0.120)	0.006	0.014
259	21.58	0.10	0.030	(0.120)	0.009	0.021
260	21.67	0.10	0.030	(0.119)	0.009	0.021
261	21.75	0.10	0.030	(0.119)	0.009	0.021
262	21.83	0.07	0.020	(0.119)	0.006	0.014
263	21.92	0.07	0.020	(0.118)	0.006	0.014
264	22.00	0.07	0.020	(0.118)	0.006	0.014
265	22.08	0.10	0.030	(0.117)	0.009	0.021
266	22.17	0.10	0.030	(0.117)	0.009	0.021
267	22.25	0.10	0.030	(0.117)	0.009	0.021

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268  22.33     0.07      0.020       (  0.116)       0.006        0.014
269  22.42     0.07      0.020       (  0.116)       0.006        0.014
270  22.50     0.07      0.020       (  0.116)       0.006        0.014
271  22.58     0.07      0.020       (  0.115)       0.006        0.014
272  22.67     0.07      0.020       (  0.115)       0.006        0.014
273  22.75     0.07      0.020       (  0.115)       0.006        0.014
274  22.83     0.07      0.020       (  0.114)       0.006        0.014
275  22.92     0.07      0.020       (  0.114)       0.006        0.014
276  23.00     0.07      0.020       (  0.114)       0.006        0.014
277  23.08     0.07      0.020       (  0.113)       0.006        0.014
278  23.17     0.07      0.020       (  0.113)       0.006        0.014
279  23.25     0.07      0.020       (  0.113)       0.006        0.014
280  23.33     0.07      0.020       (  0.113)       0.006        0.014
281  23.42     0.07      0.020       (  0.113)       0.006        0.014
282  23.50     0.07      0.020       (  0.112)       0.006        0.014
283  23.58     0.07      0.020       (  0.112)       0.006        0.014
284  23.67     0.07      0.020       (  0.112)       0.006        0.014
285  23.75     0.07      0.020       (  0.112)       0.006        0.014
286  23.83     0.07      0.020       (  0.112)       0.006        0.014
287  23.92     0.07      0.020       (  0.112)       0.006        0.014
288  24.00     0.07      0.020       (  0.112)       0.006        0.014
               (Loss Rate Not Used)
    Sum =     100.0                                    Sum =    21.3
      Flood volume = Effective rainfall      1.77(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       5.0(Ac.Ft)
      Total soil loss =      0.72(In)
      Total soil loss =     2.042(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =      217767.5 Cubic Feet
      Total soil loss =       88947.3 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =      8.216(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ---------------------------------------------------------------------------
   0+ 5       0.0004      0.06  Q         |         |         |         |
   0+10       0.0027      0.33  VQ        |         |         |         |
   0+15       0.0056      0.42  VQ        |         |         |         |
   0+20       0.0089      0.49  VQ        |         |         |         |
   0+25       0.0133      0.64  V Q       |         |         |         |
   0+30       0.0181      0.69  V Q       |         |         |         |
   0+35       0.0230      0.71  V Q       |         |         |         |
   0+40       0.0279      0.72  V Q       |         |         |         |
   0+45       0.0329      0.72  V Q       |         |         |         |
   0+50       0.0381      0.76  V  Q      |         |         |         |
   0+55       0.0443      0.89  V  Q      |         |         |         |
   1+ 0       0.0507      0.94  V  Q      |         |         |         |
   1+ 5       0.0571      0.93  V  Q      |         |         |         |
   1+10       0.0626      0.80  V  Q      |         |         |         |
   1+15       0.0678      0.76  V  Q      |         |         |         |
   1+20       0.0729      0.74  V Q       |         |         |         |
   1+25       0.0779      0.73  V Q       |         |         |         |
   1+30       0.0829      0.73  V Q       |         |         |         |
   1+35       0.0879      0.73  V Q       |         |         |         |
   1+40       0.0929      0.73  V Q       |         |         |         |
   1+45       0.0979      0.73  V Q       |         |         |         |
   1+50       0.1031      0.76  V  Q      |         |         |         |
   1+55       0.1092      0.89  V  Q      |         |         |         |
   2+ 0       0.1157      0.94  V  Q      |         |         |         |
   2+ 5       0.1223      0.96  V  Q      |         |         |         |
   2+10       0.1289      0.96  |V Q       |         |         |         |
   2+15       0.1356      0.97  |V Q       |         |         |         |
   2+20       0.1422      0.97  |V Q       |         |         |         |
   2+25       0.1489      0.97  |V Q       |         |         |         |
   2+30       0.1556      0.97  |V Q       |         |         |         |
   2+35       0.1624      1.00  |V Q       |         |         |         |
   2+40       0.1702      1.13  |V  Q      |         |         |         |
   2+45       0.1783      1.18  |V  Q      |         |         |         |
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2+50       0.1866      1.20  |V  Q     |         |         |         |
2+55       0.1949      1.21  |V  Q     |         |         |         |
3+ 0       0.2032      1.21  |V  Q     |         |         |         |
3+ 5       0.2115      1.21  |V  Q     |         |         |         |
3+10       0.2199      1.21  |V  Q     |         |         |         |
3+15       0.2282      1.21  |V  Q     |         |         |         |
3+20       0.2365      1.21  |V  Q     |         |         |         |
3+25       0.2449      1.21  |V  Q     |         |         |         |
3+30       0.2532      1.21  | V Q     |         |         |         |
3+35       0.2615      1.21  | V Q     |         |         |         |
3+40       0.2698      1.21  | V Q     |         |         |         |
3+45       0.2782      1.21  | V Q     |         |         |         |
3+50       0.2867      1.24  | V Q     |         |         |         |
3+55       0.2962      1.37  | V  Q    |         |         |         |
4+ 0       0.3060      1.42  | V  Q    |         |         |         |
4+ 5       0.3159      1.44  | V  Q    |         |         |         |
4+10       0.3258      1.45  | V  Q    |         |         |         |
4+15       0.3358      1.45  | V  Q    |         |         |         |
4+20       0.3460      1.48  | V  Q    |         |         |         |
4+25       0.3571      1.61  | V   Q   |         |         |         |
4+30       0.3686      1.66  | V   Q   |         |         |         |
4+35       0.3802      1.68  |  V  Q   |         |         |         |
4+40       0.3918      1.69  |  V  Q   |         |         |         |
4+45       0.4035      1.69  |  V  Q   |         |         |         |
4+50       0.4153      1.72  |  V  Q   |         |         |         |
4+55       0.4281      1.86  |  V   Q  |         |         |         |
5+ 0       0.4412      1.90  |  V   Q  |         |         |         |
5+ 5       0.4541      1.86  |  V   Q  |         |         |         |
5+10       0.4651      1.61  |  V  Q   |         |         |         |
5+15       0.4755      1.51  |  V  Q   |         |         |         |
5+20       0.4859      1.51  |  V  Q   |         |         |         |
5+25       0.4971      1.62  |  V  Q   |         |         |         |
5+30       0.5086      1.67  |   V Q   |         |         |         |
5+35       0.5204      1.71  |   V Q   |         |         |         |
5+40       0.5331      1.85  |   V  Q  |         |         |         |
5+45       0.5462      1.90  |   V  Q  |         |         |         |
5+50       0.5595      1.92  |   V  Q  |         |         |         |
5+55       0.5728      1.93  |   V  Q  |         |         |         |
6+ 0       0.5861      1.93  |   V  Q  |         |         |         |
6+ 5       0.5996      1.97  |   V  Q  |         |         |         |
6+10       0.6141      2.10  |   V   Q |         |         |         |
6+15       0.6288      2.15  |    V  Q |         |         |         |
6+20       0.6438      2.17  |    V  Q |         |         |         |
6+25       0.6587      2.17  |    V  Q |         |         |         |
6+30       0.6737      2.18  |    V  Q |         |         |         |
6+35       0.6889      2.21  |    V  Q |         |         |         |
6+40       0.7050      2.34  |    V   Q|         |         |         |
6+45       0.7215      2.39  |    V   Q|         |         |         |
6+50       0.7380      2.41  |    V   Q|         |         |         |
6+55       0.7547      2.42  |     V  Q|         |         |         |
7+ 0       0.7713      2.42  |     V  Q|         |         |         |
7+ 5       0.7880      2.42  |     V  Q|         |         |         |
7+10       0.8047      2.42  |     V  Q|         |         |         |
7+15       0.8213      2.42  |     V  Q|         |         |         |
7+20       0.8382      2.45  |     V  Q|         |         |         |
7+25       0.8560      2.58  |     V   Q         |         |         |
7+30       0.8741      2.63  |     V   Q         |         |         |
7+35       0.8925      2.68  |      V  Q         |         |         |
7+40       0.9120      2.82  |      V  |Q        |         |         |
7+45       0.9317      2.87  |      V  |Q        |         |         |
7+50       0.9518      2.92  |      V  |Q        |         |         |
7+55       0.9729      3.06  |      V  | Q       |         |         |
8+ 0       0.9944      3.11  |      V  | Q       |         |         |
8+ 5       1.0164      3.19  |       V | Q       |         |         |
8+10       1.0402      3.47  |       V |  Q      |         |         |
8+15       1.0648      3.56  |       V |   Q     |         |         |
8+20       1.0896      3.60  |       V |   Q     |         |         |
8+25       1.1145      3.62  |       V |   Q     |         |         |
8+30       1.1395      3.63  |        V|   Q     |         |         |
8+35       1.1647      3.66  |        V|   Q     |         |         |
8+40       1.1908      3.79  |        V|    Q    |         |         |
8+45       1.2173      3.84  |        V|    Q    |         |         |
8+50       1.2440      3.89  |        V|    Q    |         |         |
8+55       1.2718      4.03  |         V     Q   |         |         |
9+ 0       1.2999      4.08  |         V     Q   |         |         |
```

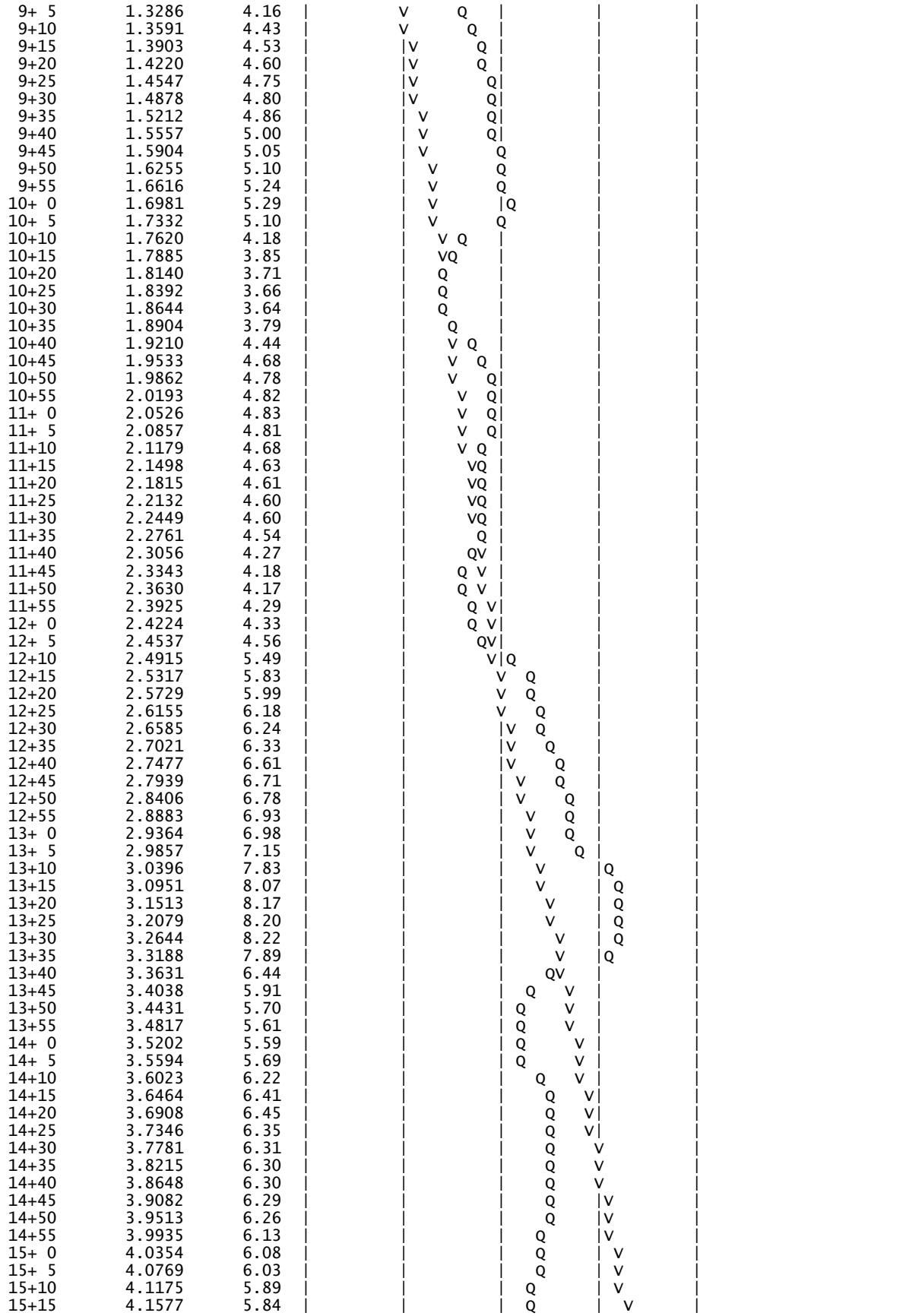

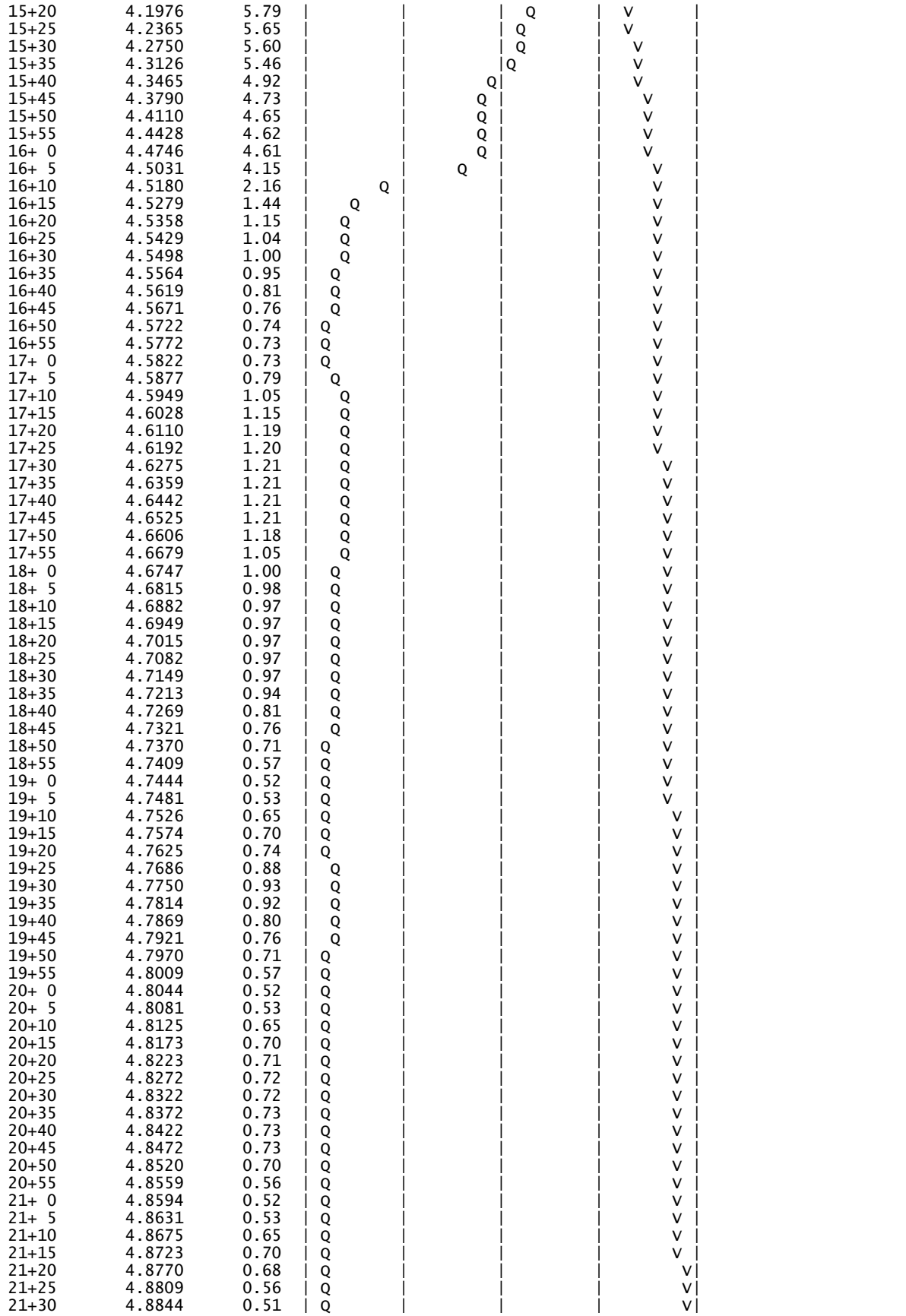

```
  21+35       4.8880      0.53  | Q       |         |         |        V|
  21+40       4.8925      0.65  | Q       |         |         |        V|
  21+45       4.8973      0.70  | Q       |         |         |        V|
  21+50       4.9020      0.68  | Q       |         |         |        V|
  21+55       4.9059      0.56  | Q       |         |         |        V|
  22+ 0       4.9094      0.51  | Q       |         |         |        V|
  22+ 5       4.9130      0.53  | Q       |         |         |        V|
  22+10       4.9175      0.65  | Q       |         |         |        V|
  22+15       4.9223      0.70  | Q       |         |         |        V|
  22+20       4.9270      0.68  | Q       |         |         |        V|
  22+25       4.9309      0.56  | Q       |         |         |        V|
  22+30       4.9344      0.51  | Q       |         |         |        V|
  22+35       4.9378      0.50  |Q        |         |         |        V|
  22+40       4.9412      0.49  |Q        |         |         |        V|
  22+45       4.9445      0.49  |Q        |         |         |        V|
  22+50       4.9479      0.48  |Q        |         |         |        V|
  22+55       4.9512      0.48  |Q        |         |         |        V|
  23+ 0       4.9545      0.48  |Q        |         |         |        V|
  23+ 5       4.9579      0.48  |Q        |         |         |        V|
  23+10       4.9612      0.48  |Q        |         |         |        V|
  23+15       4.9645      0.48  |Q        |         |         |        V|
  23+20       4.9679      0.48  |Q        |         |         |        V|
  23+25       4.9712      0.48  |Q        |         |         |        V|
  23+30       4.9745      0.48  |Q        |         |         |        V|
  23+35       4.9779      0.48  |Q        |         |         |        V|
  23+40       4.9812      0.48  |Q        |         |         |        V|
  23+45       4.9845      0.48  |Q        |         |         |        V|
  23+50       4.9879      0.48  |Q        |         |         |        V|
  23+55       4.9912      0.48  |Q        |         |         |        V|
  24+ 0       4.9945      0.48  |Q        |         |         |        V|
  24+ 5       4.9975      0.42  |Q        |         |         |        V|
  24+10       4.9985      0.16  Q         |         |         |        V|
  24+15       4.9990      0.06  Q         |         |         |        V|
  24+20       4.9992      0.02  Q         |         |         |        V|
  24+25       4.9992      0.01  Q         |         |         |        V|
  24+30       4.9992      0.00  Q         |         |         |        V|
  24+35       4.9993      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

PROPOSED CONDITION
5-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH5YR15.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.55	18.59

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.25	42.25

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.714(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 0.714(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

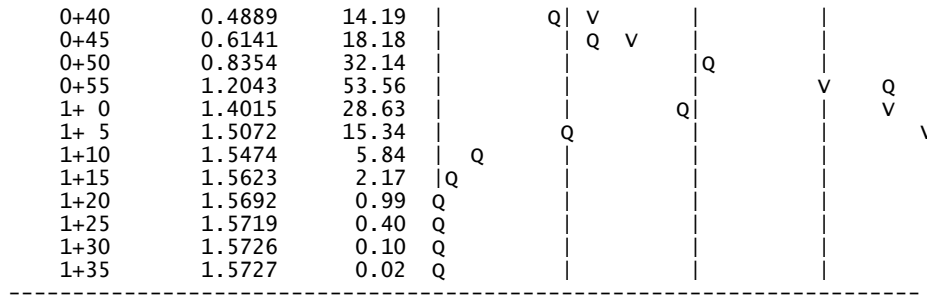
```
      56.0  36.0      0.706     0.760        0.223       1.000      0.223
                                                        Sum (F) =   0.223
      Area averaged mean soil loss (F) (In/Hr) =  0.223
      Minimum soil loss rate ((In/Hr)) =  0.112
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.290
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         94.204         12.469             4.247
          2   0.167        188.409         54.814            18.672
          3   0.250        282.613         19.639             6.690
          4   0.333        376.818          8.096             2.758
          5   0.417        471.022          3.119             1.063
          6   0.500        565.227          0.957             0.326
          7   0.583        659.431          0.629             0.214
          8   0.667        753.636          0.277             0.094
                                  Sum = 100.000   Sum=      34.064
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
    1   0.08     3.40      0.291       (  0.223)       0.084        0.207
    2   0.17     4.70      0.403       (  0.223)       0.117        0.286
    3   0.25     4.70      0.403       (  0.223)       0.117        0.286
    4   0.33     5.10      0.437       (  0.223)       0.127        0.310
    5   0.42     5.80      0.497       (  0.223)       0.144        0.353
    6   0.50     5.90      0.505       (  0.223)       0.147        0.359
    7   0.58     7.10      0.608       (  0.223)       0.176        0.432
    8   0.67     8.70      0.745       (  0.223)       0.216        0.529
    9   0.75    13.20      1.131          0.223    (  0.328)        0.907
   10   0.83    29.70      2.544          0.223    (  0.738)        2.321
   11   0.92     7.70      0.659       (  0.223)       0.191        0.468
   12   1.00     4.00      0.343       (  0.223)       0.099        0.243
              (Loss Rate Not Used)
      Sum =     100.0                                  Sum =     6.7
         Flood volume = Effective rainfall      0.56(In)
          times area      33.8(Ac.)/[(In)/(Ft.)] =       1.6(Ac.Ft)
         Total soil loss =      0.16(In)
         Total soil loss =     0.438(Ac.Ft)
         Total rainfall =      0.71(In)
         Flood volume =       68508.4 Cubic Feet
         Total soil loss =       19063.0 Cubic Feet
         ---------------------------------------------------------------------
          Peak flow rate of this hydrograph =     53.558(CFS)
         ---------------------------------------------------------------------
         +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                      R u n o f f      H y d r o g r a p h
         ---------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

         ---------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
  ------------------------------------------------------------------------
    0+ 5       0.0061      0.88  Q         |         |         |         |
    0+10       0.0410      5.08  |V Q      |         |         |         |
    0+15       0.0957      7.94  | V  Q    |         |         |         |
    0+20       0.1586      9.14  |   V Q   |         |         |         |
    0+25       0.2290     10.21  |    VQ   |         |         |         |
    0+30       0.3071     11.35  |      Q  |         |         |         |
    0+35       0.3911     12.20  |       QV|         |         |         |
```


0+40 0.4889 14.19
0+45 0.6141 18.18
0+50 0.8354 32.14
0+55 1.2043 53.56
1+ 0 1.4015 28.63
1+ 5 1.5072 15.34
1+10 1.5474 5.84
1+15 1.5623 2.17
1+20 1.5692 0.99
1+25 1.5719 0.40
1+30 1.5726 0.10
1+35 1.5727 0.02

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH5YR35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.95	32.11

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.05	69.29

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.208(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.207(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
      56.0  36.0      0.706     0.760        0.223       1.000      0.223
                                                        Sum (F) =   0.223
      Area averaged mean soil loss (F) (In/Hr) =  0.223
      Minimum soil loss rate ((In/Hr)) =  0.112
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.290
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                           Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         94.204         12.469             4.247
          2   0.167        188.409         54.814            18.672
          3   0.250        282.613         19.639             6.690
          4   0.333        376.818          8.096             2.758
          5   0.417        471.022          3.119             1.063
          6   0.500        565.227          0.957             0.326
          7   0.583        659.431          0.629             0.214
          8   0.667        753.636          0.277             0.094
                                    Sum = 100.000    Sum=      34.064
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     1.30      0.188       (  0.223)       0.055        0.134
   2   0.17     1.30      0.188       (  0.223)       0.055        0.134
   3   0.25     1.10      0.159       (  0.223)       0.046        0.113
   4   0.33     1.50      0.217       (  0.223)       0.063        0.154
   5   0.42     1.50      0.217       (  0.223)       0.063        0.154
   6   0.50     1.80      0.261       (  0.223)       0.076        0.185
   7   0.58     1.50      0.217       (  0.223)       0.063        0.154
   8   0.67     1.80      0.261       (  0.223)       0.076        0.185
   9   0.75     1.80      0.261       (  0.223)       0.076        0.185
  10   0.83     1.50      0.217       (  0.223)       0.063        0.154
  11   0.92     1.60      0.232       (  0.223)       0.067        0.165
  12   1.00     1.80      0.261       (  0.223)       0.076        0.185
  13   1.08     2.20      0.319       (  0.223)       0.092        0.226
  14   1.17     2.20      0.319       (  0.223)       0.092        0.226
  15   1.25     2.20      0.319       (  0.223)       0.092        0.226
  16   1.33     2.00      0.290       (  0.223)       0.084        0.206
  17   1.42     2.60      0.377       (  0.223)       0.109        0.267
  18   1.50     2.70      0.391       (  0.223)       0.113        0.278
  19   1.58     2.40      0.348       (  0.223)       0.101        0.247
  20   1.67     2.70      0.391       (  0.223)       0.113        0.278
  21   1.75     3.30      0.478       (  0.223)       0.139        0.339
  22   1.83     3.10      0.449       (  0.223)       0.130        0.319
  23   1.92     2.90      0.420       (  0.223)       0.122        0.298
  24   2.00     3.00      0.435       (  0.223)       0.126        0.309
  25   2.08     3.10      0.449       (  0.223)       0.130        0.319
  26   2.17     4.20      0.609       (  0.223)       0.176        0.432
  27   2.25     5.00      0.724       (  0.223)       0.210        0.514
  28   2.33     3.50      0.507       (  0.223)       0.147        0.360
  29   2.42     6.80      0.985          0.223    (  0.286)        0.762
  30   2.50     7.30      1.058          0.223    (  0.307)        0.835
  31   2.58     8.20      1.188          0.223    (  0.345)        0.965
  32   2.67     5.90      0.855          0.223    (  0.248)        0.632
  33   2.75     2.00      0.290       (  0.223)       0.084        0.206
  34   2.83     1.80      0.261       (  0.223)       0.076        0.185
  35   2.92     1.80      0.261       (  0.223)       0.076        0.185
  36   3.00     0.60      0.087       (  0.223)       0.025        0.062
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =    10.6
       Flood volume = Effective rainfall      0.88(In)
        times area      33.8(Ac.)/[(In)/(Ft.)] =       2.5(Ac.Ft)
       Total soil loss =      0.33(In)
       Total soil loss =     0.918(Ac.Ft)
```

```
      Total rainfall =      1.21(In)
      Flood volume =      108177.3 Cubic Feet
      Total soil loss =       39971.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     29.076(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          3 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
 ---------------------------------------------------------------------------
   0+ 5       0.0039      0.57  Q         |         |         |         |
   0+10       0.0250      3.07  V   Q     |         |         |         |
   0+15       0.0517      3.87  V    Q    |         |         |         |
   0+20       0.0795      4.03  |V   Q    |         |         |         |
   0+25       0.1126      4.81  |V    Q   |         |         |         |
   0+30       0.1484      5.20  | V   Q   |         |         |         |
   0+35       0.1881      5.77  |  V   Q  |         |         |         |
   0+40       0.2266      5.58  |  V   Q  |         |         |         |
   0+45       0.2682      6.04  |   V   Q |         |         |         |
   0+50       0.3100      6.07  |   V   Q |         |         |         |
   0+55       0.3486      5.60  |    V Q  |         |         |         |
   1+ 0       0.3879      5.71  |     VQ  |         |         |         |
   1+ 5       0.4310      6.26  |     V Q |         |         |         |
   1+10       0.4803      7.16  |      V Q|         |         |         |
   1+15       0.5319      7.50  |       VQ|         |         |         |
   1+20       0.5839      7.54  |        VQ         |         |         |
   1+25       0.6353      7.47  |        QV         |         |         |
   1+30       0.6942      8.55  |         |Q        |         |         |
   1+35       0.7560      8.98  |         |QV       |         |         |
   1+40       0.8163      8.75  |         |Q V      |         |         |
   1+45       0.8815      9.47  |         | Q V     |         |         |
   1+50       0.9551     10.69  |         |   QV    |         |         |
   1+55       1.0288     10.69  |         |   Q V   |         |         |
   2+ 0       1.1005     10.42  |         |  Q   V  |         |         |
   2+ 5       1.1730     10.53  |         |   Q   V |         |         |
   2+10       1.2503     11.22  |         |   Q     V         |         |
   2+15       1.3451     13.76  |         |       Q |V        |         |
   2+20       1.4514     15.44  |         |         Q  V      |         |
   2+25       1.5556     15.13  |         |         Q    V    |         |
   2+30       1.7090     22.27  |         |         |      V Q|         |
   2+35       1.8920     26.57  |         |         |         V    Q    |
   2+40       2.0923     29.08  |         |         |         |  V    Q |
   2+45       2.2474     22.52  |         |         |         Q     V   |
   2+50       2.3354     12.78  |         |       Q |         |      V  |
   2+55       2.3965      8.86  |         |Q        |         |       V |
   3+ 0       2.4431      6.77  |         |Q        |         |         V|
   3+ 5       2.4679      3.61  |    Q    |         |         |         V|
   3+10       2.4777      1.41  |Q        |         |         |         V|
   3+15       2.4813      0.53  Q         |         |         |         V|
   3+20       2.4826      0.19  Q         |         |         |         V|
   3+25       2.4832      0.08  Q         |         |         |         V|
   3+30       2.4834      0.03  Q         |         |         |         V|
   3+35       2.4834      0.01  Q         |         |         |         V|
 ---------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH5YR65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.40	47.32

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	3.00	101.40

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.775(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.775(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0 36.0 0.706 0.760 0.223 1.000 0.223
Sum (F) = 0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.106	(0.223)	0.031	0.076
2	0.17	0.60	0.128	(0.223)	0.037	0.091
3	0.25	0.60	0.128	(0.223)	0.037	0.091
4	0.33	0.60	0.128	(0.223)	0.037	0.091
5	0.42	0.60	0.128	(0.223)	0.037	0.091
6	0.50	0.70	0.149	(0.223)	0.043	0.106
7	0.58	0.70	0.149	(0.223)	0.043	0.106
8	0.67	0.70	0.149	(0.223)	0.043	0.106
9	0.75	0.70	0.149	(0.223)	0.043	0.106
10	0.83	0.70	0.149	(0.223)	0.043	0.106
11	0.92	0.70	0.149	(0.223)	0.043	0.106
12	1.00	0.80	0.170	(0.223)	0.049	0.121
13	1.08	0.80	0.170	(0.223)	0.049	0.121
14	1.17	0.80	0.170	(0.223)	0.049	0.121
15	1.25	0.80	0.170	(0.223)	0.049	0.121
16	1.33	0.80	0.170	(0.223)	0.049	0.121
17	1.42	0.80	0.170	(0.223)	0.049	0.121
18	1.50	0.80	0.170	(0.223)	0.049	0.121
19	1.58	0.80	0.170	(0.223)	0.049	0.121
20	1.67	0.80	0.170	(0.223)	0.049	0.121
21	1.75	0.80	0.170	(0.223)	0.049	0.121
22	1.83	0.80	0.170	(0.223)	0.049	0.121
23	1.92	0.80	0.170	(0.223)	0.049	0.121
24	2.00	0.90	0.192	(0.223)	0.056	0.136
25	2.08	0.80	0.170	(0.223)	0.049	0.121
26	2.17	0.90	0.192	(0.223)	0.056	0.136
27	2.25	0.90	0.192	(0.223)	0.056	0.136
28	2.33	0.90	0.192	(0.223)	0.056	0.136
29	2.42	0.90	0.192	(0.223)	0.056	0.136
30	2.50	0.90	0.192	(0.223)	0.056	0.136
31	2.58	0.90	0.192	(0.223)	0.056	0.136
32	2.67	0.90	0.192	(0.223)	0.056	0.136
33	2.75	1.00	0.213	(0.223)	0.062	0.151
34	2.83	1.00	0.213	(0.223)	0.062	0.151
35	2.92	1.00	0.213	(0.223)	0.062	0.151
36	3.00	1.00	0.213	(0.223)	0.062	0.151
37	3.08	1.00	0.213	(0.223)	0.062	0.151
38	3.17	1.10	0.234	(0.223)	0.068	0.166
39	3.25	1.10	0.234	(0.223)	0.068	0.166
40	3.33	1.10	0.234	(0.223)	0.068	0.166
41	3.42	1.20	0.256	(0.223)	0.074	0.181
42	3.50	1.30	0.277	(0.223)	0.080	0.197

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43   3.58     1.40      0.298       (  0.223)       0.086        0.212
44   3.67     1.40      0.298       (  0.223)       0.086        0.212
45   3.75     1.50      0.319       (  0.223)       0.093        0.227
46   3.83     1.50      0.319       (  0.223)       0.093        0.227
47   3.92     1.60      0.341       (  0.223)       0.099        0.242
48   4.00     1.60      0.341       (  0.223)       0.099        0.242
49   4.08     1.70      0.362       (  0.223)       0.105        0.257
50   4.17     1.80      0.383       (  0.223)       0.111        0.272
51   4.25     1.90      0.405       (  0.223)       0.117        0.287
52   4.33     2.00      0.426       (  0.223)       0.124        0.302
53   4.42     2.10      0.447       (  0.223)       0.130        0.318
54   4.50     2.10      0.447       (  0.223)       0.130        0.318
55   4.58     2.20      0.468       (  0.223)       0.136        0.333
56   4.67     2.30      0.490       (  0.223)       0.142        0.348
57   4.75     2.40      0.511       (  0.223)       0.148        0.363
58   4.83     2.40      0.511       (  0.223)       0.148        0.363
59   4.92     2.50      0.532       (  0.223)       0.154        0.378
60   5.00     2.60      0.554       (  0.223)       0.161        0.393
61   5.08     3.10      0.660       (  0.223)       0.191        0.469
62   5.17     3.60      0.767       (  0.223)       0.222        0.544
63   5.25     3.90      0.830          0.223    (  0.241)       0.607
64   5.33     4.20      0.894          0.223    (  0.259)       0.671
65   5.42     4.70      1.001          0.223    (  0.290)       0.778
66   5.50     5.60      1.192          0.223    (  0.346)       0.969
67   5.58     1.90      0.405       (  0.223)       0.117        0.287
68   5.67     0.90      0.192       (  0.223)       0.056        0.136
69   5.75     0.60      0.128       (  0.223)       0.037        0.091
70   5.83     0.50      0.106       (  0.223)       0.031        0.076
71   5.92     0.30      0.064       (  0.223)       0.019        0.045
72   6.00     0.20      0.043       (  0.223)       0.012        0.030
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    15.4
      Flood volume = Effective rainfall      1.28(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       3.6(Ac.Ft)
      Total soil loss =      0.49(In)
      Total soil loss =     1.392(Ac.Ft)
      Total rainfall =      1.77(In)
      Flood volume =      157079.9 Cubic Feet
      Total soil loss =       60647.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     27.349(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0022      0.32  Q          |          |          |          |
  0+10       0.0146      1.80  V Q        |          |          |          |
  0+15       0.0324      2.59  V  Q       |          |          |          |
  0+20       0.0523      2.90  V  Q       |          |          |          |
  0+25       0.0731      3.02  V   Q      |          |          |          |
  0+30       0.0946      3.12  |V  Q      |          |          |          |
  0+35       0.1182      3.43  |V  Q      |          |          |          |
  0+40       0.1426      3.54  |V  Q      |          |          |          |
  0+45       0.1673      3.58  |V  Q      |          |          |          |
  0+50       0.1921      3.60  | V Q      |          |          |          |
  0+55       0.2169      3.60  | V Q      |          |          |          |
  1+ 0       0.2421      3.67  | V Q      |          |          |          |
  1+ 5       0.2694      3.95  | V  Q     |          |          |          |
  1+10       0.2973      4.05  |  V Q     |          |          |          |
  1+15       0.3255      4.10  |  V Q     |          |          |          |
  1+20       0.3538      4.11  |  V Q     |          |          |          |
  1+25       0.3822      4.12  |   VQ     |          |          |          |
  1+30       0.4106      4.12  |   VQ     |          |          |          |
  1+35       0.4390      4.12  |   VQ     |          |          |          |
  1+40       0.4673      4.12  |    Q     |          |          |          |
  1+45       0.4957      4.12  |    Q     |          |          |          |
  1+50       0.5241      4.12  |    Q     |          |          |          |
  1+55       0.5525      4.12  |    QV    |          |          |          |
  2+ 0       0.5814      4.19  |    QV    |          |          |          |
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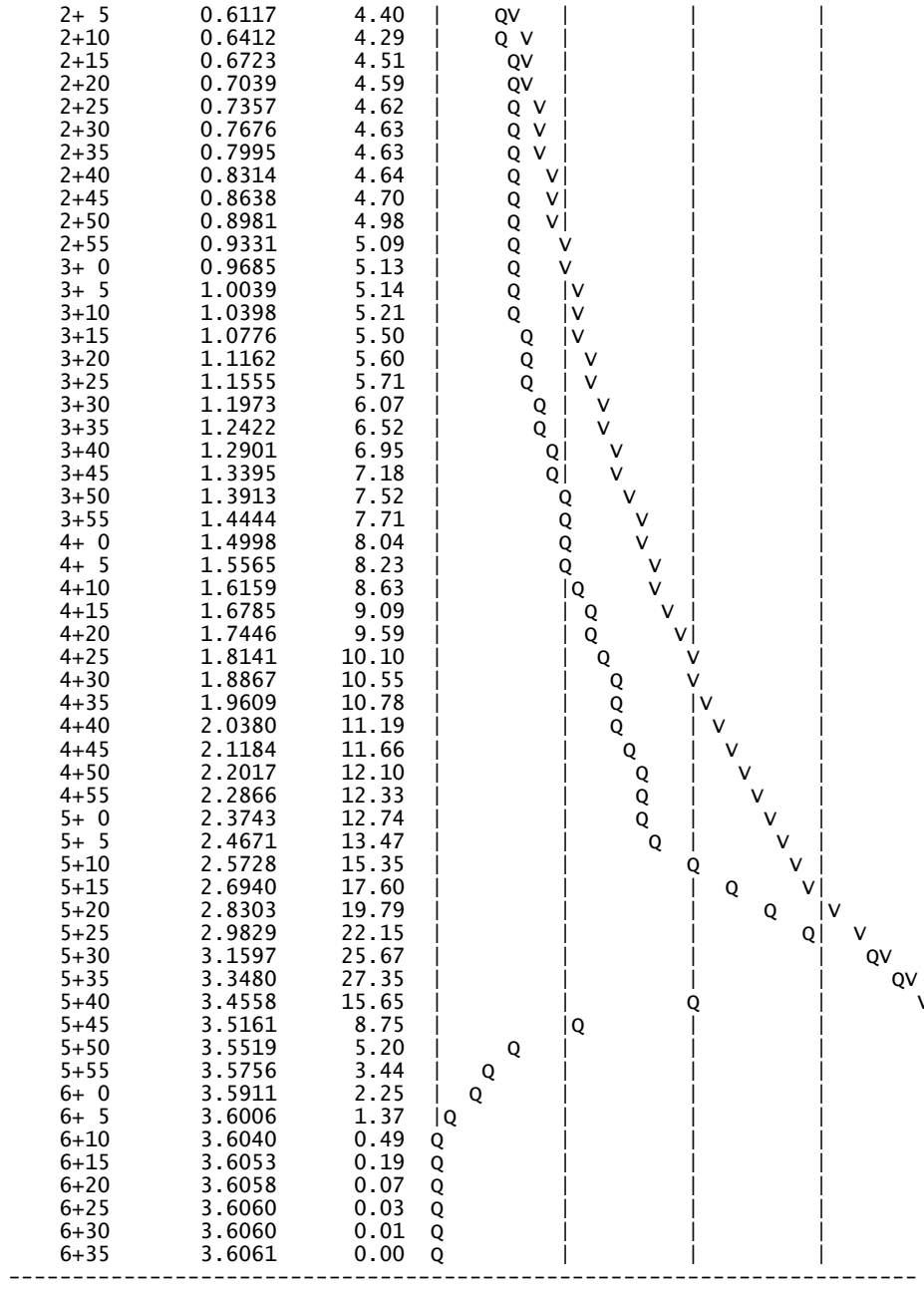

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH5YR245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 3.437(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.437(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	(0.395)	0.008	0.020
2	0.17	0.07	0.027	(0.394)	0.008	0.020
3	0.25	0.07	0.027	(0.392)	0.008	0.020
4	0.33	0.10	0.041	(0.391)	0.012	0.029
5	0.42	0.10	0.041	(0.389)	0.012	0.029
6	0.50	0.10	0.041	(0.388)	0.012	0.029
7	0.58	0.10	0.041	(0.386)	0.012	0.029
8	0.67	0.10	0.041	(0.385)	0.012	0.029
9	0.75	0.10	0.041	(0.383)	0.012	0.029
10	0.83	0.13	0.055	(0.382)	0.016	0.039
11	0.92	0.13	0.055	(0.380)	0.016	0.039
12	1.00	0.13	0.055	(0.379)	0.016	0.039
13	1.08	0.10	0.041	(0.377)	0.012	0.029
14	1.17	0.10	0.041	(0.376)	0.012	0.029
15	1.25	0.10	0.041	(0.374)	0.012	0.029
16	1.33	0.10	0.041	(0.373)	0.012	0.029
17	1.42	0.10	0.041	(0.371)	0.012	0.029
18	1.50	0.10	0.041	(0.370)	0.012	0.029
19	1.58	0.10	0.041	(0.368)	0.012	0.029
20	1.67	0.10	0.041	(0.367)	0.012	0.029
21	1.75	0.10	0.041	(0.365)	0.012	0.029
22	1.83	0.13	0.055	(0.364)	0.016	0.039
23	1.92	0.13	0.055	(0.363)	0.016	0.039
24	2.00	0.13	0.055	(0.361)	0.016	0.039
25	2.08	0.13	0.055	(0.360)	0.016	0.039
26	2.17	0.13	0.055	(0.358)	0.016	0.039
27	2.25	0.13	0.055	(0.357)	0.016	0.039
28	2.33	0.13	0.055	(0.355)	0.016	0.039
29	2.42	0.13	0.055	(0.354)	0.016	0.039
30	2.50	0.13	0.055	(0.352)	0.016	0.039
31	2.58	0.17	0.069	(0.351)	0.020	0.049
32	2.67	0.17	0.069	(0.349)	0.020	0.049
33	2.75	0.17	0.069	(0.348)	0.020	0.049
34	2.83	0.17	0.069	(0.347)	0.020	0.049
35	2.92	0.17	0.069	(0.345)	0.020	0.049
36	3.00	0.17	0.069	(0.344)	0.020	0.049
37	3.08	0.17	0.069	(0.342)	0.020	0.049
38	3.17	0.17	0.069	(0.341)	0.020	0.049
39	3.25	0.17	0.069	(0.339)	0.020	0.049
40	3.33	0.17	0.069	(0.338)	0.020	0.049
41	3.42	0.17	0.069	(0.337)	0.020	0.049
42	3.50	0.17	0.069	(0.335)	0.020	0.049

43	3.58	0.17	0.069	(0.334)	0.020	0.049
44	3.67	0.17	0.069	(0.332)	0.020	0.049
45	3.75	0.17	0.069	(0.331)	0.020	0.049
46	3.83	0.20	0.082	(0.330)	0.024	0.059
47	3.92	0.20	0.082	(0.328)	0.024	0.059
48	4.00	0.20	0.082	(0.327)	0.024	0.059
49	4.08	0.20	0.082	(0.325)	0.024	0.059
50	4.17	0.20	0.082	(0.324)	0.024	0.059
51	4.25	0.20	0.082	(0.323)	0.024	0.059
52	4.33	0.23	0.096	(0.321)	0.028	0.068
53	4.42	0.23	0.096	(0.320)	0.028	0.068
54	4.50	0.23	0.096	(0.319)	0.028	0.068
55	4.58	0.23	0.096	(0.317)	0.028	0.068
56	4.67	0.23	0.096	(0.316)	0.028	0.068
57	4.75	0.23	0.096	(0.314)	0.028	0.068
58	4.83	0.27	0.110	(0.313)	0.032	0.078
59	4.92	0.27	0.110	(0.312)	0.032	0.078
60	5.00	0.27	0.110	(0.310)	0.032	0.078
61	5.08	0.20	0.082	(0.309)	0.024	0.059
62	5.17	0.20	0.082	(0.308)	0.024	0.059
63	5.25	0.20	0.082	(0.306)	0.024	0.059
64	5.33	0.23	0.096	(0.305)	0.028	0.068
65	5.42	0.23	0.096	(0.304)	0.028	0.068
66	5.50	0.23	0.096	(0.302)	0.028	0.068
67	5.58	0.27	0.110	(0.301)	0.032	0.078
68	5.67	0.27	0.110	(0.300)	0.032	0.078
69	5.75	0.27	0.110	(0.298)	0.032	0.078
70	5.83	0.27	0.110	(0.297)	0.032	0.078
71	5.92	0.27	0.110	(0.296)	0.032	0.078
72	6.00	0.27	0.110	(0.294)	0.032	0.078
73	6.08	0.30	0.124	(0.293)	0.036	0.088
74	6.17	0.30	0.124	(0.292)	0.036	0.088
75	6.25	0.30	0.124	(0.291)	0.036	0.088
76	6.33	0.30	0.124	(0.289)	0.036	0.088
77	6.42	0.30	0.124	(0.288)	0.036	0.088
78	6.50	0.30	0.124	(0.287)	0.036	0.088
79	6.58	0.33	0.137	(0.285)	0.040	0.098
80	6.67	0.33	0.137	(0.284)	0.040	0.098
81	6.75	0.33	0.137	(0.283)	0.040	0.098
82	6.83	0.33	0.137	(0.282)	0.040	0.098
83	6.92	0.33	0.137	(0.280)	0.040	0.098
84	7.00	0.33	0.137	(0.279)	0.040	0.098
85	7.08	0.33	0.137	(0.278)	0.040	0.098
86	7.17	0.33	0.137	(0.276)	0.040	0.098
87	7.25	0.33	0.137	(0.275)	0.040	0.098
88	7.33	0.37	0.151	(0.274)	0.044	0.107
89	7.42	0.37	0.151	(0.273)	0.044	0.107
90	7.50	0.37	0.151	(0.271)	0.044	0.107
91	7.58	0.40	0.165	(0.270)	0.048	0.117
92	7.67	0.40	0.165	(0.269)	0.048	0.117
93	7.75	0.40	0.165	(0.268)	0.048	0.117
94	7.83	0.43	0.179	(0.266)	0.052	0.127
95	7.92	0.43	0.179	(0.265)	0.052	0.127
96	8.00	0.43	0.179	(0.264)	0.052	0.127
97	8.08	0.50	0.206	(0.263)	0.060	0.146
98	8.17	0.50	0.206	(0.262)	0.060	0.146
99	8.25	0.50	0.206	(0.260)	0.060	0.146
100	8.33	0.50	0.206	(0.259)	0.060	0.146
101	8.42	0.50	0.206	(0.258)	0.060	0.146
102	8.50	0.50	0.206	(0.257)	0.060	0.146
103	8.58	0.53	0.220	(0.256)	0.064	0.156
104	8.67	0.53	0.220	(0.254)	0.064	0.156
105	8.75	0.53	0.220	(0.253)	0.064	0.156
106	8.83	0.57	0.234	(0.252)	0.068	0.166
107	8.92	0.57	0.234	(0.251)	0.068	0.166
108	9.00	0.57	0.234	(0.250)	0.068	0.166
109	9.08	0.63	0.261	(0.248)	0.076	0.185
110	9.17	0.63	0.261	(0.247)	0.076	0.185
111	9.25	0.63	0.261	(0.246)	0.076	0.185
112	9.33	0.67	0.275	(0.245)	0.080	0.195
113	9.42	0.67	0.275	(0.244)	0.080	0.195
114	9.50	0.67	0.275	(0.243)	0.080	0.195
115	9.58	0.70	0.289	(0.241)	0.084	0.205
116	9.67	0.70	0.289	(0.240)	0.084	0.205
117	9.75	0.70	0.289	(0.239)	0.084	0.205

118	9.83	0.73	0.302	(0.238)	0.088	0.215
119	9.92	0.73	0.302	(0.237)	0.088	0.215
120	10.00	0.73	0.302	(0.236)	0.088	0.215
121	10.08	0.50	0.206	(0.234)	0.060	0.146
122	10.17	0.50	0.206	(0.233)	0.060	0.146
123	10.25	0.50	0.206	(0.232)	0.060	0.146
124	10.33	0.50	0.206	(0.231)	0.060	0.146
125	10.42	0.50	0.206	(0.230)	0.060	0.146
126	10.50	0.50	0.206	(0.229)	0.060	0.146
127	10.58	0.67	0.275	(0.228)	0.080	0.195
128	10.67	0.67	0.275	(0.227)	0.080	0.195
129	10.75	0.67	0.275	(0.225)	0.080	0.195
130	10.83	0.67	0.275	(0.224)	0.080	0.195
131	10.92	0.67	0.275	(0.223)	0.080	0.195
132	11.00	0.67	0.275	(0.222)	0.080	0.195
133	11.08	0.63	0.261	(0.221)	0.076	0.185
134	11.17	0.63	0.261	(0.220)	0.076	0.185
135	11.25	0.63	0.261	(0.219)	0.076	0.185
136	11.33	0.63	0.261	(0.218)	0.076	0.185
137	11.42	0.63	0.261	(0.217)	0.076	0.185
138	11.50	0.63	0.261	(0.216)	0.076	0.185
139	11.58	0.57	0.234	(0.215)	0.068	0.166
140	11.67	0.57	0.234	(0.214)	0.068	0.166
141	11.75	0.57	0.234	(0.212)	0.068	0.166
142	11.83	0.60	0.247	(0.211)	0.072	0.176
143	11.92	0.60	0.247	(0.210)	0.072	0.176
144	12.00	0.60	0.247	(0.209)	0.072	0.176
145	12.08	0.83	0.344	(0.208)	0.100	0.244
146	12.17	0.83	0.344	(0.207)	0.100	0.244
147	12.25	0.83	0.344	(0.206)	0.100	0.244
148	12.33	0.87	0.357	(0.205)	0.104	0.254
149	12.42	0.87	0.357	(0.204)	0.104	0.254
150	12.50	0.87	0.357	(0.203)	0.104	0.254
151	12.58	0.93	0.385	(0.202)	0.112	0.273
152	12.67	0.93	0.385	(0.201)	0.112	0.273
153	12.75	0.93	0.385	(0.200)	0.112	0.273
154	12.83	0.97	0.399	(0.199)	0.116	0.283
155	12.92	0.97	0.399	(0.198)	0.116	0.283
156	13.00	0.97	0.399	(0.197)	0.116	0.283
157	13.08	1.13	0.467	(0.196)	0.136	0.332
158	13.17	1.13	0.467	(0.195)	0.136	0.332
159	13.25	1.13	0.467	(0.194)	0.136	0.332
160	13.33	1.13	0.467	(0.193)	0.136	0.332
161	13.42	1.13	0.467	(0.192)	0.136	0.332
162	13.50	1.13	0.467	(0.191)	0.136	0.332
163	13.58	0.77	0.316	(0.190)	0.092	0.224
164	13.67	0.77	0.316	(0.189)	0.092	0.224
165	13.75	0.77	0.316	(0.188)	0.092	0.224
166	13.83	0.77	0.316	(0.187)	0.092	0.224
167	13.92	0.77	0.316	(0.186)	0.092	0.224
168	14.00	0.77	0.316	(0.185)	0.092	0.224
169	14.08	0.90	0.371	(0.184)	0.108	0.264
170	14.17	0.90	0.371	(0.183)	0.108	0.264
171	14.25	0.90	0.371	(0.182)	0.108	0.264
172	14.33	0.87	0.357	(0.182)	0.104	0.254
173	14.42	0.87	0.357	(0.181)	0.104	0.254
174	14.50	0.87	0.357	(0.180)	0.104	0.254
175	14.58	0.87	0.357	(0.179)	0.104	0.254
176	14.67	0.87	0.357	(0.178)	0.104	0.254
177	14.75	0.87	0.357	(0.177)	0.104	0.254
178	14.83	0.83	0.344	(0.176)	0.100	0.244
179	14.92	0.83	0.344	(0.175)	0.100	0.244
180	15.00	0.83	0.344	(0.174)	0.100	0.244
181	15.08	0.80	0.330	(0.173)	0.096	0.234
182	15.17	0.80	0.330	(0.172)	0.096	0.234
183	15.25	0.80	0.330	(0.172)	0.096	0.234
184	15.33	0.77	0.316	(0.171)	0.092	0.224
185	15.42	0.77	0.316	(0.170)	0.092	0.224
186	15.50	0.77	0.316	(0.169)	0.092	0.224
187	15.58	0.63	0.261	(0.168)	0.076	0.185
188	15.67	0.63	0.261	(0.167)	0.076	0.185
189	15.75	0.63	0.261	(0.166)	0.076	0.185
190	15.83	0.63	0.261	(0.166)	0.076	0.185
191	15.92	0.63	0.261	(0.165)	0.076	0.185
192	16.00	0.63	0.261	(0.164)	0.076	0.185

193	16.08	0.13	0.055	(0.163)	0.016	0.039
194	16.17	0.13	0.055	(0.162)	0.016	0.039
195	16.25	0.13	0.055	(0.161)	0.016	0.039
196	16.33	0.13	0.055	(0.161)	0.016	0.039
197	16.42	0.13	0.055	(0.160)	0.016	0.039
198	16.50	0.13	0.055	(0.159)	0.016	0.039
199	16.58	0.10	0.041	(0.158)	0.012	0.029
200	16.67	0.10	0.041	(0.157)	0.012	0.029
201	16.75	0.10	0.041	(0.156)	0.012	0.029
202	16.83	0.10	0.041	(0.156)	0.012	0.029
203	16.92	0.10	0.041	(0.155)	0.012	0.029
204	17.00	0.10	0.041	(0.154)	0.012	0.029
205	17.08	0.17	0.069	(0.153)	0.020	0.049
206	17.17	0.17	0.069	(0.153)	0.020	0.049
207	17.25	0.17	0.069	(0.152)	0.020	0.049
208	17.33	0.17	0.069	(0.151)	0.020	0.049
209	17.42	0.17	0.069	(0.150)	0.020	0.049
210	17.50	0.17	0.069	(0.150)	0.020	0.049
211	17.58	0.17	0.069	(0.149)	0.020	0.049
212	17.67	0.17	0.069	(0.148)	0.020	0.049
213	17.75	0.17	0.069	(0.147)	0.020	0.049
214	17.83	0.13	0.055	(0.147)	0.016	0.039
215	17.92	0.13	0.055	(0.146)	0.016	0.039
216	18.00	0.13	0.055	(0.145)	0.016	0.039
217	18.08	0.13	0.055	(0.144)	0.016	0.039
218	18.17	0.13	0.055	(0.144)	0.016	0.039
219	18.25	0.13	0.055	(0.143)	0.016	0.039
220	18.33	0.13	0.055	(0.142)	0.016	0.039
221	18.42	0.13	0.055	(0.142)	0.016	0.039
222	18.50	0.13	0.055	(0.141)	0.016	0.039
223	18.58	0.10	0.041	(0.140)	0.012	0.029
224	18.67	0.10	0.041	(0.140)	0.012	0.029
225	18.75	0.10	0.041	(0.139)	0.012	0.029
226	18.83	0.07	0.027	(0.138)	0.008	0.020
227	18.92	0.07	0.027	(0.138)	0.008	0.020
228	19.00	0.07	0.027	(0.137)	0.008	0.020
229	19.08	0.10	0.041	(0.136)	0.012	0.029
230	19.17	0.10	0.041	(0.136)	0.012	0.029
231	19.25	0.10	0.041	(0.135)	0.012	0.029
232	19.33	0.13	0.055	(0.134)	0.016	0.039
233	19.42	0.13	0.055	(0.134)	0.016	0.039
234	19.50	0.13	0.055	(0.133)	0.016	0.039
235	19.58	0.10	0.041	(0.133)	0.012	0.029
236	19.67	0.10	0.041	(0.132)	0.012	0.029
237	19.75	0.10	0.041	(0.131)	0.012	0.029
238	19.83	0.07	0.027	(0.131)	0.008	0.020
239	19.92	0.07	0.027	(0.130)	0.008	0.020
240	20.00	0.07	0.027	(0.130)	0.008	0.020
241	20.08	0.10	0.041	(0.129)	0.012	0.029
242	20.17	0.10	0.041	(0.128)	0.012	0.029
243	20.25	0.10	0.041	(0.128)	0.012	0.029
244	20.33	0.10	0.041	(0.127)	0.012	0.029
245	20.42	0.10	0.041	(0.127)	0.012	0.029
246	20.50	0.10	0.041	(0.126)	0.012	0.029
247	20.58	0.10	0.041	(0.126)	0.012	0.029
248	20.67	0.10	0.041	(0.125)	0.012	0.029
249	20.75	0.10	0.041	(0.125)	0.012	0.029
250	20.83	0.07	0.027	(0.124)	0.008	0.020
251	20.92	0.07	0.027	(0.124)	0.008	0.020
252	21.00	0.07	0.027	(0.123)	0.008	0.020
253	21.08	0.10	0.041	(0.123)	0.012	0.029
254	21.17	0.10	0.041	(0.122)	0.012	0.029
255	21.25	0.10	0.041	(0.122)	0.012	0.029
256	21.33	0.07	0.027	(0.121)	0.008	0.020
257	21.42	0.07	0.027	(0.121)	0.008	0.020
258	21.50	0.07	0.027	(0.120)	0.008	0.020
259	21.58	0.10	0.041	(0.120)	0.012	0.029
260	21.67	0.10	0.041	(0.119)	0.012	0.029
261	21.75	0.10	0.041	(0.119)	0.012	0.029
262	21.83	0.07	0.027	(0.119)	0.008	0.020
263	21.92	0.07	0.027	(0.118)	0.008	0.020
264	22.00	0.07	0.027	(0.118)	0.008	0.020
265	22.08	0.10	0.041	(0.117)	0.012	0.029
266	22.17	0.10	0.041	(0.117)	0.012	0.029
267	22.25	0.10	0.041	(0.117)	0.012	0.029

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268  22.33     0.07      0.027       (  0.116)       0.008        0.020
269  22.42     0.07      0.027       (  0.116)       0.008        0.020
270  22.50     0.07      0.027       (  0.116)       0.008        0.020
271  22.58     0.07      0.027       (  0.115)       0.008        0.020
272  22.67     0.07      0.027       (  0.115)       0.008        0.020
273  22.75     0.07      0.027       (  0.115)       0.008        0.020
274  22.83     0.07      0.027       (  0.114)       0.008        0.020
275  22.92     0.07      0.027       (  0.114)       0.008        0.020
276  23.00     0.07      0.027       (  0.114)       0.008        0.020
277  23.08     0.07      0.027       (  0.113)       0.008        0.020
278  23.17     0.07      0.027       (  0.113)       0.008        0.020
279  23.25     0.07      0.027       (  0.113)       0.008        0.020
280  23.33     0.07      0.027       (  0.113)       0.008        0.020
281  23.42     0.07      0.027       (  0.113)       0.008        0.020
282  23.50     0.07      0.027       (  0.112)       0.008        0.020
283  23.58     0.07      0.027       (  0.112)       0.008        0.020
284  23.67     0.07      0.027       (  0.112)       0.008        0.020
285  23.75     0.07      0.027       (  0.112)       0.008        0.020
286  23.83     0.07      0.027       (  0.112)       0.008        0.020
287  23.92     0.07      0.027       (  0.112)       0.008        0.020
288  24.00     0.07      0.027       (  0.112)       0.008        0.020
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    29.3
      Flood volume = Effective rainfall      2.44(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       6.9(Ac.Ft)
      Total soil loss =      1.00(In)
      Total soil loss =     2.807(Ac.Ft)
      Total rainfall =      3.44(In)
      Flood volume =      299377.8 Cubic Feet
      Total soil loss =      122281.1 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     11.295(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0006      0.08  Q         |          |          |          |
   0+10       0.0037      0.45  Q         |          |          |          |
   0+15       0.0076      0.58  VQ        |          |          |          |
   0+20       0.0123      0.67  VQ        |          |          |          |
   0+25       0.0183      0.88  VQ        |          |          |          |
   0+30       0.0248      0.95  VQ        |          |          |          |
   0+35       0.0316      0.98  VQ        |          |          |          |
   0+40       0.0384      0.99  VQ        |          |          |          |
   0+45       0.0453      0.99  VQ        |          |          |          |
   0+50       0.0524      1.04  V Q       |          |          |          |
   0+55       0.0608      1.22  V Q       |          |          |          |
   1+ 0       0.0697      1.29  V Q       |          |          |          |
   1+ 5       0.0785      1.27  V Q       |          |          |          |
   1+10       0.0860      1.10  V Q       |          |          |          |
   1+15       0.0932      1.04  V Q       |          |          |          |
   1+20       0.1002      1.01  V Q       |          |          |          |
   1+25       0.1071      1.00  V Q       |          |          |          |
   1+30       0.1140      1.00  V Q       |          |          |          |
   1+35       0.1209      1.00  VQ        |          |          |          |
   1+40       0.1277      1.00  VQ        |          |          |          |
   1+45       0.1346      1.00  VQ        |          |          |          |
   1+50       0.1418      1.04  V Q       |          |          |          |
   1+55       0.1502      1.22  V Q       |          |          |          |
   2+ 0       0.1590      1.29  V Q       |          |          |          |
   2+ 5       0.1681      1.31  V Q       |          |          |          |
   2+10       0.1772      1.32  |VQ       |          |          |          |
   2+15       0.1864      1.33  |VQ       |          |          |          |
   2+20       0.1955      1.33  |VQ       |          |          |          |
   2+25       0.2047      1.33  |VQ       |          |          |          |
   2+30       0.2138      1.33  |VQ       |          |          |          |
   2+35       0.2233      1.37  |VQ       |          |          |          |
   2+40       0.2340      1.55  |V Q      |          |          |          |
   2+45       0.2452      1.62  |V Q      |          |          |          |
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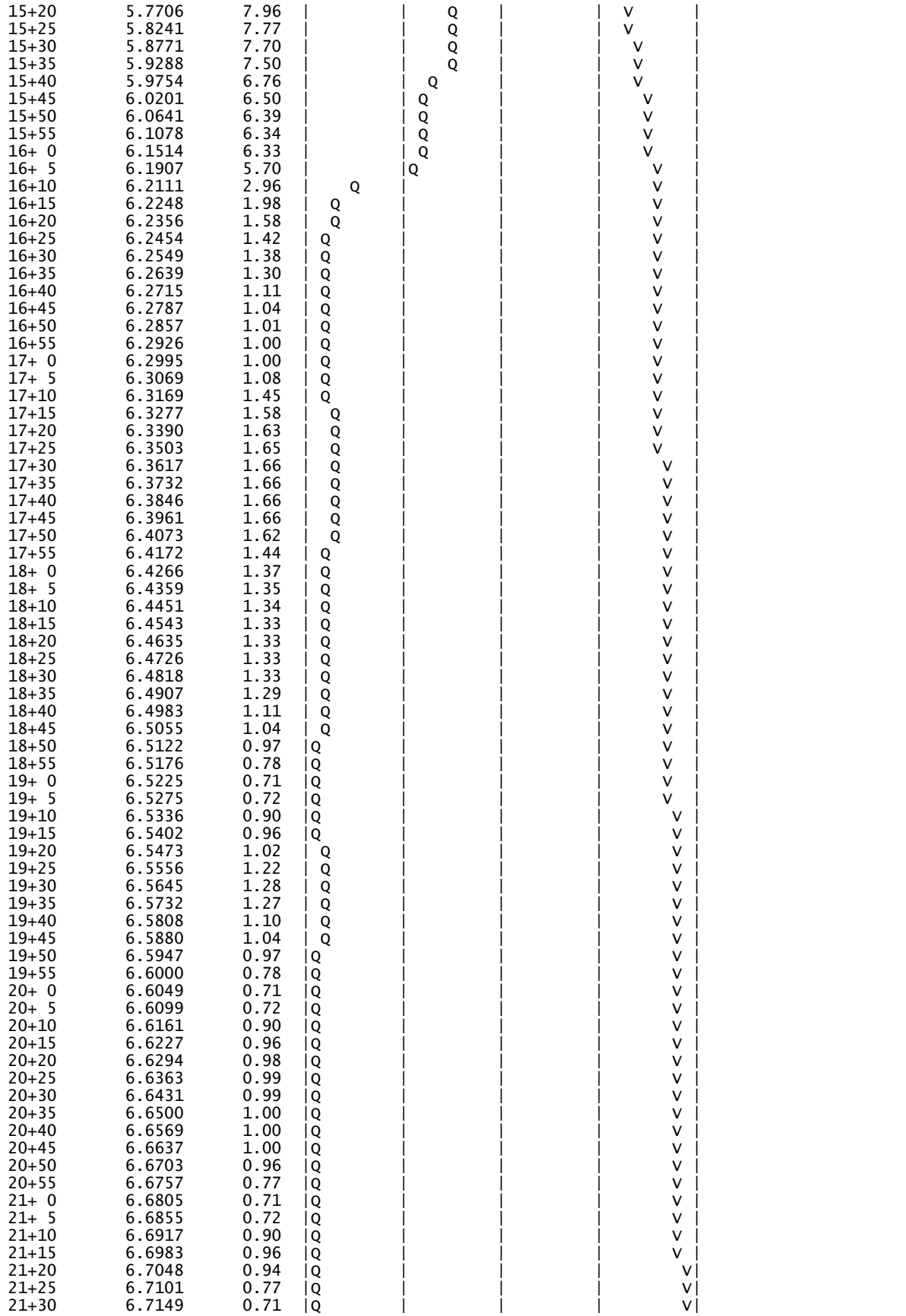
2+50       0.2565      1.65  |V Q       |          |          |          |
2+55       0.2679      1.66  |V Q       |          |          |          |
3+ 0       0.2793      1.66  |V Q       |          |          |          |
3+ 5       0.2908      1.66  |V Q       |          |          |          |
3+10       0.3022      1.66  |V Q       |          |          |          |
3+15       0.3137      1.66  |V Q       |          |          |          |
3+20       0.3252      1.66  |V Q       |          |          |          |
3+25       0.3366      1.66  |V Q       |          |          |          |
3+30       0.3481      1.66  | VQ       |          |          |          |
3+35       0.3595      1.66  | VQ       |          |          |          |
3+40       0.3710      1.66  | VQ       |          |          |          |
3+45       0.3824      1.66  | VQ       |          |          |          |
3+50       0.3942      1.70  | VQ       |          |          |          |
3+55       0.4072      1.89  | VQ       |          |          |          |
4+ 0       0.4206      1.95  | VQ       |          |          |          |
4+ 5       0.4342      1.98  | VQ       |          |          |          |
4+10       0.4479      1.99  | VQ       |          |          |          |
4+15       0.4617      1.99  | VQ       |          |          |          |
4+20       0.4757      2.04  | V Q      |          |          |          |
4+25       0.4910      2.22  | V Q      |          |          |          |
4+30       0.5067      2.28  | V Q      |          |          |          |
4+35       0.5226      2.31  |  VQ      |          |          |          |
4+40       0.5386      2.32  |  VQ      |          |          |          |
4+45       0.5547      2.33  |  VQ      |          |          |          |
4+50       0.5710      2.37  |  VQ      |          |          |          |
4+55       0.5885      2.55  |  V Q     |          |          |          |
5+ 0       0.6066      2.62  |  V Q     |          |          |          |
5+ 5       0.6242      2.56  |  V Q     |          |          |          |
5+10       0.6394      2.21  |  VQ      |          |          |          |
5+15       0.6537      2.08  |  VQ      |          |          |          |
5+20       0.6680      2.07  |  VQ      |          |          |          |
5+25       0.6834      2.23  |  VQ      |          |          |          |
5+30       0.6991      2.29  |   Q      |          |          |          |
5+35       0.7154      2.36  |   Q      |          |          |          |
5+40       0.7329      2.55  |   VQ     |          |          |          |
5+45       0.7509      2.61  |   VQ     |          |          |          |
5+50       0.7691      2.64  |   VQ     |          |          |          |
5+55       0.7874      2.65  |   VQ     |          |          |          |
6+ 0       0.8057      2.66  |   VQ     |          |          |          |
6+ 5       0.8243      2.70  |   VQ     |          |          |          |
6+10       0.8442      2.88  |   VQ     |          |          |          |
6+15       0.8645      2.95  |    Q     |          |          |          |
6+20       0.8850      2.98  |    Q     |          |          |          |
6+25       0.9056      2.99  |    Q     |          |          |          |
6+30       0.9262      2.99  |    Q     |          |          |          |
6+35       0.9471      3.03  |    VQ    |          |          |          |
6+40       0.9692      3.22  |    VQ    |          |          |          |
6+45       0.9918      3.28  |    VQ    |          |          |          |
6+50       1.0146      3.31  |    VQ    |          |          |          |
6+55       1.0375      3.32  |     Q    |          |          |          |
7+ 0       1.0604      3.32  |     Q    |          |          |          |
7+ 5       1.0833      3.33  |     Q    |          |          |          |
7+10       1.1062      3.33  |     Q    |          |          |          |
7+15       1.1291      3.33  |     Q    |          |          |          |
7+20       1.1523      3.37  |     Q    |          |          |          |
7+25       1.1768      3.55  |     VQ   |          |          |          |
7+30       1.2017      3.62  |     VQ   |          |          |          |
7+35       1.2270      3.68  |      Q   |          |          |          |
7+40       1.2537      3.88  |      Q   |          |          |          |
7+45       1.2809      3.95  |      Q   |          |          |          |
7+50       1.3086      4.02  |      VQ  |          |          |          |
7+55       1.3375      4.21  |      VQ  |          |          |          |
8+ 0       1.3670      4.28  |      VQ  |          |          |          |
8+ 5       1.3972      4.39  |       Q  |          |          |          |
8+10       1.4301      4.77  |       VQ|          |          |          |
8+15       1.4638      4.90  |       VQ|          |          |          |
8+20       1.4979      4.96  |       VQ|          |          |          |
8+25       1.5322      4.98  |       VQ|          |          |          |
8+30       1.5665      4.98  |        Q|          |          |          |
8+35       1.6012      5.03  |         VQ         |          |          |
8+40       1.6371      5.21  |         VQ         |          |          |
8+45       1.6734      5.28  |         VQ         |          |          |
8+50       1.7103      5.35  |         VQ         |          |          |
8+55       1.7484      5.54  |          VQ        |          |          |
9+ 0       1.7870      5.61  |          VQ        |          |          |
```

9+ 5	1.8264	5.72	VQ			
9+10	1.8684	6.10	V Q			
9+15	1.9113	6.23	|VQ			
9+20	1.9549	6.33	|VQ			
9+25	1.9999	6.53	|V Q			
9+30	2.0454	6.60	|V Q			
9+35	2.0913	6.68	| VQ			
9+40	2.1387	6.87	| VQ			
9+45	2.1865	6.94	| VQ			
9+50	2.2347	7.01	| VQ			
9+55	2.2843	7.20	| VQ			
10+ 0	2.3344	7.27	| VQ			
10+ 5	2.3827	7.01	| VQ			
10+10	2.4223	5.75	|Q V			
10+15	2.4587	5.29	Q V			
10+20	2.4939	5.10	Q V			
10+25	2.5285	5.03	Q V			
10+30	2.5630	5.01	Q V			
10+35	2.5989	5.20	Q V			
10+40	2.6409	6.11	| Q V			
10+45	2.6853	6.44	| Q V			
10+50	2.7305	6.57	| Q V			
10+55	2.7761	6.62	| Q V			
11+ 0	2.8218	6.64	| Q V			
11+ 5	2.8673	6.61	| Q V			
11+10	2.9116	6.43	| Q V			
11+15	2.9554	6.36	| Q V			
11+20	2.9991	6.34	| Q V			
11+25	3.0426	6.33	| Q V			
11+30	3.0862	6.32	| Q V			
11+35	3.1292	6.24	| Q V			
11+40	3.1696	5.87	|Q V			
11+45	3.2091	5.74	|Q V			
11+50	3.2486	5.73	|Q V			
11+55	3.2892	5.89	|Q V|			
12+ 0	3.3302	5.95	|Q V|			
12+ 5	3.3733	6.26	| Q V|			
12+10	3.4253	7.55	| Q V|			
12+15	3.4804	8.01	| Q V			
12+20	3.5372	8.24	| Q V			
12+25	3.5957	8.50	| Q V			
12+30	3.6548	8.58	| Q |V			
12+35	3.7148	8.71	| Q |V			
12+40	3.7774	9.09	| Q |V			
12+45	3.8409	9.22	| Q | V			
12+50	3.9051	9.32	| Q | V			
12+55	3.9707	9.53	| Q| V			
13+ 0	4.0368	9.60	| Q| V			
13+ 5	4.1046	9.84	| Q| V			
13+10	4.1787	10.76	| |Q V			
13+15	4.2550	11.09	| | Q V			
13+20	4.3323	11.23	| | Q V			
13+25	4.4100	11.28	| | Q V			
13+30	4.4878	11.29	| | Q V			
13+35	4.5625	10.85	| |Q V			
13+40	4.6235	8.85	| Q | V			
13+45	4.6794	8.13	| Q | V			
13+50	4.7334	7.83	| Q | V			
13+55	4.7866	7.72	| Q | V			
14+ 0	4.8395	7.68	| Q | V			
14+ 5	4.8934	7.83	| Q | V			
14+10	4.9522	8.55	| Q | V			
14+15	5.0129	8.81	| Q | V|			
14+20	5.0740	8.87	| Q | V|			
14+25	5.1341	8.73	| Q | V|			
14+30	5.1939	8.68	| Q | V			
14+35	5.2536	8.66	| Q | V			
14+40	5.3132	8.65	| Q | V			
14+45	5.3728	8.65	| Q | |V			
14+50	5.4321	8.61	| Q | |V			
14+55	5.4901	8.42	| Q | |V			
15+ 0	5.5477	8.36	| Q | | V			
15+ 5	5.6048	8.29	| Q | | V			
15+10	5.6605	8.10	| Q | | V			
15+15	5.7158	8.03	| Q | | V			



```
   21+35       6.7199      0.72  |Q        |         |         |        v|
   21+40       6.7261      0.90  |Q        |         |         |        v|
   21+45       6.7326      0.96  |Q        |         |         |        v|
   21+50       6.7391      0.94  |Q        |         |         |        v|
   21+55       6.7444      0.77  |Q        |         |         |        v|
   22+ 0       6.7493      0.71  |Q        |         |         |        v|
   22+ 5       6.7543      0.72  |Q        |         |         |        v|
   22+10       6.7604      0.90  |Q        |         |         |        v|
   22+15       6.7670      0.96  |Q        |         |         |        v|
   22+20       6.7735      0.94  |Q        |         |         |        v|
   22+25       6.7788      0.77  |Q        |         |         |        v|
   22+30       6.7836      0.71  |Q        |         |         |        v|
   22+35       6.7883      0.68  |Q        |         |         |        v|
   22+40       6.7930      0.67  |Q        |         |         |        v|
   22+45       6.7976      0.67  |Q        |         |         |        v|
   22+50       6.8021      0.67  |Q        |         |         |        v|
   22+55       6.8067      0.67  |Q        |         |         |        v|
   23+ 0       6.8113      0.67  |Q        |         |         |        v|
   23+ 5       6.8159      0.67  |Q        |         |         |        v|
   23+10       6.8205      0.67  |Q        |         |         |        v|
   23+15       6.8251      0.67  |Q        |         |         |        v|
   23+20       6.8296      0.67  |Q        |         |         |        v|
   23+25       6.8342      0.67  |Q        |         |         |        v|
   23+30       6.8388      0.67  |Q        |         |         |        v|
   23+35       6.8434      0.67  |Q        |         |         |        v|
   23+40       6.8480      0.67  |Q        |         |         |        v|
   23+45       6.8525      0.67  |Q        |         |         |        v|
   23+50       6.8571      0.67  |Q        |         |         |        v|
   23+55       6.8617      0.67  |Q        |         |         |        v|
   24+ 0       6.8663      0.67  |Q        |         |         |        v|
   24+ 5       6.8703      0.58  |Q        |         |         |        v|
   24+10       6.8718      0.22  Q         |         |         |        v|
   24+15       6.8724      0.09  Q         |         |         |        v|
   24+20       6.8726      0.03  Q         |         |         |        v|
   24+25       6.8727      0.01  Q         |         |         |        v|
   24+30       6.8728      0.01  Q         |         |         |        v|
   24+35       6.8728      0.00  Q         |         |         |         v
-------------------------------------------------------------------------
```

PROPOSED CONDITION
10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH10YR110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.55	18.59

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.25	42.25

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.838(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 0.838(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

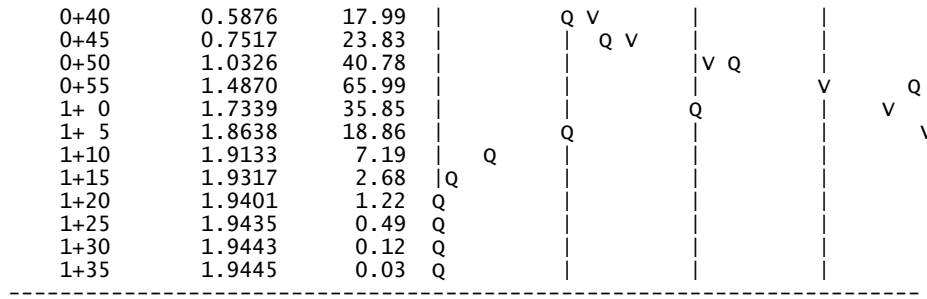
```
      56.0  56.0      0.511     0.760        0.161       1.000      0.161
                                                        Sum (F) =   0.161
      Area averaged mean soil loss (F) (In/Hr) =  0.161
      Minimum soil loss rate ((In/Hr)) =  0.081
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.290
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083         94.204         12.469             4.247
          2   0.167        188.409         54.814            18.672
          3   0.250        282.613         19.639             6.690
          4   0.333        376.818          8.096             2.758
          5   0.417        471.022          3.119             1.063
          6   0.500        565.227          0.957             0.326
          7   0.583        659.431          0.629             0.214
          8   0.667        753.636          0.277             0.094
                                  Sum = 100.000   Sum=      34.064
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low         (In/Hr)
   1   0.08     3.40      0.342       (  0.161)       0.099        0.243
   2   0.17     4.70      0.472       (  0.161)       0.137        0.335
   3   0.25     4.70      0.472       (  0.161)       0.137        0.335
   4   0.33     5.10      0.513       (  0.161)       0.149        0.364
   5   0.42     5.80      0.583          0.161    (  0.169)        0.422
   6   0.50     5.90      0.593          0.161    (  0.172)        0.432
   7   0.58     7.10      0.714          0.161    (  0.207)        0.552
   8   0.67     8.70      0.875          0.161    (  0.254)        0.713
   9   0.75    13.20      1.327          0.161    (  0.385)        1.166
  10   0.83    29.70      2.986          0.161    (  0.866)        2.824
  11   0.92     7.70      0.774          0.161    (  0.224)        0.613
  12   1.00     4.00      0.402       (  0.161)       0.117        0.285
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     8.3
        Flood volume = Effective rainfall      0.69(In)
         times area      33.8(Ac.)/[(In)/(Ft.)] =       1.9(Ac.Ft)
        Total soil loss =      0.15(In)
        Total soil loss =     0.415(Ac.Ft)
        Total rainfall =      0.84(In)
        Flood volume =       84703.9 Cubic Feet
        Total soil loss =       18080.4 Cubic Feet
        ------------------------------------------------------------------------
         Peak flow rate of this hydrograph =     65.987(CFS)
        ------------------------------------------------------------------------
        ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                           1 - H O U R    S T O R M
                        R u n o f f     H y d r o g r a p h
        ------------------------------------------------------------------------
                    Hydrograph in   5   Minute intervals ((CFS))

        ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       17.5      35.0      52.5      70.0
  ----------------------------------------------------------------------------
    0+ 5       0.0071      1.03  Q         |         |         |         |
    0+10       0.0481      5.96  V  Q      |         |         |         |
    0+15       0.1123      9.32  | V  Q    |         |         |         |
    0+20       0.1862     10.73  |  V  Q   |         |         |         |
    0+25       0.2690     12.02  |    VQ   |         |         |         |
    0+30       0.3620     13.51  |      Q  |         |         |         |
    0+35       0.4637     14.76  |       QV|         |         |         |
```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0+45 0.7517 23.83
0+50 1.0326 40.78
0+55 1.4870 65.99
1+ 0 1.7339 35.85
1+ 5 1.8638 18.86
1+10 1.9133 7.19
1+15 1.9317 2.68
1+20 1.9401 1.22
1+25 1.9435 0.49
1+30 1.9443 0.12
1+35 1.9445 0.03

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH10YR310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.95	32.11

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.05	69.29

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.403(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 1.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	1.30	0.219	(0.161)	0.063	0.155
2	0.17	1.30	0.219	(0.161)	0.063	0.155
3	0.25	1.10	0.185	(0.161)	0.054	0.131
4	0.33	1.50	0.252	(0.161)	0.073	0.179
5	0.42	1.50	0.252	(0.161)	0.073	0.179
6	0.50	1.80	0.303	(0.161)	0.088	0.215
7	0.58	1.50	0.252	(0.161)	0.073	0.179
8	0.67	1.80	0.303	(0.161)	0.088	0.215
9	0.75	1.80	0.303	(0.161)	0.088	0.215
10	0.83	1.50	0.252	(0.161)	0.073	0.179
11	0.92	1.60	0.269	(0.161)	0.078	0.191
12	1.00	1.80	0.303	(0.161)	0.088	0.215
13	1.08	2.20	0.370	(0.161)	0.107	0.263
14	1.17	2.20	0.370	(0.161)	0.107	0.263
15	1.25	2.20	0.370	(0.161)	0.107	0.263
16	1.33	2.00	0.337	(0.161)	0.098	0.239
17	1.42	2.60	0.438	(0.161)	0.127	0.311
18	1.50	2.70	0.454	(0.161)	0.132	0.323
19	1.58	2.40	0.404	(0.161)	0.117	0.287
20	1.67	2.70	0.454	(0.161)	0.132	0.323
21	1.75	3.30	0.555	(0.161)	0.161	0.394
22	1.83	3.10	0.522	(0.161)	0.151	0.370
23	1.92	2.90	0.488	(0.161)	0.142	0.346
24	2.00	3.00	0.505	(0.161)	0.146	0.358
25	2.08	3.10	0.522	(0.161)	0.151	0.370
26	2.17	4.20	0.707	0.161	(0.205)	0.545
27	2.25	5.00	0.841	0.161	(0.244)	0.680
28	2.33	3.50	0.589	0.161	(0.171)	0.428
29	2.42	6.80	1.144	0.161	(0.332)	0.983
30	2.50	7.30	1.228	0.161	(0.356)	1.067
31	2.58	8.20	1.380	0.161	(0.400)	1.218
32	2.67	5.90	0.993	0.161	(0.288)	0.831
33	2.75	2.00	0.337	(0.161)	0.098	0.239
34	2.83	1.80	0.303	(0.161)	0.088	0.215
35	2.92	1.80	0.303	(0.161)	0.088	0.215
36	3.00	0.60	0.101	(0.161)	0.029	0.072
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	12.8

Flood volume = Effective rainfall 1.07(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)
Total soil loss = 0.33(In)
Total soil loss = 0.942(Ac.Ft)

Total rainfall = 1.40(In)
Flood volume = 131017.2 Cubic Feet
Total soil loss = 41041.7 Cubic Feet

Peak flow rate of this hydrograph = 36.979(CFS)

++

3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 10.0 20.0 30.0 40.0
0+ 5	0.0045	0.66	Q
0+10	0.0291	3.56	V Q
0+15	0.0601	4.50	V Q
0+20	0.0923	4.69	V Q
0+25	0.1308	5.58	V Q
0+30	0.1724	6.04	V Q
0+35	0.2185	6.70	V Q
0+40	0.2631	6.48	V Q
0+45	0.3114	7.02	V Q
0+50	0.3600	7.05	V Q
0+55	0.4048	6.51	VQ
1+ 0	0.4505	6.63	VQ
1+ 5	0.5005	7.27	VQ
1+10	0.5578	8.32	VQ
1+15	0.6178	8.71	Q
1+20	0.6781	8.76	QV
1+25	0.7379	8.68	QV
1+30	0.8062	9.93	QV
1+35	0.8781	10.43	QV
1+40	0.9481	10.17	Q V
1+45	1.0238	11.00	Q V
1+50	1.1093	12.41	Q V
1+55	1.1948	12.42	Q V
2+ 0	1.2782	12.10	Q V
2+ 5	1.3624	12.23	Q V
2+10	1.4533	13.21	Q V
2+15	1.5715	17.15	Q V
2+20	1.7078	19.80	Q V
2+25	1.8376	18.84	Q V
2+30	2.0335	28.44	VQ
2+35	2.2669	33.88	V Q
2+40	2.5215	36.98	V Q
2+45	2.7215	29.03	Q V
2+50	2.8311	15.92	Q V
2+55	2.9049	10.72	Q V
3+ 0	2.9602	8.02	Q V
3+ 5	2.9895	4.26	Q V
3+10	3.0010	1.67	Q V
3+15	3.0053	0.63	Q V
3+20	3.0068	0.22	Q V
3+25	3.0074	0.09	Q V
3+30	3.0077	0.04	Q V
3+35	3.0077	0.01	Q V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH10YR610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.40	47.32

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	3.00	101.40

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 2.058(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.058(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.50	0.123	(0.161)	0.036	0.088
2	0.17	0.60	0.148	(0.161)	0.043	0.105
3	0.25	0.60	0.148	(0.161)	0.043	0.105
4	0.33	0.60	0.148	(0.161)	0.043	0.105
5	0.42	0.60	0.148	(0.161)	0.043	0.105
6	0.50	0.70	0.173	(0.161)	0.050	0.123
7	0.58	0.70	0.173	(0.161)	0.050	0.123
8	0.67	0.70	0.173	(0.161)	0.050	0.123
9	0.75	0.70	0.173	(0.161)	0.050	0.123
10	0.83	0.70	0.173	(0.161)	0.050	0.123
11	0.92	0.70	0.173	(0.161)	0.050	0.123
12	1.00	0.80	0.198	(0.161)	0.057	0.140
13	1.08	0.80	0.198	(0.161)	0.057	0.140
14	1.17	0.80	0.198	(0.161)	0.057	0.140
15	1.25	0.80	0.198	(0.161)	0.057	0.140
16	1.33	0.80	0.198	(0.161)	0.057	0.140
17	1.42	0.80	0.198	(0.161)	0.057	0.140
18	1.50	0.80	0.198	(0.161)	0.057	0.140
19	1.58	0.80	0.198	(0.161)	0.057	0.140
20	1.67	0.80	0.198	(0.161)	0.057	0.140
21	1.75	0.80	0.198	(0.161)	0.057	0.140
22	1.83	0.80	0.198	(0.161)	0.057	0.140
23	1.92	0.80	0.198	(0.161)	0.057	0.140
24	2.00	0.90	0.222	(0.161)	0.064	0.158
25	2.08	0.80	0.198	(0.161)	0.057	0.140
26	2.17	0.90	0.222	(0.161)	0.064	0.158
27	2.25	0.90	0.222	(0.161)	0.064	0.158
28	2.33	0.90	0.222	(0.161)	0.064	0.158
29	2.42	0.90	0.222	(0.161)	0.064	0.158
30	2.50	0.90	0.222	(0.161)	0.064	0.158
31	2.58	0.90	0.222	(0.161)	0.064	0.158
32	2.67	0.90	0.222	(0.161)	0.064	0.158
33	2.75	1.00	0.247	(0.161)	0.072	0.175
34	2.83	1.00	0.247	(0.161)	0.072	0.175
35	2.92	1.00	0.247	(0.161)	0.072	0.175
36	3.00	1.00	0.247	(0.161)	0.072	0.175
37	3.08	1.00	0.247	(0.161)	0.072	0.175
38	3.17	1.10	0.272	(0.161)	0.079	0.193
39	3.25	1.10	0.272	(0.161)	0.079	0.193
40	3.33	1.10	0.272	(0.161)	0.079	0.193
41	3.42	1.20	0.296	(0.161)	0.086	0.210
42	3.50	1.30	0.321	(0.161)	0.093	0.228

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43   3.58     1.40      0.346       (  0.161)       0.100        0.245
44   3.67     1.40      0.346       (  0.161)       0.100        0.245
45   3.75     1.50      0.370       (  0.161)       0.107        0.263
46   3.83     1.50      0.370       (  0.161)       0.107        0.263
47   3.92     1.60      0.395       (  0.161)       0.115        0.281
48   4.00     1.60      0.395       (  0.161)       0.115        0.281
49   4.08     1.70      0.420       (  0.161)       0.122        0.298
50   4.17     1.80      0.445       (  0.161)       0.129        0.316
51   4.25     1.90      0.469       (  0.161)       0.136        0.333
52   4.33     2.00      0.494       (  0.161)       0.143        0.351
53   4.42     2.10      0.519       (  0.161)       0.150        0.368
54   4.50     2.10      0.519       (  0.161)       0.150        0.368
55   4.58     2.20      0.543       (  0.161)       0.158        0.386
56   4.67     2.30      0.568          0.161    (  0.165)       0.407
57   4.75     2.40      0.593          0.161    (  0.172)       0.431
58   4.83     2.40      0.593          0.161    (  0.172)       0.431
59   4.92     2.50      0.617          0.161    (  0.179)       0.456
60   5.00     2.60      0.642          0.161    (  0.186)       0.481
61   5.08     3.10      0.766          0.161    (  0.222)       0.604
62   5.17     3.60      0.889          0.161    (  0.258)       0.728
63   5.25     3.90      0.963          0.161    (  0.279)       0.802
64   5.33     4.20      1.037          0.161    (  0.301)       0.876
65   5.42     4.70      1.161          0.161    (  0.337)       0.999
66   5.50     5.60      1.383          0.161    (  0.401)       1.222
67   5.58     1.90      0.469       (  0.161)       0.136        0.333
68   5.67     0.90      0.222       (  0.161)       0.064        0.158
69   5.75     0.60      0.148       (  0.161)       0.043        0.105
70   5.83     0.50      0.123       (  0.161)       0.036        0.088
71   5.92     0.30      0.074       (  0.161)       0.021        0.053
72   6.00     0.20      0.049       (  0.161)       0.014        0.035
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    18.4
      Flood volume = Effective rainfall      1.54(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       4.3(Ac.Ft)
      Total soil loss =      0.52(In)
      Total soil loss =     1.471(Ac.Ft)
      Total rainfall =      2.06(In)
      Flood volume =      188438.8 Cubic Feet
      Total soil loss =       64067.2 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     34.606(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------------
  0+ 5       0.0026      0.37  Q          |         |         |         |
  0+10       0.0169      2.08  V Q        |         |         |         |
  0+15       0.0376      3.00  V Q        |         |         |         |
  0+20       0.0607      3.36  V  Q       |         |         |         |
  0+25       0.0848      3.50  V  Q       |         |         |         |
  0+30       0.1098      3.62  |V Q       |         |         |         |
  0+35       0.1371      3.97  |V Q       |         |         |         |
  0+40       0.1654      4.10  |V  Q      |         |         |         |
  0+45       0.1940      4.15  |V  Q      |         |         |         |
  0+50       0.2227      4.17  | V Q      |         |         |         |
  0+55       0.2515      4.18  | V Q      |         |         |         |
  1+ 0       0.2808      4.26  | V Q      |         |         |         |
  1+ 5       0.3124      4.59  | V Q      |         |         |         |
  1+10       0.3448      4.70  |  VQ      |         |         |         |
  1+15       0.3775      4.75  |  VQ      |         |         |         |
  1+20       0.4103      4.77  |  VQ      |         |         |         |
  1+25       0.4432      4.78  |   Q      |         |         |         |
  1+30       0.4761      4.78  |   Q      |         |         |         |
  1+35       0.5091      4.78  |   Q      |         |         |         |
  1+40       0.5420      4.78  |   QV     |         |         |         |
  1+45       0.5749      4.78  |   QV     |         |         |         |
  1+50       0.6079      4.78  |   QV     |         |         |         |
  1+55       0.6408      4.78  |   QV     |         |         |         |
  2+ 0       0.6742      4.86  |   Q V    |         |         |         |
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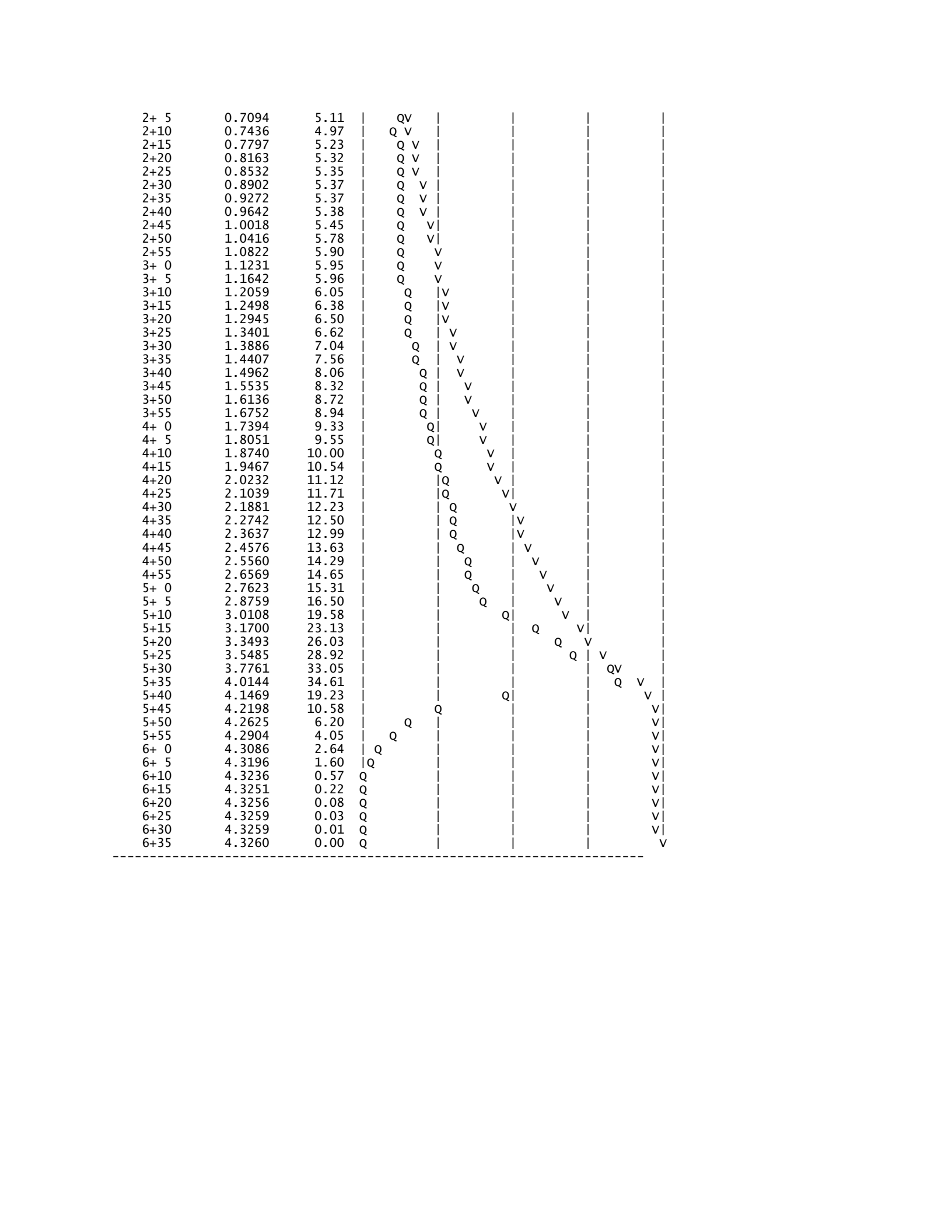

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: NORTH10YR2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.145(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time	(Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	(0.286)	0.010	0.024
2	0.17	0.07	0.033	(0.285)	0.010	0.024
3	0.25	0.07	0.033	(0.284)	0.010	0.024
4	0.33	0.10	0.050	(0.283)	0.014	0.035
5	0.42	0.10	0.050	(0.282)	0.014	0.035
6	0.50	0.10	0.050	(0.281)	0.014	0.035
7	0.58	0.10	0.050	(0.280)	0.014	0.035
8	0.67	0.10	0.050	(0.278)	0.014	0.035
9	0.75	0.10	0.050	(0.277)	0.014	0.035
10	0.83	0.13	0.066	(0.276)	0.019	0.047
11	0.92	0.13	0.066	(0.275)	0.019	0.047
12	1.00	0.13	0.066	(0.274)	0.019	0.047
13	1.08	0.10	0.050	(0.273)	0.014	0.035
14	1.17	0.10	0.050	(0.272)	0.014	0.035
15	1.25	0.10	0.050	(0.271)	0.014	0.035
16	1.33	0.10	0.050	(0.270)	0.014	0.035
17	1.42	0.10	0.050	(0.269)	0.014	0.035
18	1.50	0.10	0.050	(0.268)	0.014	0.035
19	1.58	0.10	0.050	(0.267)	0.014	0.035
20	1.67	0.10	0.050	(0.265)	0.014	0.035
21	1.75	0.10	0.050	(0.264)	0.014	0.035
22	1.83	0.13	0.066	(0.263)	0.019	0.047
23	1.92	0.13	0.066	(0.262)	0.019	0.047
24	2.00	0.13	0.066	(0.261)	0.019	0.047
25	2.08	0.13	0.066	(0.260)	0.019	0.047
26	2.17	0.13	0.066	(0.259)	0.019	0.047
27	2.25	0.13	0.066	(0.258)	0.019	0.047
28	2.33	0.13	0.066	(0.257)	0.019	0.047
29	2.42	0.13	0.066	(0.256)	0.019	0.047
30	2.50	0.13	0.066	(0.255)	0.019	0.047
31	2.58	0.17	0.083	(0.254)	0.024	0.059
32	2.67	0.17	0.083	(0.253)	0.024	0.059
33	2.75	0.17	0.083	(0.252)	0.024	0.059
34	2.83	0.17	0.083	(0.251)	0.024	0.059
35	2.92	0.17	0.083	(0.250)	0.024	0.059
36	3.00	0.17	0.083	(0.249)	0.024	0.059
37	3.08	0.17	0.083	(0.248)	0.024	0.059
38	3.17	0.17	0.083	(0.247)	0.024	0.059
39	3.25	0.17	0.083	(0.246)	0.024	0.059
40	3.33	0.17	0.083	(0.245)	0.024	0.059
41	3.42	0.17	0.083	(0.244)	0.024	0.059
42	3.50	0.17	0.083	(0.243)	0.024	0.059

43	3.58	0.17	0.083	(0.242)	0.024	0.059
44	3.67	0.17	0.083	(0.241)	0.024	0.059
45	3.75	0.17	0.083	(0.240)	0.024	0.059
46	3.83	0.20	0.099	(0.238)	0.029	0.071
47	3.92	0.20	0.099	(0.237)	0.029	0.071
48	4.00	0.20	0.099	(0.236)	0.029	0.071
49	4.08	0.20	0.099	(0.235)	0.029	0.071
50	4.17	0.20	0.099	(0.234)	0.029	0.071
51	4.25	0.20	0.099	(0.233)	0.029	0.071
52	4.33	0.23	0.116	(0.232)	0.034	0.082
53	4.42	0.23	0.116	(0.231)	0.034	0.082
54	4.50	0.23	0.116	(0.231)	0.034	0.082
55	4.58	0.23	0.116	(0.230)	0.034	0.082
56	4.67	0.23	0.116	(0.229)	0.034	0.082
57	4.75	0.23	0.116	(0.228)	0.034	0.082
58	4.83	0.27	0.133	(0.227)	0.038	0.094
59	4.92	0.27	0.133	(0.226)	0.038	0.094
60	5.00	0.27	0.133	(0.225)	0.038	0.094
61	5.08	0.20	0.099	(0.224)	0.029	0.071
62	5.17	0.20	0.099	(0.223)	0.029	0.071
63	5.25	0.20	0.099	(0.222)	0.029	0.071
64	5.33	0.23	0.116	(0.221)	0.034	0.082
65	5.42	0.23	0.116	(0.220)	0.034	0.082
66	5.50	0.23	0.116	(0.219)	0.034	0.082
67	5.58	0.27	0.133	(0.218)	0.038	0.094
68	5.67	0.27	0.133	(0.217)	0.038	0.094
69	5.75	0.27	0.133	(0.216)	0.038	0.094
70	5.83	0.27	0.133	(0.215)	0.038	0.094
71	5.92	0.27	0.133	(0.214)	0.038	0.094
72	6.00	0.27	0.133	(0.213)	0.038	0.094
73	6.08	0.30	0.149	(0.212)	0.043	0.106
74	6.17	0.30	0.149	(0.211)	0.043	0.106
75	6.25	0.30	0.149	(0.210)	0.043	0.106
76	6.33	0.30	0.149	(0.209)	0.043	0.106
77	6.42	0.30	0.149	(0.208)	0.043	0.106
78	6.50	0.30	0.149	(0.207)	0.043	0.106
79	6.58	0.33	0.166	(0.206)	0.048	0.118
80	6.67	0.33	0.166	(0.206)	0.048	0.118
81	6.75	0.33	0.166	(0.205)	0.048	0.118
82	6.83	0.33	0.166	(0.204)	0.048	0.118
83	6.92	0.33	0.166	(0.203)	0.048	0.118
84	7.00	0.33	0.166	(0.202)	0.048	0.118
85	7.08	0.33	0.166	(0.201)	0.048	0.118
86	7.17	0.33	0.166	(0.200)	0.048	0.118
87	7.25	0.33	0.166	(0.199)	0.048	0.118
88	7.33	0.37	0.182	(0.198)	0.053	0.130
89	7.42	0.37	0.182	(0.197)	0.053	0.130
90	7.50	0.37	0.182	(0.196)	0.053	0.130
91	7.58	0.40	0.199	(0.195)	0.058	0.141
92	7.67	0.40	0.199	(0.195)	0.058	0.141
93	7.75	0.40	0.199	(0.194)	0.058	0.141
94	7.83	0.43	0.216	(0.193)	0.063	0.153
95	7.92	0.43	0.216	(0.192)	0.063	0.153
96	8.00	0.43	0.216	(0.191)	0.063	0.153
97	8.08	0.50	0.249	(0.190)	0.072	0.177
98	8.17	0.50	0.249	(0.189)	0.072	0.177
99	8.25	0.50	0.249	(0.188)	0.072	0.177
100	8.33	0.50	0.249	(0.187)	0.072	0.177
101	8.42	0.50	0.249	(0.187)	0.072	0.177
102	8.50	0.50	0.249	(0.186)	0.072	0.177
103	8.58	0.53	0.265	(0.185)	0.077	0.188
104	8.67	0.53	0.265	(0.184)	0.077	0.188
105	8.75	0.53	0.265	(0.183)	0.077	0.188
106	8.83	0.57	0.282	(0.182)	0.082	0.200
107	8.92	0.57	0.282	(0.181)	0.082	0.200
108	9.00	0.57	0.282	(0.181)	0.082	0.200
109	9.08	0.63	0.315	(0.180)	0.091	0.224
110	9.17	0.63	0.315	(0.179)	0.091	0.224
111	9.25	0.63	0.315	(0.178)	0.091	0.224
112	9.33	0.67	0.332	(0.177)	0.096	0.235
113	9.42	0.67	0.332	(0.176)	0.096	0.235
114	9.50	0.67	0.332	(0.175)	0.096	0.235
115	9.58	0.70	0.348	(0.175)	0.101	0.247
116	9.67	0.70	0.348	(0.174)	0.101	0.247
117	9.75	0.70	0.348	(0.173)	0.101	0.247

118	9.83	0.73	0.365	(0.172)	0.106	0.259
119	9.92	0.73	0.365	(0.171)	0.106	0.259
120	10.00	0.73	0.365	(0.170)	0.106	0.259
121	10.08	0.50	0.249	(0.170)	0.072	0.177
122	10.17	0.50	0.249	(0.169)	0.072	0.177
123	10.25	0.50	0.249	(0.168)	0.072	0.177
124	10.33	0.50	0.249	(0.167)	0.072	0.177
125	10.42	0.50	0.249	(0.166)	0.072	0.177
126	10.50	0.50	0.249	(0.166)	0.072	0.177
127	10.58	0.67	0.332	(0.165)	0.096	0.235
128	10.67	0.67	0.332	(0.164)	0.096	0.235
129	10.75	0.67	0.332	(0.163)	0.096	0.235
130	10.83	0.67	0.332	(0.162)	0.096	0.235
131	10.92	0.67	0.332	(0.162)	0.096	0.235
132	11.00	0.67	0.332	(0.161)	0.096	0.235
133	11.08	0.63	0.315	(0.160)	0.091	0.224
134	11.17	0.63	0.315	(0.159)	0.091	0.224
135	11.25	0.63	0.315	(0.158)	0.091	0.224
136	11.33	0.63	0.315	(0.158)	0.091	0.224
137	11.42	0.63	0.315	(0.157)	0.091	0.224
138	11.50	0.63	0.315	(0.156)	0.091	0.224
139	11.58	0.57	0.282	(0.155)	0.082	0.200
140	11.67	0.57	0.282	(0.154)	0.082	0.200
141	11.75	0.57	0.282	(0.154)	0.082	0.200
142	11.83	0.60	0.298	(0.153)	0.087	0.212
143	11.92	0.60	0.298	(0.152)	0.087	0.212
144	12.00	0.60	0.298	(0.151)	0.087	0.212
145	12.08	0.83	0.415	(0.151)	0.120	0.294
146	12.17	0.83	0.415	(0.150)	0.120	0.294
147	12.25	0.83	0.415	(0.149)	0.120	0.294
148	12.33	0.87	0.431	(0.148)	0.125	0.306
149	12.42	0.87	0.431	(0.148)	0.125	0.306
150	12.50	0.87	0.431	(0.147)	0.125	0.306
151	12.58	0.93	0.464	(0.146)	0.135	0.330
152	12.67	0.93	0.464	(0.145)	0.135	0.330
153	12.75	0.93	0.464	(0.145)	0.135	0.330
154	12.83	0.97	0.481	(0.144)	0.139	0.341
155	12.92	0.97	0.481	(0.143)	0.139	0.341
156	13.00	0.97	0.481	(0.143)	0.139	0.341
157	13.08	1.13	0.564	0.142	(0.163)	0.422
158	13.17	1.13	0.564	0.141	(0.163)	0.423
159	13.25	1.13	0.564	0.140	(0.163)	0.423
160	13.33	1.13	0.564	0.140	(0.163)	0.424
161	13.42	1.13	0.564	0.139	(0.163)	0.425
162	13.50	1.13	0.564	0.138	(0.163)	0.426
163	13.58	0.77	0.381	(0.138)	0.111	0.271
164	13.67	0.77	0.381	(0.137)	0.111	0.271
165	13.75	0.77	0.381	(0.136)	0.111	0.271
166	13.83	0.77	0.381	(0.135)	0.111	0.271
167	13.92	0.77	0.381	(0.135)	0.111	0.271
168	14.00	0.77	0.381	(0.134)	0.111	0.271
169	14.08	0.90	0.448	(0.133)	0.130	0.318
170	14.17	0.90	0.448	(0.133)	0.130	0.318
171	14.25	0.90	0.448	(0.132)	0.130	0.318
172	14.33	0.87	0.431	(0.131)	0.125	0.306
173	14.42	0.87	0.431	(0.131)	0.125	0.306
174	14.50	0.87	0.431	(0.130)	0.125	0.306
175	14.58	0.87	0.431	(0.129)	0.125	0.306
176	14.67	0.87	0.431	(0.129)	0.125	0.306
177	14.75	0.87	0.431	(0.128)	0.125	0.306
178	14.83	0.83	0.415	(0.127)	0.120	0.294
179	14.92	0.83	0.415	(0.127)	0.120	0.294
180	15.00	0.83	0.415	(0.126)	0.120	0.294
181	15.08	0.80	0.398	(0.125)	0.115	0.283
182	15.17	0.80	0.398	(0.125)	0.115	0.283
183	15.25	0.80	0.398	(0.124)	0.115	0.283
184	15.33	0.77	0.381	(0.124)	0.111	0.271
185	15.42	0.77	0.381	(0.123)	0.111	0.271
186	15.50	0.77	0.381	(0.122)	0.111	0.271
187	15.58	0.63	0.315	(0.122)	0.091	0.224
188	15.67	0.63	0.315	(0.121)	0.091	0.224
189	15.75	0.63	0.315	(0.120)	0.091	0.224
190	15.83	0.63	0.315	(0.120)	0.091	0.224
191	15.92	0.63	0.315	(0.119)	0.091	0.224
192	16.00	0.63	0.315	(0.119)	0.091	0.224

193	16.08	0.13	0.066	(0.118)	0.019	0.047
194	16.17	0.13	0.066	(0.117)	0.019	0.047
195	16.25	0.13	0.066	(0.117)	0.019	0.047
196	16.33	0.13	0.066	(0.116)	0.019	0.047
197	16.42	0.13	0.066	(0.116)	0.019	0.047
198	16.50	0.13	0.066	(0.115)	0.019	0.047
199	16.58	0.10	0.050	(0.114)	0.014	0.035
200	16.67	0.10	0.050	(0.114)	0.014	0.035
201	16.75	0.10	0.050	(0.113)	0.014	0.035
202	16.83	0.10	0.050	(0.113)	0.014	0.035
203	16.92	0.10	0.050	(0.112)	0.014	0.035
204	17.00	0.10	0.050	(0.111)	0.014	0.035
205	17.08	0.17	0.083	(0.111)	0.024	0.059
206	17.17	0.17	0.083	(0.110)	0.024	0.059
207	17.25	0.17	0.083	(0.110)	0.024	0.059
208	17.33	0.17	0.083	(0.109)	0.024	0.059
209	17.42	0.17	0.083	(0.109)	0.024	0.059
210	17.50	0.17	0.083	(0.108)	0.024	0.059
211	17.58	0.17	0.083	(0.108)	0.024	0.059
212	17.67	0.17	0.083	(0.107)	0.024	0.059
213	17.75	0.17	0.083	(0.107)	0.024	0.059
214	17.83	0.13	0.066	(0.106)	0.019	0.047
215	17.92	0.13	0.066	(0.106)	0.019	0.047
216	18.00	0.13	0.066	(0.105)	0.019	0.047
217	18.08	0.13	0.066	(0.104)	0.019	0.047
218	18.17	0.13	0.066	(0.104)	0.019	0.047
219	18.25	0.13	0.066	(0.103)	0.019	0.047
220	18.33	0.13	0.066	(0.103)	0.019	0.047
221	18.42	0.13	0.066	(0.102)	0.019	0.047
222	18.50	0.13	0.066	(0.102)	0.019	0.047
223	18.58	0.10	0.050	(0.101)	0.014	0.035
224	18.67	0.10	0.050	(0.101)	0.014	0.035
225	18.75	0.10	0.050	(0.100)	0.014	0.035
226	18.83	0.07	0.033	(0.100)	0.010	0.024
227	18.92	0.07	0.033	(0.100)	0.010	0.024
228	19.00	0.07	0.033	(0.099)	0.010	0.024
229	19.08	0.10	0.050	(0.099)	0.014	0.035
230	19.17	0.10	0.050	(0.098)	0.014	0.035
231	19.25	0.10	0.050	(0.098)	0.014	0.035
232	19.33	0.13	0.066	(0.097)	0.019	0.047
233	19.42	0.13	0.066	(0.097)	0.019	0.047
234	19.50	0.13	0.066	(0.096)	0.019	0.047
235	19.58	0.10	0.050	(0.096)	0.014	0.035
236	19.67	0.10	0.050	(0.095)	0.014	0.035
237	19.75	0.10	0.050	(0.095)	0.014	0.035
238	19.83	0.07	0.033	(0.095)	0.010	0.024
239	19.92	0.07	0.033	(0.094)	0.010	0.024
240	20.00	0.07	0.033	(0.094)	0.010	0.024
241	20.08	0.10	0.050	(0.093)	0.014	0.035
242	20.17	0.10	0.050	(0.093)	0.014	0.035
243	20.25	0.10	0.050	(0.093)	0.014	0.035
244	20.33	0.10	0.050	(0.092)	0.014	0.035
245	20.42	0.10	0.050	(0.092)	0.014	0.035
246	20.50	0.10	0.050	(0.091)	0.014	0.035
247	20.58	0.10	0.050	(0.091)	0.014	0.035
248	20.67	0.10	0.050	(0.091)	0.014	0.035
249	20.75	0.10	0.050	(0.090)	0.014	0.035
250	20.83	0.07	0.033	(0.090)	0.010	0.024
251	20.92	0.07	0.033	(0.089)	0.010	0.024
252	21.00	0.07	0.033	(0.089)	0.010	0.024
253	21.08	0.10	0.050	(0.089)	0.014	0.035
254	21.17	0.10	0.050	(0.088)	0.014	0.035
255	21.25	0.10	0.050	(0.088)	0.014	0.035
256	21.33	0.07	0.033	(0.088)	0.010	0.024
257	21.42	0.07	0.033	(0.087)	0.010	0.024
258	21.50	0.07	0.033	(0.087)	0.010	0.024
259	21.58	0.10	0.050	(0.087)	0.014	0.035
260	21.67	0.10	0.050	(0.086)	0.014	0.035
261	21.75	0.10	0.050	(0.086)	0.014	0.035
262	21.83	0.07	0.033	(0.086)	0.010	0.024
263	21.92	0.07	0.033	(0.086)	0.010	0.024
264	22.00	0.07	0.033	(0.085)	0.010	0.024
265	22.08	0.10	0.050	(0.085)	0.014	0.035
266	22.17	0.10	0.050	(0.085)	0.014	0.035
267	22.25	0.10	0.050	(0.084)	0.014	0.035

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268  22.33     0.07      0.033       (  0.084)       0.010        0.024
269  22.42     0.07      0.033       (  0.084)       0.010        0.024
270  22.50     0.07      0.033       (  0.084)       0.010        0.024
271  22.58     0.07      0.033       (  0.083)       0.010        0.024
272  22.67     0.07      0.033       (  0.083)       0.010        0.024
273  22.75     0.07      0.033       (  0.083)       0.010        0.024
274  22.83     0.07      0.033       (  0.083)       0.010        0.024
275  22.92     0.07      0.033       (  0.083)       0.010        0.024
276  23.00     0.07      0.033       (  0.082)       0.010        0.024
277  23.08     0.07      0.033       (  0.082)       0.010        0.024
278  23.17     0.07      0.033       (  0.082)       0.010        0.024
279  23.25     0.07      0.033       (  0.082)       0.010        0.024
280  23.33     0.07      0.033       (  0.082)       0.010        0.024
281  23.42     0.07      0.033       (  0.081)       0.010        0.024
282  23.50     0.07      0.033       (  0.081)       0.010        0.024
283  23.58     0.07      0.033       (  0.081)       0.010        0.024
284  23.67     0.07      0.033       (  0.081)       0.010        0.024
285  23.75     0.07      0.033       (  0.081)       0.010        0.024
286  23.83     0.07      0.033       (  0.081)       0.010        0.024
287  23.92     0.07      0.033       (  0.081)       0.010        0.024
288  24.00     0.07      0.033       (  0.081)       0.010        0.024
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    35.5
      Flood volume = Effective rainfall      2.95(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       8.3(Ac.Ft)
      Total soil loss =      1.19(In)
      Total soil loss =     3.353(Ac.Ft)
      Total rainfall =      4.15(In)
      Flood volume =      362552.9 Cubic Feet
      Total soil loss =      146057.7 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     14.444(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0007      0.10  Q         |          |          |          |
   0+10       0.0044      0.54  VQ        |          |          |          |
   0+15       0.0092      0.70  VQ        |          |          |          |
   0+20       0.0148      0.81  VQ        |          |          |          |
   0+25       0.0221      1.06  V Q       |          |          |          |
   0+30       0.0300      1.14  V Q       |          |          |          |
   0+35       0.0381      1.18  V Q       |          |          |          |
   0+40       0.0463      1.20  V Q       |          |          |          |
   0+45       0.0546      1.20  V Q       |          |          |          |
   0+50       0.0632      1.25  V Q       |          |          |          |
   0+55       0.0734      1.47  V Q       |          |          |          |
   1+ 0       0.0841      1.55  V  Q      |          |          |          |
   1+ 5       0.0946      1.53  V  Q      |          |          |          |
   1+10       0.1038      1.33  V Q       |          |          |          |
   1+15       0.1124      1.25  V Q       |          |          |          |
   1+20       0.1208      1.22  V Q       |          |          |          |
   1+25       0.1292      1.21  V Q       |          |          |          |
   1+30       0.1375      1.21  V Q       |          |          |          |
   1+35       0.1458      1.20  V Q       |          |          |          |
   1+40       0.1541      1.20  V Q       |          |          |          |
   1+45       0.1624      1.20  V Q       |          |          |          |
   1+50       0.1710      1.25  V Q       |          |          |          |
   1+55       0.1812      1.47  V Q       |          |          |          |
   2+ 0       0.1918      1.55  V  Q      |          |          |          |
   2+ 5       0.2028      1.58  V  Q      |          |          |          |
   2+10       0.2138      1.60  |V Q      |          |          |          |
   2+15       0.2248      1.60  |V Q      |          |          |          |
   2+20       0.2358      1.60  |V Q      |          |          |          |
   2+25       0.2469      1.60  |V Q      |          |          |          |
   2+30       0.2579      1.60  |V Q      |          |          |          |
   2+35       0.2693      1.65  |V Q      |          |          |          |
   2+40       0.2823      1.87  |V Q      |          |          |          |
   2+45       0.2957      1.95  |V Q      |          |          |          |
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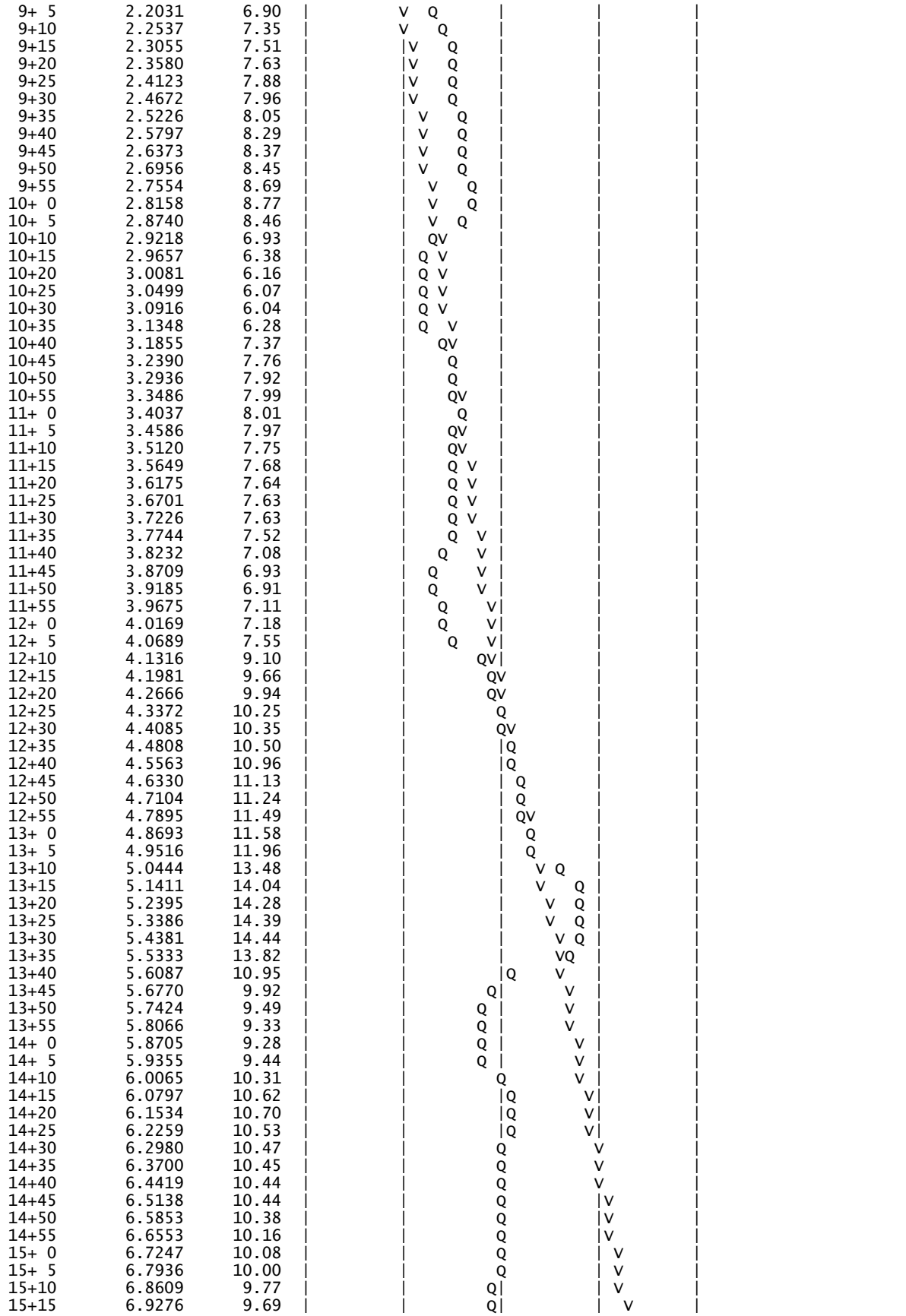
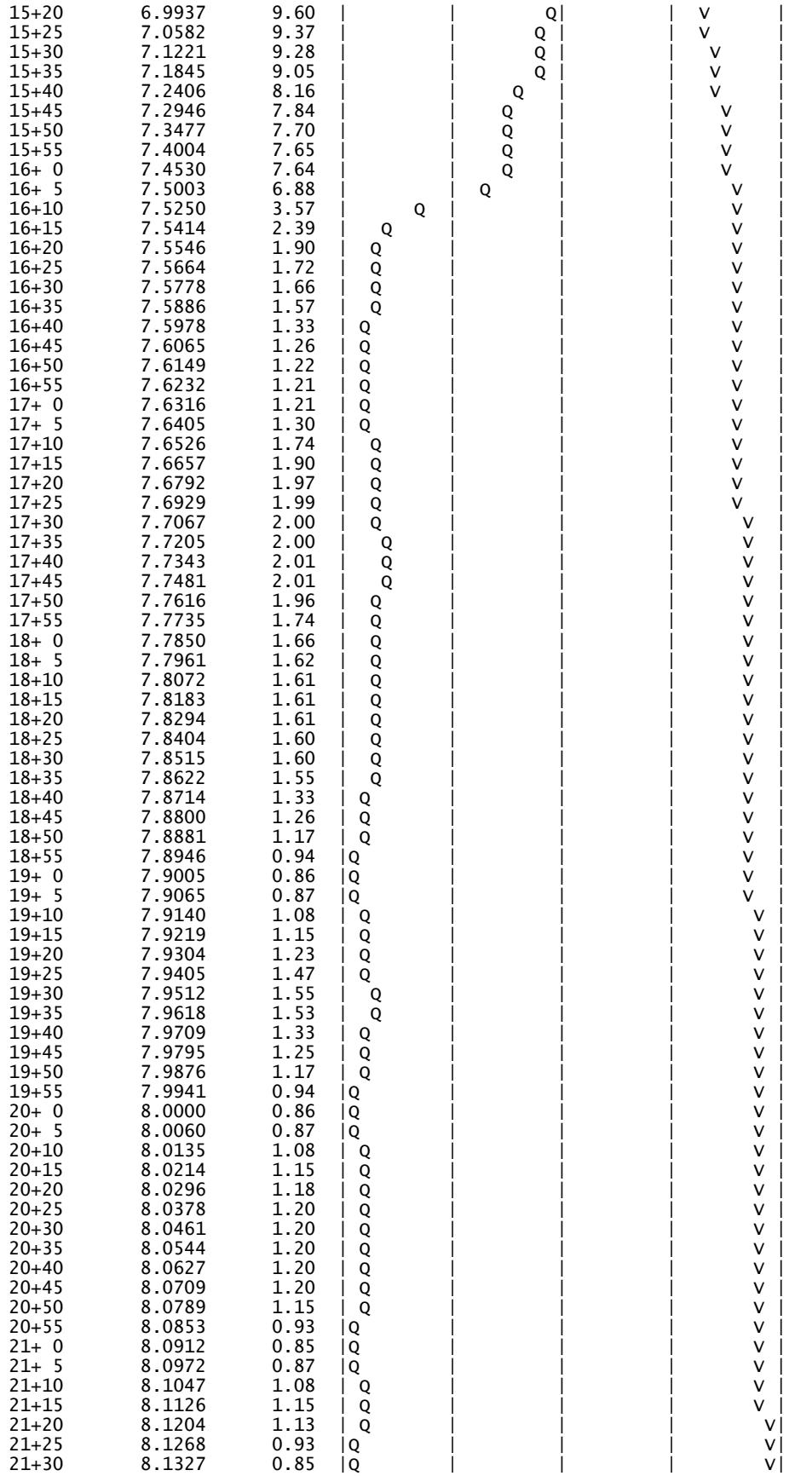
2+50	0.3094	1.99	V Q			
2+55	0.3232	2.00	V Q			
3+ 0	0.3369	2.00	V Q			
3+ 5	0.3508	2.01	V Q			
3+10	0.3646	2.01	V Q			
3+15	0.3784	2.01	V Q			
3+20	0.3922	2.01	V Q			
3+25	0.4060	2.01	V Q			
3+30	0.4198	2.01	V Q			
3+35	0.4337	2.01	V Q			
3+40	0.4475	2.01	V Q			
3+45	0.4613	2.01	V Q			
3+50	0.4755	2.06	V Q			
3+55	0.4911	2.28	V Q			
4+ 0	0.5073	2.35	V Q			
4+ 5	0.5238	2.39	V Q			
4+10	0.5403	2.40	V Q			
4+15	0.5569	2.40	V Q			
4+20	0.5738	2.46	V Q			
4+25	0.5922	2.68	V Q			
4+30	0.6112	2.76	V Q			
4+35	0.6304	2.79	V Q			
4+40	0.6497	2.80	V Q			
4+45	0.6690	2.81	V Q			
4+50	0.6887	2.86	V Q			
4+55	0.7099	3.08	V Q			
5+ 0	0.7317	3.16	V Q			
5+ 5	0.7529	3.09	V Q			
5+10	0.7713	2.66	V Q			
5+15	0.7885	2.51	V Q			
5+20	0.8057	2.50	VQ			
5+25	0.8243	2.69	V Q			
5+30	0.8433	2.76	VQ			
5+35	0.8629	2.84	VQ			
5+40	0.8840	3.07	V Q			
5+45	0.9058	3.15	V Q			
5+50	0.9277	3.19	V Q			
5+55	0.9498	3.20	V Q			
6+ 0	0.9719	3.21	V Q			
6+ 5	0.9943	3.26	V Q			
6+10	1.0183	3.48	V Q			
6+15	1.0428	3.56	V Q			
6+20	1.0675	3.59	V Q			
6+25	1.0923	3.60	V Q			
6+30	1.1172	3.61	V Q			
6+35	1.1424	3.66	V Q			
6+40	1.1691	3.88	V Q			
6+45	1.1964	3.96	V Q			
6+50	1.2239	3.99	V Q			
6+55	1.2515	4.00	V Q			
7+ 0	1.2791	4.01	V Q			
7+ 5	1.3067	4.01	V Q			
7+10	1.3343	4.01	V Q			
7+15	1.3620	4.01	V Q			
7+20	1.3899	4.06	V Q			
7+25	1.4194	4.28	V Q			
7+30	1.4495	4.36	V Q			
7+35	1.4801	4.44	VQ			
7+40	1.5123	4.68	V Q			
7+45	1.5450	4.76	V Q			
7+50	1.5784	4.84	V Q			
7+55	1.6134	5.08	V Q			
8+ 0	1.6489	5.16	V Q			
8+ 5	1.6854	5.30	V Q			
8+10	1.7250	5.75	V |Q			
8+15	1.7657	5.91	V |Q			
8+20	1.8068	5.98	V |Q			
8+25	1.8482	6.00	V	Q			
8+30	1.8896	6.01	V| Q			
8+35	1.9314	6.07	V| Q			
8+40	1.9747	6.29	V| Q			
8+45	2.0185	6.37	V| Q			
8+50	2.0629	6.45	V| Q			
8+55	2.1090	6.68	V Q			
9+ 0	2.1556	6.76	V Q			





```
   21+35       8.1387      0.87  |Q        |         |         |        v|
   21+40       8.1461      1.08  | Q       |         |         |        v|
   21+45       8.1541      1.15  | Q       |         |         |        v|
   21+50       8.1619      1.13  | Q       |         |         |        v|
   21+55       8.1682      0.93  |Q        |         |         |        v|
   22+ 0       8.1741      0.85  |Q        |         |         |        v|
   22+ 5       8.1801      0.87  |Q        |         |         |        v|
   22+10       8.1876      1.08  | Q       |         |         |        v|
   22+15       8.1955      1.15  | Q       |         |         |        v|
   22+20       8.2033      1.13  | Q       |         |         |        v|
   22+25       8.2097      0.93  |Q        |         |         |        v|
   22+30       8.2156      0.85  |Q        |         |         |        v|
   22+35       8.2212      0.82  |Q        |         |         |        v|
   22+40       8.2268      0.81  |Q        |         |         |        v|
   22+45       8.2323      0.81  |Q        |         |         |        v|
   22+50       8.2379      0.80  |Q        |         |         |        v|
   22+55       8.2434      0.80  |Q        |         |         |        v|
   23+ 0       8.2489      0.80  |Q        |         |         |        v|
   23+ 5       8.2545      0.80  |Q        |         |         |        v|
   23+10       8.2600      0.80  |Q        |         |         |        v|
   23+15       8.2655      0.80  |Q        |         |         |        v|
   23+20       8.2710      0.80  |Q        |         |         |        v|
   23+25       8.2766      0.80  |Q        |         |         |        v|
   23+30       8.2821      0.80  |Q        |         |         |        v|
   23+35       8.2876      0.80  |Q        |         |         |        v|
   23+40       8.2932      0.80  |Q        |         |         |        v|
   23+45       8.2987      0.80  |Q        |         |         |        v|
   23+50       8.3042      0.80  |Q        |         |         |        v|
   23+55       8.3097      0.80  |Q        |         |         |        v|
   24+ 0       8.3153      0.80  |Q        |         |         |        v|
   24+ 5       8.3201      0.70  |Q        |         |         |        v|
   24+10       8.3219      0.26  Q         |         |         |        v|
   24+15       8.3226      0.10  Q         |         |         |        v|
   24+20       8.3229      0.04  Q         |         |         |        v|
   24+25       8.3230      0.01  Q         |         |         |        v|
   24+30       8.3231      0.01  Q         |         |         |        v|
   24+35       8.3231      0.00  Q         |         |         |        v|
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PROPOSED CONDITION
100-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: NORTH100YR1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.55	18.59

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.25	42.25

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 1.250(In)
Areal adjustment factor = 99.97 %
Adjusted average point rain = 1.250(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI	RI	Infil. Rate	Impervious	Adj. Infil. Rate	Area%	F

AMC2	AMC-2	(In/Hr)	(Dec.%)	(In/Hr)	(Dec.)	(In/Hr)
56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

Slope of intensity-duration curve for a 1 hour storm =0.5300

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
		Sum = 100.000	Sum=	34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	3.40	0.510	(0.161)	0.148	0.362
2	0.17	4.70	0.705	0.161	(0.204)	0.543
3	0.25	4.70	0.705	0.161	(0.204)	0.543
4	0.33	5.10	0.765	0.161	(0.222)	0.603
5	0.42	5.80	0.870	0.161	(0.252)	0.708
6	0.50	5.90	0.885	0.161	(0.257)	0.723
7	0.58	7.10	1.065	0.161	(0.309)	0.903
8	0.67	8.70	1.305	0.161	(0.378)	1.143
9	0.75	13.20	1.979	0.161	(0.574)	1.818
10	0.83	29.70	4.454	0.161	(1.292)	4.292
11	0.92	7.70	1.155	0.161	(0.335)	0.993
12	1.00	4.00	0.600	0.161	(0.174)	0.438
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	13.1

Flood volume = Effective rainfall 1.09(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 3.1(Ac.Ft)
Total soil loss = 0.16(In)
Total soil loss = 0.451(Ac.Ft)
Total rainfall = 1.25(In)
Flood volume = 133654.8 Cubic Feet
Total soil loss = 19665.8 Cubic Feet

Peak flow rate of this hydrograph = 101.134(CFS)

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1 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	50.0	100.0	150.0	200.0
0+ 5	0.0106	1.54	Q				
0+10	0.0731	9.07	VQ				
0+15	0.1756	14.88	| Q				
0+20	0.2951	17.35	| Q				
0+25	0.4314	19.80	| Q V				
0+30	0.5867	22.54	| Q V				

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    0+35       0.7560     24.59  |   Q    V|         |         |         |
    0+40       0.9592     29.50  |    Q    | V       |         |         |
    0+45       1.2225     38.24  |      Q  |    V    |         |         |
    0+50       1.6601     63.53  |         | Q       |V        |         |
    0+55       2.3566    101.13  |         |         Q         V         |
    1+ 0       2.7415     55.89  |         |Q        |         |    V    |
    1+ 5       2.9430     29.25  |    Q    |         |         |       V |
    1+10       3.0198     11.16  | Q       |         |         |        V|
    1+15       3.0485      4.16  Q         |         |         |        V|
    1+20       3.0615      1.88  Q         |         |         |        V|
    1+25       3.0667      0.76  Q         |         |         |        V|
    1+30       3.0680      0.19  Q         |         |         |        V|
    1+35       3.0683      0.04  Q         |         |         |        V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: NORTH100YR3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	0.95	32.11

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.05	69.29

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 2.050(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.050(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)			Effective
	(Hr.)	Percent	(In/Hr)	Max		Low	(In/Hr)
1	0.08	1.30	0.320	(0.161)		0.093	0.227
2	0.17	1.30	0.320	(0.161)		0.093	0.227
3	0.25	1.10	0.271	(0.161)		0.078	0.192
4	0.33	1.50	0.369	(0.161)		0.107	0.262
5	0.42	1.50	0.369	(0.161)		0.107	0.262
6	0.50	1.80	0.443	(0.161)		0.128	0.314
7	0.58	1.50	0.369	(0.161)		0.107	0.262
8	0.67	1.80	0.443	(0.161)		0.128	0.314
9	0.75	1.80	0.443	(0.161)		0.128	0.314
10	0.83	1.50	0.369	(0.161)		0.107	0.262
11	0.92	1.60	0.394	(0.161)		0.114	0.279
12	1.00	1.80	0.443	(0.161)		0.128	0.314
13	1.08	2.20	0.541	(0.161)		0.157	0.384
14	1.17	2.20	0.541	(0.161)		0.157	0.384
15	1.25	2.20	0.541	(0.161)		0.157	0.384
16	1.33	2.00	0.492	(0.161)		0.143	0.349
17	1.42	2.60	0.640	0.161	(	0.185)	0.478
18	1.50	2.70	0.664	0.161	(	0.193)	0.503
19	1.58	2.40	0.590	0.161	(	0.171)	0.429
20	1.67	2.70	0.664	0.161	(	0.193)	0.503
21	1.75	3.30	0.812	0.161	(	0.235)	0.650
22	1.83	3.10	0.762	0.161	(	0.221)	0.601
23	1.92	2.90	0.713	0.161	(	0.207)	0.552
24	2.00	3.00	0.738	0.161	(	0.214)	0.576
25	2.08	3.10	0.762	0.161	(	0.221)	0.601
26	2.17	4.20	1.033	0.161	(	0.300)	0.872
27	2.25	5.00	1.230	0.161	(	0.357)	1.068
28	2.33	3.50	0.861	0.161	(	0.250)	0.699
29	2.42	6.80	1.673	0.161	(	0.485)	1.511
30	2.50	7.30	1.796	0.161	(	0.521)	1.634
31	2.58	8.20	2.017	0.161	(	0.585)	1.855
32	2.67	5.90	1.451	0.161	(	0.421)	1.290
33	2.75	2.00	0.492	(0.161)		0.143	0.349
34	2.83	1.80	0.443	(0.161)		0.128	0.314
35	2.92	1.80	0.443	(0.161)		0.128	0.314
36	3.00	0.60	0.148	(0.161)		0.043	0.105
		(Loss Rate Not Used)					
Sum =		100.0				Sum =	19.6

Flood volume = Effective rainfall 1.64(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 4.6(Ac.Ft)
Total soil loss = 0.41(In)
Total soil loss = 1.164(Ac.Ft)

Total rainfall = 2.05(In)
Flood volume = 200793.7 Cubic Feet
Total soil loss = 50691.8 Cubic Feet

Peak flow rate of this hydrograph = 56.587(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	15.0	30.0	45.0	60.0
0+ 5	0.0066	0.96	Q				
0+10	0.0425	5.21	V Q				
0+15	0.0878	6.58	V Q				
0+20	0.1350	6.85	V Q				
0+25	0.1912	8.16	V Q				
0+30	0.2520	8.83	V Q				
0+35	0.3194	9.79	V Q				
0+40	0.3846	9.47	V Q				
0+45	0.4552	10.26	V Q				
0+50	0.5262	10.31	V Q				
0+55	0.5917	9.51	VQ				
1+ 0	0.6584	9.69	VQ				
1+ 5	0.7316	10.62	VQ				
1+10	0.8153	12.16	VQ				
1+15	0.9030	12.73	VQ				
1+20	0.9912	12.80	Q				
1+25	1.0792	12.78	QV				
1+30	1.1831	15.09	Q				
1+35	1.2935	16.02	QV				
1+40	1.3999	15.45	Q V				
1+45	1.5180	17.15	Q V				
1+50	1.6561	20.05	QV				
1+55	1.7943	20.07	Q V				
2+ 0	1.9280	19.40	Q V				
2+ 5	2.0634	19.67	Q V				
2+10	2.2102	21.31	Q V				
2+15	2.3990	27.41	Q V				
2+20	2.6153	31.41	Q V				
2+25	2.8222	30.05	Q V				
2+30	3.1260	44.10	V Q				
2+35	3.4845	52.06	V Q				
2+40	3.8742	56.59	V Q				
2+45	4.1818	44.65	Q V				
2+50	4.3477	24.09	Q V				
2+55	4.4579	16.00	Q V				
3+ 0	4.5395	11.85	Q V				
3+ 5	4.5827	6.27	Q V				
3+10	4.5997	2.47	Q V				
3+15	4.6061	0.92	Q V				
3+20	4.6083	0.31	Q V				
3+25	4.6092	0.13	Q V				
3+30	4.6095	0.05	Q V				
3+35	4.6096	0.01	Q V				

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: NORTH100YR6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	1.40	47.32

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	3.00	101.40

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.000(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.180	(0.161)	0.052	0.128
2	0.17	0.60	0.216	(0.161)	0.063	0.153
3	0.25	0.60	0.216	(0.161)	0.063	0.153
4	0.33	0.60	0.216	(0.161)	0.063	0.153
5	0.42	0.60	0.216	(0.161)	0.063	0.153
6	0.50	0.70	0.252	(0.161)	0.073	0.179
7	0.58	0.70	0.252	(0.161)	0.073	0.179
8	0.67	0.70	0.252	(0.161)	0.073	0.179
9	0.75	0.70	0.252	(0.161)	0.073	0.179
10	0.83	0.70	0.252	(0.161)	0.073	0.179
11	0.92	0.70	0.252	(0.161)	0.073	0.179
12	1.00	0.80	0.288	(0.161)	0.084	0.204
13	1.08	0.80	0.288	(0.161)	0.084	0.204
14	1.17	0.80	0.288	(0.161)	0.084	0.204
15	1.25	0.80	0.288	(0.161)	0.084	0.204
16	1.33	0.80	0.288	(0.161)	0.084	0.204
17	1.42	0.80	0.288	(0.161)	0.084	0.204
18	1.50	0.80	0.288	(0.161)	0.084	0.204
19	1.58	0.80	0.288	(0.161)	0.084	0.204
20	1.67	0.80	0.288	(0.161)	0.084	0.204
21	1.75	0.80	0.288	(0.161)	0.084	0.204
22	1.83	0.80	0.288	(0.161)	0.084	0.204
23	1.92	0.80	0.288	(0.161)	0.084	0.204
24	2.00	0.90	0.324	(0.161)	0.094	0.230
25	2.08	0.80	0.288	(0.161)	0.084	0.204
26	2.17	0.90	0.324	(0.161)	0.094	0.230
27	2.25	0.90	0.324	(0.161)	0.094	0.230
28	2.33	0.90	0.324	(0.161)	0.094	0.230
29	2.42	0.90	0.324	(0.161)	0.094	0.230
30	2.50	0.90	0.324	(0.161)	0.094	0.230
31	2.58	0.90	0.324	(0.161)	0.094	0.230
32	2.67	0.90	0.324	(0.161)	0.094	0.230
33	2.75	1.00	0.360	(0.161)	0.104	0.256
34	2.83	1.00	0.360	(0.161)	0.104	0.256
35	2.92	1.00	0.360	(0.161)	0.104	0.256
36	3.00	1.00	0.360	(0.161)	0.104	0.256
37	3.08	1.00	0.360	(0.161)	0.104	0.256
38	3.17	1.10	0.396	(0.161)	0.115	0.281
39	3.25	1.10	0.396	(0.161)	0.115	0.281
40	3.33	1.10	0.396	(0.161)	0.115	0.281
41	3.42	1.20	0.432	(0.161)	0.125	0.307
42	3.50	1.30	0.468	(0.161)	0.136	0.332

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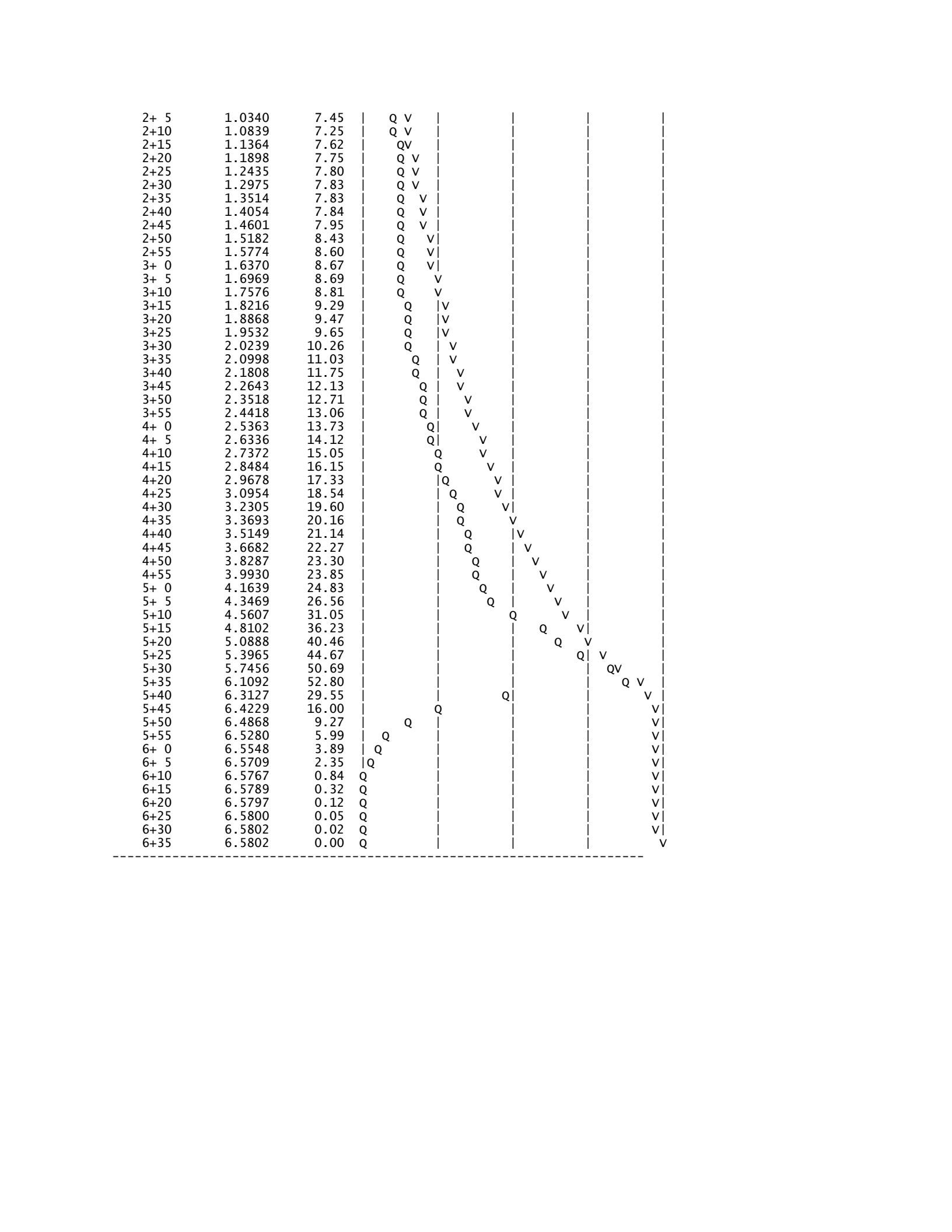
43   3.58     1.40      0.504       (  0.161)       0.146        0.358
44   3.67     1.40      0.504       (  0.161)       0.146        0.358
45   3.75     1.50      0.540       (  0.161)       0.157        0.383
46   3.83     1.50      0.540       (  0.161)       0.157        0.383
47   3.92     1.60      0.576          0.161    (  0.167)        0.415
48   4.00     1.60      0.576          0.161    (  0.167)        0.415
49   4.08     1.70      0.612          0.161    (  0.177)        0.451
50   4.17     1.80      0.648          0.161    (  0.188)        0.487
51   4.25     1.90      0.684          0.161    (  0.198)        0.523
52   4.33     2.00      0.720          0.161    (  0.209)        0.559
53   4.42     2.10      0.756          0.161    (  0.219)        0.594
54   4.50     2.10      0.756          0.161    (  0.219)        0.594
55   4.58     2.20      0.792          0.161    (  0.230)        0.630
56   4.67     2.30      0.828          0.161    (  0.240)        0.666
57   4.75     2.40      0.864          0.161    (  0.251)        0.702
58   4.83     2.40      0.864          0.161    (  0.251)        0.702
59   4.92     2.50      0.900          0.161    (  0.261)        0.738
60   5.00     2.60      0.936          0.161    (  0.271)        0.774
61   5.08     3.10      1.116          0.161    (  0.324)        0.954
62   5.17     3.60      1.296          0.161    (  0.376)        1.134
63   5.25     3.90      1.404          0.161    (  0.407)        1.242
64   5.33     4.20      1.512          0.161    (  0.438)        1.350
65   5.42     4.70      1.692          0.161    (  0.491)        1.530
66   5.50     5.60      2.016          0.161    (  0.585)        1.854
67   5.58     1.90      0.684          0.161    (  0.198)        0.523
68   5.67     0.90      0.324       (  0.161)       0.094        0.230
69   5.75     0.60      0.216       (  0.161)       0.063        0.153
70   5.83     0.50      0.180       (  0.161)       0.052        0.128
71   5.92     0.30      0.108       (  0.161)       0.031        0.077
72   6.00     0.20      0.072       (  0.161)       0.021        0.051
              (Loss Rate Not Used)
   Sum =     100.0                                    Sum =    28.0
      Flood volume = Effective rainfall      2.34(In)
       times area      33.8(Ac.)/[(In)/(Ft.)] =       6.6(Ac.Ft)
      Total soil loss =      0.66(In)
      Total soil loss =     1.869(Ac.Ft)
      Total rainfall =      3.00(In)
      Flood volume =      286633.2 Cubic Feet
      Total soil loss =       81406.0 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     52.800(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
-------------------------------------------------------------------------
  0+ 5       0.0037      0.54  Q          |         |         |         |
  0+10       0.0247      3.04  V Q        |         |         |         |
  0+15       0.0548      4.37  V Q        |         |         |         |
  0+20       0.0885      4.90  V  Q       |         |         |         |
  0+25       0.1236      5.10  V  Q       |         |         |         |
  0+30       0.1600      5.28  V  Q       |         |         |         |
  0+35       0.1999      5.79  |V Q       |         |         |         |
  0+40       0.2411      5.98  |V Q       |         |         |         |
  0+45       0.2828      6.05  |V  Q      |         |         |         |
  0+50       0.3246      6.08  |V  Q      |         |         |         |
  0+55       0.3666      6.09  | V Q      |         |         |         |
  1+ 0       0.4093      6.20  | V Q      |         |         |         |
  1+ 5       0.4553      6.68  | V Q      |         |         |         |
  1+10       0.5025      6.85  |  VQ      |         |         |         |
  1+15       0.5502      6.92  |  VQ      |         |         |         |
  1+20       0.5981      6.95  |  VQ      |         |         |         |
  1+25       0.6460      6.96  |  VQ      |         |         |         |
  1+30       0.6940      6.97  |   Q      |         |         |         |
  1+35       0.7420      6.97  |   Q      |         |         |         |
  1+40       0.7900      6.97  |   Q      |         |         |         |
  1+45       0.8380      6.97  |   QV     |         |         |         |
  1+50       0.8860      6.97  |   QV     |         |         |         |
  1+55       0.9340      6.97  |   QV     |         |         |         |
  2+ 0       0.9827      7.08  |   QV     |         |         |         |
```


2+ 5 1.0340 7.45
2+10 1.0839 7.25
2+15 1.1364 7.62
2+20 1.1898 7.75
2+25 1.2435 7.80
2+30 1.2975 7.83
2+35 1.3514 7.83
2+40 1.4054 7.84
2+45 1.4601 7.95
2+50 1.5182 8.43
2+55 1.5774 8.60
3+ 0 1.6370 8.67
3+ 5 1.6969 8.69
3+10 1.7576 8.81
3+15 1.8216 9.29
3+20 1.8868 9.47
3+25 1.9532 9.65
3+30 2.0239 10.26
3+35 2.0998 11.03
3+40 2.1808 11.75
3+45 2.2643 12.13
3+50 2.3518 12.71
3+55 2.4418 13.06
4+ 0 2.5363 13.73
4+ 5 2.6336 14.12
4+10 2.7372 15.05
4+15 2.8484 16.15
4+20 2.9678 17.33
4+25 3.0954 18.54
4+30 3.2305 19.60
4+35 3.3693 20.16
4+40 3.5149 21.14
4+45 3.6682 22.27
4+50 3.8287 23.30
4+55 3.9930 23.85
5+ 0 4.1639 24.83
5+ 5 4.3469 26.56
5+10 4.5607 31.05
5+15 4.8102 36.23
5+20 5.0888 40.46
5+25 5.3965 44.67
5+30 5.7456 50.69
5+35 6.1092 52.80
5+40 6.3127 29.55
5+45 6.4229 16.00
5+50 6.4868 9.27
5+55 6.5280 5.99
6+ 0 6.5548 3.89
6+ 5 6.5709 2.35
6+10 6.5767 0.84
6+15 6.5789 0.32
6+20 6.5797 0.12
6+25 6.5800 0.05
6+30 6.5802 0.02
6+35 6.5802 0.00

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: NORTH100YR24100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 6.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 6.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	56.0	0.511	0.760	0.161	1.000	0.161
					Sum (F) =	0.161

Area averaged mean soil loss (F) (In/Hr) = 0.161
Minimum soil loss rate ((In/Hr)) = 0.081
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time		Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.07	0.052	(0.286)	0.015	0.037
2	0.17	0.07	0.052	(0.285)	0.015	0.037
3	0.25	0.07	0.052	(0.284)	0.015	0.037
4	0.33	0.10	0.078	(0.283)	0.023	0.055
5	0.42	0.10	0.078	(0.282)	0.023	0.055
6	0.50	0.10	0.078	(0.281)	0.023	0.055
7	0.58	0.10	0.078	(0.280)	0.023	0.055
8	0.67	0.10	0.078	(0.278)	0.023	0.055
9	0.75	0.10	0.078	(0.277)	0.023	0.055
10	0.83	0.13	0.104	(0.276)	0.030	0.074
11	0.92	0.13	0.104	(0.275)	0.030	0.074
12	1.00	0.13	0.104	(0.274)	0.030	0.074
13	1.08	0.10	0.078	(0.273)	0.023	0.055
14	1.17	0.10	0.078	(0.272)	0.023	0.055
15	1.25	0.10	0.078	(0.271)	0.023	0.055
16	1.33	0.10	0.078	(0.270)	0.023	0.055
17	1.42	0.10	0.078	(0.269)	0.023	0.055
18	1.50	0.10	0.078	(0.268)	0.023	0.055
19	1.58	0.10	0.078	(0.267)	0.023	0.055
20	1.67	0.10	0.078	(0.265)	0.023	0.055
21	1.75	0.10	0.078	(0.264)	0.023	0.055
22	1.83	0.13	0.104	(0.263)	0.030	0.074
23	1.92	0.13	0.104	(0.262)	0.030	0.074
24	2.00	0.13	0.104	(0.261)	0.030	0.074
25	2.08	0.13	0.104	(0.260)	0.030	0.074
26	2.17	0.13	0.104	(0.259)	0.030	0.074
27	2.25	0.13	0.104	(0.258)	0.030	0.074
28	2.33	0.13	0.104	(0.257)	0.030	0.074
29	2.42	0.13	0.104	(0.256)	0.030	0.074
30	2.50	0.13	0.104	(0.255)	0.030	0.074
31	2.58	0.17	0.130	(0.254)	0.038	0.092
32	2.67	0.17	0.130	(0.253)	0.038	0.092
33	2.75	0.17	0.130	(0.252)	0.038	0.092
34	2.83	0.17	0.130	(0.251)	0.038	0.092
35	2.92	0.17	0.130	(0.250)	0.038	0.092
36	3.00	0.17	0.130	(0.249)	0.038	0.092
37	3.08	0.17	0.130	(0.248)	0.038	0.092
38	3.17	0.17	0.130	(0.247)	0.038	0.092
39	3.25	0.17	0.130	(0.246)	0.038	0.092
40	3.33	0.17	0.130	(0.245)	0.038	0.092
41	3.42	0.17	0.130	(0.244)	0.038	0.092
42	3.50	0.17	0.130	(0.243)	0.038	0.092

43	3.58	0.17	0.130	(0.242)	0.038	0.092
44	3.67	0.17	0.130	(0.241)	0.038	0.092
45	3.75	0.17	0.130	(0.240)	0.038	0.092
46	3.83	0.20	0.156	(0.238)	0.045	0.111
47	3.92	0.20	0.156	(0.237)	0.045	0.111
48	4.00	0.20	0.156	(0.236)	0.045	0.111
49	4.08	0.20	0.156	(0.235)	0.045	0.111
50	4.17	0.20	0.156	(0.234)	0.045	0.111
51	4.25	0.20	0.156	(0.233)	0.045	0.111
52	4.33	0.23	0.182	(0.232)	0.053	0.129
53	4.42	0.23	0.182	(0.231)	0.053	0.129
54	4.50	0.23	0.182	(0.231)	0.053	0.129
55	4.58	0.23	0.182	(0.230)	0.053	0.129
56	4.67	0.23	0.182	(0.229)	0.053	0.129
57	4.75	0.23	0.182	(0.228)	0.053	0.129
58	4.83	0.27	0.208	(0.227)	0.060	0.148
59	4.92	0.27	0.208	(0.226)	0.060	0.148
60	5.00	0.27	0.208	(0.225)	0.060	0.148
61	5.08	0.20	0.156	(0.224)	0.045	0.111
62	5.17	0.20	0.156	(0.223)	0.045	0.111
63	5.25	0.20	0.156	(0.222)	0.045	0.111
64	5.33	0.23	0.182	(0.221)	0.053	0.129
65	5.42	0.23	0.182	(0.220)	0.053	0.129
66	5.50	0.23	0.182	(0.219)	0.053	0.129
67	5.58	0.27	0.208	(0.218)	0.060	0.148
68	5.67	0.27	0.208	(0.217)	0.060	0.148
69	5.75	0.27	0.208	(0.216)	0.060	0.148
70	5.83	0.27	0.208	(0.215)	0.060	0.148
71	5.92	0.27	0.208	(0.214)	0.060	0.148
72	6.00	0.27	0.208	(0.213)	0.060	0.148
73	6.08	0.30	0.234	(0.212)	0.068	0.166
74	6.17	0.30	0.234	(0.211)	0.068	0.166
75	6.25	0.30	0.234	(0.210)	0.068	0.166
76	6.33	0.30	0.234	(0.209)	0.068	0.166
77	6.42	0.30	0.234	(0.208)	0.068	0.166
78	6.50	0.30	0.234	(0.207)	0.068	0.166
79	6.58	0.33	0.260	(0.206)	0.075	0.185
80	6.67	0.33	0.260	(0.206)	0.075	0.185
81	6.75	0.33	0.260	(0.205)	0.075	0.185
82	6.83	0.33	0.260	(0.204)	0.075	0.185
83	6.92	0.33	0.260	(0.203)	0.075	0.185
84	7.00	0.33	0.260	(0.202)	0.075	0.185
85	7.08	0.33	0.260	(0.201)	0.075	0.185
86	7.17	0.33	0.260	(0.200)	0.075	0.185
87	7.25	0.33	0.260	(0.199)	0.075	0.185
88	7.33	0.37	0.286	(0.198)	0.083	0.203
89	7.42	0.37	0.286	(0.197)	0.083	0.203
90	7.50	0.37	0.286	(0.196)	0.083	0.203
91	7.58	0.40	0.312	(0.195)	0.090	0.222
92	7.67	0.40	0.312	(0.195)	0.090	0.222
93	7.75	0.40	0.312	(0.194)	0.090	0.222
94	7.83	0.43	0.338	(0.193)	0.098	0.240
95	7.92	0.43	0.338	(0.192)	0.098	0.240
96	8.00	0.43	0.338	(0.191)	0.098	0.240
97	8.08	0.50	0.390	(0.190)	0.113	0.277
98	8.17	0.50	0.390	(0.189)	0.113	0.277
99	8.25	0.50	0.390	(0.188)	0.113	0.277
100	8.33	0.50	0.390	(0.187)	0.113	0.277
101	8.42	0.50	0.390	(0.187)	0.113	0.277
102	8.50	0.50	0.390	(0.186)	0.113	0.277
103	8.58	0.53	0.416	(0.185)	0.121	0.295
104	8.67	0.53	0.416	(0.184)	0.121	0.295
105	8.75	0.53	0.416	(0.183)	0.121	0.295
106	8.83	0.57	0.442	(0.182)	0.128	0.314
107	8.92	0.57	0.442	(0.181)	0.128	0.314
108	9.00	0.57	0.442	(0.181)	0.128	0.314
109	9.08	0.63	0.494	(0.180)	0.143	0.351
110	9.17	0.63	0.494	(0.179)	0.143	0.351
111	9.25	0.63	0.494	(0.178)	0.143	0.351
112	9.33	0.67	0.520	(0.177)	0.151	0.369
113	9.42	0.67	0.520	(0.176)	0.151	0.369
114	9.50	0.67	0.520	(0.175)	0.151	0.369
115	9.58	0.70	0.546	(0.175)	0.158	0.388
116	9.67	0.70	0.546	(0.174)	0.158	0.388
117	9.75	0.70	0.546	(0.173)	0.158	0.388

118	9.83	0.73	0.572	(	0.172)	0.166	0.406
119	9.92	0.73	0.572	(	0.171)	0.166	0.406
120	10.00	0.73	0.572	(	0.170)	0.166	0.406
121	10.08	0.50	0.390	(	0.170)	0.113	0.277
122	10.17	0.50	0.390	(	0.169)	0.113	0.277
123	10.25	0.50	0.390	(	0.168)	0.113	0.277
124	10.33	0.50	0.390	(	0.167)	0.113	0.277
125	10.42	0.50	0.390	(	0.166)	0.113	0.277
126	10.50	0.50	0.390	(	0.166)	0.113	0.277
127	10.58	0.67	0.520	(	0.165)	0.151	0.369
128	10.67	0.67	0.520	(	0.164)	0.151	0.369
129	10.75	0.67	0.520	(	0.163)	0.151	0.369
130	10.83	0.67	0.520	(	0.162)	0.151	0.369
131	10.92	0.67	0.520	(	0.162)	0.151	0.369
132	11.00	0.67	0.520	(	0.161)	0.151	0.369
133	11.08	0.63	0.494	(	0.160)	0.143	0.351
134	11.17	0.63	0.494	(	0.159)	0.143	0.351
135	11.25	0.63	0.494	(	0.158)	0.143	0.351
136	11.33	0.63	0.494	(	0.158)	0.143	0.351
137	11.42	0.63	0.494	(	0.157)	0.143	0.351
138	11.50	0.63	0.494	(	0.156)	0.143	0.351
139	11.58	0.57	0.442	(	0.155)	0.128	0.314
140	11.67	0.57	0.442	(	0.154)	0.128	0.314
141	11.75	0.57	0.442	(	0.154)	0.128	0.314
142	11.83	0.60	0.468	(	0.153)	0.136	0.332
143	11.92	0.60	0.468	(	0.152)	0.136	0.332
144	12.00	0.60	0.468	(	0.151)	0.136	0.332
145	12.08	0.83	0.650		0.151	(0.188)	0.499
146	12.17	0.83	0.650		0.150	(0.188)	0.500
147	12.25	0.83	0.650		0.149	(0.188)	0.501
148	12.33	0.87	0.676		0.148	(0.196)	0.528
149	12.42	0.87	0.676		0.148	(0.196)	0.528
150	12.50	0.87	0.676		0.147	(0.196)	0.529
151	12.58	0.93	0.728		0.146	(0.211)	0.582
152	12.67	0.93	0.728		0.145	(0.211)	0.582
153	12.75	0.93	0.728		0.145	(0.211)	0.583
154	12.83	0.97	0.754		0.144	(0.219)	0.610
155	12.92	0.97	0.754		0.143	(0.219)	0.611
156	13.00	0.97	0.754		0.143	(0.219)	0.611
157	13.08	1.13	0.884		0.142	(0.256)	0.742
158	13.17	1.13	0.884		0.141	(0.256)	0.743
159	13.25	1.13	0.884		0.140	(0.256)	0.744
160	13.33	1.13	0.884		0.140	(0.256)	0.744
161	13.42	1.13	0.884		0.139	(0.256)	0.745
162	13.50	1.13	0.884		0.138	(0.256)	0.746
163	13.58	0.77	0.598		0.138	(0.173)	0.460
164	13.67	0.77	0.598		0.137	(0.173)	0.461
165	13.75	0.77	0.598		0.136	(0.173)	0.462
166	13.83	0.77	0.598		0.135	(0.173)	0.463
167	13.92	0.77	0.598		0.135	(0.173)	0.463
168	14.00	0.77	0.598		0.134	(0.173)	0.464
169	14.08	0.90	0.702		0.133	(0.204)	0.569
170	14.17	0.90	0.702		0.133	(0.204)	0.569
171	14.25	0.90	0.702		0.132	(0.204)	0.570
172	14.33	0.87	0.676		0.131	(0.196)	0.545
173	14.42	0.87	0.676		0.131	(0.196)	0.545
174	14.50	0.87	0.676		0.130	(0.196)	0.546
175	14.58	0.87	0.676		0.129	(0.196)	0.547
176	14.67	0.87	0.676		0.129	(0.196)	0.547
177	14.75	0.87	0.676		0.128	(0.196)	0.548
178	14.83	0.83	0.650		0.127	(0.188)	0.523
179	14.92	0.83	0.650		0.127	(0.188)	0.523
180	15.00	0.83	0.650		0.126	(0.188)	0.524
181	15.08	0.80	0.624		0.125	(0.181)	0.499
182	15.17	0.80	0.624		0.125	(0.181)	0.499
183	15.25	0.80	0.624		0.124	(0.181)	0.500
184	15.33	0.77	0.598		0.124	(0.173)	0.474
185	15.42	0.77	0.598		0.123	(0.173)	0.475
186	15.50	0.77	0.598		0.122	(0.173)	0.476
187	15.58	0.63	0.494		0.122	(0.143)	0.372
188	15.67	0.63	0.494		0.121	(0.143)	0.373
189	15.75	0.63	0.494		0.120	(0.143)	0.374
190	15.83	0.63	0.494		0.120	(0.143)	0.374
191	15.92	0.63	0.494		0.119	(0.143)	0.375
192	16.00	0.63	0.494		0.119	(0.143)	0.375

193	16.08	0.13	0.104	(0.118)	0.030	0.074
194	16.17	0.13	0.104	(0.117)	0.030	0.074
195	16.25	0.13	0.104	(0.117)	0.030	0.074
196	16.33	0.13	0.104	(0.116)	0.030	0.074
197	16.42	0.13	0.104	(0.116)	0.030	0.074
198	16.50	0.13	0.104	(0.115)	0.030	0.074
199	16.58	0.10	0.078	(0.114)	0.023	0.055
200	16.67	0.10	0.078	(0.114)	0.023	0.055
201	16.75	0.10	0.078	(0.113)	0.023	0.055
202	16.83	0.10	0.078	(0.113)	0.023	0.055
203	16.92	0.10	0.078	(0.112)	0.023	0.055
204	17.00	0.10	0.078	(0.111)	0.023	0.055
205	17.08	0.17	0.130	(0.111)	0.038	0.092
206	17.17	0.17	0.130	(0.110)	0.038	0.092
207	17.25	0.17	0.130	(0.110)	0.038	0.092
208	17.33	0.17	0.130	(0.109)	0.038	0.092
209	17.42	0.17	0.130	(0.109)	0.038	0.092
210	17.50	0.17	0.130	(0.108)	0.038	0.092
211	17.58	0.17	0.130	(0.108)	0.038	0.092
212	17.67	0.17	0.130	(0.107)	0.038	0.092
213	17.75	0.17	0.130	(0.107)	0.038	0.092
214	17.83	0.13	0.104	(0.106)	0.030	0.074
215	17.92	0.13	0.104	(0.106)	0.030	0.074
216	18.00	0.13	0.104	(0.105)	0.030	0.074
217	18.08	0.13	0.104	(0.104)	0.030	0.074
218	18.17	0.13	0.104	(0.104)	0.030	0.074
219	18.25	0.13	0.104	(0.103)	0.030	0.074
220	18.33	0.13	0.104	(0.103)	0.030	0.074
221	18.42	0.13	0.104	(0.102)	0.030	0.074
222	18.50	0.13	0.104	(0.102)	0.030	0.074
223	18.58	0.10	0.078	(0.101)	0.023	0.055
224	18.67	0.10	0.078	(0.101)	0.023	0.055
225	18.75	0.10	0.078	(0.100)	0.023	0.055
226	18.83	0.07	0.052	(0.100)	0.015	0.037
227	18.92	0.07	0.052	(0.100)	0.015	0.037
228	19.00	0.07	0.052	(0.099)	0.015	0.037
229	19.08	0.10	0.078	(0.099)	0.023	0.055
230	19.17	0.10	0.078	(0.098)	0.023	0.055
231	19.25	0.10	0.078	(0.098)	0.023	0.055
232	19.33	0.13	0.104	(0.097)	0.030	0.074
233	19.42	0.13	0.104	(0.097)	0.030	0.074
234	19.50	0.13	0.104	(0.096)	0.030	0.074
235	19.58	0.10	0.078	(0.096)	0.023	0.055
236	19.67	0.10	0.078	(0.095)	0.023	0.055
237	19.75	0.10	0.078	(0.095)	0.023	0.055
238	19.83	0.07	0.052	(0.095)	0.015	0.037
239	19.92	0.07	0.052	(0.094)	0.015	0.037
240	20.00	0.07	0.052	(0.094)	0.015	0.037
241	20.08	0.10	0.078	(0.093)	0.023	0.055
242	20.17	0.10	0.078	(0.093)	0.023	0.055
243	20.25	0.10	0.078	(0.093)	0.023	0.055
244	20.33	0.10	0.078	(0.092)	0.023	0.055
245	20.42	0.10	0.078	(0.092)	0.023	0.055
246	20.50	0.10	0.078	(0.091)	0.023	0.055
247	20.58	0.10	0.078	(0.091)	0.023	0.055
248	20.67	0.10	0.078	(0.091)	0.023	0.055
249	20.75	0.10	0.078	(0.090)	0.023	0.055
250	20.83	0.07	0.052	(0.090)	0.015	0.037
251	20.92	0.07	0.052	(0.089)	0.015	0.037
252	21.00	0.07	0.052	(0.089)	0.015	0.037
253	21.08	0.10	0.078	(0.089)	0.023	0.055
254	21.17	0.10	0.078	(0.088)	0.023	0.055
255	21.25	0.10	0.078	(0.088)	0.023	0.055
256	21.33	0.07	0.052	(0.088)	0.015	0.037
257	21.42	0.07	0.052	(0.087)	0.015	0.037
258	21.50	0.07	0.052	(0.087)	0.015	0.037
259	21.58	0.10	0.078	(0.087)	0.023	0.055
260	21.67	0.10	0.078	(0.086)	0.023	0.055
261	21.75	0.10	0.078	(0.086)	0.023	0.055
262	21.83	0.07	0.052	(0.086)	0.015	0.037
263	21.92	0.07	0.052	(0.086)	0.015	0.037
264	22.00	0.07	0.052	(0.085)	0.015	0.037
265	22.08	0.10	0.078	(0.085)	0.023	0.055
266	22.17	0.10	0.078	(0.085)	0.023	0.055
267	22.25	0.10	0.078	(0.084)	0.023	0.055

268	22.33	0.07	0.052	(0.084)	0.015	0.037
269	22.42	0.07	0.052	(0.084)	0.015	0.037
270	22.50	0.07	0.052	(0.084)	0.015	0.037
271	22.58	0.07	0.052	(0.083)	0.015	0.037
272	22.67	0.07	0.052	(0.083)	0.015	0.037
273	22.75	0.07	0.052	(0.083)	0.015	0.037
274	22.83	0.07	0.052	(0.083)	0.015	0.037
275	22.92	0.07	0.052	(0.083)	0.015	0.037
276	23.00	0.07	0.052	(0.082)	0.015	0.037
277	23.08	0.07	0.052	(0.082)	0.015	0.037
278	23.17	0.07	0.052	(0.082)	0.015	0.037
279	23.25	0.07	0.052	(0.082)	0.015	0.037
280	23.33	0.07	0.052	(0.082)	0.015	0.037
281	23.42	0.07	0.052	(0.081)	0.015	0.037
282	23.50	0.07	0.052	(0.081)	0.015	0.037
283	23.58	0.07	0.052	(0.081)	0.015	0.037
284	23.67	0.07	0.052	(0.081)	0.015	0.037
285	23.75	0.07	0.052	(0.081)	0.015	0.037
286	23.83	0.07	0.052	(0.081)	0.015	0.037
287	23.92	0.07	0.052	(0.081)	0.015	0.037
288	24.00	0.07	0.052	(0.081)	0.015	0.037

(Loss Rate Not Used)

Sum = 100.0 Sum = 58.2

Flood volume = Effective rainfall 4.85(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 13.7(Ac.Ft)
Total soil loss = 1.65(In)
Total soil loss = 4.637(Ac.Ft)
Total rainfall = 6.50(In)
Flood volume = 595462.3 Cubic Feet
Total soil loss = 201996.1 Cubic Feet

Peak flow rate of this hydrograph = 25.340(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.5	15.0	22.5	30.0
0+ 5	0.0011	0.16	Q				
0+10	0.0069	0.85	VQ				
0+15	0.0144	1.09	VQ				
0+20	0.0232	1.27	VQ				
0+25	0.0346	1.66	V Q				
0+30	0.0470	1.79	V Q				
0+35	0.0597	1.85	V Q				
0+40	0.0727	1.88	V Q				
0+45	0.0856	1.88	V Q				
0+50	0.0991	1.96	V Q				
0+55	0.1151	2.31	V Q				
1+ 0	0.1318	2.43	V Q				
1+ 5	0.1484	2.41	V Q				
1+10	0.1627	2.08	V Q				
1+15	0.1763	1.96	V Q				
1+20	0.1895	1.92	V Q				
1+25	0.2025	1.90	V Q				
1+30	0.2156	1.89	V Q				
1+35	0.2286	1.89	V Q				
1+40	0.2416	1.89	V Q				
1+45	0.2546	1.89	V Q				
1+50	0.2681	1.97	V Q				
1+55	0.2840	2.31	V Q				
2+ 0	0.3008	2.43	V Q				
2+ 5	0.3179	2.49	V Q				
2+10	0.3352	2.50	V Q				
2+15	0.3525	2.51	|V Q				
2+20	0.3698	2.51	|V Q				
2+25	0.3871	2.52	|V Q				
2+30	0.4044	2.52	|V Q				
2+35	0.4223	2.59	|V Q				
2+40	0.4426	2.94	|V Q				
2+45	0.4637	3.06	|V Q				

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2+50       0.4851      3.11  |V  Q     |         |         |         |
2+55       0.5067      3.13  |V  Q     |         |         |         |
3+ 0       0.5283      3.14  |V  Q     |         |         |         |
3+ 5       0.5500      3.14  |V  Q     |         |         |         |
3+10       0.5716      3.15  |V  Q     |         |         |         |
3+15       0.5933      3.15  |V  Q     |         |         |         |
3+20       0.6149      3.15  |V  Q     |         |         |         |
3+25       0.6366      3.15  |V  Q     |         |         |         |
3+30       0.6583      3.15  |V  Q     |         |         |         |
3+35       0.6799      3.15  |V  Q     |         |         |         |
3+40       0.7016      3.15  | V Q     |         |         |         |
3+45       0.7233      3.15  | V Q     |         |         |         |
3+50       0.7455      3.22  | V Q     |         |         |         |
3+55       0.7700      3.57  | V Q     |         |         |         |
4+ 0       0.7955      3.69  | V Q     |         |         |         |
4+ 5       0.8213      3.74  | V Q     |         |         |         |
4+10       0.8472      3.76  | V  Q    |         |         |         |
4+15       0.8731      3.77  | V  Q    |         |         |         |
4+20       0.8997      3.85  | V  Q    |         |         |         |
4+25       0.9286      4.20  | V  Q    |         |         |         |
4+30       0.9583      4.32  | V  Q    |         |         |         |
4+35       0.9884      4.37  | V  Q    |         |         |         |
4+40       1.0187      4.39  | V  Q    |         |         |         |
4+45       1.0490      4.40  |  V Q    |         |         |         |
4+50       1.0798      4.48  |  V Q    |         |         |         |
4+55       1.1131      4.83  |  V  Q   |         |         |         |
5+ 0       1.1472      4.95  |  V  Q   |         |         |         |
5+ 5       1.1805      4.84  |  V  Q   |         |         |         |
5+10       1.2093      4.17  |  V Q    |         |         |         |
5+15       1.2364      3.93  |  V Q    |         |         |         |
5+20       1.2633      3.91  |  V Q    |         |         |         |
5+25       1.2924      4.22  |  V Q    |         |         |         |
5+30       1.3222      4.33  |  V Q    |         |         |         |
5+35       1.3529      4.45  |  V Q    |         |         |         |
5+40       1.3861      4.82  |   V Q   |         |         |         |
5+45       1.4201      4.94  |   V Q   |         |         |         |
5+50       1.4546      5.00  |   V Q   |         |         |         |
5+55       1.4892      5.02  |   V Q   |         |         |         |
6+ 0       1.5238      5.03  |   V Q   |         |         |         |
6+ 5       1.5590      5.11  |   V Q   |         |         |         |
6+10       1.5965      5.46  |   V  Q  |         |         |         |
6+15       1.6350      5.58  |   V  Q  |         |         |         |
6+20       1.6738      5.63  |   V  Q  |         |         |         |
6+25       1.7127      5.65  |    V Q  |         |         |         |
6+30       1.7516      5.66  |    V Q  |         |         |         |
6+35       1.7911      5.74  |    V Q  |         |         |         |
6+40       1.8331      6.09  |    V  Q |         |         |         |
6+45       1.8758      6.21  |    V  Q |         |         |         |
6+50       1.9189      6.26  |    V  Q |         |         |         |
6+55       1.9622      6.28  |    V  Q |         |         |         |
7+ 0       2.0055      6.29  |    V  Q |         |         |         |
7+ 5       2.0488      6.29  |    V  Q |         |         |         |
7+10       2.0921      6.29  |     V Q |         |         |         |
7+15       2.1354      6.29  |     V Q |         |         |         |
7+20       2.1793      6.37  |     V Q |         |         |         |
7+25       2.2255      6.71  |     V Q |         |         |         |
7+30       2.2726      6.84  |     V  Q|         |         |         |
7+35       2.3206      6.97  |     V  Q|         |         |         |
7+40       2.3711      7.33  |     V  Q|         |         |         |
7+45       2.4225      7.46  |      V Q|         |         |         |
7+50       2.4748      7.59  |      V  Q         |         |         |
7+55       2.5296      7.96  |      V  Q         |         |         |
8+ 0       2.5853      8.09  |      V  Q         |         |         |
8+ 5       2.6425      8.30  |      V  |Q        |         |         |
8+10       2.7046      9.01  |      V  | Q       |         |         |
8+15       2.7684      9.27  |       V | Q       |         |         |
8+20       2.8330      9.37  |       V | Q       |         |         |
8+25       2.8978      9.41  |       V | Q       |         |         |
8+30       2.9627      9.43  |       V | Q       |         |         |
8+35       3.0282      9.51  |       V | Q       |         |         |
8+40       3.0961      9.86  |        V|  Q      |         |         |
8+45       3.1649      9.98  |        V|  Q      |         |         |
8+50       3.2345     10.11  |        V|  Q      |         |         |
8+55       3.3067     10.48  |        V|  Q      |         |         |
9+ 0       3.3797     10.61  |        V|   Q     |         |         |
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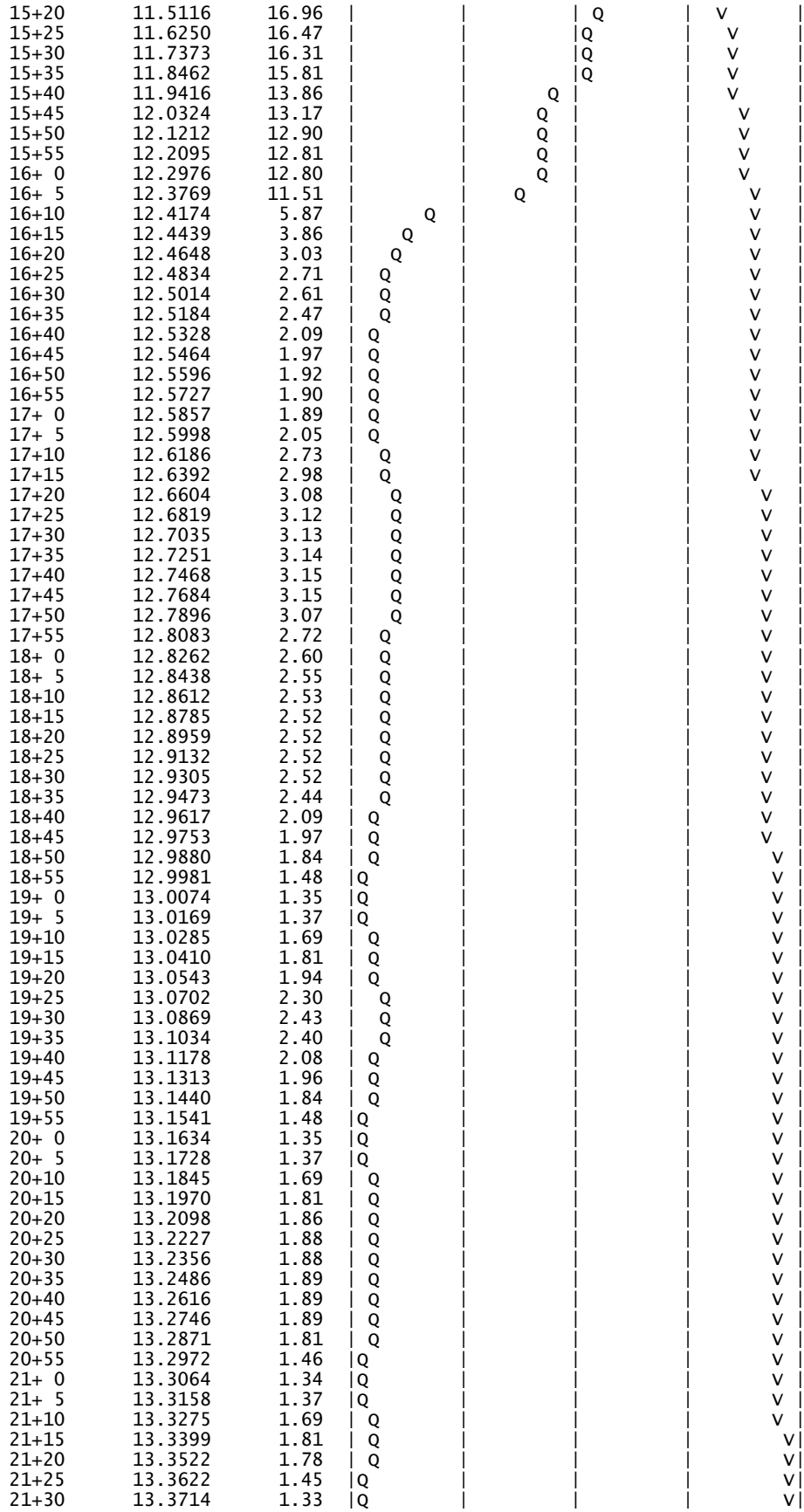
9+ 5	3.4542	10.82	V Q				
9+10	3.5336	11.53	V Q				
9+15	3.6148	11.78	V Q				
9+20	3.6972	11.97	V Q				
9+25	3.7823	12.35	|V Q				
9+30	3.8683	12.49	|V Q				
9+35	3.9552	12.63	|V Q				
9+40	4.0447	12.99	|V Q				
9+45	4.1351	13.12	| V Q				
9+50	4.2264	13.26	| V Q				
9+55	4.3202	13.62	| V Q				
10+ 0	4.4149	13.75	| V Q				
10+ 5	4.5063	13.26	| V Q				
10+10	4.5811	10.87	| VQ				
10+15	4.6500	10.01	| Q				
10+20	4.7165	9.65	| QV				
10+25	4.7820	9.52	| QV				
10+30	4.8473	9.48	| Q V				
10+35	4.9151	9.84	| QV				
10+40	4.9947	11.55	| VQ				
10+45	5.0785	12.17	| V Q				
10+50	5.1640	12.43	| VQ				
10+55	5.2503	12.52	| VQ				
11+ 0	5.3368	12.55	| VQ				
11+ 5	5.4228	12.49	| VQ				
11+10	5.5065	12.16	| Q				
11+15	5.5894	12.04	| Q				
11+20	5.6720	11.98	| QV				
11+25	5.7544	11.96	| QV				
11+30	5.8367	11.96	| Q V				
11+35	5.9180	11.80	| Q V				
11+40	5.9945	11.11	| Q V				
11+45	6.0693	10.86	| Q V				
11+50	6.1439	10.84	| Q V				
11+55	6.2206	11.14	| Q V				
12+ 0	6.2981	11.25	| Q V				
12+ 5	6.3808	12.01	| Q V				
12+10	6.4851	15.15	| V Q				
12+15	6.5973	16.29	| V|Q				
12+20	6.7136	16.88	| V| Q				
12+25	6.8346	17.57	| V| Q				
12+30	6.9574	17.83	| V Q				
12+35	7.0826	18.18	| V Q				
12+40	7.2150	19.22	| |V Q				
12+45	7.3500	19.60	| |V Q				
12+50	7.4869	19.89	| |V Q				
12+55	7.6278	20.46	| | V Q				
13+ 0	7.7702	20.67	| | V Q				
13+ 5	7.9171	21.33	| | V Q				
13+10	8.0811	23.82	| | V |Q				
13+15	8.2513	24.72	| | V | Q				
13+20	8.4243	25.11	| | V | Q				
13+25	8.5983	25.27	| | V | Q				
13+30	8.7728	25.34	| | V | Q				
13+35	8.9393	24.18	| | V | Q				
13+40	9.0693	18.87	| | QV |				
13+45	9.1862	16.98	| | Q V |				
13+50	9.2979	16.21	| |Q V |				
13+55	9.4077	15.93	| |Q V |				
14+ 0	9.5169	15.86	| |Q V |				
14+ 5	9.6290	16.27	| |Q V |				
14+10	9.7544	18.21	| | Q V |				
14+15	9.8847	18.93	| | Q V |				
14+20	10.0165	19.13	| | Q V|				
14+25	10.1458	18.78	| | Q V|				
14+30	10.2743	18.66	| | Q V				
14+35	10.4026	18.63	| | Q V				
14+40	10.5309	18.64	| | Q V				
14+45	10.6594	18.65	| | Q |V				
14+50	10.7872	18.56	| | Q |V				
14+55	10.9118	18.09	| | Q |V				
15+ 0	11.0353	17.94	| | Q | V				
15+ 5	11.1578	17.78	| | Q | V				
15+10	11.2768	17.29	| | Q | V				
15+15	11.3948	17.13	| | Q | V				



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   21+35      13.3808      1.37  |Q        |         |         |        v|
   21+40      13.3925      1.69  | Q       |         |         |        v|
   21+45      13.4049      1.81  | Q       |         |         |        v|
   21+50      13.4172      1.78  | Q       |         |         |        v|
   21+55      13.4272      1.45  |Q        |         |         |        v|
   22+ 0      13.4364      1.33  |Q        |         |         |        v|
   22+ 5      13.4458      1.37  |Q        |         |         |        v|
   22+10      13.4575      1.69  | Q       |         |         |        v|
   22+15      13.4699      1.81  | Q       |         |         |        v|
   22+20      13.4822      1.78  | Q       |         |         |        v|
   22+25      13.4922      1.45  |Q        |         |         |        v|
   22+30      13.5014      1.33  |Q        |         |         |        v|
   22+35      13.5102      1.29  |Q        |         |         |        v|
   22+40      13.5190      1.27  |Q        |         |         |        v|
   22+45      13.5277      1.26  |Q        |         |         |        v|
   22+50      13.5364      1.26  |Q        |         |         |        v|
   22+55      13.5450      1.26  |Q        |         |         |        v|
   23+ 0      13.5537      1.26  |Q        |         |         |        v|
   23+ 5      13.5624      1.26  |Q        |         |         |        v|
   23+10      13.5710      1.26  |Q        |         |         |        v|
   23+15      13.5797      1.26  |Q        |         |         |        v|
   23+20      13.5884      1.26  |Q        |         |         |        v|
   23+25      13.5970      1.26  |Q        |         |         |        v|
   23+30      13.6057      1.26  |Q        |         |         |        v|
   23+35      13.6144      1.26  |Q        |         |         |        v|
   23+40      13.6230      1.26  |Q        |         |         |        v|
   23+45      13.6317      1.26  |Q        |         |         |        v|
   23+50      13.6404      1.26  |Q        |         |         |        v|
   23+55      13.6490      1.26  |Q        |         |         |        v|
   24+ 0      13.6577      1.26  |Q        |         |         |        v|
   24+ 5      13.6653      1.10  |Q        |         |         |        v|
   24+10      13.6681      0.41  Q         |         |         |        v|
   24+15      13.6692      0.16  Q         |         |         |        v|
   24+20      13.6697      0.06  Q         |         |         |        v|
   24+25      13.6698      0.02  Q         |         |         |        v|
   24+30      13.6699      0.01  Q         |         |         |        v|
   24+35      13.6699      0.00  Q         |         |         |        v|
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STAGE-STORAGE/OUTFLOW TABLE

Building 3 CMP Chambers - Stage/Storage/Outflow Table
W.O.# 21-0044

Basin Information: Infiltration Basin		2-Year	ORIFICE	5-YEAR	ORIFICE	10/100-Year	WEIR
Tributary Area:	30.10 AC	Q EXISTING	0.72	Q EXISTING	1.8	Q EXISTING	6.1/11.8
Bottom Elevation:	2501.50 FT	Opening (in)	3.5	Opening (in)	5	L(ft)	0.8
		# of Orifices	1	# of Orifices	1	C	3
Bottom Chamber Area:	77638 SF	Orifice Area (sf)	0.0668	Orifice Area (sf)	0.1364		
Bottom Slope:	0 %	Orifice Diameter (ft)	0.2917	Orifice Diameter (ft)	0.4167		
Constant Infiltration:	0.0 cfs	Total Area (sf)	0.0668	Total Area (sf)	0.1364		
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$		G (ft/s^2)	32.2	G (ft/s^2)	32.2		
Q_{WEIR}= C*L*H$^{3/2}$		Cd	0.66	Cd	0.66		
		Invert H (ft)	0	Invert H (ft)	4.24	Invert H (ft)	5.48

#	Elevation (ft)	Depth (ft)	Storage (cf)	Storage (ac-ft)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	Total Q (cfs) 2 Year	Total Q (cfs) 5 Year	Total Q (cfs) 10/100 Year	Comments
1	2501.5	0	0.00	0.000							0.00	0.00	0.00	**Bottom of Chambers/Inv of 2 Yr**
2	2501.6458	0.14583	4528.88	0.104	0.00						0.00	0.00	0.00	**Middle of 2 Yr Orifice**
3	**2502**	**0.5**	**15527.60**	0.356	0.35	0.21					0.21	0.21	0.21	
4	2502.5	1	**36636.90**	0.841	0.85	0.33					0.33	0.33	0.33	
5	**2503**	1.5	**62057.78**	1.425	1.35	0.41					0.41	0.41	0.41	
6	2503.5	2	**89951.27**	2.065	1.85	0.48					0.48	0.48	0.48	
7	**2504**	2.5	**119571.59**	2.745	2.35	0.54					0.54	0.54	0.54	
8	2504.5	3	**150432.47**	3.453	2.85	0.60					0.60	0.60	0.60	
9	**2504.99**	3.49	**181526.47**	4.167	3.34	0.65	0				0.65	0.65	0.65	**Top of 2 Yr Ponding/Inv of 5 Yr**
10	2505	**3.5**	**182161.04**	4.182	3.35	0.65	**0.01**	**0.07**			0.65	0.72	0.72	
	2505.5	**4**	**214442.99**	4.923	3.85	0.69	**0.51**	**0.52**				1.21	1.21	
11	**2505.96**	**4.46**	**244390.69**	5.610	4.31	0.74	**0.97**	**0.71**	**0.00**		0.74	1.45	1.45	**Top of 5 Yr Ponding/Inv of 10/100 Yr**
12	2506	**4.5**	**246994.83**	5.670	4.35	0.74	**1.01**	**0.73**	**0.04**	**0.02**	0.74	1.46	1.48	
13	2506.5	5	**279546.68**	6.418	4.85	0.78	**1.51**	**0.89**	**0.54**	**0.95**	0.78	1.67	2.62	
14	**2506.66**	**5.16**	**289876.90**	6.655	5.01	0.79	**1.67**	**0.93**	**0.70**	**1.41**	0.79	1.73	3.13	**Top of 10 Yr Ponding**
15	2507	**5.5**	**311828.62**	7.159	5.35	0.82	**2.01**	**1.02**	**1.04**	**2.55**	0.82	1.84	4.39	
16	**2507.5**	**6**	**343557.20**	7.887	5.85	0.86	**2.51**	**1.14**	**1.54**	**4.59**	0.86	2.00	6.59	
17	2508	**6.5**	**374418.07**	8.595	6.35	0.89	**3.01**	**1.25**	**2.04**	**6.99**	0.89	2.14	9.14	
18	**2508.5**	**7**	**404038.39**	9.275	6.85	0.93	**3.51**	**1.35**	**2.54**	**9.72**	0.93	2.28	11.99	
	2508.53	**7.03**	**405712.00**	9.314	6.88	0.93	**3.54**	**1.36**	**2.57**	**9.89**	0.93	2.29	12.18	**Top of 100 Yr Ponding**
19	2509	**7.5**	**431931.89**	9.916	7.35	0.96	**4.01**	**1.45**	**3.04**	**12.72**	0.96	2.41	15.13	
20	2509.5	**8**	**457352.77**	10.499	7.85	0.99	**4.51**	**1.53**	**3.54**	**15.99**	0.99	2.53	18.51	**Top of Chambers**
21	**2510**	**8.5**	**478462.07**	10.984	8.35	1.02	**5.01**	**1.62**	**4.04**	**19.49**	1.02	2.64	22.13	
22	2510.5	**9**	**493989.67**	11.340	8.85	1.05	**5.51**	**1.70**	**4.54**	**23.22**	1.05	2.75	25.96	**Top of Gravel**

BASIN ROUTING
2-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 02/17/22

EXETER BSS BUILDING 3
2-YEAR 24-HOUR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH2YR242.rte
**********HYDROGRAPH DATA**********
Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 8.216 (CFS)
Total volume = 4.999 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
1.500	1.425	0.412	1.424	1.426
2.000	2.065	0.482	2.063	2.067
2.500	2.745	0.543	2.743	2.747
3.000	3.453	0.598	3.451	3.455
3.500	4.182	0.648	4.180	4.184
4.000	4.923	0.695	4.921	4.925
4.500	5.670	0.738	5.667	5.673
5.000	6.418	0.780	6.415	6.421
5.500	7.159	0.819	7.156	7.162
6.000	7.887	0.856	7.884	7.890
6.500	8.595	0.892	8.592	8.598
7.000	9.275	0.926	9.272	9.278
7.500	9.916	0.960	9.913	9.919
8.000	10.499	0.992	10.496	10.502
8.500	10.984	1.023	10.980	10.988

9.000 11.340 1.053 11.336 11.344

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	2.1	4.11	6.16	8.22	Depth (Ft.)
0.083	0.06	0.00	0.000	O					0.00
0.167	0.33	0.00	0.002	OI					0.00
0.250	0.42	0.00	0.004	OI					0.01
0.333	0.49	0.00	0.007	OI					0.01
0.417	0.64	0.00	0.011	O I					0.02
0.500	0.69	0.00	0.016	O I					0.02
0.583	0.71	0.00	0.021	O I					0.03
0.667	0.72	0.00	0.025	O I					0.04
0.750	0.72	0.00	0.030	O I					0.04
0.833	0.76	0.00	0.036	O I					0.05
0.917	0.89	0.00	0.041	O I					0.06
1.000	0.94	0.00	0.047	O I					0.07
1.083	0.93	0.00	0.054	O I					0.08
1.167	0.80	0.00	0.060	O I					0.08
1.250	0.76	0.00	0.065	O I					0.09
1.333	0.74	0.00	0.070	O I					0.10
1.417	0.73	0.00	0.075	O I					0.11
1.500	0.73	0.00	0.080	O I					0.11
1.583	0.73	0.00	0.085	O I					0.12
1.667	0.73	0.00	0.090	O I					0.13
1.750	0.73	0.00	0.095	O I					0.13
1.833	0.76	0.00	0.100	O I					0.14
1.917	0.89	0.00	0.106	O I					0.15
2.000	0.94	0.01	0.112	O I					0.16
2.083	0.96	0.01	0.119	O I					0.17
2.167	0.96	0.02	0.125	O I					0.18
2.250	0.97	0.02	0.132	O I					0.19
2.333	0.97	0.03	0.138	O I					0.19
2.417	0.97	0.03	0.145	O I					0.20
2.500	0.97	0.04	0.151	O I					0.21
2.583	1.00	0.05	0.158	O I					0.22
2.667	1.13	0.05	0.165	O I					0.23
2.750	1.18	0.06	0.172	O I					0.24
2.833	1.20	0.06	0.180	O I					0.25
2.917	1.21	0.07	0.188	O I					0.26
3.000	1.21	0.08	0.196	O I					0.27
3.083	1.21	0.08	0.203	O I					0.29
3.167	1.21	0.09	0.211	O I					0.30
3.250	1.21	0.10	0.219	O I					0.31
3.333	1.21	0.10	0.226	O I					0.32
3.417	1.21	0.11	0.234	O I					0.33
3.500	1.21	0.12	0.242	O I					0.34
3.583	1.21	0.12	0.249	O I					0.35
3.667	1.21	0.13	0.257	O I					0.36
3.750	1.21	0.13	0.264	O I					0.37
3.833	1.24	0.14	0.271	O I					0.38
3.917	1.37	0.15	0.279	O I					0.39
4.000	1.42	0.15	0.288	O I					0.40
4.083	1.44	0.16	0.297	O I					0.42
4.167	1.45	0.17	0.306	O I					0.43
4.250	1.45	0.18	0.314	O I					0.44
4.333	1.48	0.18	0.323	O I					0.45
4.417	1.61	0.19	0.333	O I					0.47
4.500	1.66	0.20	0.343	O I					0.48
4.583	1.68	0.21	0.353	O I					0.50
4.667	1.69	0.21	0.363	O I					0.51
4.750	1.69	0.22	0.373	O I					0.52
4.833	1.72	0.22	0.383	O I					0.53
4.917	1.86	0.22	0.394	O I					0.54
5.000	1.90	0.22	0.405	O I					0.55
5.083	1.86	0.23	0.417	O I					0.56
5.167	1.61	0.23	0.427	O I					0.57
5.250	1.51	0.23	0.436	O I					0.58
5.333	1.51	0.23	0.445	O I					0.59
5.417	1.62	0.23	0.454	O I					0.60
5.500	1.67	0.24	0.464	O I					0.61

5.583	1.71	0.24	0.474	o	I	|	|	|	0.62
5.667	1.85	0.24	0.485	o	I	|	|	|	0.63
5.750	1.90	0.24	0.496	o	I	|	|	|	0.64
5.833	1.92	0.25	0.507	o	I	|	|	|	0.66
5.917	1.93	0.25	0.519	o	I	|	|	|	0.67
6.000	1.93	0.25	0.531	o	I	|	|	|	0.68
6.083	1.97	0.26	0.542	o	I	|	|	|	0.69
6.167	2.10	0.26	0.554	|o	I	|	|	|	0.70
6.250	2.15	0.26	0.567	|o	I	|	|	|	0.72
6.333	2.17	0.26	0.580	|o	I	|	|	|	0.73
6.417	2.17	0.27	0.593	|o	I	|	|	|	0.74
6.500	2.18	0.27	0.607	|o	I	|	|	|	0.76
6.583	2.21	0.27	0.620	|o	I	|	|	|	0.77
6.667	2.34	0.28	0.634	|o	|I	|	|	|	0.79
6.750	2.39	0.28	0.648	|o	|I	|	|	|	0.80
6.833	2.41	0.28	0.662	|o	|I	|	|	|	0.82
6.917	2.42	0.29	0.677	|o	|I	|	|	|	0.83
7.000	2.42	0.29	0.692	|o	|I	|	|	|	0.85
7.083	2.42	0.29	0.706	|o	|I	|	|	|	0.86
7.167	2.42	0.30	0.721	|o	|I	|	|	|	0.88
7.250	2.42	0.30	0.736	|o	|I	|	|	|	0.89
7.333	2.45	0.31	0.750	|o	|I	|	|	|	0.91
7.417	2.58	0.31	0.766	|o	| I	|	|	|	0.92
7.500	2.63	0.31	0.781	|o	| I	|	|	|	0.94
7.583	2.68	0.32	0.797	|o	| I	|	|	|	0.96
7.667	2.82	0.32	0.814	|o	| I	|	|	|	0.97
7.750	2.87	0.32	0.832	|o	| I	|	|	|	0.99
7.833	2.92	0.33	0.849	|o	| I	|	|	|	1.01
7.917	3.06	0.33	0.868	|o	| I	|	|	|	1.02
8.000	3.11	0.33	0.887	|o	| I	|	|	|	1.04
8.083	3.19	0.34	0.906	|o	| I	|	|	|	1.06
8.167	3.47	0.34	0.927	|o	| I	|	|	|	1.07
8.250	3.56	0.34	0.948	|o	| I	|	|	|	1.09
8.333	3.60	0.35	0.971	|o	| I	|	|	|	1.11
8.417	3.62	0.35	0.993	|o	| I	|	|	|	1.13
8.500	3.63	0.35	1.016	|o	| I	|	|	|	1.15
8.583	3.66	0.36	1.038	|o	| I	|	|	|	1.17
8.667	3.79	0.36	1.062	|o	| I	|	|	|	1.19
8.750	3.84	0.36	1.085	|o	| I	|	|	|	1.21
8.833	3.89	0.37	1.109	|o	| I	|	|	|	1.23
8.917	4.03	0.37	1.134	|o	| I	|	|	|	1.25
9.000	4.08	0.37	1.160	|o	| I	|	|	|	1.27
9.083	4.16	0.38	1.185	|o	| I	|	|	|	1.29
9.167	4.43	0.38	1.212	|o	| |I	|	|	|	1.32
9.250	4.53	0.39	1.241	|o	| |I	|	|	|	1.34
9.333	4.60	0.39	1.269	|o	| |I	|	|	|	1.37
9.417	4.75	0.39	1.299	|o	| | I	|	|	|	1.39
9.500	4.80	0.40	1.329	|o	| | I	|	|	|	1.42
9.583	4.86	0.40	1.360	|o	| | I	|	|	|	1.44
9.667	5.00	0.41	1.391	|o	| | I	|	|	|	1.47
9.750	5.05	0.41	1.423	|o	| | I	|	|	|	1.50
9.833	5.10	0.42	1.455	|o	| | I	|	|	|	1.52
9.917	5.24	0.42	1.487	|o	| | I	|	|	|	1.55
10.000	5.29	0.42	1.521	|o	| | I	|	|	|	1.57
10.083	5.10	0.43	1.554	|o	| | I	|	|	|	1.60
10.167	4.18	0.43	1.583	|o	| I	|	|	|	1.62
10.250	3.85	0.43	1.607	|o	| I	|	|	|	1.64
10.333	3.71	0.43	1.630	|o	| I	|	|	|	1.66
10.417	3.66	0.44	1.653	|o	| I	|	|	|	1.68
10.500	3.64	0.44	1.675	|o	| I	|	|	|	1.70
10.583	3.79	0.44	1.697	|o	| I	|	|	|	1.71
10.667	4.44	0.44	1.723	|o	| |I	|	|	|	1.73
10.750	4.68	0.45	1.751	|o	| | I	|	|	|	1.75
10.833	4.78	0.45	1.780	|o	| | I	|	|	|	1.78
10.917	4.82	0.45	1.810	|o	| | I	|	|	|	1.80
11.000	4.83	0.46	1.840	|o	| | I	|	|	|	1.82
11.083	4.81	0.46	1.870	|o	| | I	|	|	|	1.85
11.167	4.68	0.46	1.900	|o	| | I	|	|	|	1.87
11.250	4.63	0.47	1.929	|o	| | I	|	|	|	1.89
11.333	4.61	0.47	1.957	|o	| |I	|	|	|	1.92
11.417	4.60	0.47	1.986	|o	| |I	|	|	|	1.94
11.500	4.60	0.48	2.014	|o	| |I	|	|	|	1.96
11.583	4.54	0.48	2.042	|o	| |I	|	|	|	1.98
11.667	4.27	0.48	2.069	|o	| I	|	|	|	2.00
11.750	4.18	0.48	2.095	|o	| I	|	|	|	2.02

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11.833    4.17    0.49      2.121  |O      |       I       |       |     2.04
11.917    4.29    0.49      2.146  |O      |       I       |       |     2.06
12.000    4.33    0.49      2.173  |O      |       I       |       |     2.08
12.083    4.56    0.49      2.200  |O      |       |I      |       |     2.10
12.167    5.49    0.50      2.231  |O      |       |    I  |       |     2.12
12.250    5.83    0.50      2.267  |O      |       |     I |       |     2.15
12.333    5.99    0.50      2.304  |O      |       |      I|       |     2.18
12.417    6.18    0.51      2.342  |O      |       |       I       |     2.20
12.500    6.24    0.51      2.382  |O      |       |       I       |     2.23
12.583    6.33    0.51      2.421  | O     |       |       I       |     2.26
12.667    6.61    0.52      2.462  | O     |       |       |I      |     2.29
12.750    6.71    0.52      2.505  | O     |       |       | I     |     2.32
12.833    6.78    0.53      2.547  | O     |       |       | I     |     2.35
12.917    6.93    0.53      2.591  | O     |       |       | I     |     2.39
13.000    6.98    0.53      2.635  | O     |       |       |  I    |     2.42
13.083    7.15    0.54      2.680  | O     |       |       |  I    |     2.45
13.167    7.83    0.54      2.728  | O     |       |       |     I |     2.49
13.250    8.07    0.55      2.779  | O     |       |       |      I|     2.52
13.333    8.17    0.55      2.831  | O     |       |       |      I|     2.56
13.417    8.20    0.55      2.884  | O     |       |       |      I|     2.60
13.500    8.22    0.56      2.937  | O     |       |       |       I     2.64
13.583    7.89    0.56      2.988  | O     |       |       |     I |     2.67
13.667    6.44    0.57      3.034  | O     |       |       |I      |     2.70
13.750    5.91    0.57      3.072  | O     |       |      I|       |     2.73
13.833    5.70    0.57      3.108  | O     |       |     I |       |     2.76
13.917    5.61    0.57      3.143  | O     |       |    I  |       |     2.78
14.000    5.59    0.58      3.178  | O     |       |    I  |       |     2.81
14.083    5.69    0.58      3.213  | O     |       |     I |       |     2.83
14.167    6.22    0.58      3.250  | O     |       |       I       |     2.86
14.250    6.41    0.59      3.289  | O     |       |       I       |     2.88
14.333    6.45    0.59      3.330  | O     |       |       |I      |     2.91
14.417    6.35    0.59      3.370  | O     |       |       I       |     2.94
14.500    6.31    0.59      3.409  | O     |       |       I       |     2.97
14.583    6.30    0.60      3.448  | O     |       |       I       |     3.00
14.667    6.30    0.60      3.488  | O     |       |       I       |     3.02
14.750    6.29    0.60      3.527  | O     |       |       I       |     3.05
14.833    6.26    0.61      3.566  | O     |       |       I       |     3.08
14.917    6.13    0.61      3.604  | O     |       |      I|       |     3.10
15.000    6.08    0.61      3.642  | O     |       |      I|       |     3.13
15.083    6.03    0.61      3.680  | O     |       |      I|       |     3.16
15.167    5.89    0.62      3.717  | O     |       |     I |       |     3.18
15.250    5.84    0.62      3.753  | O     |       |     I |       |     3.21
15.333    5.79    0.62      3.788  | O     |       |     I |       |     3.23
15.417    5.65    0.62      3.824  | O     |       |     I |       |     3.25
15.500    5.60    0.63      3.858  | O     |       |    I  |       |     3.28
15.583    5.46    0.63      3.892  | O     |       |    I  |       |     3.30
15.667    4.92    0.63      3.923  | O     |       |  I    |       |     3.32
15.750    4.73    0.63      3.952  | O     |       | I     |       |     3.34
15.833    4.65    0.63      3.980  | O     |       | I     |       |     3.36
15.917    4.62    0.64      4.007  | O     |       |I      |       |     3.38
16.000    4.61    0.64      4.035  | O     |       |I      |       |     3.40
16.083    4.15    0.64      4.061  | O     |       I       |       |     3.42
16.167    2.16    0.64      4.078  | O     I       |       |       |     3.43
16.250    1.44    0.64      4.086  | O  I  |       |       |       |     3.43
16.333    1.15    0.64      4.090  | O I   |       |       |       |     3.44
16.417    1.04    0.64      4.093  | O I   |       |       |       |     3.44
16.500    1.00    0.64      4.096  | OI    |       |       |       |     3.44
16.583    0.95    0.64      4.098  | OI    |       |       |       |     3.44
16.667    0.81    0.64      4.100  | OI    |       |       |       |     3.44
16.750    0.76    0.64      4.101  | O     |       |       |       |     3.44
16.833    0.74    0.64      4.102  | O     |       |       |       |     3.44
16.917    0.73    0.64      4.102  | O     |       |       |       |     3.45
17.000    0.73    0.64      4.103  | O     |       |       |       |     3.45
17.083    0.79    0.64      4.104  | OI    |       |       |       |     3.45
17.167    1.05    0.64      4.106  | O I   |       |       |       |     3.45
17.250    1.15    0.64      4.109  | O I   |       |       |       |     3.45
17.333    1.19    0.64      4.112  | O I   |       |       |       |     3.45
17.417    1.20    0.64      4.116  | O I   |       |       |       |     3.45
17.500    1.21    0.64      4.120  | O I   |       |       |       |     3.46
17.583    1.21    0.64      4.124  | O I   |       |       |       |     3.46
17.667    1.21    0.64      4.128  | O I   |       |       |       |     3.46
17.750    1.21    0.64      4.132  | O I   |       |       |       |     3.47
17.833    1.18    0.64      4.135  | O I   |       |       |       |     3.47
17.917    1.05    0.65      4.139  | O I   |       |       |       |     3.47
18.000    1.00    0.65      4.141  | OI    |       |       |       |     3.47
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18.083	0.98	0.65	4.144	OI				3.47
18.167	0.97	0.65	4.146	OI				3.48
18.250	0.97	0.65	4.148	OI				3.48
18.333	0.97	0.65	4.150	OI				3.48
18.417	0.97	0.65	4.153	OI				3.48
18.500	0.97	0.65	4.155	OI				3.48
18.583	0.94	0.65	4.157	OI				3.48
18.667	0.81	0.65	4.158	OI				3.48
18.750	0.76	0.65	4.159	O				3.48
18.833	0.71	0.65	4.160	O				3.48
18.917	0.57	0.65	4.160	O				3.48
19.000	0.52	0.65	4.159	O				3.48
19.083	0.53	0.65	4.158	O				3.48
19.167	0.65	0.65	4.158	O				3.48
19.250	0.70	0.65	4.158	O				3.48
19.333	0.74	0.65	4.159	O				3.48
19.417	0.88	0.65	4.160	OI				3.48
19.500	0.93	0.65	4.162	OI				3.49
19.583	0.92	0.65	4.164	OI				3.49
19.667	0.80	0.65	4.165	OI				3.49
19.750	0.76	0.65	4.166	O				3.49
19.833	0.71	0.65	4.167	O				3.49
19.917	0.57	0.65	4.166	O				3.49
20.000	0.52	0.65	4.166	O				3.49
20.083	0.53	0.65	4.165	O				3.49
20.167	0.65	0.65	4.164	O				3.49
20.250	0.70	0.65	4.165	O				3.49
20.333	0.71	0.65	4.165	O				3.49
20.417	0.72	0.65	4.166	O				3.49
20.500	0.72	0.65	4.166	O				3.49
20.583	0.73	0.65	4.167	O				3.49
20.667	0.73	0.65	4.167	O				3.49
20.750	0.73	0.65	4.168	O				3.49
20.833	0.70	0.65	4.168	O				3.49
20.917	0.56	0.65	4.168	O				3.49
21.000	0.52	0.65	4.167	O				3.49
21.083	0.53	0.65	4.166	O				3.49
21.167	0.65	0.65	4.166	O				3.49
21.250	0.70	0.65	4.166	O				3.49
21.333	0.68	0.65	4.166	O				3.49
21.417	0.56	0.65	4.166	O				3.49
21.500	0.51	0.65	4.166	IO				3.49
21.583	0.53	0.65	4.165	O				3.49
21.667	0.65	0.65	4.164	O				3.49
21.750	0.70	0.65	4.164	O				3.49
21.833	0.68	0.65	4.165	O				3.49
21.917	0.56	0.65	4.165	O				3.49
22.000	0.51	0.65	4.164	IO				3.49
22.083	0.53	0.65	4.163	O				3.49
22.167	0.65	0.65	4.163	O				3.49
22.250	0.70	0.65	4.163	O				3.49
22.333	0.68	0.65	4.163	O				3.49
22.417	0.56	0.65	4.163	O				3.49
22.500	0.51	0.65	4.162	IO				3.49
22.583	0.50	0.65	4.161	IO				3.49
22.667	0.49	0.65	4.160	IO				3.48
22.750	0.49	0.65	4.159	IO				3.48
22.833	0.48	0.65	4.158	IO				3.48
22.917	0.48	0.65	4.157	IO				3.48
23.000	0.48	0.65	4.156	IO				3.48
23.083	0.48	0.65	4.154	IO				3.48
23.167	0.48	0.65	4.153	IO				3.48
23.250	0.48	0.65	4.152	IO				3.48
23.333	0.48	0.65	4.151	IO				3.48
23.417	0.48	0.65	4.150	IO				3.48
23.500	0.48	0.65	4.149	IO				3.48
23.583	0.48	0.65	4.148	IO				3.48
23.667	0.48	0.65	4.147	IO				3.48
23.750	0.48	0.65	4.146	IO				3.48
23.833	0.48	0.65	4.144	IO				3.47
23.917	0.48	0.65	4.143	IO				3.47
24.000	0.48	0.65	4.142	IO				3.47
24.083	0.42	0.65	4.141	IO				3.47
24.167	0.16	0.65	4.138	I O				3.47
24.250	0.06	0.64	4.135	I O				3.47

24.333	0.02	0.64	4.131	I	O	|	|	|	3.46
24.417	0.01	0.64	4.126	I	O	|	|	|	3.46
24.500	0.00	0.64	4.122	I	O	|	|	|	3.46
24.583	0.00	0.64	4.118	I	O	|	|	|	3.46
24.667	0.00	0.64	4.113	I	O	|	|	|	3.45
24.750	0.00	0.64	4.109	I	O	|	|	|	3.45
24.833	0.00	0.64	4.104	I	O	|	|	|	3.45
24.917	0.00	0.64	4.100	I	O	|	|	|	3.44
25.000	0.00	0.64	4.095	I	O	|	|	|	3.44
25.083	0.00	0.64	4.091	I	O	|	|	|	3.44
25.167	0.00	0.64	4.087	I	O	|	|	|	3.43
25.250	0.00	0.64	4.082	I	O	|	|	|	3.43
25.333	0.00	0.64	4.078	I	O	|	|	|	3.43
25.417	0.00	0.64	4.073	I	O	|	|	|	3.43
25.500	0.00	0.64	4.069	I	O	|	|	|	3.42
25.583	0.00	0.64	4.065	I	O	|	|	|	3.42
25.667	0.00	0.64	4.060	I	O	|	|	|	3.42
25.750	0.00	0.64	4.056	I	O	|	|	|	3.41
25.833	0.00	0.64	4.051	I	O	|	|	|	3.41
25.917	0.00	0.64	4.047	I	O	|	|	|	3.41
26.000	0.00	0.64	4.042	I	O	|	|	|	3.40
26.083	0.00	0.64	4.038	I	O	|	|	|	3.40
26.167	0.00	0.64	4.034	I	O	|	|	|	3.40
26.250	0.00	0.64	4.029	I	O	|	|	|	3.40
26.333	0.00	0.64	4.025	I	O	|	|	|	3.39
26.417	0.00	0.64	4.021	I	O	|	|	|	3.39
26.500	0.00	0.64	4.016	I	O	|	|	|	3.39
26.583	0.00	0.64	4.012	I	O	|	|	|	3.38
26.667	0.00	0.64	4.007	I	O	|	|	|	3.38
26.750	0.00	0.64	4.003	I	O	|	|	|	3.38
26.833	0.00	0.64	3.999	I	O	|	|	|	3.37
26.917	0.00	0.64	3.994	I	O	|	|	|	3.37
27.000	0.00	0.63	3.990	I	O	|	|	|	3.37
27.083	0.00	0.63	3.986	I	O	|	|	|	3.37
27.167	0.00	0.63	3.981	I	O	|	|	|	3.36
27.250	0.00	0.63	3.977	I	O	|	|	|	3.36
27.333	0.00	0.63	3.972	I	O	|	|	|	3.36
27.417	0.00	0.63	3.968	I	O	|	|	|	3.35
27.500	0.00	0.63	3.964	I	O	|	|	|	3.35
27.583	0.00	0.63	3.959	I	O	|	|	|	3.35
27.667	0.00	0.63	3.955	I	O	|	|	|	3.34
27.750	0.00	0.63	3.951	I	O	|	|	|	3.34
27.833	0.00	0.63	3.946	I	O	|	|	|	3.34
27.917	0.00	0.63	3.942	I	O	|	|	|	3.34
28.000	0.00	0.63	3.938	I	O	|	|	|	3.33
28.083	0.00	0.63	3.933	I	O	|	|	|	3.33
28.167	0.00	0.63	3.929	I	O	|	|	|	3.33
28.250	0.00	0.63	3.925	I	O	|	|	|	3.32
28.333	0.00	0.63	3.920	I	O	|	|	|	3.32
28.417	0.00	0.63	3.916	I	O	|	|	|	3.32
28.500	0.00	0.63	3.912	I	O	|	|	|	3.31
28.583	0.00	0.63	3.907	I	O	|	|	|	3.31
28.667	0.00	0.63	3.903	I	O	|	|	|	3.31
28.750	0.00	0.63	3.899	I	O	|	|	|	3.31
28.833	0.00	0.63	3.894	I	O	|	|	|	3.30
28.917	0.00	0.63	3.890	I	O	|	|	|	3.30
29.000	0.00	0.63	3.886	I	O	|	|	|	3.30
29.083	0.00	0.63	3.881	I	O	|	|	|	3.29
29.167	0.00	0.63	3.877	I	O	|	|	|	3.29
29.250	0.00	0.63	3.873	I	O	|	|	|	3.29
29.333	0.00	0.63	3.868	I	O	|	|	|	3.28
29.417	0.00	0.63	3.864	I	O	|	|	|	3.28
29.500	0.00	0.63	3.860	I	O	|	|	|	3.28
29.583	0.00	0.63	3.855	I	O	|	|	|	3.28
29.667	0.00	0.63	3.851	I	O	|	|	|	3.27
29.750	0.00	0.63	3.847	I	O	|	|	|	3.27
29.833	0.00	0.62	3.842	I	O	|	|	|	3.27
29.917	0.00	0.62	3.838	I	O	|	|	|	3.26
30.000	0.00	0.62	3.834	I	O	|	|	|	3.26
30.083	0.00	0.62	3.830	I	O	|	|	|	3.26
30.167	0.00	0.62	3.825	I	O	|	|	|	3.26
30.250	0.00	0.62	3.821	I	O	|	|	|	3.25
30.333	0.00	0.62	3.817	I	O	|	|	|	3.25
30.417	0.00	0.62	3.812	I	O	|	|	|	3.25
30.500	0.00	0.62	3.808	I	O	|	|	|	3.24

30.583	0.00	0.62	3.804	I	O	|	|	|	3.24
30.667	0.00	0.62	3.799	I	O	|	|	|	3.24
30.750	0.00	0.62	3.795	I	O	|	|	|	3.23
30.833	0.00	0.62	3.791	I	O	|	|	|	3.23
30.917	0.00	0.62	3.787	I	O	|	|	|	3.23
31.000	0.00	0.62	3.782	I	O	|	|	|	3.23
31.083	0.00	0.62	3.778	I	O	|	|	|	3.22
31.167	0.00	0.62	3.774	I	O	|	|	|	3.22
31.250	0.00	0.62	3.770	I	O	|	|	|	3.22
31.333	0.00	0.62	3.765	I	O	|	|	|	3.21
31.417	0.00	0.62	3.761	I	O	|	|	|	3.21
31.500	0.00	0.62	3.757	I	O	|	|	|	3.21
31.583	0.00	0.62	3.753	I	O	|	|	|	3.21
31.667	0.00	0.62	3.748	I	O	|	|	|	3.20
31.750	0.00	0.62	3.744	I	O	|	|	|	3.20
31.833	0.00	0.62	3.740	I	O	|	|	|	3.20
31.917	0.00	0.62	3.735	I	O	|	|	|	3.19
32.000	0.00	0.62	3.731	I	O	|	|	|	3.19
32.083	0.00	0.62	3.727	I	O	|	|	|	3.19
32.167	0.00	0.62	3.723	I	O	|	|	|	3.19
32.250	0.00	0.62	3.718	I	O	|	|	|	3.18
32.333	0.00	0.62	3.714	I	O	|	|	|	3.18
32.417	0.00	0.62	3.710	I	O	|	|	|	3.18
32.500	0.00	0.62	3.706	I	O	|	|	|	3.17
32.583	0.00	0.62	3.702	I	O	|	|	|	3.17
32.667	0.00	0.61	3.697	I	O	|	|	|	3.17
32.750	0.00	0.61	3.693	I	O	|	|	|	3.16
32.833	0.00	0.61	3.689	I	O	|	|	|	3.16
32.917	0.00	0.61	3.685	I	O	|	|	|	3.16
33.000	0.00	0.61	3.680	I	O	|	|	|	3.16
33.083	0.00	0.61	3.676	I	O	|	|	|	3.15
33.167	0.00	0.61	3.672	I	O	|	|	|	3.15
33.250	0.00	0.61	3.668	I	O	|	|	|	3.15
33.333	0.00	0.61	3.663	I	O	|	|	|	3.14
33.417	0.00	0.61	3.659	I	O	|	|	|	3.14
33.500	0.00	0.61	3.655	I	O	|	|	|	3.14
33.583	0.00	0.61	3.651	I	O	|	|	|	3.14
33.667	0.00	0.61	3.647	I	O	|	|	|	3.13
33.750	0.00	0.61	3.642	I	O	|	|	|	3.13
33.833	0.00	0.61	3.638	I	O	|	|	|	3.13
33.917	0.00	0.61	3.634	I	O	|	|	|	3.12
34.000	0.00	0.61	3.630	I	O	|	|	|	3.12
34.083	0.00	0.61	3.626	I	O	|	|	|	3.12
34.167	0.00	0.61	3.621	I	O	|	|	|	3.12
34.250	0.00	0.61	3.617	I	O	|	|	|	3.11
34.333	0.00	0.61	3.613	I	O	|	|	|	3.11
34.417	0.00	0.61	3.609	I	O	|	|	|	3.11
34.500	0.00	0.61	3.605	I	O	|	|	|	3.10
34.583	0.00	0.61	3.600	I	O	|	|	|	3.10
34.667	0.00	0.61	3.596	I	O	|	|	|	3.10
34.750	0.00	0.61	3.592	I	O	|	|	|	3.10
34.833	0.00	0.61	3.588	I	O	|	|	|	3.09
34.917	0.00	0.61	3.584	I	O	|	|	|	3.09
35.000	0.00	0.61	3.580	I	O	|	|	|	3.09
35.083	0.00	0.61	3.575	I	O	|	|	|	3.08
35.167	0.00	0.61	3.571	I	O	|	|	|	3.08
35.250	0.00	0.61	3.567	I	O	|	|	|	3.08
35.333	0.00	0.61	3.563	I	O	|	|	|	3.08
35.417	0.00	0.61	3.559	I	O	|	|	|	3.07
35.500	0.00	0.60	3.555	I	O	|	|	|	3.07
35.583	0.00	0.60	3.550	I	O	|	|	|	3.07
35.667	0.00	0.60	3.546	I	O	|	|	|	3.06
35.750	0.00	0.60	3.542	I	O	|	|	|	3.06
35.833	0.00	0.60	3.538	I	O	|	|	|	3.06
35.917	0.00	0.60	3.534	I	O	|	|	|	3.06
36.000	0.00	0.60	3.530	I	O	|	|	|	3.05
36.083	0.00	0.60	3.525	I	O	|	|	|	3.05
36.167	0.00	0.60	3.521	I	O	|	|	|	3.05
36.250	0.00	0.60	3.517	I	O	|	|	|	3.04
36.333	0.00	0.60	3.513	I	O	|	|	|	3.04
36.417	0.00	0.60	3.509	I	O	|	|	|	3.04
36.500	0.00	0.60	3.505	I	O	|	|	|	3.04
36.583	0.00	0.60	3.501	I	O	|	|	|	3.03
36.667	0.00	0.60	3.496	I	O	|	|	|	3.03
36.750	0.00	0.60	3.492	I	O	|	|	|	3.03

36.833	0.00	0.60	3.488	I O	|	|	|	3.02
36.917	0.00	0.60	3.484	I O	|	|	|	3.02
37.000	0.00	0.60	3.480	I O	|	|	|	3.02
37.083	0.00	0.60	3.476	I O	|	|	|	3.02
37.167	0.00	0.60	3.472	I O	|	|	|	3.01
37.250	0.00	0.60	3.467	I O	|	|	|	3.01
37.333	0.00	0.60	3.463	I O	|	|	|	3.01
37.417	0.00	0.60	3.459	I O	|	|	|	3.00
37.500	0.00	0.60	3.455	I O	|	|	|	3.00
37.583	0.00	0.60	3.451	I O	|	|	|	3.00
37.667	0.00	0.60	3.447	I O	|	|	|	3.00
37.750	0.00	0.60	3.443	I O	|	|	|	2.99
37.833	0.00	0.60	3.439	I O	|	|	|	2.99
37.917	0.00	0.60	3.435	I O	|	|	|	2.99
38.000	0.00	0.60	3.430	I O	|	|	|	2.98
38.083	0.00	0.60	3.426	I O	|	|	|	2.98
38.167	0.00	0.60	3.422	I O	|	|	|	2.98
38.250	0.00	0.60	3.418	I O	|	|	|	2.98
38.333	0.00	0.59	3.414	I O	|	|	|	2.97
38.417	0.00	0.59	3.410	I O	|	|	|	2.97
38.500	0.00	0.59	3.406	I O	|	|	|	2.97
38.583	0.00	0.59	3.402	I O	|	|	|	2.96
38.667	0.00	0.59	3.398	I O	|	|	|	2.96
38.750	0.00	0.59	3.394	I O	|	|	|	2.96
38.833	0.00	0.59	3.389	I O	|	|	|	2.96
38.917	0.00	0.59	3.385	I O	|	|	|	2.95
39.000	0.00	0.59	3.381	I O	|	|	|	2.95
39.083	0.00	0.59	3.377	I O	|	|	|	2.95
39.167	0.00	0.59	3.373	I O	|	|	|	2.94
39.250	0.00	0.59	3.369	I O	|	|	|	2.94
39.333	0.00	0.59	3.365	I O	|	|	|	2.94
39.417	0.00	0.59	3.361	I O	|	|	|	2.93
39.500	0.00	0.59	3.357	I O	|	|	|	2.93
39.583	0.00	0.59	3.353	I O	|	|	|	2.93
39.667	0.00	0.59	3.349	I O	|	|	|	2.93
39.750	0.00	0.59	3.345	I O	|	|	|	2.92
39.833	0.00	0.59	3.341	I O	|	|	|	2.92
39.917	0.00	0.59	3.337	I O	|	|	|	2.92
40.000	0.00	0.59	3.332	I O	|	|	|	2.91
40.083	0.00	0.59	3.328	I O	|	|	|	2.91
40.167	0.00	0.59	3.324	I O	|	|	|	2.91
40.250	0.00	0.59	3.320	I O	|	|	|	2.91
40.333	0.00	0.59	3.316	I O	|	|	|	2.90
40.417	0.00	0.59	3.312	I O	|	|	|	2.90
40.500	0.00	0.59	3.308	I O	|	|	|	2.90
40.583	0.00	0.59	3.304	I O	|	|	|	2.89
40.667	0.00	0.59	3.300	I O	|	|	|	2.89
40.750	0.00	0.59	3.296	I O	|	|	|	2.89
40.833	0.00	0.59	3.292	I O	|	|	|	2.89
40.917	0.00	0.59	3.288	I O	|	|	|	2.88
41.000	0.00	0.58	3.284	I O	|	|	|	2.88
41.083	0.00	0.58	3.280	I O	|	|	|	2.88
41.167	0.00	0.58	3.276	I O	|	|	|	2.87
41.250	0.00	0.58	3.272	I O	|	|	|	2.87
41.333	0.00	0.58	3.268	I O	|	|	|	2.87
41.417	0.00	0.58	3.264	I O	|	|	|	2.87
41.500	0.00	0.58	3.260	I O	|	|	|	2.86
41.583	0.00	0.58	3.256	I O	|	|	|	2.86
41.667	0.00	0.58	3.252	I O	|	|	|	2.86
41.750	0.00	0.58	3.248	I O	|	|	|	2.86
41.833	0.00	0.58	3.244	I O	|	|	|	2.85
41.917	0.00	0.58	3.240	I O	|	|	|	2.85
42.000	0.00	0.58	3.236	I O	|	|	|	2.85
42.083	0.00	0.58	3.232	I O	|	|	|	2.84
42.167	0.00	0.58	3.228	I O	|	|	|	2.84
42.250	0.00	0.58	3.224	I O	|	|	|	2.84
42.333	0.00	0.58	3.220	I O	|	|	|	2.84
42.417	0.00	0.58	3.216	I O	|	|	|	2.83
42.500	0.00	0.58	3.212	I O	|	|	|	2.83
42.583	0.00	0.58	3.208	I O	|	|	|	2.83
42.667	0.00	0.58	3.204	I O	|	|	|	2.82
42.750	0.00	0.58	3.200	I O	|	|	|	2.82
42.833	0.00	0.58	3.196	I O	|	|	|	2.82
42.917	0.00	0.58	3.192	I O	|	|	|	2.82
43.000	0.00	0.58	3.188	I O	|	|	|	2.81

43.083	0.00	0.58	3.184	I O	|	|	|	2.81
43.167	0.00	0.58	3.180	I O	|	|	|	2.81
43.250	0.00	0.58	3.176	I O	|	|	|	2.80
43.333	0.00	0.58	3.172	I O	|	|	|	2.80
43.417	0.00	0.58	3.168	I O	|	|	|	2.80
43.500	0.00	0.58	3.164	I O	|	|	|	2.80
43.583	0.00	0.58	3.160	I O	|	|	|	2.79
43.667	0.00	0.57	3.156	I O	|	|	|	2.79
43.750	0.00	0.57	3.152	I O	|	|	|	2.79
43.833	0.00	0.57	3.148	I O	|	|	|	2.78
43.917	0.00	0.57	3.144	I O	|	|	|	2.78
44.000	0.00	0.57	3.140	I O	|	|	|	2.78
44.083	0.00	0.57	3.136	I O	|	|	|	2.78
44.167	0.00	0.57	3.132	I O	|	|	|	2.77
44.250	0.00	0.57	3.129	I O	|	|	|	2.77
44.333	0.00	0.57	3.125	I O	|	|	|	2.77
44.417	0.00	0.57	3.121	I O	|	|	|	2.77
44.500	0.00	0.57	3.117	I O	|	|	|	2.76
44.583	0.00	0.57	3.113	I O	|	|	|	2.76
44.667	0.00	0.57	3.109	I O	|	|	|	2.76
44.750	0.00	0.57	3.105	I O	|	|	|	2.75
44.833	0.00	0.57	3.101	I O	|	|	|	2.75
44.917	0.00	0.57	3.097	I O	|	|	|	2.75
45.000	0.00	0.57	3.093	I O	|	|	|	2.75
45.083	0.00	0.57	3.089	I O	|	|	|	2.74
45.167	0.00	0.57	3.085	I O	|	|	|	2.74
45.250	0.00	0.57	3.081	I O	|	|	|	2.74
45.333	0.00	0.57	3.077	I O	|	|	|	2.73
45.417	0.00	0.57	3.073	I O	|	|	|	2.73
45.500	0.00	0.57	3.070	I O	|	|	|	2.73
45.583	0.00	0.57	3.066	I O	|	|	|	2.73
45.667	0.00	0.57	3.062	I O	|	|	|	2.72
45.750	0.00	0.57	3.058	I O	|	|	|	2.72
45.833	0.00	0.57	3.054	I O	|	|	|	2.72
45.917	0.00	0.57	3.050	I O	|	|	|	2.72
46.000	0.00	0.57	3.046	I O	|	|	|	2.71
46.083	0.00	0.57	3.042	I O	|	|	|	2.71
46.167	0.00	0.57	3.038	I O	|	|	|	2.71
46.250	0.00	0.57	3.034	I O	|	|	|	2.70
46.333	0.00	0.57	3.031	I O	|	|	|	2.70
46.417	0.00	0.56	3.027	I O	|	|	|	2.70
46.500	0.00	0.56	3.023	I O	|	|	|	2.70
46.583	0.00	0.56	3.019	I O	|	|	|	2.69
46.667	0.00	0.56	3.015	I O	|	|	|	2.69
46.750	0.00	0.56	3.011	I O	|	|	|	2.69
46.833	0.00	0.56	3.007	I O	|	|	|	2.69
46.917	0.00	0.56	3.003	I O	|	|	|	2.68
47.000	0.00	0.56	2.999	I O	|	|	|	2.68
47.083	0.00	0.56	2.996	I O	|	|	|	2.68
47.167	0.00	0.56	2.992	I O	|	|	|	2.67
47.250	0.00	0.56	2.988	I O	|	|	|	2.67
47.333	0.00	0.56	2.984	I O	|	|	|	2.67
47.417	0.00	0.56	2.980	I O	|	|	|	2.67
47.500	0.00	0.56	2.976	I O	|	|	|	2.66
47.583	0.00	0.56	2.972	I O	|	|	|	2.66
47.667	0.00	0.56	2.969	I O	|	|	|	2.66
47.750	0.00	0.56	2.965	I O	|	|	|	2.66
47.833	0.00	0.56	2.961	I O	|	|	|	2.65
47.917	0.00	0.56	2.957	I O	|	|	|	2.65
48.000	0.00	0.56	2.953	I O	|	|	|	2.65
48.083	0.00	0.56	2.949	I O	|	|	|	2.64
48.167	0.00	0.56	2.945	I O	|	|	|	2.64
48.250	0.00	0.56	2.942	I O	|	|	|	2.64
48.333	0.00	0.56	2.938	I O	|	|	|	2.64
48.417	0.00	0.56	2.934	I O	|	|	|	2.63
48.500	0.00	0.56	2.930	I O	|	|	|	2.63
48.583	0.00	0.56	2.926	I O	|	|	|	2.63
48.667	0.00	0.56	2.922	I O	|	|	|	2.63
48.750	0.00	0.56	2.919	I O	|	|	|	2.62
48.833	0.00	0.56	2.915	I O	|	|	|	2.62
48.917	0.00	0.56	2.911	I O	|	|	|	2.62
49.000	0.00	0.56	2.907	I O	|	|	|	2.61
49.083	0.00	0.56	2.903	I O	|	|	|	2.61
49.167	0.00	0.55	2.899	I O	|	|	|	2.61
49.250	0.00	0.55	2.896	I O	|	|	|	2.61

49.333	0.00	0.55	2.892	I O	|	|	|	2.60
49.417	0.00	0.55	2.888	I O	|	|	|	2.60
49.500	0.00	0.55	2.884	I O	|	|	|	2.60
49.583	0.00	0.55	2.880	I O	|	|	|	2.60
49.667	0.00	0.55	2.877	I O	|	|	|	2.59
49.750	0.00	0.55	2.873	I O	|	|	|	2.59
49.833	0.00	0.55	2.869	I O	|	|	|	2.59
49.917	0.00	0.55	2.865	I O	|	|	|	2.58
50.000	0.00	0.55	2.861	I O	|	|	|	2.58
50.083	0.00	0.55	2.857	I O	|	|	|	2.58
50.167	0.00	0.55	2.854	I O	|	|	|	2.58
50.250	0.00	0.55	2.850	I O	|	|	|	2.57
50.333	0.00	0.55	2.846	I O	|	|	|	2.57
50.417	0.00	0.55	2.842	I O	|	|	|	2.57
50.500	0.00	0.55	2.839	I O	|	|	|	2.57
50.583	0.00	0.55	2.835	I O	|	|	|	2.56
50.667	0.00	0.55	2.831	I O	|	|	|	2.56
50.750	0.00	0.55	2.827	I O	|	|	|	2.56
50.833	0.00	0.55	2.823	I O	|	|	|	2.56
50.917	0.00	0.55	2.820	I O	|	|	|	2.55
51.000	0.00	0.55	2.816	I O	|	|	|	2.55
51.083	0.00	0.55	2.812	I O	|	|	|	2.55
51.167	0.00	0.55	2.808	I O	|	|	|	2.54
51.250	0.00	0.55	2.804	I O	|	|	|	2.54
51.333	0.00	0.55	2.801	I O	|	|	|	2.54
51.417	0.00	0.55	2.797	I O	|	|	|	2.54
51.500	0.00	0.55	2.793	I O	|	|	|	2.53
51.583	0.00	0.55	2.789	I O	|	|	|	2.53
51.667	0.00	0.55	2.786	I O	|	|	|	2.53
51.750	0.00	0.55	2.782	I O	|	|	|	2.53
51.833	0.00	0.55	2.778	I O	|	|	|	2.52
51.917	0.00	0.55	2.774	I O	|	|	|	2.52
52.000	0.00	0.54	2.771	I O	|	|	|	2.52
52.083	0.00	0.54	2.767	I O	|	|	|	2.52
52.167	0.00	0.54	2.763	I O	|	|	|	2.51
52.250	0.00	0.54	2.759	I O	|	|	|	2.51
52.333	0.00	0.54	2.756	I O	|	|	|	2.51
52.417	0.00	0.54	2.752	I O	|	|	|	2.50
52.500	0.00	0.54	2.748	I O	|	|	|	2.50
52.583	0.00	0.54	2.744	I O	|	|	|	2.50
52.667	0.00	0.54	2.741	I O	|	|	|	2.50
52.750	0.00	0.54	2.737	I O	|	|	|	2.49
52.833	0.00	0.54	2.733	I O	|	|	|	2.49
52.917	0.00	0.54	2.729	I O	|	|	|	2.49
53.000	0.00	0.54	2.726	I O	|	|	|	2.49
53.083	0.00	0.54	2.722	I O	|	|	|	2.48
53.167	0.00	0.54	2.718	I O	|	|	|	2.48
53.250	0.00	0.54	2.715	I O	|	|	|	2.48
53.333	0.00	0.54	2.711	I O	|	|	|	2.47
53.417	0.00	0.54	2.707	I O	|	|	|	2.47
53.500	0.00	0.54	2.703	I O	|	|	|	2.47
53.583	0.00	0.54	2.700	I O	|	|	|	2.47
53.667	0.00	0.54	2.696	I O	|	|	|	2.46
53.750	0.00	0.54	2.692	I O	|	|	|	2.46
53.833	0.00	0.54	2.689	I O	|	|	|	2.46
53.917	0.00	0.54	2.685	I O	|	|	|	2.46
54.000	0.00	0.54	2.681	I O	|	|	|	2.45
54.083	0.00	0.54	2.677	I O	|	|	|	2.45
54.167	0.00	0.54	2.674	I O	|	|	|	2.45
54.250	0.00	0.54	2.670	I O	|	|	|	2.44
54.333	0.00	0.54	2.666	I O	|	|	|	2.44
54.417	0.00	0.54	2.663	I O	|	|	|	2.44
54.500	0.00	0.54	2.659	I O	|	|	|	2.44
54.583	0.00	0.53	2.655	I O	|	|	|	2.43
54.667	0.00	0.53	2.652	I O	|	|	|	2.43
54.750	0.00	0.53	2.648	I O	|	|	|	2.43
54.833	0.00	0.53	2.644	I O	|	|	|	2.43
54.917	0.00	0.53	2.641	I O	|	|	|	2.42
55.000	0.00	0.53	2.637	I O	|	|	|	2.42
55.083	0.00	0.53	2.633	I O	|	|	|	2.42
55.167	0.00	0.53	2.630	I O	|	|	|	2.42
55.250	0.00	0.53	2.626	I O	|	|	|	2.41
55.333	0.00	0.53	2.622	I O	|	|	|	2.41
55.417	0.00	0.53	2.619	I O	|	|	|	2.41
55.500	0.00	0.53	2.615	I O	|	|	|	2.40

55.583	0.00	0.53	2.611	I O	|	|	|	2.40
55.667	0.00	0.53	2.608	I O	|	|	|	2.40
55.750	0.00	0.53	2.604	I O	|	|	|	2.40
55.833	0.00	0.53	2.600	I O	|	|	|	2.39
55.917	0.00	0.53	2.597	I O	|	|	|	2.39
56.000	0.00	0.53	2.593	I O	|	|	|	2.39
56.083	0.00	0.53	2.589	I O	|	|	|	2.39
56.167	0.00	0.53	2.586	I O	|	|	|	2.38
56.250	0.00	0.53	2.582	I O	|	|	|	2.38
56.333	0.00	0.53	2.578	I O	|	|	|	2.38
56.417	0.00	0.53	2.575	I O	|	|	|	2.37
56.500	0.00	0.53	2.571	I O	|	|	|	2.37
56.583	0.00	0.53	2.568	I O	|	|	|	2.37
56.667	0.00	0.53	2.564	I O	|	|	|	2.37
56.750	0.00	0.53	2.560	I O	|	|	|	2.36
56.833	0.00	0.53	2.557	I O	|	|	|	2.36
56.917	0.00	0.53	2.553	I O	|	|	|	2.36
57.000	0.00	0.53	2.549	I O	|	|	|	2.36
57.083	0.00	0.53	2.546	I O	|	|	|	2.35
57.167	0.00	0.52	2.542	I O	|	|	|	2.35
57.250	0.00	0.52	2.539	I O	|	|	|	2.35
57.333	0.00	0.52	2.535	I O	|	|	|	2.35
57.417	0.00	0.52	2.531	I O	|	|	|	2.34
57.500	0.00	0.52	2.528	I O	|	|	|	2.34
57.583	0.00	0.52	2.524	I O	|	|	|	2.34
57.667	0.00	0.52	2.521	I O	|	|	|	2.33
57.750	0.00	0.52	2.517	I O	|	|	|	2.33
57.833	0.00	0.52	2.513	I O	|	|	|	2.33
57.917	0.00	0.52	2.510	I O	|	|	|	2.33
58.000	0.00	0.52	2.506	I O	|	|	|	2.32
58.083	0.00	0.52	2.503	I O	|	|	|	2.32
58.167	0.00	0.52	2.499	I O	|	|	|	2.32
58.250	0.00	0.52	2.495	I O	|	|	|	2.32
58.333	0.00	0.52	2.492	I O	|	|	|	2.31
58.417	0.00	0.52	2.488	I O	|	|	|	2.31
58.500	0.00	0.52	2.485	I O	|	|	|	2.31
58.583	0.00	0.52	2.481	I O	|	|	|	2.31
58.667	0.00	0.52	2.477	I O	|	|	|	2.30
58.750	0.00	0.52	2.474	I O	|	|	|	2.30
58.833	0.00	0.52	2.470	I O	|	|	|	2.30
58.917	0.00	0.52	2.467	I O	|	|	|	2.30
59.000	0.00	0.52	2.463	I O	|	|	|	2.29
59.083	0.00	0.52	2.460	I O	|	|	|	2.29
59.167	0.00	0.52	2.456	I O	|	|	|	2.29
59.250	0.00	0.52	2.453	I O	|	|	|	2.28
59.333	0.00	0.52	2.449	I O	|	|	|	2.28
59.417	0.00	0.52	2.445	I O	|	|	|	2.28
59.500	0.00	0.52	2.442	I O	|	|	|	2.28
59.583	0.00	0.52	2.438	I O	|	|	|	2.27
59.667	0.00	0.52	2.435	I O	|	|	|	2.27
59.750	0.00	0.51	2.431	I O	|	|	|	2.27
59.833	0.00	0.51	2.428	I O	|	|	|	2.27
59.917	0.00	0.51	2.424	I O	|	|	|	2.26
60.000	0.00	0.51	2.421	I O	|	|	|	2.26
60.083	0.00	0.51	2.417	I O	|	|	|	2.26
60.167	0.00	0.51	2.414	IO	|	|	|	2.26
60.250	0.00	0.51	2.410	IO	|	|	|	2.25
60.333	0.00	0.51	2.406	IO	|	|	|	2.25
60.417	0.00	0.51	2.403	IO	|	|	|	2.25
60.500	0.00	0.51	2.399	IO	|	|	|	2.25
60.583	0.00	0.51	2.396	IO	|	|	|	2.24
60.667	0.00	0.51	2.392	IO	|	|	|	2.24
60.750	0.00	0.51	2.389	IO	|	|	|	2.24
60.833	0.00	0.51	2.385	IO	|	|	|	2.24
60.917	0.00	0.51	2.382	IO	|	|	|	2.23
61.000	0.00	0.51	2.378	IO	|	|	|	2.23
61.083	0.00	0.51	2.375	IO	|	|	|	2.23
61.167	0.00	0.51	2.371	IO	|	|	|	2.23
61.250	0.00	0.51	2.368	IO	|	|	|	2.22
61.333	0.00	0.51	2.364	IO	|	|	|	2.22
61.417	0.00	0.51	2.361	IO	|	|	|	2.22
61.500	0.00	0.51	2.357	IO	|	|	|	2.21
61.583	0.00	0.51	2.354	IO	|	|	|	2.21
61.667	0.00	0.51	2.350	IO	|	|	|	2.21
61.750	0.00	0.51	2.347	IO	|	|	|	2.21

61.833	0.00	0.51	2.343	IO					2.20
61.917	0.00	0.51	2.340	IO					2.20
62.000	0.00	0.51	2.336	IO					2.20
62.083	0.00	0.51	2.333	IO					2.20
62.167	0.00	0.51	2.329	IO					2.19
62.250	0.00	0.51	2.326	IO					2.19
62.333	0.00	0.51	2.322	IO					2.19
62.417	0.00	0.50	2.319	IO					2.19
62.500	0.00	0.50	2.315	IO					2.18
62.583	0.00	0.50	2.312	IO					2.18
62.667	0.00	0.50	2.308	IO					2.18
62.750	0.00	0.50	2.305	IO					2.18
62.833	0.00	0.50	2.302	IO					2.17
62.917	0.00	0.50	2.298	IO					2.17
63.000	0.00	0.50	2.295	IO					2.17
63.083	0.00	0.50	2.291	IO					2.17
63.167	0.00	0.50	2.288	IO					2.16
63.250	0.00	0.50	2.284	IO					2.16
63.333	0.00	0.50	2.281	IO					2.16
63.417	0.00	0.50	2.277	IO					2.16
63.500	0.00	0.50	2.274	IO					2.15
63.583	0.00	0.50	2.270	IO					2.15
63.667	0.00	0.50	2.267	IO					2.15
63.750	0.00	0.50	2.264	IO					2.15
63.833	0.00	0.50	2.260	IO					2.14
63.917	0.00	0.50	2.257	IO					2.14
64.000	0.00	0.50	2.253	IO					2.14
64.083	0.00	0.50	2.250	IO					2.14
64.167	0.00	0.50	2.246	IO					2.13
64.250	0.00	0.50	2.243	IO					2.13
64.333	0.00	0.50	2.239	IO					2.13
64.417	0.00	0.50	2.236	IO					2.13
64.500	0.00	0.50	2.233	IO					2.12
64.583	0.00	0.50	2.229	IO					2.12
64.667	0.00	0.50	2.226	IO					2.12
64.750	0.00	0.50	2.222	IO					2.12
64.833	0.00	0.50	2.219	IO					2.11
64.917	0.00	0.50	2.216	IO					2.11
65.000	0.00	0.50	2.212	IO					2.11
65.083	0.00	0.49	2.209	IO					2.11
65.167	0.00	0.49	2.205	IO					2.10
65.250	0.00	0.49	2.202	IO					2.10
65.333	0.00	0.49	2.198	IO					2.10
65.417	0.00	0.49	2.195	IO					2.10
65.500	0.00	0.49	2.192	IO					2.09
65.583	0.00	0.49	2.188	IO					2.09
65.667	0.00	0.49	2.185	IO					2.09
65.750	0.00	0.49	2.182	IO					2.09
65.833	0.00	0.49	2.178	IO					2.08
65.917	0.00	0.49	2.175	IO					2.08
66.000	0.00	0.49	2.171	IO					2.08
66.083	0.00	0.49	2.168	IO					2.08
66.167	0.00	0.49	2.165	IO					2.07
66.250	0.00	0.49	2.161	IO					2.07
66.333	0.00	0.49	2.158	IO					2.07
66.417	0.00	0.49	2.154	IO					2.07
66.500	0.00	0.49	2.151	IO					2.06
66.583	0.00	0.49	2.148	IO					2.06
66.667	0.00	0.49	2.144	IO					2.06
66.750	0.00	0.49	2.141	IO					2.06
66.833	0.00	0.49	2.138	IO					2.05
66.917	0.00	0.49	2.134	IO					2.05
67.000	0.00	0.49	2.131	IO					2.05
67.083	0.00	0.49	2.128	IO					2.05
67.167	0.00	0.49	2.124	IO					2.04
67.250	0.00	0.49	2.121	IO					2.04
67.333	0.00	0.49	2.117	IO					2.04
67.417	0.00	0.49	2.114	IO					2.04
67.500	0.00	0.49	2.111	IO					2.03
67.583	0.00	0.49	2.107	IO					2.03
67.667	0.00	0.49	2.104	IO					2.03
67.750	0.00	0.49	2.101	IO					2.03
67.833	0.00	0.48	2.097	IO					2.02
67.917	0.00	0.48	2.094	IO					2.02
68.000	0.00	0.48	2.091	IO					2.02

68.083	0.00	0.48	2.087	IO					2.02
68.167	0.00	0.48	2.084	IO					2.01
68.250	0.00	0.48	2.081	IO					2.01
68.333	0.00	0.48	2.077	IO					2.01
68.417	0.00	0.48	2.074	IO					2.01
68.500	0.00	0.48	2.071	IO					2.00
68.583	0.00	0.48	2.067	IO					2.00
68.667	0.00	0.48	2.064	IO					2.00
68.750	0.00	0.48	2.061	IO					2.00
68.833	0.00	0.48	2.057	IO					1.99
68.917	0.00	0.48	2.054	IO					1.99
69.000	0.00	0.48	2.051	IO					1.99
69.083	0.00	0.48	2.048	IO					1.99
69.167	0.00	0.48	2.044	IO					1.98
69.250	0.00	0.48	2.041	IO					1.98
69.333	0.00	0.48	2.038	IO					1.98
69.417	0.00	0.48	2.034	IO					1.98
69.500	0.00	0.48	2.031	IO					1.97
69.583	0.00	0.48	2.028	IO					1.97
69.667	0.00	0.48	2.024	IO					1.97
69.750	0.00	0.48	2.021	IO					1.97
69.833	0.00	0.48	2.018	IO					1.96
69.917	0.00	0.48	2.015	IO					1.96
70.000	0.00	0.48	2.011	IO					1.96
70.083	0.00	0.48	2.008	IO					1.96
70.167	0.00	0.48	2.005	IO					1.95
70.250	0.00	0.48	2.001	IO					1.95
70.333	0.00	0.47	1.998	IO					1.95
70.417	0.00	0.47	1.995	IO					1.95
70.500	0.00	0.47	1.992	IO					1.94
70.583	0.00	0.47	1.988	IO					1.94
70.667	0.00	0.47	1.985	IO					1.94
70.750	0.00	0.47	1.982	IO					1.94
70.833	0.00	0.47	1.979	IO					1.93
70.917	0.00	0.47	1.975	IO					1.93
71.000	0.00	0.47	1.972	IO					1.93
71.083	0.00	0.47	1.969	IO					1.92
71.167	0.00	0.47	1.966	IO					1.92
71.250	0.00	0.47	1.962	IO					1.92
71.333	0.00	0.47	1.959	IO					1.92
71.417	0.00	0.47	1.956	IO					1.91
71.500	0.00	0.47	1.953	IO					1.91
71.583	0.00	0.47	1.949	IO					1.91
71.667	0.00	0.47	1.946	IO					1.91
71.750	0.00	0.47	1.943	IO					1.90
71.833	0.00	0.47	1.940	IO					1.90
71.917	0.00	0.47	1.937	IO					1.90
72.000	0.00	0.47	1.933	IO					1.90
72.083	0.00	0.47	1.930	IO					1.89
72.167	0.00	0.47	1.927	IO					1.89
72.250	0.00	0.47	1.924	IO					1.89
72.333	0.00	0.47	1.920	IO					1.89
72.417	0.00	0.47	1.917	IO					1.88
72.500	0.00	0.47	1.914	IO					1.88
72.583	0.00	0.47	1.911	IO					1.88
72.667	0.00	0.46	1.908	IO					1.88
72.750	0.00	0.46	1.904	IO					1.87
72.833	0.00	0.46	1.901	IO					1.87
72.917	0.00	0.46	1.898	IO					1.87
73.000	0.00	0.46	1.895	IO					1.87
73.083	0.00	0.46	1.892	IO					1.86
73.167	0.00	0.46	1.888	IO					1.86
73.250	0.00	0.46	1.885	IO					1.86
73.333	0.00	0.46	1.882	IO					1.86
73.417	0.00	0.46	1.879	IO					1.85
73.500	0.00	0.46	1.876	IO					1.85
73.583	0.00	0.46	1.873	IO					1.85
73.667	0.00	0.46	1.869	IO					1.85
73.750	0.00	0.46	1.866	IO					1.84
73.833	0.00	0.46	1.863	IO					1.84
73.917	0.00	0.46	1.860	IO					1.84
74.000	0.00	0.46	1.857	IO					1.84
74.083	0.00	0.46	1.854	IO					1.83
74.167	0.00	0.46	1.850	IO					1.83
74.250	0.00	0.46	1.847	IO					1.83

74.333	0.00	0.46	1.844	IO				1.83
74.417	0.00	0.46	1.841	IO				1.82
74.500	0.00	0.46	1.838	IO				1.82
74.583	0.00	0.46	1.835	IO				1.82
74.667	0.00	0.46	1.831	IO				1.82
74.750	0.00	0.46	1.828	IO				1.82
74.833	0.00	0.46	1.825	IO				1.81
74.917	0.00	0.46	1.822	IO				1.81
75.000	0.00	0.46	1.819	IO				1.81
75.083	0.00	0.45	1.816	IO				1.81
75.167	0.00	0.45	1.813	IO				1.80
75.250	0.00	0.45	1.810	IO				1.80
75.333	0.00	0.45	1.806	IO				1.80
75.417	0.00	0.45	1.803	IO				1.80
75.500	0.00	0.45	1.800	IO				1.79
75.583	0.00	0.45	1.797	IO				1.79
75.667	0.00	0.45	1.794	IO				1.79
75.750	0.00	0.45	1.791	IO				1.79
75.833	0.00	0.45	1.788	IO				1.78
75.917	0.00	0.45	1.785	IO				1.78
76.000	0.00	0.45	1.781	IO				1.78
76.083	0.00	0.45	1.778	IO				1.78
76.167	0.00	0.45	1.775	IO				1.77
76.250	0.00	0.45	1.772	IO				1.77
76.333	0.00	0.45	1.769	IO				1.77
76.417	0.00	0.45	1.766	IO				1.77
76.500	0.00	0.45	1.763	IO				1.76
76.583	0.00	0.45	1.760	IO				1.76
76.667	0.00	0.45	1.757	IO				1.76
76.750	0.00	0.45	1.754	IO				1.76
76.833	0.00	0.45	1.751	IO				1.75
76.917	0.00	0.45	1.747	IO				1.75
77.000	0.00	0.45	1.744	IO				1.75
77.083	0.00	0.45	1.741	IO				1.75
77.167	0.00	0.45	1.738	IO				1.74
77.250	0.00	0.45	1.735	IO				1.74
77.333	0.00	0.45	1.732	IO				1.74
77.417	0.00	0.45	1.729	IO				1.74
77.500	0.00	0.44	1.726	IO				1.74
77.583	0.00	0.44	1.723	IO				1.73
77.667	0.00	0.44	1.720	IO				1.73
77.750	0.00	0.44	1.717	IO				1.73
77.833	0.00	0.44	1.714	IO				1.73
77.917	0.00	0.44	1.711	IO				1.72
78.000	0.00	0.44	1.708	IO				1.72
78.083	0.00	0.44	1.705	IO				1.72
78.167	0.00	0.44	1.702	IO				1.72
78.250	0.00	0.44	1.698	IO				1.71
78.333	0.00	0.44	1.695	IO				1.71
78.417	0.00	0.44	1.692	IO				1.71
78.500	0.00	0.44	1.689	IO				1.71
78.583	0.00	0.44	1.686	IO				1.70
78.667	0.00	0.44	1.683	IO				1.70
78.750	0.00	0.44	1.680	IO				1.70
78.833	0.00	0.44	1.677	IO				1.70
78.917	0.00	0.44	1.674	IO				1.69
79.000	0.00	0.44	1.671	IO				1.69
79.083	0.00	0.44	1.668	IO				1.69
79.167	0.00	0.44	1.665	IO				1.69
79.250	0.00	0.44	1.662	IO				1.69
79.333	0.00	0.44	1.659	IO				1.68
79.417	0.00	0.44	1.656	IO				1.68
79.500	0.00	0.44	1.653	IO				1.68
79.583	0.00	0.44	1.650	IO				1.68
79.667	0.00	0.44	1.647	IO				1.67
79.750	0.00	0.44	1.644	IO				1.67
79.833	0.00	0.44	1.641	IO				1.67
79.917	0.00	0.44	1.638	IO				1.67
80.000	0.00	0.43	1.635	IO				1.66
80.083	0.00	0.43	1.632	IO				1.66
80.167	0.00	0.43	1.629	IO				1.66
80.250	0.00	0.43	1.626	IO				1.66
80.333	0.00	0.43	1.623	IO				1.65
80.417	0.00	0.43	1.620	IO				1.65
80.500	0.00	0.43	1.617	IO				1.65

80.583	0.00	0.43	1.614	IO					1.65
80.667	0.00	0.43	1.611	IO					1.65
80.750	0.00	0.43	1.608	IO					1.64
80.833	0.00	0.43	1.605	IO					1.64
80.917	0.00	0.43	1.602	IO					1.64
81.000	0.00	0.43	1.599	IO					1.64
81.083	0.00	0.43	1.596	IO					1.63
81.167	0.00	0.43	1.593	IO					1.63
81.250	0.00	0.43	1.590	IO					1.63
81.333	0.00	0.43	1.587	IO					1.63
81.417	0.00	0.43	1.584	IO					1.62
81.500	0.00	0.43	1.582	IO					1.62
81.583	0.00	0.43	1.579	IO					1.62
81.667	0.00	0.43	1.576	IO					1.62
81.750	0.00	0.43	1.573	IO					1.62
81.833	0.00	0.43	1.570	IO					1.61
81.917	0.00	0.43	1.567	IO					1.61
82.000	0.00	0.43	1.564	IO					1.61
82.083	0.00	0.43	1.561	IO					1.61
82.167	0.00	0.43	1.558	IO					1.60
82.250	0.00	0.43	1.555	IO					1.60
82.333	0.00	0.43	1.552	IO					1.60
82.417	0.00	0.43	1.549	IO					1.60
82.500	0.00	0.43	1.546	IO					1.59
82.583	0.00	0.42	1.543	IO					1.59
82.667	0.00	0.42	1.540	IO					1.59
82.750	0.00	0.42	1.537	IO					1.59
82.833	0.00	0.42	1.535	IO					1.59
82.917	0.00	0.42	1.532	IO					1.58
83.000	0.00	0.42	1.529	IO					1.58
83.083	0.00	0.42	1.526	IO					1.58
83.167	0.00	0.42	1.523	IO					1.58
83.250	0.00	0.42	1.520	IO					1.57
83.333	0.00	0.42	1.517	IO					1.57
83.417	0.00	0.42	1.514	IO					1.57
83.500	0.00	0.42	1.511	IO					1.57
83.583	0.00	0.42	1.508	IO					1.57
83.667	0.00	0.42	1.505	IO					1.56
83.750	0.00	0.42	1.503	IO					1.56
83.833	0.00	0.42	1.500	IO					1.56
83.917	0.00	0.42	1.497	IO					1.56
84.000	0.00	0.42	1.494	IO					1.55
84.083	0.00	0.42	1.491	IO					1.55
84.167	0.00	0.42	1.488	IO					1.55
84.250	0.00	0.42	1.485	IO					1.55
84.333	0.00	0.42	1.482	IO					1.54
84.417	0.00	0.42	1.479	IO					1.54
84.500	0.00	0.42	1.477	IO					1.54
84.583	0.00	0.42	1.474	IO					1.54
84.667	0.00	0.42	1.471	IO					1.54
84.750	0.00	0.42	1.468	IO					1.53
84.833	0.00	0.42	1.465	IO					1.53
84.917	0.00	0.42	1.462	IO					1.53
85.000	0.00	0.42	1.459	IO					1.53
85.083	0.00	0.42	1.456	IO					1.52
85.167	0.00	0.42	1.454	IO					1.52
85.250	0.00	0.41	1.451	IO					1.52
85.333	0.00	0.41	1.448	IO					1.52
85.417	0.00	0.41	1.445	IO					1.52
85.500	0.00	0.41	1.442	IO					1.51
85.583	0.00	0.41	1.439	IO					1.51
85.667	0.00	0.41	1.436	IO					1.51
85.750	0.00	0.41	1.434	IO					1.51
85.833	0.00	0.41	1.431	IO					1.50
85.917	0.00	0.41	1.428	IO					1.50
86.000	0.00	0.41	1.425	IO					1.50
86.083	0.00	0.41	1.422	IO					1.50
86.167	0.00	0.41	1.419	IO					1.50
86.250	0.00	0.41	1.417	IO					1.49
86.333	0.00	0.41	1.414	IO					1.49
86.417	0.00	0.41	1.411	IO					1.49
86.500	0.00	0.41	1.408	IO					1.49
86.583	0.00	0.41	1.405	IO					1.48
86.667	0.00	0.41	1.403	IO					1.48
86.750	0.00	0.41	1.400	IO					1.48

86.833	0.00	0.41	1.397	IO	|	|	|	1.48
86.917	0.00	0.41	1.394	IO	|	|	|	1.47
87.000	0.00	0.41	1.391	IO	|	|	|	1.47
87.083	0.00	0.41	1.388	IO	|	|	|	1.47
87.167	0.00	0.41	1.386	IO	|	|	|	1.47
87.250	0.00	0.41	1.383	IO	|	|	|	1.46
87.333	0.00	0.41	1.380	IO	|	|	|	1.46
87.417	0.00	0.41	1.377	IO	|	|	|	1.46
87.500	0.00	0.40	1.374	IO	|	|	|	1.46
87.583	0.00	0.40	1.372	IO	|	|	|	1.45
87.667	0.00	0.40	1.369	IO	|	|	|	1.45
87.750	0.00	0.40	1.366	IO	|	|	|	1.45
87.833	0.00	0.40	1.363	IO	|	|	|	1.45
87.917	0.00	0.40	1.361	IO	|	|	|	1.44
88.000	0.00	0.40	1.358	IO	|	|	|	1.44
88.083	0.00	0.40	1.355	IO	|	|	|	1.44
88.167	0.00	0.40	1.352	IO	|	|	|	1.44
88.250	0.00	0.40	1.350	IO	|	|	|	1.44
88.333	0.00	0.40	1.347	IO	|	|	|	1.43
88.417	0.00	0.40	1.344	IO	|	|	|	1.43
88.500	0.00	0.40	1.341	IO	|	|	|	1.43
88.583	0.00	0.40	1.339	IO	|	|	|	1.43
88.667	0.00	0.40	1.336	IO	|	|	|	1.42
88.750	0.00	0.40	1.333	IO	|	|	|	1.42
88.833	0.00	0.40	1.330	IO	|	|	|	1.42
88.917	0.00	0.40	1.328	IO	|	|	|	1.42
89.000	0.00	0.40	1.325	IO	|	|	|	1.41
89.083	0.00	0.40	1.322	IO	|	|	|	1.41
89.167	0.00	0.40	1.319	IO	|	|	|	1.41
89.250	0.00	0.40	1.317	IO	|	|	|	1.41
89.333	0.00	0.40	1.314	IO	|	|	|	1.40
89.417	0.00	0.40	1.311	IO	|	|	|	1.40
89.500	0.00	0.40	1.308	IO	|	|	|	1.40
89.583	0.00	0.39	1.306	IO	|	|	|	1.40
89.667	0.00	0.39	1.303	IO	|	|	|	1.40
89.750	0.00	0.39	1.300	IO	|	|	|	1.39
89.833	0.00	0.39	1.298	IO	|	|	|	1.39
89.917	0.00	0.39	1.295	IO	|	|	|	1.39
90.000	0.00	0.39	1.292	IO	|	|	|	1.39
90.083	0.00	0.39	1.289	IO	|	|	|	1.38
90.167	0.00	0.39	1.287	IO	|	|	|	1.38
90.250	0.00	0.39	1.284	IO	|	|	|	1.38
90.333	0.00	0.39	1.281	IO	|	|	|	1.38
90.417	0.00	0.39	1.279	IO	|	|	|	1.37
90.500	0.00	0.39	1.276	IO	|	|	|	1.37
90.583	0.00	0.39	1.273	IO	|	|	|	1.37
90.667	0.00	0.39	1.271	IO	|	|	|	1.37
90.750	0.00	0.39	1.268	IO	|	|	|	1.37
90.833	0.00	0.39	1.265	IO	|	|	|	1.36
90.917	0.00	0.39	1.263	IO	|	|	|	1.36
91.000	0.00	0.39	1.260	IO	|	|	|	1.36
91.083	0.00	0.39	1.257	IO	|	|	|	1.36
91.167	0.00	0.39	1.255	IO	|	|	|	1.35
91.250	0.00	0.39	1.252	IO	|	|	|	1.35
91.333	0.00	0.39	1.249	IO	|	|	|	1.35
91.417	0.00	0.39	1.247	IO	|	|	|	1.35
91.500	0.00	0.39	1.244	IO	|	|	|	1.34
91.583	0.00	0.39	1.241	IO	|	|	|	1.34
91.667	0.00	0.38	1.239	IO	|	|	|	1.34
91.750	0.00	0.38	1.236	IO	|	|	|	1.34
91.833	0.00	0.38	1.233	IO	|	|	|	1.34
91.917	0.00	0.38	1.231	IO	|	|	|	1.33
92.000	0.00	0.38	1.228	IO	|	|	|	1.33
92.083	0.00	0.38	1.225	IO	|	|	|	1.33
92.167	0.00	0.38	1.223	IO	|	|	|	1.33
92.250	0.00	0.38	1.220	IO	|	|	|	1.32
92.333	0.00	0.38	1.217	IO	|	|	|	1.32
92.417	0.00	0.38	1.215	IO	|	|	|	1.32
92.500	0.00	0.38	1.212	IO	|	|	|	1.32
92.583	0.00	0.38	1.210	IO	|	|	|	1.32
92.667	0.00	0.38	1.207	IO	|	|	|	1.31
92.750	0.00	0.38	1.204	IO	|	|	|	1.31
92.833	0.00	0.38	1.202	IO	|	|	|	1.31
92.917	0.00	0.38	1.199	IO	|	|	|	1.31
93.000	0.00	0.38	1.197	IO	|	|	|	1.30

93.083	0.00	0.38	1.194	IO				1.30
93.167	0.00	0.38	1.191	IO				1.30
93.250	0.00	0.38	1.189	IO				1.30
93.333	0.00	0.38	1.186	IO				1.30
93.417	0.00	0.38	1.184	IO				1.29
93.500	0.00	0.38	1.181	IO				1.29
93.583	0.00	0.38	1.178	IO				1.29
93.667	0.00	0.38	1.176	IO				1.29
93.750	0.00	0.38	1.173	IO				1.28
93.833	0.00	0.37	1.171	IO				1.28
93.917	0.00	0.37	1.168	IO				1.28
94.000	0.00	0.37	1.165	IO				1.28
94.083	0.00	0.37	1.163	IO				1.28
94.167	0.00	0.37	1.160	IO				1.27
94.250	0.00	0.37	1.158	IO				1.27
94.333	0.00	0.37	1.155	IO				1.27
94.417	0.00	0.37	1.153	IO				1.27
94.500	0.00	0.37	1.150	IO				1.26
94.583	0.00	0.37	1.147	IO				1.26
94.667	0.00	0.37	1.145	IO				1.26
94.750	0.00	0.37	1.142	IO				1.26
94.833	0.00	0.37	1.140	IO				1.26
94.917	0.00	0.37	1.137	IO				1.25
95.000	0.00	0.37	1.135	IO				1.25
95.083	0.00	0.37	1.132	IO				1.25
95.167	0.00	0.37	1.130	IO				1.25
95.250	0.00	0.37	1.127	IO				1.24
95.333	0.00	0.37	1.124	IO				1.24
95.417	0.00	0.37	1.122	IO				1.24
95.500	0.00	0.37	1.119	IO				1.24
95.583	0.00	0.37	1.117	IO				1.24
95.667	0.00	0.37	1.114	IO				1.23
95.750	0.00	0.37	1.112	IO				1.23
95.833	0.00	0.37	1.109	IO				1.23
95.917	0.00	0.37	1.107	IO				1.23
96.000	0.00	0.37	1.104	IO				1.23
96.083	0.00	0.36	1.102	IO				1.22
96.167	0.00	0.36	1.099	IO				1.22
96.250	0.00	0.36	1.097	IO				1.22
96.333	0.00	0.36	1.094	IO				1.22
96.417	0.00	0.36	1.092	IO				1.21
96.500	0.00	0.36	1.089	IO				1.21
96.583	0.00	0.36	1.087	IO				1.21
96.667	0.00	0.36	1.084	IO				1.21
96.750	0.00	0.36	1.082	IO				1.21
96.833	0.00	0.36	1.079	IO				1.20
96.917	0.00	0.36	1.077	IO				1.20
97.000	0.00	0.36	1.074	IO				1.20
97.083	0.00	0.36	1.072	IO				1.20
97.167	0.00	0.36	1.069	IO				1.20
97.250	0.00	0.36	1.067	IO				1.19
97.333	0.00	0.36	1.064	IO				1.19
97.417	0.00	0.36	1.062	IO				1.19
97.500	0.00	0.36	1.059	IO				1.19
97.583	0.00	0.36	1.057	IO				1.18
97.667	0.00	0.36	1.054	IO				1.18
97.750	0.00	0.36	1.052	IO				1.18
97.833	0.00	0.36	1.050	IO				1.18
97.917	0.00	0.36	1.047	IO				1.18
98.000	0.00	0.36	1.045	IO				1.17
98.083	0.00	0.36	1.042	IO				1.17
98.167	0.00	0.36	1.040	IO				1.17
98.250	0.00	0.36	1.037	IO				1.17
98.333	0.00	0.36	1.035	IO				1.17
98.417	0.00	0.35	1.032	IO				1.16
98.500	0.00	0.35	1.030	IO				1.16
98.583	0.00	0.35	1.027	IO				1.16
98.667	0.00	0.35	1.025	IO				1.16
98.750	0.00	0.35	1.023	IO				1.16
98.833	0.00	0.35	1.020	IO				1.15
98.917	0.00	0.35	1.018	IO				1.15
99.000	0.00	0.35	1.015	IO				1.15
99.083	0.00	0.35	1.013	IO				1.15
99.167	0.00	0.35	1.010	IO				1.15
99.250	0.00	0.35	1.008	IO				1.14

99.333	0.00	0.35	1.006	IO					1.14
99.417	0.00	0.35	1.003	IO					1.14
99.500	0.00	0.35	1.001	IO					1.14
99.583	0.00	0.35	0.998	IO					1.13
99.667	0.00	0.35	0.996	IO					1.13
99.750	0.00	0.35	0.994	IO					1.13
99.833	0.00	0.35	0.991	IO					1.13
99.917	0.00	0.35	0.989	IO					1.13
100.000	0.00	0.35	0.986	IO					1.12
100.083	0.00	0.35	0.984	IO					1.12
100.167	0.00	0.35	0.982	IO					1.12
100.250	0.00	0.35	0.979	IO					1.12
100.333	0.00	0.35	0.977	IO					1.12
100.417	0.00	0.35	0.974	IO					1.11
100.500	0.00	0.35	0.972	IO					1.11
100.583	0.00	0.35	0.970	IO					1.11
100.667	0.00	0.35	0.967	IO					1.11
100.750	0.00	0.35	0.965	IO					1.11
100.833	0.00	0.34	0.963	IO					1.10
100.917	0.00	0.34	0.960	IO					1.10
101.000	0.00	0.34	0.958	IO					1.10
101.083	0.00	0.34	0.955	IO					1.10
101.167	0.00	0.34	0.953	IO					1.10
101.250	0.00	0.34	0.951	IO					1.09
101.333	0.00	0.34	0.948	IO					1.09
101.417	0.00	0.34	0.946	IO					1.09
101.500	0.00	0.34	0.944	IO					1.09
101.583	0.00	0.34	0.941	IO					1.09
101.667	0.00	0.34	0.939	IO					1.08
101.750	0.00	0.34	0.937	IO					1.08
101.833	0.00	0.34	0.934	IO					1.08
101.917	0.00	0.34	0.932	IO					1.08
102.000	0.00	0.34	0.930	IO					1.08
102.083	0.00	0.34	0.927	IO					1.07
102.167	0.00	0.34	0.925	IO					1.07
102.250	0.00	0.34	0.923	IO					1.07
102.333	0.00	0.34	0.920	IO					1.07
102.417	0.00	0.34	0.918	IO					1.07
102.500	0.00	0.34	0.916	IO					1.06
102.583	0.00	0.34	0.913	IO					1.06
102.667	0.00	0.34	0.911	IO					1.06
102.750	0.00	0.34	0.909	IO					1.06
102.833	0.00	0.34	0.906	IO					1.06
102.917	0.00	0.34	0.904	IO					1.05
103.000	0.00	0.34	0.902	IO					1.05
103.083	0.00	0.34	0.899	IO					1.05
103.167	0.00	0.34	0.897	IO					1.05
103.250	0.00	0.33	0.895	IO					1.05
103.333	0.00	0.33	0.892	IO					1.04
103.417	0.00	0.33	0.890	IO					1.04
103.500	0.00	0.33	0.888	IO					1.04
103.583	0.00	0.33	0.885	IO					1.04
103.667	0.00	0.33	0.883	IO					1.04
103.750	0.00	0.33	0.881	IO					1.03
103.833	0.00	0.33	0.879	IO					1.03
103.917	0.00	0.33	0.876	IO					1.03
104.000	0.00	0.33	0.874	IO					1.03
104.083	0.00	0.33	0.872	IO					1.03
104.167	0.00	0.33	0.869	IO					1.02
104.250	0.00	0.33	0.867	IO					1.02
104.333	0.00	0.33	0.865	IO					1.02
104.417	0.00	0.33	0.863	IO					1.02
104.500	0.00	0.33	0.860	IO					1.02
104.583	0.00	0.33	0.858	IO					1.01
104.667	0.00	0.33	0.856	IO					1.01
104.750	0.00	0.33	0.854	IO					1.01
104.833	0.00	0.33	0.851	IO					1.01
104.917	0.00	0.33	0.849	IO					1.01
105.000	0.00	0.33	0.847	IO					1.00
105.083	0.00	0.33	0.844	IO					1.00
105.167	0.00	0.33	0.842	IO					1.00
105.250	0.00	0.33	0.840	IO					1.00
105.333	0.00	0.33	0.838	IO					1.00
105.417	0.00	0.33	0.835	IO					0.99
105.500	0.00	0.33	0.833	IO					0.99

105.583	0.00	0.32	0.831	IO					0.99
105.667	0.00	0.32	0.829	IO					0.99
105.750	0.00	0.32	0.827	IO					0.99
105.833	0.00	0.32	0.824	IO					0.98
105.917	0.00	0.32	0.822	IO					0.98
106.000	0.00	0.32	0.820	IO					0.98
106.083	0.00	0.32	0.818	IO					0.98
106.167	0.00	0.32	0.815	IO					0.97
106.250	0.00	0.32	0.813	IO					0.97
106.333	0.00	0.32	0.811	IO					0.97
106.417	0.00	0.32	0.809	IO					0.97
106.500	0.00	0.32	0.807	IO					0.96
106.583	0.00	0.32	0.804	IO					0.96
106.667	0.00	0.32	0.802	IO					0.96
106.750	0.00	0.32	0.800	IO					0.96
106.833	0.00	0.32	0.798	IO					0.96
106.917	0.00	0.32	0.796	IO					0.95
107.000	0.00	0.32	0.794	IO					0.95
107.083	0.00	0.32	0.791	IO					0.95
107.167	0.00	0.31	0.789	IO					0.95
107.250	0.00	0.31	0.787	IO					0.94
107.333	0.00	0.31	0.785	IO					0.94
107.417	0.00	0.31	0.783	IO					0.94
107.500	0.00	0.31	0.781	IO					0.94
107.583	0.00	0.31	0.778	IO					0.94
107.667	0.00	0.31	0.776	IO					0.93
107.750	0.00	0.31	0.774	IO					0.93
107.833	0.00	0.31	0.772	IO					0.93
107.917	0.00	0.31	0.770	IO					0.93
108.000	0.00	0.31	0.768	IO					0.92
108.083	0.00	0.31	0.766	IO					0.92
108.167	0.00	0.31	0.763	IO					0.92
108.250	0.00	0.31	0.761	IO					0.92
108.333	0.00	0.31	0.759	IO					0.92
108.417	0.00	0.31	0.757	IO					0.91
108.500	0.00	0.31	0.755	IO					0.91
108.583	0.00	0.31	0.753	IO					0.91
108.667	0.00	0.31	0.751	IO					0.91
108.750	0.00	0.30	0.749	IO					0.90
108.833	0.00	0.30	0.747	IO					0.90
108.917	0.00	0.30	0.744	IO					0.90
109.000	0.00	0.30	0.742	IO					0.90
109.083	0.00	0.30	0.740	IO					0.90
109.167	0.00	0.30	0.738	IO					0.89
109.250	0.00	0.30	0.736	IO					0.89
109.333	0.00	0.30	0.734	IO					0.89
109.417	0.00	0.30	0.732	IO					0.89
109.500	0.00	0.30	0.730	IO					0.89
109.583	0.00	0.30	0.728	IO					0.88
109.667	0.00	0.30	0.726	IO					0.88
109.750	0.00	0.30	0.724	IO					0.88
109.833	0.00	0.30	0.722	IO					0.88
109.917	0.00	0.30	0.720	IO					0.87
110.000	0.00	0.30	0.718	IO					0.87
110.083	0.00	0.30	0.716	IO					0.87
110.167	0.00	0.30	0.713	IO					0.87
110.250	0.00	0.30	0.711	IO					0.87
110.333	0.00	0.30	0.709	IO					0.86
110.417	0.00	0.30	0.707	IO					0.86
110.500	0.00	0.29	0.705	IO					0.86
110.583	0.00	0.29	0.703	IO					0.86
110.667	0.00	0.29	0.701	IO					0.86
110.750	0.00	0.29	0.699	IO					0.85
110.833	0.00	0.29	0.697	IO					0.85
110.917	0.00	0.29	0.695	IO					0.85
111.000	0.00	0.29	0.693	IO					0.85
111.083	0.00	0.29	0.691	IO					0.85
111.167	0.00	0.29	0.689	IO					0.84
111.250	0.00	0.29	0.687	IO					0.84
111.333	0.00	0.29	0.685	IO					0.84
111.417	0.00	0.29	0.683	IO					0.84
111.500	0.00	0.29	0.681	IO					0.84
111.583	0.00	0.29	0.679	IO					0.83
111.667	0.00	0.29	0.677	IO					0.83
111.750	0.00	0.29	0.675	IO					0.83

111.833	0.00	0.29	0.673	IO				0.83
111.917	0.00	0.29	0.671	IO				0.83
112.000	0.00	0.29	0.669	IO				0.82
112.083	0.00	0.29	0.667	IO				0.82
112.167	0.00	0.29	0.665	IO				0.82
112.250	0.00	0.28	0.663	IO				0.82
112.333	0.00	0.28	0.661	IO				0.81
112.417	0.00	0.28	0.660	IO				0.81
112.500	0.00	0.28	0.658	IO				0.81
112.583	0.00	0.28	0.656	IO				0.81
112.667	0.00	0.28	0.654	IO				0.81
112.750	0.00	0.28	0.652	IO				0.80
112.833	0.00	0.28	0.650	IO				0.80
112.917	0.00	0.28	0.648	IO				0.80
113.000	0.00	0.28	0.646	IO				0.80
113.083	0.00	0.28	0.644	IO				0.80
113.167	0.00	0.28	0.642	IO				0.79
113.250	0.00	0.28	0.640	IO				0.79
113.333	0.00	0.28	0.638	IO				0.79
113.417	0.00	0.28	0.636	IO				0.79
113.500	0.00	0.28	0.634	IO				0.79
113.583	0.00	0.28	0.633	IO				0.79
113.667	0.00	0.28	0.631	IO				0.78
113.750	0.00	0.28	0.629	IO				0.78
113.833	0.00	0.28	0.627	IO				0.78
113.917	0.00	0.28	0.625	IO				0.78
114.000	0.00	0.27	0.623	IO				0.78
114.083	0.00	0.27	0.621	IO				0.77
114.167	0.00	0.27	0.619	IO				0.77
114.250	0.00	0.27	0.617	IO				0.77
114.333	0.00	0.27	0.615	IO				0.77
114.417	0.00	0.27	0.614	IO				0.77
114.500	0.00	0.27	0.612	IO				0.76
114.583	0.00	0.27	0.610	IO				0.76
114.667	0.00	0.27	0.608	IO				0.76
114.750	0.00	0.27	0.606	IO				0.76
114.833	0.00	0.27	0.604	IO				0.76
114.917	0.00	0.27	0.602	IO				0.75
115.000	0.00	0.27	0.601	IO				0.75
115.083	0.00	0.27	0.599	IO				0.75
115.167	0.00	0.27	0.597	IO				0.75
115.250	0.00	0.27	0.595	IO				0.75
115.333	0.00	0.27	0.593	IO				0.74
115.417	0.00	0.27	0.591	IO				0.74
115.500	0.00	0.27	0.589	IO				0.74
115.583	0.00	0.27	0.588	IO				0.74
115.667	0.00	0.27	0.586	IO				0.74
115.750	0.00	0.27	0.584	IO				0.73
115.833	0.00	0.27	0.582	IO				0.73
115.917	0.00	0.26	0.580	IO				0.73
116.000	0.00	0.26	0.578	IO				0.73
116.083	0.00	0.26	0.577	IO				0.73
116.167	0.00	0.26	0.575	IO				0.73
116.250	0.00	0.26	0.573	IO				0.72
116.333	0.00	0.26	0.571	IO				0.72
116.417	0.00	0.26	0.569	IO				0.72
116.500	0.00	0.26	0.568	IO				0.72
116.583	0.00	0.26	0.566	IO				0.72
116.667	0.00	0.26	0.564	IO				0.71
116.750	0.00	0.26	0.562	IO				0.71
116.833	0.00	0.26	0.560	IO				0.71
116.917	0.00	0.26	0.559	IO				0.71
117.000	0.00	0.26	0.557	IO				0.71
117.083	0.00	0.26	0.555	IO				0.71
117.167	0.00	0.26	0.553	IO				0.70
117.250	0.00	0.26	0.552	IO				0.70
117.333	0.00	0.26	0.550	IO				0.70
117.417	0.00	0.26	0.548	IO				0.70
117.500	0.00	0.26	0.546	O				0.70
117.583	0.00	0.26	0.544	O				0.69
117.667	0.00	0.26	0.543	O				0.69
117.750	0.00	0.26	0.541	O				0.69
117.833	0.00	0.25	0.539	O				0.69
117.917	0.00	0.25	0.537	O				0.69
118.000	0.00	0.25	0.536	O				0.69

118.083	0.00	0.25	0.534	o	|	|	|	|	0.68
118.167	0.00	0.25	0.532	o	|	|	|	|	0.68
118.250	0.00	0.25	0.530	o	|	|	|	|	0.68
118.333	0.00	0.25	0.529	o	|	|	|	|	0.68
118.417	0.00	0.25	0.527	o	|	|	|	|	0.68
118.500	0.00	0.25	0.525	o	|	|	|	|	0.67
118.583	0.00	0.25	0.523	o	|	|	|	|	0.67
118.667	0.00	0.25	0.522	o	|	|	|	|	0.67
118.750	0.00	0.25	0.520	o	|	|	|	|	0.67
118.833	0.00	0.25	0.518	o	|	|	|	|	0.67
118.917	0.00	0.25	0.517	o	|	|	|	|	0.67
119.000	0.00	0.25	0.515	o	|	|	|	|	0.66
119.083	0.00	0.25	0.513	o	|	|	|	|	0.66
119.167	0.00	0.25	0.511	o	|	|	|	|	0.66
119.250	0.00	0.25	0.510	o	|	|	|	|	0.66
119.333	0.00	0.25	0.508	o	|	|	|	|	0.66
119.417	0.00	0.25	0.506	o	|	|	|	|	0.65
119.500	0.00	0.25	0.505	o	|	|	|	|	0.65
119.583	0.00	0.25	0.503	o	|	|	|	|	0.65
119.667	0.00	0.25	0.501	o	|	|	|	|	0.65
119.750	0.00	0.25	0.500	o	|	|	|	|	0.65
119.833	0.00	0.24	0.498	o	|	|	|	|	0.65
119.917	0.00	0.24	0.496	o	|	|	|	|	0.64
120.000	0.00	0.24	0.494	o	|	|	|	|	0.64
120.083	0.00	0.24	0.493	o	|	|	|	|	0.64
120.167	0.00	0.24	0.491	o	|	|	|	|	0.64
120.250	0.00	0.24	0.489	o	|	|	|	|	0.64
120.333	0.00	0.24	0.488	o	|	|	|	|	0.64
120.417	0.00	0.24	0.486	o	|	|	|	|	0.63
120.500	0.00	0.24	0.484	o	|	|	|	|	0.63
120.583	0.00	0.24	0.483	o	|	|	|	|	0.63
120.667	0.00	0.24	0.481	o	|	|	|	|	0.63
120.750	0.00	0.24	0.479	o	|	|	|	|	0.63
120.833	0.00	0.24	0.478	o	|	|	|	|	0.63
120.917	0.00	0.24	0.476	o	|	|	|	|	0.62
121.000	0.00	0.24	0.475	o	|	|	|	|	0.62
121.083	0.00	0.24	0.473	o	|	|	|	|	0.62
121.167	0.00	0.24	0.471	o	|	|	|	|	0.62
121.250	0.00	0.24	0.470	o	|	|	|	|	0.62
121.333	0.00	0.24	0.468	o	|	|	|	|	0.62
121.417	0.00	0.24	0.466	o	|	|	|	|	0.61
121.500	0.00	0.24	0.465	o	|	|	|	|	0.61
121.583	0.00	0.24	0.463	o	|	|	|	|	0.61
121.667	0.00	0.24	0.461	o	|	|	|	|	0.61
121.750	0.00	0.24	0.460	o	|	|	|	|	0.61
121.833	0.00	0.24	0.458	o	|	|	|	|	0.61
121.917	0.00	0.24	0.457	o	|	|	|	|	0.60
122.000	0.00	0.23	0.455	o	|	|	|	|	0.60
122.083	0.00	0.23	0.453	o	|	|	|	|	0.60
122.167	0.00	0.23	0.452	o	|	|	|	|	0.60
122.250	0.00	0.23	0.450	o	|	|	|	|	0.60
122.333	0.00	0.23	0.448	o	|	|	|	|	0.60
122.417	0.00	0.23	0.447	o	|	|	|	|	0.59
122.500	0.00	0.23	0.445	o	|	|	|	|	0.59
122.583	0.00	0.23	0.444	o	|	|	|	|	0.59
122.667	0.00	0.23	0.442	o	|	|	|	|	0.59
122.750	0.00	0.23	0.440	o	|	|	|	|	0.59
122.833	0.00	0.23	0.439	o	|	|	|	|	0.59
122.917	0.00	0.23	0.437	o	|	|	|	|	0.58
123.000	0.00	0.23	0.436	o	|	|	|	|	0.58
123.083	0.00	0.23	0.434	o	|	|	|	|	0.58
123.167	0.00	0.23	0.433	o	|	|	|	|	0.58
123.250	0.00	0.23	0.431	o	|	|	|	|	0.58
123.333	0.00	0.23	0.429	o	|	|	|	|	0.58
123.417	0.00	0.23	0.428	o	|	|	|	|	0.57
123.500	0.00	0.23	0.426	o	|	|	|	|	0.57
123.583	0.00	0.23	0.425	o	|	|	|	|	0.57
123.667	0.00	0.23	0.423	o	|	|	|	|	0.57
123.750	0.00	0.23	0.422	o	|	|	|	|	0.57
123.833	0.00	0.23	0.420	o	|	|	|	|	0.57
123.917	0.00	0.23	0.418	o	|	|	|	|	0.56
124.000	0.00	0.23	0.417	o	|	|	|	|	0.56
124.083	0.00	0.23	0.415	o	|	|	|	|	0.56
124.167	0.00	0.22	0.414	o	|	|	|	|	0.56
124.250	0.00	0.22	0.412	o	|	|	|	|	0.56

124.333	0.00	0.22	0.411	o	|	|	|	0.56
124.417	0.00	0.22	0.409	o	|	|	|	0.55
124.500	0.00	0.22	0.408	o	|	|	|	0.55
124.583	0.00	0.22	0.406	o	|	|	|	0.55
124.667	0.00	0.22	0.405	o	|	|	|	0.55
124.750	0.00	0.22	0.403	o	|	|	|	0.55
124.833	0.00	0.22	0.401	o	|	|	|	0.55
124.917	0.00	0.22	0.400	o	|	|	|	0.55
125.000	0.00	0.22	0.398	o	|	|	|	0.54
125.083	0.00	0.22	0.397	o	|	|	|	0.54
125.167	0.00	0.22	0.395	o	|	|	|	0.54
125.250	0.00	0.22	0.394	o	|	|	|	0.54
125.333	0.00	0.22	0.392	o	|	|	|	0.54
125.417	0.00	0.22	0.391	o	|	|	|	0.54
125.500	0.00	0.22	0.389	o	|	|	|	0.53
125.583	0.00	0.22	0.388	o	|	|	|	0.53
125.667	0.00	0.22	0.386	o	|	|	|	0.53
125.750	0.00	0.22	0.385	o	|	|	|	0.53
125.833	0.00	0.22	0.383	o	|	|	|	0.53
125.917	0.00	0.22	0.382	o	|	|	|	0.53
126.000	0.00	0.22	0.380	o	|	|	|	0.53
126.083	0.00	0.22	0.379	o	|	|	|	0.52
126.167	0.00	0.22	0.377	o	|	|	|	0.52
126.250	0.00	0.22	0.376	o	|	|	|	0.52
126.333	0.00	0.22	0.374	o	|	|	|	0.52
126.417	0.00	0.22	0.373	o	|	|	|	0.52
126.500	0.00	0.21	0.371	o	|	|	|	0.52
126.583	0.00	0.21	0.370	o	|	|	|	0.51
126.667	0.00	0.21	0.368	o	|	|	|	0.51
126.750	0.00	0.21	0.367	o	|	|	|	0.51
126.833	0.00	0.21	0.366	o	|	|	|	0.51
126.917	0.00	0.21	0.364	o	|	|	|	0.51
127.000	0.00	0.21	0.363	o	|	|	|	0.51
127.083	0.00	0.21	0.361	o	|	|	|	0.51
127.167	0.00	0.21	0.360	o	|	|	|	0.50
127.250	0.00	0.21	0.358	o	|	|	|	0.50
127.333	0.00	0.21	0.357	o	|	|	|	0.50
127.417	0.00	0.21	0.355	o	|	|	|	0.50
127.500	0.00	0.21	0.354	o	|	|	|	0.50
127.583	0.00	0.21	0.352	o	|	|	|	0.49
127.667	0.00	0.21	0.351	o	|	|	|	0.49
127.750	0.00	0.21	0.350	o	|	|	|	0.49
127.833	0.00	0.20	0.348	o	|	|	|	0.49
127.917	0.00	0.20	0.347	o	|	|	|	0.49
128.000	0.00	0.20	0.345	o	|	|	|	0.49
128.083	0.00	0.20	0.344	o	|	|	|	0.48
128.167	0.00	0.20	0.343	o	|	|	|	0.48
128.250	0.00	0.20	0.341	o	|	|	|	0.48
128.333	0.00	0.20	0.340	o	|	|	|	0.48
128.417	0.00	0.20	0.338	o	|	|	|	0.48
128.500	0.00	0.20	0.337	o	|	|	|	0.47
128.583	0.00	0.19	0.336	o	|	|	|	0.47
128.667	0.00	0.19	0.334	o	|	|	|	0.47
128.750	0.00	0.19	0.333	o	|	|	|	0.47
128.833	0.00	0.19	0.332	o	|	|	|	0.47
128.917	0.00	0.19	0.331	o	|	|	|	0.46
129.000	0.00	0.19	0.329	o	|	|	|	0.46
129.083	0.00	0.19	0.328	o	|	|	|	0.46
129.167	0.00	0.19	0.327	o	|	|	|	0.46
129.250	0.00	0.19	0.325	o	|	|	|	0.46
129.333	0.00	0.18	0.324	o	|	|	|	0.46
129.417	0.00	0.18	0.323	o	|	|	|	0.45
129.500	0.00	0.18	0.322	o	|	|	|	0.45
129.583	0.00	0.18	0.320	o	|	|	|	0.45
129.667	0.00	0.18	0.319	o	|	|	|	0.45
129.750	0.00	0.18	0.318	o	|	|	|	0.45
129.833	0.00	0.18	0.317	o	|	|	|	0.44
129.917	0.00	0.18	0.315	o	|	|	|	0.44
130.000	0.00	0.18	0.314	o	|	|	|	0.44
130.083	0.00	0.18	0.313	o	|	|	|	0.44
130.167	0.00	0.17	0.312	o	|	|	|	0.44
130.250	0.00	0.17	0.311	o	|	|	|	0.44
130.333	0.00	0.17	0.309	o	|	|	|	0.43
130.417	0.00	0.17	0.308	o	|	|	|	0.43
130.500	0.00	0.17	0.307	o	|	|	|	0.43

130.583	0.00	0.17	0.306	o	|	|	|	|	0.43
130.667	0.00	0.17	0.305	o	|	|	|	|	0.43
130.750	0.00	0.17	0.304	o	|	|	|	|	0.43
130.833	0.00	0.17	0.302	o	|	|	|	|	0.42
130.917	0.00	0.17	0.301	o	|	|	|	|	0.42
131.000	0.00	0.16	0.300	o	|	|	|	|	0.42
131.083	0.00	0.16	0.299	o	|	|	|	|	0.42
131.167	0.00	0.16	0.298	o	|	|	|	|	0.42
131.250	0.00	0.16	0.297	o	|	|	|	|	0.42
131.333	0.00	0.16	0.296	o	|	|	|	|	0.42
131.417	0.00	0.16	0.295	o	|	|	|	|	0.41
131.500	0.00	0.16	0.293	o	|	|	|	|	0.41
131.583	0.00	0.16	0.292	o	|	|	|	|	0.41
131.667	0.00	0.16	0.291	o	|	|	|	|	0.41
131.750	0.00	0.16	0.290	o	|	|	|	|	0.41
131.833	0.00	0.16	0.289	o	|	|	|	|	0.41
131.917	0.00	0.15	0.288	o	|	|	|	|	0.40
132.000	0.00	0.15	0.287	o	|	|	|	|	0.40
132.083	0.00	0.15	0.286	o	|	|	|	|	0.40
132.167	0.00	0.15	0.285	o	|	|	|	|	0.40
132.250	0.00	0.15	0.284	o	|	|	|	|	0.40
132.333	0.00	0.15	0.283	o	|	|	|	|	0.40
132.417	0.00	0.15	0.282	o	|	|	|	|	0.40
132.500	0.00	0.15	0.281	o	|	|	|	|	0.39
132.583	0.00	0.15	0.280	o	|	|	|	|	0.39
132.667	0.00	0.15	0.279	o	|	|	|	|	0.39
132.750	0.00	0.15	0.278	o	|	|	|	|	0.39
132.833	0.00	0.14	0.277	o	|	|	|	|	0.39
132.917	0.00	0.14	0.276	o	|	|	|	|	0.39
133.000	0.00	0.14	0.275	o	|	|	|	|	0.39
133.083	0.00	0.14	0.274	o	|	|	|	|	0.38
133.167	0.00	0.14	0.273	o	|	|	|	|	0.38
133.250	0.00	0.14	0.272	o	|	|	|	|	0.38
133.333	0.00	0.14	0.271	o	|	|	|	|	0.38
133.417	0.00	0.14	0.270	o	|	|	|	|	0.38
133.500	0.00	0.14	0.269	o	|	|	|	|	0.38
133.583	0.00	0.14	0.268	o	|	|	|	|	0.38
133.667	0.00	0.14	0.267	o	|	|	|	|	0.37
133.750	0.00	0.14	0.266	o	|	|	|	|	0.37
133.833	0.00	0.14	0.265	o	|	|	|	|	0.37
133.917	0.00	0.13	0.264	o	|	|	|	|	0.37
134.000	0.00	0.13	0.263	o	|	|	|	|	0.37
134.083	0.00	0.13	0.262	o	|	|	|	|	0.37
134.167	0.00	0.13	0.261	o	|	|	|	|	0.37
134.250	0.00	0.13	0.261	o	|	|	|	|	0.37
134.333	0.00	0.13	0.260	o	|	|	|	|	0.36
134.417	0.00	0.13	0.259	o	|	|	|	|	0.36
134.500	0.00	0.13	0.258	o	|	|	|	|	0.36
134.583	0.00	0.13	0.257	o	|	|	|	|	0.36
134.667	0.00	0.13	0.256	o	|	|	|	|	0.36
134.750	0.00	0.13	0.255	o	|	|	|	|	0.36
134.833	0.00	0.13	0.254	o	|	|	|	|	0.36
134.917	0.00	0.13	0.253	o	|	|	|	|	0.36
135.000	0.00	0.12	0.253	o	|	|	|	|	0.35
135.083	0.00	0.12	0.252	o	|	|	|	|	0.35
135.167	0.00	0.12	0.251	o	|	|	|	|	0.35
135.250	0.00	0.12	0.250	o	|	|	|	|	0.35
135.333	0.00	0.12	0.249	o	|	|	|	|	0.35
135.417	0.00	0.12	0.248	o	|	|	|	|	0.35
135.500	0.00	0.12	0.248	o	|	|	|	|	0.35
135.583	0.00	0.12	0.247	o	|	|	|	|	0.35
135.667	0.00	0.12	0.246	o	|	|	|	|	0.35
135.750	0.00	0.12	0.245	o	|	|	|	|	0.34
135.833	0.00	0.12	0.244	o	|	|	|	|	0.34
135.917	0.00	0.12	0.243	o	|	|	|	|	0.34
136.000	0.00	0.12	0.243	o	|	|	|	|	0.34
136.083	0.00	0.12	0.242	o	|	|	|	|	0.34
136.167	0.00	0.12	0.241	o	|	|	|	|	0.34
136.250	0.00	0.11	0.240	o	|	|	|	|	0.34
136.333	0.00	0.11	0.239	o	|	|	|	|	0.34
136.417	0.00	0.11	0.239	o	|	|	|	|	0.34
136.500	0.00	0.11	0.238	o	|	|	|	|	0.33
136.583	0.00	0.11	0.237	o	|	|	|	|	0.33
136.667	0.00	0.11	0.236	o	|	|	|	|	0.33
136.750	0.00	0.11	0.236	o	|	|	|	|	0.33

136.833	0.00	0.11	0.235	o	|	|	|	|	0.33
136.917	0.00	0.11	0.234	o	|	|	|	|	0.33
137.000	0.00	0.11	0.233	o	|	|	|	|	0.33
137.083	0.00	0.11	0.233	o	|	|	|	|	0.33
137.167	0.00	0.11	0.232	o	|	|	|	|	0.33
137.250	0.00	0.11	0.231	o	|	|	|	|	0.32
137.333	0.00	0.11	0.230	o	|	|	|	|	0.32
137.417	0.00	0.11	0.230	o	|	|	|	|	0.32
137.500	0.00	0.11	0.229	o	|	|	|	|	0.32
137.583	0.00	0.10	0.228	o	|	|	|	|	0.32
137.667	0.00	0.10	0.227	o	|	|	|	|	0.32
137.750	0.00	0.10	0.227	o	|	|	|	|	0.32
137.833	0.00	0.10	0.226	o	|	|	|	|	0.32
137.917	0.00	0.10	0.225	o	|	|	|	|	0.32
138.000	0.00	0.10	0.225	o	|	|	|	|	0.32
138.083	0.00	0.10	0.224	o	|	|	|	|	0.31
138.167	0.00	0.10	0.223	o	|	|	|	|	0.31
138.250	0.00	0.10	0.223	o	|	|	|	|	0.31
138.333	0.00	0.10	0.222	o	|	|	|	|	0.31
138.417	0.00	0.10	0.221	o	|	|	|	|	0.31
138.500	0.00	0.10	0.220	o	|	|	|	|	0.31
138.583	0.00	0.10	0.220	o	|	|	|	|	0.31
138.667	0.00	0.10	0.219	o	|	|	|	|	0.31
138.750	0.00	0.10	0.218	o	|	|	|	|	0.31
138.833	0.00	0.10	0.218	o	|	|	|	|	0.31
138.917	0.00	0.10	0.217	o	|	|	|	|	0.30
139.000	0.00	0.09	0.217	o	|	|	|	|	0.30
139.083	0.00	0.09	0.216	o	|	|	|	|	0.30
139.167	0.00	0.09	0.215	o	|	|	|	|	0.30
139.250	0.00	0.09	0.215	o	|	|	|	|	0.30
139.333	0.00	0.09	0.214	o	|	|	|	|	0.30
139.417	0.00	0.09	0.213	o	|	|	|	|	0.30
139.500	0.00	0.09	0.213	o	|	|	|	|	0.30
139.583	0.00	0.09	0.212	o	|	|	|	|	0.30
139.667	0.00	0.09	0.211	o	|	|	|	|	0.30
139.750	0.00	0.09	0.211	o	|	|	|	|	0.30
139.833	0.00	0.09	0.210	o	|	|	|	|	0.30
139.917	0.00	0.09	0.210	o	|	|	|	|	0.29
140.000	0.00	0.09	0.209	o	|	|	|	|	0.29
140.083	0.00	0.09	0.208	o	|	|	|	|	0.29
140.167	0.00	0.09	0.208	o	|	|	|	|	0.29
140.250	0.00	0.09	0.207	o	|	|	|	|	0.29
140.333	0.00	0.09	0.207	o	|	|	|	|	0.29
140.417	0.00	0.09	0.206	o	|	|	|	|	0.29
140.500	0.00	0.09	0.205	o	|	|	|	|	0.29
140.583	0.00	0.08	0.205	o	|	|	|	|	0.29
140.667	0.00	0.08	0.204	o	|	|	|	|	0.29
140.750	0.00	0.08	0.204	o	|	|	|	|	0.29
140.833	0.00	0.08	0.203	o	|	|	|	|	0.29
140.917	0.00	0.08	0.202	o	|	|	|	|	0.28
141.000	0.00	0.08	0.202	o	|	|	|	|	0.28
141.083	0.00	0.08	0.201	o	|	|	|	|	0.28
141.167	0.00	0.08	0.201	o	|	|	|	|	0.28
141.250	0.00	0.08	0.200	o	|	|	|	|	0.28
141.333	0.00	0.08	0.200	o	|	|	|	|	0.28
141.417	0.00	0.08	0.199	o	|	|	|	|	0.28
141.500	0.00	0.08	0.199	o	|	|	|	|	0.28
141.583	0.00	0.08	0.198	o	|	|	|	|	0.28
141.667	0.00	0.08	0.197	o	|	|	|	|	0.28
141.750	0.00	0.08	0.197	o	|	|	|	|	0.28
141.833	0.00	0.08	0.196	o	|	|	|	|	0.28
141.917	0.00	0.08	0.196	o	|	|	|	|	0.27
142.000	0.00	0.08	0.195	o	|	|	|	|	0.27
142.083	0.00	0.08	0.195	o	|	|	|	|	0.27
142.167	0.00	0.08	0.194	o	|	|	|	|	0.27
142.250	0.00	0.08	0.194	o	|	|	|	|	0.27
142.333	0.00	0.08	0.193	o	|	|	|	|	0.27
142.417	0.00	0.07	0.193	o	|	|	|	|	0.27
142.500	0.00	0.07	0.192	o	|	|	|	|	0.27
142.583	0.00	0.07	0.192	o	|	|	|	|	0.27
142.667	0.00	0.07	0.191	o	|	|	|	|	0.27
142.750	0.00	0.07	0.191	o	|	|	|	|	0.27
142.833	0.00	0.07	0.190	o	|	|	|	|	0.27
142.917	0.00	0.07	0.190	o	|	|	|	|	0.27
143.000	0.00	0.07	0.189	o	|	|	|	|	0.27

143.083	0.00	0.07	0.189	o	|	|	|	|	0.26
143.167	0.00	0.07	0.188	o	|	|	|	|	0.26
143.250	0.00	0.07	0.188	o	|	|	|	|	0.26
143.333	0.00	0.07	0.187	o	|	|	|	|	0.26
143.417	0.00	0.07	0.187	o	|	|	|	|	0.26
143.500	0.00	0.07	0.186	o	|	|	|	|	0.26
143.583	0.00	0.07	0.186	o	|	|	|	|	0.26
143.667	0.00	0.07	0.185	o	|	|	|	|	0.26
143.750	0.00	0.07	0.185	o	|	|	|	|	0.26
143.833	0.00	0.07	0.184	o	|	|	|	|	0.26
143.917	0.00	0.07	0.184	o	|	|	|	|	0.26
144.000	0.00	0.07	0.183	o	|	|	|	|	0.26
144.083	0.00	0.07	0.183	o	|	|	|	|	0.26
144.167	0.00	0.07	0.182	o	|	|	|	|	0.26
144.250	0.00	0.07	0.182	o	|	|	|	|	0.26
144.333	0.00	0.07	0.182	o	|	|	|	|	0.25
144.417	0.00	0.07	0.181	o	|	|	|	|	0.25
144.500	0.00	0.06	0.181	o	|	|	|	|	0.25
144.583	0.00	0.06	0.180	o	|	|	|	|	0.25
144.667	0.00	0.06	0.180	o	|	|	|	|	0.25
144.750	0.00	0.06	0.179	o	|	|	|	|	0.25
144.833	0.00	0.06	0.179	o	|	|	|	|	0.25
144.917	0.00	0.06	0.178	o	|	|	|	|	0.25
145.000	0.00	0.06	0.178	o	|	|	|	|	0.25
145.083	0.00	0.06	0.178	o	|	|	|	|	0.25
145.167	0.00	0.06	0.177	o	|	|	|	|	0.25
145.250	0.00	0.06	0.177	o	|	|	|	|	0.25
145.333	0.00	0.06	0.176	o	|	|	|	|	0.25
145.417	0.00	0.06	0.176	o	|	|	|	|	0.25
145.500	0.00	0.06	0.175	o	|	|	|	|	0.25
145.583	0.00	0.06	0.175	o	|	|	|	|	0.25
145.667	0.00	0.06	0.175	o	|	|	|	|	0.25
145.750	0.00	0.06	0.174	o	|	|	|	|	0.24
145.833	0.00	0.06	0.174	o	|	|	|	|	0.24
145.917	0.00	0.06	0.173	o	|	|	|	|	0.24
146.000	0.00	0.06	0.173	o	|	|	|	|	0.24
146.083	0.00	0.06	0.173	o	|	|	|	|	0.24
146.167	0.00	0.06	0.172	o	|	|	|	|	0.24
146.250	0.00	0.06	0.172	o	|	|	|	|	0.24
146.333	0.00	0.06	0.171	o	|	|	|	|	0.24
146.417	0.00	0.06	0.171	o	|	|	|	|	0.24
146.500	0.00	0.06	0.171	o	|	|	|	|	0.24
146.583	0.00	0.06	0.170	o	|	|	|	|	0.24
146.667	0.00	0.06	0.170	o	|	|	|	|	0.24
146.750	0.00	0.06	0.169	o	|	|	|	|	0.24
146.833	0.00	0.06	0.169	o	|	|	|	|	0.24
146.917	0.00	0.05	0.169	o	|	|	|	|	0.24
147.000	0.00	0.05	0.168	o	|	|	|	|	0.24
147.083	0.00	0.05	0.168	o	|	|	|	|	0.24
147.167	0.00	0.05	0.168	o	|	|	|	|	0.24
147.250	0.00	0.05	0.167	o	|	|	|	|	0.23
147.333	0.00	0.05	0.167	o	|	|	|	|	0.23
147.417	0.00	0.05	0.166	o	|	|	|	|	0.23
147.500	0.00	0.05	0.166	o	|	|	|	|	0.23
147.583	0.00	0.05	0.166	o	|	|	|	|	0.23
147.667	0.00	0.05	0.165	o	|	|	|	|	0.23
147.750	0.00	0.05	0.165	o	|	|	|	|	0.23
147.833	0.00	0.05	0.165	o	|	|	|	|	0.23
147.917	0.00	0.05	0.164	o	|	|	|	|	0.23
148.000	0.00	0.05	0.164	o	|	|	|	|	0.23
148.083	0.00	0.05	0.164	o	|	|	|	|	0.23
148.167	0.00	0.05	0.163	o	|	|	|	|	0.23
148.250	0.00	0.05	0.163	o	|	|	|	|	0.23
148.333	0.00	0.05	0.163	o	|	|	|	|	0.23
148.417	0.00	0.05	0.162	o	|	|	|	|	0.23
148.500	0.00	0.05	0.162	o	|	|	|	|	0.23
148.583	0.00	0.05	0.162	o	|	|	|	|	0.23
148.667	0.00	0.05	0.161	o	|	|	|	|	0.23
148.750	0.00	0.05	0.161	o	|	|	|	|	0.23
148.833	0.00	0.05	0.161	o	|	|	|	|	0.23
148.917	0.00	0.05	0.160	o	|	|	|	|	0.23
149.000	0.00	0.05	0.160	o	|	|	|	|	0.22
149.083	0.00	0.05	0.160	o	|	|	|	|	0.22
149.167	0.00	0.05	0.159	o	|	|	|	|	0.22
149.250	0.00	0.05	0.159	o	|	|	|	|	0.22

149.333	0.00	0.05	0.159	o	|	|	|	|	0.22
149.417	0.00	0.05	0.158	o	|	|	|	|	0.22
149.500	0.00	0.05	0.158	o	|	|	|	|	0.22
149.583	0.00	0.05	0.158	o	|	|	|	|	0.22
149.667	0.00	0.05	0.157	o	|	|	|	|	0.22
149.750	0.00	0.05	0.157	o	|	|	|	|	0.22
149.833	0.00	0.04	0.157	o	|	|	|	|	0.22
149.917	0.00	0.04	0.156	o	|	|	|	|	0.22
150.000	0.00	0.04	0.156	o	|	|	|	|	0.22
150.083	0.00	0.04	0.156	o	|	|	|	|	0.22
150.167	0.00	0.04	0.155	o	|	|	|	|	0.22
150.250	0.00	0.04	0.155	o	|	|	|	|	0.22
150.333	0.00	0.04	0.155	o	|	|	|	|	0.22
150.417	0.00	0.04	0.155	o	|	|	|	|	0.22
150.500	0.00	0.04	0.154	o	|	|	|	|	0.22
150.583	0.00	0.04	0.154	o	|	|	|	|	0.22
150.667	0.00	0.04	0.154	o	|	|	|	|	0.22
150.750	0.00	0.04	0.153	o	|	|	|	|	0.22
150.833	0.00	0.04	0.153	o	|	|	|	|	0.22
150.917	0.00	0.04	0.153	o	|	|	|	|	0.21
151.000	0.00	0.04	0.153	o	|	|	|	|	0.21
151.083	0.00	0.04	0.152	o	|	|	|	|	0.21
151.167	0.00	0.04	0.152	o	|	|	|	|	0.21
151.250	0.00	0.04	0.152	o	|	|	|	|	0.21
151.333	0.00	0.04	0.151	o	|	|	|	|	0.21
151.417	0.00	0.04	0.151	o	|	|	|	|	0.21
151.500	0.00	0.04	0.151	o	|	|	|	|	0.21
151.583	0.00	0.04	0.151	o	|	|	|	|	0.21
151.667	0.00	0.04	0.150	o	|	|	|	|	0.21
151.750	0.00	0.04	0.150	o	|	|	|	|	0.21
151.833	0.00	0.04	0.150	o	|	|	|	|	0.21
151.917	0.00	0.04	0.150	o	|	|	|	|	0.21
152.000	0.00	0.04	0.149	o	|	|	|	|	0.21
152.083	0.00	0.04	0.149	o	|	|	|	|	0.21
152.167	0.00	0.04	0.149	o	|	|	|	|	0.21
152.250	0.00	0.04	0.148	o	|	|	|	|	0.21
152.333	0.00	0.04	0.148	o	|	|	|	|	0.21
152.417	0.00	0.04	0.148	o	|	|	|	|	0.21
152.500	0.00	0.04	0.148	o	|	|	|	|	0.21
152.583	0.00	0.04	0.147	o	|	|	|	|	0.21
152.667	0.00	0.04	0.147	o	|	|	|	|	0.21
152.750	0.00	0.04	0.147	o	|	|	|	|	0.21
152.833	0.00	0.04	0.147	o	|	|	|	|	0.21
152.917	0.00	0.04	0.146	o	|	|	|	|	0.21
153.000	0.00	0.04	0.146	o	|	|	|	|	0.21
153.083	0.00	0.04	0.146	o	|	|	|	|	0.20
153.167	0.00	0.04	0.146	o	|	|	|	|	0.20
153.250	0.00	0.04	0.145	o	|	|	|	|	0.20
153.333	0.00	0.04	0.145	o	|	|	|	|	0.20
153.417	0.00	0.04	0.145	o	|	|	|	|	0.20
153.500	0.00	0.03	0.145	o	|	|	|	|	0.20
153.583	0.00	0.03	0.144	o	|	|	|	|	0.20
153.667	0.00	0.03	0.144	o	|	|	|	|	0.20
153.750	0.00	0.03	0.144	o	|	|	|	|	0.20
153.833	0.00	0.03	0.144	o	|	|	|	|	0.20
153.917	0.00	0.03	0.144	o	|	|	|	|	0.20
154.000	0.00	0.03	0.143	o	|	|	|	|	0.20
154.083	0.00	0.03	0.143	o	|	|	|	|	0.20
154.167	0.00	0.03	0.143	o	|	|	|	|	0.20
154.250	0.00	0.03	0.143	o	|	|	|	|	0.20
154.333	0.00	0.03	0.142	o	|	|	|	|	0.20
154.417	0.00	0.03	0.142	o	|	|	|	|	0.20
154.500	0.00	0.03	0.142	o	|	|	|	|	0.20
154.583	0.00	0.03	0.142	o	|	|	|	|	0.20
154.667	0.00	0.03	0.141	o	|	|	|	|	0.20
154.750	0.00	0.03	0.141	o	|	|	|	|	0.20
154.833	0.00	0.03	0.141	o	|	|	|	|	0.20
154.917	0.00	0.03	0.141	o	|	|	|	|	0.20
155.000	0.00	0.03	0.141	o	|	|	|	|	0.20
155.083	0.00	0.03	0.140	o	|	|	|	|	0.20
155.167	0.00	0.03	0.140	o	|	|	|	|	0.20
155.250	0.00	0.03	0.140	o	|	|	|	|	0.20
155.333	0.00	0.03	0.140	o	|	|	|	|	0.20
155.417	0.00	0.03	0.140	o	|	|	|	|	0.20
155.500	0.00	0.03	0.139	o	|	|	|	|	0.20

155.583	0.00	0.03	0.139	o	|	|	|	|	0.20
155.667	0.00	0.03	0.139	o	|	|	|	|	0.20
155.750	0.00	0.03	0.139	o	|	|	|	|	0.19
155.833	0.00	0.03	0.138	o	|	|	|	|	0.19
155.917	0.00	0.03	0.138	o	|	|	|	|	0.19
156.000	0.00	0.03	0.138	o	|	|	|	|	0.19
156.083	0.00	0.03	0.138	o	|	|	|	|	0.19
156.167	0.00	0.03	0.138	o	|	|	|	|	0.19
156.250	0.00	0.03	0.137	o	|	|	|	|	0.19
156.333	0.00	0.03	0.137	o	|	|	|	|	0.19
156.417	0.00	0.03	0.137	o	|	|	|	|	0.19
156.500	0.00	0.03	0.137	o	|	|	|	|	0.19
156.583	0.00	0.03	0.137	o	|	|	|	|	0.19
156.667	0.00	0.03	0.136	o	|	|	|	|	0.19
156.750	0.00	0.03	0.136	o	|	|	|	|	0.19
156.833	0.00	0.03	0.136	o	|	|	|	|	0.19
156.917	0.00	0.03	0.136	o	|	|	|	|	0.19
157.000	0.00	0.03	0.136	o	|	|	|	|	0.19
157.083	0.00	0.03	0.136	o	|	|	|	|	0.19
157.167	0.00	0.03	0.135	o	|	|	|	|	0.19
157.250	0.00	0.03	0.135	o	|	|	|	|	0.19
157.333	0.00	0.03	0.135	o	|	|	|	|	0.19
157.417	0.00	0.03	0.135	o	|	|	|	|	0.19
157.500	0.00	0.03	0.135	o	|	|	|	|	0.19
157.583	0.00	0.03	0.134	o	|	|	|	|	0.19
157.667	0.00	0.03	0.134	o	|	|	|	|	0.19
157.750	0.00	0.03	0.134	o	|	|	|	|	0.19
157.833	0.00	0.03	0.134	o	|	|	|	|	0.19
157.917	0.00	0.03	0.134	o	|	|	|	|	0.19
158.000	0.00	0.03	0.134	o	|	|	|	|	0.19
158.083	0.00	0.03	0.133	o	|	|	|	|	0.19
158.167	0.00	0.03	0.133	o	|	|	|	|	0.19
158.250	0.00	0.03	0.133	o	|	|	|	|	0.19
158.333	0.00	0.03	0.133	o	|	|	|	|	0.19
158.417	0.00	0.02	0.133	o	|	|	|	|	0.19
158.500	0.00	0.02	0.132	o	|	|	|	|	0.19
158.583	0.00	0.02	0.132	o	|	|	|	|	0.19
158.667	0.00	0.02	0.132	o	|	|	|	|	0.19
158.750	0.00	0.02	0.132	o	|	|	|	|	0.19
158.833	0.00	0.02	0.132	o	|	|	|	|	0.19
158.917	0.00	0.02	0.132	o	|	|	|	|	0.18
159.000	0.00	0.02	0.131	o	|	|	|	|	0.18
159.083	0.00	0.02	0.131	o	|	|	|	|	0.18
159.167	0.00	0.02	0.131	o	|	|	|	|	0.18
159.250	0.00	0.02	0.131	o	|	|	|	|	0.18
159.333	0.00	0.02	0.131	o	|	|	|	|	0.18
159.417	0.00	0.02	0.131	o	|	|	|	|	0.18
159.500	0.00	0.02	0.131	o	|	|	|	|	0.18
159.583	0.00	0.02	0.130	o	|	|	|	|	0.18
159.667	0.00	0.02	0.130	o	|	|	|	|	0.18
159.750	0.00	0.02	0.130	o	|	|	|	|	0.18
159.833	0.00	0.02	0.130	o	|	|	|	|	0.18
159.917	0.00	0.02	0.130	o	|	|	|	|	0.18
160.000	0.00	0.02	0.130	o	|	|	|	|	0.18
160.083	0.00	0.02	0.129	o	|	|	|	|	0.18
160.167	0.00	0.02	0.129	o	|	|	|	|	0.18
160.250	0.00	0.02	0.129	o	|	|	|	|	0.18
160.333	0.00	0.02	0.129	o	|	|	|	|	0.18
160.417	0.00	0.02	0.129	o	|	|	|	|	0.18
160.500	0.00	0.02	0.129	o	|	|	|	|	0.18
160.583	0.00	0.02	0.129	o	|	|	|	|	0.18
160.667	0.00	0.02	0.128	o	|	|	|	|	0.18
160.750	0.00	0.02	0.128	o	|	|	|	|	0.18
160.833	0.00	0.02	0.128	o	|	|	|	|	0.18
160.917	0.00	0.02	0.128	o	|	|	|	|	0.18
161.000	0.00	0.02	0.128	o	|	|	|	|	0.18
161.083	0.00	0.02	0.128	o	|	|	|	|	0.18
161.167	0.00	0.02	0.128	o	|	|	|	|	0.18
161.250	0.00	0.02	0.127	o	|	|	|	|	0.18
161.333	0.00	0.02	0.127	o	|	|	|	|	0.18
161.417	0.00	0.02	0.127	o	|	|	|	|	0.18
161.500	0.00	0.02	0.127	o	|	|	|	|	0.18
161.583	0.00	0.02	0.127	o	|	|	|	|	0.18
161.667	0.00	0.02	0.127	o	|	|	|	|	0.18
161.750	0.00	0.02	0.127	o	|	|	|	|	0.18

161.833	0.00	0.02	0.126	o	|	|	|	|	0.18
161.917	0.00	0.02	0.126	o	|	|	|	|	0.18
162.000	0.00	0.02	0.126	o	|	|	|	|	0.18
162.083	0.00	0.02	0.126	o	|	|	|	|	0.18
162.167	0.00	0.02	0.126	o	|	|	|	|	0.18
162.250	0.00	0.02	0.126	o	|	|	|	|	0.18
162.333	0.00	0.02	0.126	o	|	|	|	|	0.18
162.417	0.00	0.02	0.125	o	|	|	|	|	0.18
162.500	0.00	0.02	0.125	o	|	|	|	|	0.18
162.583	0.00	0.02	0.125	o	|	|	|	|	0.18
162.667	0.00	0.02	0.125	o	|	|	|	|	0.18
162.750	0.00	0.02	0.125	o	|	|	|	|	0.18
162.833	0.00	0.02	0.125	o	|	|	|	|	0.18
162.917	0.00	0.02	0.125	o	|	|	|	|	0.18
163.000	0.00	0.02	0.125	o	|	|	|	|	0.17
163.083	0.00	0.02	0.124	o	|	|	|	|	0.17
163.167	0.00	0.02	0.124	o	|	|	|	|	0.17
163.250	0.00	0.02	0.124	o	|	|	|	|	0.17
163.333	0.00	0.02	0.124	o	|	|	|	|	0.17
163.417	0.00	0.02	0.124	o	|	|	|	|	0.17
163.500	0.00	0.02	0.124	o	|	|	|	|	0.17
163.583	0.00	0.02	0.124	o	|	|	|	|	0.17
163.667	0.00	0.02	0.124	o	|	|	|	|	0.17
163.750	0.00	0.02	0.123	o	|	|	|	|	0.17
163.833	0.00	0.02	0.123	o	|	|	|	|	0.17
163.917	0.00	0.02	0.123	o	|	|	|	|	0.17
164.000	0.00	0.02	0.123	o	|	|	|	|	0.17
164.083	0.00	0.02	0.123	o	|	|	|	|	0.17
164.167	0.00	0.02	0.123	o	|	|	|	|	0.17
164.250	0.00	0.02	0.123	o	|	|	|	|	0.17
164.333	0.00	0.02	0.123	o	|	|	|	|	0.17
164.417	0.00	0.02	0.123	o	|	|	|	|	0.17
164.500	0.00	0.02	0.122	o	|	|	|	|	0.17
164.583	0.00	0.02	0.122	o	|	|	|	|	0.17
164.667	0.00	0.02	0.122	o	|	|	|	|	0.17
164.750	0.00	0.02	0.122	o	|	|	|	|	0.17
164.833	0.00	0.02	0.122	o	|	|	|	|	0.17
164.917	0.00	0.02	0.122	o	|	|	|	|	0.17
165.000	0.00	0.02	0.122	o	|	|	|	|	0.17
165.083	0.00	0.02	0.122	o	|	|	|	|	0.17
165.167	0.00	0.02	0.122	o	|	|	|	|	0.17
165.250	0.00	0.02	0.121	o	|	|	|	|	0.17
165.333	0.00	0.02	0.121	o	|	|	|	|	0.17
165.417	0.00	0.02	0.121	o	|	|	|	|	0.17
165.500	0.00	0.02	0.121	o	|	|	|	|	0.17
165.583	0.00	0.02	0.121	o	|	|	|	|	0.17
165.667	0.00	0.02	0.121	o	|	|	|	|	0.17
165.750	0.00	0.02	0.121	o	|	|	|	|	0.17
165.833	0.00	0.01	0.121	o	|	|	|	|	0.17
165.917	0.00	0.01	0.121	o	|	|	|	|	0.17
166.000	0.00	0.01	0.121	o	|	|	|	|	0.17
166.083	0.00	0.01	0.120	o	|	|	|	|	0.17
166.167	0.00	0.01	0.120	o	|	|	|	|	0.17
166.250	0.00	0.01	0.120	o	|	|	|	|	0.17
166.333	0.00	0.01	0.120	o	|	|	|	|	0.17
166.417	0.00	0.01	0.120	o	|	|	|	|	0.17
166.500	0.00	0.01	0.120	o	|	|	|	|	0.17
166.583	0.00	0.01	0.120	o	|	|	|	|	0.17
166.667	0.00	0.01	0.120	o	|	|	|	|	0.17
166.750	0.00	0.01	0.120	o	|	|	|	|	0.17
166.833	0.00	0.01	0.120	o	|	|	|	|	0.17
166.917	0.00	0.01	0.119	o	|	|	|	|	0.17
167.000	0.00	0.01	0.119	o	|	|	|	|	0.17
167.083	0.00	0.01	0.119	o	|	|	|	|	0.17
167.167	0.00	0.01	0.119	o	|	|	|	|	0.17
167.250	0.00	0.01	0.119	o	|	|	|	|	0.17
167.333	0.00	0.01	0.119	o	|	|	|	|	0.17
167.417	0.00	0.01	0.119	o	|	|	|	|	0.17
167.500	0.00	0.01	0.119	o	|	|	|	|	0.17
167.583	0.00	0.01	0.119	o	|	|	|	|	0.17
167.667	0.00	0.01	0.119	o	|	|	|	|	0.17
167.750	0.00	0.01	0.118	o	|	|	|	|	0.17
167.833	0.00	0.01	0.118	o	|	|	|	|	0.17
167.917	0.00	0.01	0.118	o	|	|	|	|	0.17
168.000	0.00	0.01	0.118	o	|	|	|	|	0.17

168.083	0.00	0.01	0.118	o	|	|	|	|	0.17
168.167	0.00	0.01	0.118	o	|	|	|	|	0.17
168.250	0.00	0.01	0.118	o	|	|	|	|	0.17
168.333	0.00	0.01	0.118	o	|	|	|	|	0.17
168.417	0.00	0.01	0.118	o	|	|	|	|	0.17
168.500	0.00	0.01	0.118	o	|	|	|	|	0.17
168.583	0.00	0.01	0.118	o	|	|	|	|	0.17
168.667	0.00	0.01	0.118	o	|	|	|	|	0.17
168.750	0.00	0.01	0.117	o	|	|	|	|	0.16
168.833	0.00	0.01	0.117	o	|	|	|	|	0.16
168.917	0.00	0.01	0.117	o	|	|	|	|	0.16
169.000	0.00	0.01	0.117	o	|	|	|	|	0.16
169.083	0.00	0.01	0.117	o	|	|	|	|	0.16
169.167	0.00	0.01	0.117	o	|	|	|	|	0.16
169.250	0.00	0.01	0.117	o	|	|	|	|	0.16
169.333	0.00	0.01	0.117	o	|	|	|	|	0.16
169.417	0.00	0.01	0.117	o	|	|	|	|	0.16
169.500	0.00	0.01	0.117	o	|	|	|	|	0.16
169.583	0.00	0.01	0.117	o	|	|	|	|	0.16
169.667	0.00	0.01	0.117	o	|	|	|	|	0.16
169.750	0.00	0.01	0.116	o	|	|	|	|	0.16
169.833	0.00	0.01	0.116	o	|	|	|	|	0.16
169.917	0.00	0.01	0.116	o	|	|	|	|	0.16
170.000	0.00	0.01	0.116	o	|	|	|	|	0.16
170.083	0.00	0.01	0.116	o	|	|	|	|	0.16
170.167	0.00	0.01	0.116	o	|	|	|	|	0.16
170.250	0.00	0.01	0.116	o	|	|	|	|	0.16
170.333	0.00	0.01	0.116	o	|	|	|	|	0.16
170.417	0.00	0.01	0.116	o	|	|	|	|	0.16
170.500	0.00	0.01	0.116	o	|	|	|	|	0.16
170.583	0.00	0.01	0.116	o	|	|	|	|	0.16
170.667	0.00	0.01	0.116	o	|	|	|	|	0.16
170.750	0.00	0.01	0.116	o	|	|	|	|	0.16
170.833	0.00	0.01	0.115	o	|	|	|	|	0.16
170.917	0.00	0.01	0.115	o	|	|	|	|	0.16
171.000	0.00	0.01	0.115	o	|	|	|	|	0.16
171.083	0.00	0.01	0.115	o	|	|	|	|	0.16
171.167	0.00	0.01	0.115	o	|	|	|	|	0.16
171.250	0.00	0.01	0.115	o	|	|	|	|	0.16
171.333	0.00	0.01	0.115	o	|	|	|	|	0.16
171.417	0.00	0.01	0.115	o	|	|	|	|	0.16
171.500	0.00	0.01	0.115	o	|	|	|	|	0.16
171.583	0.00	0.01	0.115	o	|	|	|	|	0.16
171.667	0.00	0.01	0.115	o	|	|	|	|	0.16
171.750	0.00	0.01	0.115	o	|	|	|	|	0.16
171.833	0.00	0.01	0.115	o	|	|	|	|	0.16
171.917	0.00	0.01	0.115	o	|	|	|	|	0.16
172.000	0.00	0.01	0.115	o	|	|	|	|	0.16
172.083	0.00	0.01	0.114	o	|	|	|	|	0.16
172.167	0.00	0.01	0.114	o	|	|	|	|	0.16
172.250	0.00	0.01	0.114	o	|	|	|	|	0.16
172.333	0.00	0.01	0.114	o	|	|	|	|	0.16
172.417	0.00	0.01	0.114	o	|	|	|	|	0.16
172.500	0.00	0.01	0.114	o	|	|	|	|	0.16
172.583	0.00	0.01	0.114	o	|	|	|	|	0.16
172.667	0.00	0.01	0.114	o	|	|	|	|	0.16
172.750	0.00	0.01	0.114	o	|	|	|	|	0.16
172.833	0.00	0.01	0.114	o	|	|	|	|	0.16
172.917	0.00	0.01	0.114	o	|	|	|	|	0.16
173.000	0.00	0.01	0.114	o	|	|	|	|	0.16
173.083	0.00	0.01	0.114	o	|	|	|	|	0.16
173.167	0.00	0.01	0.114	o	|	|	|	|	0.16
173.250	0.00	0.01	0.114	o	|	|	|	|	0.16
173.333	0.00	0.01	0.113	o	|	|	|	|	0.16
173.417	0.00	0.01	0.113	o	|	|	|	|	0.16
173.500	0.00	0.01	0.113	o	|	|	|	|	0.16
173.583	0.00	0.01	0.113	o	|	|	|	|	0.16
173.667	0.00	0.01	0.113	o	|	|	|	|	0.16
173.750	0.00	0.01	0.113	o	|	|	|	|	0.16
173.833	0.00	0.01	0.113	o	|	|	|	|	0.16
173.917	0.00	0.01	0.113	o	|	|	|	|	0.16
174.000	0.00	0.01	0.113	o	|	|	|	|	0.16
174.083	0.00	0.01	0.113	o	|	|	|	|	0.16
174.167	0.00	0.01	0.113	o	|	|	|	|	0.16
174.250	0.00	0.01	0.113	o	|	|	|	|	0.16

174.333	0.00	0.01	0.113	o	|	|	|	|	0.16
174.417	0.00	0.01	0.113	o	|	|	|	|	0.16
174.500	0.00	0.01	0.113	o	|	|	|	|	0.16
174.583	0.00	0.01	0.113	o	|	|	|	|	0.16
174.667	0.00	0.01	0.113	o	|	|	|	|	0.16
174.750	0.00	0.01	0.112	o	|	|	|	|	0.16
174.833	0.00	0.01	0.112	o	|	|	|	|	0.16
174.917	0.00	0.01	0.112	o	|	|	|	|	0.16
175.000	0.00	0.01	0.112	o	|	|	|	|	0.16
175.083	0.00	0.01	0.112	o	|	|	|	|	0.16
175.167	0.00	0.01	0.112	o	|	|	|	|	0.16
175.250	0.00	0.01	0.112	o	|	|	|	|	0.16
175.333	0.00	0.01	0.112	o	|	|	|	|	0.16
175.417	0.00	0.01	0.112	o	|	|	|	|	0.16
175.500	0.00	0.01	0.112	o	|	|	|	|	0.16
175.583	0.00	0.01	0.112	o	|	|	|	|	0.16
175.667	0.00	0.01	0.112	o	|	|	|	|	0.16
175.750	0.00	0.01	0.112	o	|	|	|	|	0.16
175.833	0.00	0.01	0.112	o	|	|	|	|	0.16
175.917	0.00	0.01	0.112	o	|	|	|	|	0.16
176.000	0.00	0.01	0.112	o	|	|	|	|	0.16
176.083	0.00	0.01	0.112	o	|	|	|	|	0.16
176.167	0.00	0.01	0.112	o	|	|	|	|	0.16
176.250	0.00	0.01	0.112	o	|	|	|	|	0.16
176.333	0.00	0.01	0.111	o	|	|	|	|	0.16
176.417	0.00	0.01	0.111	o	|	|	|	|	0.16
176.500	0.00	0.01	0.111	o	|	|	|	|	0.16
176.583	0.00	0.01	0.111	o	|	|	|	|	0.16
176.667	0.00	0.01	0.111	o	|	|	|	|	0.16
176.750	0.00	0.01	0.111	o	|	|	|	|	0.16
176.833	0.00	0.01	0.111	o	|	|	|	|	0.16
176.917	0.00	0.01	0.111	o	|	|	|	|	0.16
177.000	0.00	0.01	0.111	o	|	|	|	|	0.16
177.083	0.00	0.01	0.111	o	|	|	|	|	0.16
177.167	0.00	0.01	0.111	o	|	|	|	|	0.16
177.250	0.00	0.01	0.111	o	|	|	|	|	0.16
177.333	0.00	0.01	0.111	o	|	|	|	|	0.16
177.417	0.00	0.01	0.111	o	|	|	|	|	0.16
177.500	0.00	0.01	0.111	o	|	|	|	|	0.16
177.583	0.00	0.01	0.111	o	|	|	|	|	0.16
177.667	0.00	0.01	0.111	o	|	|	|	|	0.16
177.750	0.00	0.01	0.111	o	|	|	|	|	0.16
177.833	0.00	0.01	0.111	o	|	|	|	|	0.16
177.917	0.00	0.01	0.111	o	|	|	|	|	0.16
178.000	0.00	0.01	0.111	o	|	|	|	|	0.16
178.083	0.00	0.01	0.111	o	|	|	|	|	0.16
178.167	0.00	0.01	0.110	o	|	|	|	|	0.16
178.250	0.00	0.01	0.110	o	|	|	|	|	0.16
178.333	0.00	0.01	0.110	o	|	|	|	|	0.15
178.417	0.00	0.01	0.110	o	|	|	|	|	0.15
178.500	0.00	0.01	0.110	o	|	|	|	|	0.15
178.583	0.00	0.01	0.110	o	|	|	|	|	0.15
178.667	0.00	0.01	0.110	o	|	|	|	|	0.15
178.750	0.00	0.01	0.110	o	|	|	|	|	0.15
178.833	0.00	0.01	0.110	o	|	|	|	|	0.15
178.917	0.00	0.01	0.110	o	|	|	|	|	0.15
179.000	0.00	0.01	0.110	o	|	|	|	|	0.15
179.083	0.00	0.01	0.110	o	|	|	|	|	0.15
179.167	0.00	0.01	0.110	o	|	|	|	|	0.15
179.250	0.00	0.01	0.110	o	|	|	|	|	0.15
179.333	0.00	0.01	0.110	o	|	|	|	|	0.15
179.417	0.00	0.01	0.110	o	|	|	|	|	0.15
179.500	0.00	0.01	0.110	o	|	|	|	|	0.15
179.583	0.00	0.01	0.110	o	|	|	|	|	0.15
179.667	0.00	0.01	0.110	o	|	|	|	|	0.15
179.750	0.00	0.01	0.110	o	|	|	|	|	0.15
179.833	0.00	0.01	0.110	o	|	|	|	|	0.15
179.917	0.00	0.01	0.110	o	|	|	|	|	0.15
180.000	0.00	0.01	0.110	o	|	|	|	|	0.15
180.083	0.00	0.01	0.110	o	|	|	|	|	0.15
180.167	0.00	0.01	0.109	o	|	|	|	|	0.15
180.250	0.00	0.01	0.109	o	|	|	|	|	0.15
180.333	0.00	0.01	0.109	o	|	|	|	|	0.15
180.417	0.00	0.01	0.109	o	|	|	|	|	0.15
180.500	0.00	0.01	0.109	o	|	|	|	|	0.15

180.583	0.00	0.01	0.109	o	|	|	|	|	0.15
180.667	0.00	0.01	0.109	o	|	|	|	|	0.15
180.750	0.00	0.01	0.109	o	|	|	|	|	0.15
180.833	0.00	0.01	0.109	o	|	|	|	|	0.15
180.917	0.00	0.01	0.109	o	|	|	|	|	0.15
181.000	0.00	0.01	0.109	o	|	|	|	|	0.15
181.083	0.00	0.01	0.109	o	|	|	|	|	0.15
181.167	0.00	0.01	0.109	o	|	|	|	|	0.15
181.250	0.00	0.01	0.109	o	|	|	|	|	0.15
181.333	0.00	0.01	0.109	o	|	|	|	|	0.15
181.417	0.00	0.01	0.109	o	|	|	|	|	0.15
181.500	0.00	0.01	0.109	o	|	|	|	|	0.15
181.583	0.00	0.01	0.109	o	|	|	|	|	0.15
181.667	0.00	0.01	0.109	o	|	|	|	|	0.15
181.750	0.00	0.00	0.109	o	|	|	|	|	0.15
181.833	0.00	0.00	0.109	o	|	|	|	|	0.15
181.917	0.00	0.00	0.109	o	|	|	|	|	0.15
182.000	0.00	0.00	0.109	o	|	|	|	|	0.15
182.083	0.00	0.00	0.109	o	|	|	|	|	0.15
182.167	0.00	0.00	0.109	o	|	|	|	|	0.15
182.250	0.00	0.00	0.109	o	|	|	|	|	0.15
182.333	0.00	0.00	0.109	o	|	|	|	|	0.15
182.417	0.00	0.00	0.109	o	|	|	|	|	0.15
182.500	0.00	0.00	0.108	o	|	|	|	|	0.15
182.583	0.00	0.00	0.108	o	|	|	|	|	0.15
182.667	0.00	0.00	0.108	o	|	|	|	|	0.15
182.750	0.00	0.00	0.108	o	|	|	|	|	0.15
182.833	0.00	0.00	0.108	o	|	|	|	|	0.15
182.917	0.00	0.00	0.108	o	|	|	|	|	0.15
183.000	0.00	0.00	0.108	o	|	|	|	|	0.15
183.083	0.00	0.00	0.108	o	|	|	|	|	0.15
183.167	0.00	0.00	0.108	o	|	|	|	|	0.15
183.250	0.00	0.00	0.108	o	|	|	|	|	0.15
183.333	0.00	0.00	0.108	o	|	|	|	|	0.15
183.417	0.00	0.00	0.108	o	|	|	|	|	0.15
183.500	0.00	0.00	0.108	o	|	|	|	|	0.15
183.583	0.00	0.00	0.108	o	|	|	|	|	0.15
183.667	0.00	0.00	0.108	o	|	|	|	|	0.15
183.750	0.00	0.00	0.108	o	|	|	|	|	0.15
183.833	0.00	0.00	0.108	o	|	|	|	|	0.15
183.917	0.00	0.00	0.108	o	|	|	|	|	0.15
184.000	0.00	0.00	0.108	o	|	|	|	|	0.15
184.083	0.00	0.00	0.108	o	|	|	|	|	0.15
184.167	0.00	0.00	0.108	o	|	|	|	|	0.15
184.250	0.00	0.00	0.108	o	|	|	|	|	0.15
184.333	0.00	0.00	0.108	o	|	|	|	|	0.15
184.417	0.00	0.00	0.108	o	|	|	|	|	0.15
184.500	0.00	0.00	0.108	o	|	|	|	|	0.15
184.583	0.00	0.00	0.108	o	|	|	|	|	0.15
184.667	0.00	0.00	0.108	o	|	|	|	|	0.15
184.750	0.00	0.00	0.108	o	|	|	|	|	0.15
184.833	0.00	0.00	0.108	o	|	|	|	|	0.15
184.917	0.00	0.00	0.108	o	|	|	|	|	0.15
185.000	0.00	0.00	0.108	o	|	|	|	|	0.15
185.083	0.00	0.00	0.108	o	|	|	|	|	0.15
185.167	0.00	0.00	0.108	o	|	|	|	|	0.15
185.250	0.00	0.00	0.108	o	|	|	|	|	0.15
185.333	0.00	0.00	0.107	o	|	|	|	|	0.15
185.417	0.00	0.00	0.107	o	|	|	|	|	0.15
185.500	0.00	0.00	0.107	o	|	|	|	|	0.15
185.583	0.00	0.00	0.107	o	|	|	|	|	0.15
185.667	0.00	0.00	0.107	o	|	|	|	|	0.15
185.750	0.00	0.00	0.107	o	|	|	|	|	0.15
185.833	0.00	0.00	0.107	o	|	|	|	|	0.15
185.917	0.00	0.00	0.107	o	|	|	|	|	0.15
186.000	0.00	0.00	0.107	o	|	|	|	|	0.15
186.083	0.00	0.00	0.107	o	|	|	|	|	0.15
186.167	0.00	0.00	0.107	o	|	|	|	|	0.15
186.250	0.00	0.00	0.107	o	|	|	|	|	0.15
186.333	0.00	0.00	0.107	o	|	|	|	|	0.15
186.417	0.00	0.00	0.107	o	|	|	|	|	0.15
186.500	0.00	0.00	0.107	o	|	|	|	|	0.15
186.583	0.00	0.00	0.107	o	|	|	|	|	0.15
186.667	0.00	0.00	0.107	o	|	|	|	|	0.15
186.750	0.00	0.00	0.107	o	|	|	|	|	0.15

186.833	0.00	0.00	0.107	o	|	|	|	|	0.15
186.917	0.00	0.00	0.107	o	|	|	|	|	0.15
187.000	0.00	0.00	0.107	o	|	|	|	|	0.15
187.083	0.00	0.00	0.107	o	|	|	|	|	0.15
187.167	0.00	0.00	0.107	o	|	|	|	|	0.15
187.250	0.00	0.00	0.107	o	|	|	|	|	0.15
187.333	0.00	0.00	0.107	o	|	|	|	|	0.15
187.417	0.00	0.00	0.107	o	|	|	|	|	0.15
187.500	0.00	0.00	0.107	o	|	|	|	|	0.15
187.583	0.00	0.00	0.107	o	|	|	|	|	0.15
187.667	0.00	0.00	0.107	o	|	|	|	|	0.15
187.750	0.00	0.00	0.107	o	|	|	|	|	0.15
187.833	0.00	0.00	0.107	o	|	|	|	|	0.15
187.917	0.00	0.00	0.107	o	|	|	|	|	0.15
188.000	0.00	0.00	0.107	o	|	|	|	|	0.15
188.083	0.00	0.00	0.107	o	|	|	|	|	0.15
188.167	0.00	0.00	0.107	o	|	|	|	|	0.15
188.250	0.00	0.00	0.107	o	|	|	|	|	0.15
188.333	0.00	0.00	0.107	o	|	|	|	|	0.15
188.417	0.00	0.00	0.107	o	|	|	|	|	0.15
188.500	0.00	0.00	0.107	o	|	|	|	|	0.15
188.583	0.00	0.00	0.107	o	|	|	|	|	0.15
188.667	0.00	0.00	0.107	o	|	|	|	|	0.15
188.750	0.00	0.00	0.106	o	|	|	|	|	0.15
188.833	0.00	0.00	0.106	o	|	|	|	|	0.15
188.917	0.00	0.00	0.106	o	|	|	|	|	0.15
189.000	0.00	0.00	0.106	o	|	|	|	|	0.15
189.083	0.00	0.00	0.106	o	|	|	|	|	0.15
189.167	0.00	0.00	0.106	o	|	|	|	|	0.15
189.250	0.00	0.00	0.106	o	|	|	|	|	0.15
189.333	0.00	0.00	0.106	o	|	|	|	|	0.15
189.417	0.00	0.00	0.106	o	|	|	|	|	0.15
189.500	0.00	0.00	0.106	o	|	|	|	|	0.15
189.583	0.00	0.00	0.106	o	|	|	|	|	0.15
189.667	0.00	0.00	0.106	o	|	|	|	|	0.15
189.750	0.00	0.00	0.106	o	|	|	|	|	0.15
189.833	0.00	0.00	0.106	o	|	|	|	|	0.15
189.917	0.00	0.00	0.106	o	|	|	|	|	0.15
190.000	0.00	0.00	0.106	o	|	|	|	|	0.15
190.083	0.00	0.00	0.106	o	|	|	|	|	0.15
190.167	0.00	0.00	0.106	o	|	|	|	|	0.15
190.250	0.00	0.00	0.106	o	|	|	|	|	0.15
190.333	0.00	0.00	0.106	o	|	|	|	|	0.15
190.417	0.00	0.00	0.106	o	|	|	|	|	0.15
190.500	0.00	0.00	0.106	o	|	|	|	|	0.15
190.583	0.00	0.00	0.106	o	|	|	|	|	0.15
190.667	0.00	0.00	0.106	o	|	|	|	|	0.15
190.750	0.00	0.00	0.106	o	|	|	|	|	0.15
190.833	0.00	0.00	0.106	o	|	|	|	|	0.15
190.917	0.00	0.00	0.106	o	|	|	|	|	0.15
191.000	0.00	0.00	0.106	o	|	|	|	|	0.15
191.083	0.00	0.00	0.106	o	|	|	|	|	0.15
191.167	0.00	0.00	0.106	o	|	|	|	|	0.15
191.250	0.00	0.00	0.106	o	|	|	|	|	0.15
191.333	0.00	0.00	0.106	o	|	|	|	|	0.15
191.417	0.00	0.00	0.106	o	|	|	|	|	0.15
191.500	0.00	0.00	0.106	o	|	|	|	|	0.15
191.583	0.00	0.00	0.106	o	|	|	|	|	0.15
191.667	0.00	0.00	0.106	o	|	|	|	|	0.15
191.750	0.00	0.00	0.106	o	|	|	|	|	0.15
191.833	0.00	0.00	0.106	o	|	|	|	|	0.15
191.917	0.00	0.00	0.106	o	|	|	|	|	0.15
192.000	0.00	0.00	0.106	o	|	|	|	|	0.15
192.083	0.00	0.00	0.106	o	|	|	|	|	0.15
192.167	0.00	0.00	0.106	o	|	|	|	|	0.15
192.250	0.00	0.00	0.106	o	|	|	|	|	0.15
192.333	0.00	0.00	0.106	o	|	|	|	|	0.15
192.417	0.00	0.00	0.106	o	|	|	|	|	0.15
192.500	0.00	0.00	0.106	o	|	|	|	|	0.15
192.583	0.00	0.00	0.106	o	|	|	|	|	0.15
192.667	0.00	0.00	0.106	o	|	|	|	|	0.15
192.750	0.00	0.00	0.106	o	|	|	|	|	0.15
192.833	0.00	0.00	0.106	o	|	|	|	|	0.15
192.917	0.00	0.00	0.106	o	|	|	|	|	0.15
193.000	0.00	0.00	0.106	o	|	|	|	|	0.15

193.083	0.00	0.00	0.106	o	|	|	|	|	0.15
193.167	0.00	0.00	0.106	o	|	|	|	|	0.15
193.250	0.00	0.00	0.106	o	|	|	|	|	0.15
193.333	0.00	0.00	0.105	o	|	|	|	|	0.15
193.417	0.00	0.00	0.105	o	|	|	|	|	0.15
193.500	0.00	0.00	0.105	o	|	|	|	|	0.15
193.583	0.00	0.00	0.105	o	|	|	|	|	0.15
193.667	0.00	0.00	0.105	o	|	|	|	|	0.15
193.750	0.00	0.00	0.105	o	|	|	|	|	0.15
193.833	0.00	0.00	0.105	o	|	|	|	|	0.15
193.917	0.00	0.00	0.105	o	|	|	|	|	0.15
194.000	0.00	0.00	0.105	o	|	|	|	|	0.15
194.083	0.00	0.00	0.105	o	|	|	|	|	0.15
194.167	0.00	0.00	0.105	o	|	|	|	|	0.15
194.250	0.00	0.00	0.105	o	|	|	|	|	0.15
194.333	0.00	0.00	0.105	o	|	|	|	|	0.15
194.417	0.00	0.00	0.105	o	|	|	|	|	0.15
194.500	0.00	0.00	0.105	o	|	|	|	|	0.15
194.583	0.00	0.00	0.105	o	|	|	|	|	0.15
194.667	0.00	0.00	0.105	o	|	|	|	|	0.15
194.750	0.00	0.00	0.105	o	|	|	|	|	0.15
194.833	0.00	0.00	0.105	o	|	|	|	|	0.15
194.917	0.00	0.00	0.105	o	|	|	|	|	0.15
195.000	0.00	0.00	0.105	o	|	|	|	|	0.15
195.083	0.00	0.00	0.105	o	|	|	|	|	0.15
195.167	0.00	0.00	0.105	o	|	|	|	|	0.15
195.250	0.00	0.00	0.105	o	|	|	|	|	0.15
195.333	0.00	0.00	0.105	o	|	|	|	|	0.15
195.417	0.00	0.00	0.105	o	|	|	|	|	0.15
195.500	0.00	0.00	0.105	o	|	|	|	|	0.15
195.583	0.00	0.00	0.105	o	|	|	|	|	0.15
195.667	0.00	0.00	0.105	o	|	|	|	|	0.15
195.750	0.00	0.00	0.105	o	|	|	|	|	0.15
195.833	0.00	0.00	0.105	o	|	|	|	|	0.15
195.917	0.00	0.00	0.105	o	|	|	|	|	0.15
196.000	0.00	0.00	0.105	o	|	|	|	|	0.15
196.083	0.00	0.00	0.105	o	|	|	|	|	0.15
196.167	0.00	0.00	0.105	o	|	|	|	|	0.15
196.250	0.00	0.00	0.105	o	|	|	|	|	0.15
196.333	0.00	0.00	0.105	o	|	|	|	|	0.15
196.417	0.00	0.00	0.105	o	|	|	|	|	0.15
196.500	0.00	0.00	0.105	o	|	|	|	|	0.15
196.583	0.00	0.00	0.105	o	|	|	|	|	0.15
196.667	0.00	0.00	0.105	o	|	|	|	|	0.15
196.750	0.00	0.00	0.105	o	|	|	|	|	0.15
196.833	0.00	0.00	0.105	o	|	|	|	|	0.15
196.917	0.00	0.00	0.105	o	|	|	|	|	0.15
197.000	0.00	0.00	0.105	o	|	|	|	|	0.15
197.083	0.00	0.00	0.105	o	|	|	|	|	0.15
197.167	0.00	0.00	0.105	o	|	|	|	|	0.15
197.250	0.00	0.00	0.105	o	|	|	|	|	0.15
197.333	0.00	0.00	0.105	o	|	|	|	|	0.15
197.417	0.00	0.00	0.105	o	|	|	|	|	0.15
197.500	0.00	0.00	0.105	o	|	|	|	|	0.15
197.583	0.00	0.00	0.105	o	|	|	|	|	0.15
197.667	0.00	0.00	0.105	o	|	|	|	|	0.15
197.750	0.00	0.00	0.105	o	|	|	|	|	0.15
197.833	0.00	0.00	0.105	o	|	|	|	|	0.15
197.917	0.00	0.00	0.105	o	|	|	|	|	0.15
198.000	0.00	0.00	0.105	o	|	|	|	|	0.15
198.083	0.00	0.00	0.105	o	|	|	|	|	0.15
198.167	0.00	0.00	0.105	o	|	|	|	|	0.15
198.250	0.00	0.00	0.105	o	|	|	|	|	0.15
198.333	0.00	0.00	0.105	o	|	|	|	|	0.15
198.417	0.00	0.00	0.105	o	|	|	|	|	0.15
198.500	0.00	0.00	0.105	o	|	|	|	|	0.15
198.583	0.00	0.00	0.105	o	|	|	|	|	0.15
198.667	0.00	0.00	0.105	o	|	|	|	|	0.15
198.750	0.00	0.00	0.105	o	|	|	|	|	0.15
198.833	0.00	0.00	0.105	o	|	|	|	|	0.15
198.917	0.00	0.00	0.105	o	|	|	|	|	0.15
199.000	0.00	0.00	0.105	o	|	|	|	|	0.15
199.083	0.00	0.00	0.105	o	|	|	|	|	0.15
199.167	0.00	0.00	0.105	o	|	|	|	|	0.15
199.250	0.00	0.00	0.105	o	|	|	|	|	0.15

199.333	0.00	0.00	0.105	o	|	|	|	|	0.15
199.417	0.00	0.00	0.105	o	|	|	|	|	0.15
199.500	0.00	0.00	0.105	o	|	|	|	|	0.15
199.583	0.00	0.00	0.105	o	|	|	|	|	0.15
199.667	0.00	0.00	0.105	o	|	|	|	|	0.15
199.750	0.00	0.00	0.105	o	|	|	|	|	0.15
199.833	0.00	0.00	0.105	o	|	|	|	|	0.15
199.917	0.00	0.00	0.105	o	|	|	|	|	0.15
200.000	0.00	0.00	0.105	o	|	|	|	|	0.15
200.083	0.00	0.00	0.104	o	|	|	|	|	0.15
200.167	0.00	0.00	0.104	o	|	|	|	|	0.15
200.250	0.00	0.00	0.104	o	|	|	|	|	0.15
200.333	0.00	0.00	0.104	o	|	|	|	|	0.15
200.417	0.00	0.00	0.104	o	|	|	|	|	0.15
200.500	0.00	0.00	0.104	o	|	|	|	|	0.15
200.583	0.00	0.00	0.104	o	|	|	|	|	0.15
200.667	0.00	0.00	0.104	o	|	|	|	|	0.15
200.750	0.00	0.00	0.104	o	|	|	|	|	0.15
200.833	0.00	0.00	0.104	o	|	|	|	|	0.15
200.917	0.00	0.00	0.104	o	|	|	|	|	0.15
201.000	0.00	0.00	0.104	o	|	|	|	|	0.15
201.083	0.00	0.00	0.104	o	|	|	|	|	0.15
201.167	0.00	0.00	0.104	o	|	|	|	|	0.15
201.250	0.00	0.00	0.104	o	|	|	|	|	0.15
201.333	0.00	0.00	0.104	o	|	|	|	|	0.15
201.417	0.00	0.00	0.104	o	|	|	|	|	0.15
201.500	0.00	0.00	0.104	o	|	|	|	|	0.15
201.583	0.00	0.00	0.104	o	|	|	|	|	0.15
201.667	0.00	0.00	0.104	o	|	|	|	|	0.15
201.750	0.00	0.00	0.104	o	|	|	|	|	0.15
201.833	0.00	0.00	0.104	o	|	|	|	|	0.15
201.917	0.00	0.00	0.104	o	|	|	|	|	0.15
202.000	0.00	0.00	0.104	o	|	|	|	|	0.15
202.083	0.00	0.00	0.104	o	|	|	|	|	0.15
202.167	0.00	0.00	0.104	o	|	|	|	|	0.15
202.250	0.00	0.00	0.104	o	|	|	|	|	0.15
202.333	0.00	0.00	0.104	o	|	|	|	|	0.15
202.417	0.00	0.00	0.104	o	|	|	|	|	0.15
202.500	0.00	0.00	0.104	o	|	|	|	|	0.15
202.583	0.00	0.00	0.104	o	|	|	|	|	0.15
202.667	0.00	0.00	0.104	o	|	|	|	|	0.15
202.750	0.00	0.00	0.104	o	|	|	|	|	0.15
202.833	0.00	0.00	0.104	o	|	|	|	|	0.15
202.917	0.00	0.00	0.104	o	|	|	|	|	0.15
203.000	0.00	0.00	0.104	o	|	|	|	|	0.15
203.083	0.00	0.00	0.104	o	|	|	|	|	0.15
203.167	0.00	0.00	0.104	o	|	|	|	|	0.15
203.250	0.00	0.00	0.104	o	|	|	|	|	0.15
203.333	0.00	0.00	0.104	o	|	|	|	|	0.15
203.417	0.00	0.00	0.104	o	|	|	|	|	0.15
203.500	0.00	0.00	0.104	o	|	|	|	|	0.15
203.583	0.00	0.00	0.104	o	|	|	|	|	0.15
203.667	0.00	0.00	0.104	o	|	|	|	|	0.15
203.750	0.00	0.00	0.104	o	|	|	|	|	0.15
203.833	0.00	0.00	0.104	o	|	|	|	|	0.15
203.917	0.00	0.00	0.104	o	|	|	|	|	0.15
204.000	0.00	0.00	0.104	o	|	|	|	|	0.15
204.083	0.00	0.00	0.104	o	|	|	|	|	0.15
204.167	0.00	0.00	0.104	o	|	|	|	|	0.15
204.250	0.00	0.00	0.104	o	|	|	|	|	0.15
204.333	0.00	0.00	0.104	o	|	|	|	|	0.15
204.417	0.00	0.00	0.104	o	|	|	|	|	0.15
204.500	0.00	0.00	0.104	o	|	|	|	|	0.15
204.583	0.00	0.00	0.104	o	|	|	|	|	0.15
204.667	0.00	0.00	0.104	o	|	|	|	|	0.15
204.750	0.00	0.00	0.104	o	|	|	|	|	0.15
204.833	0.00	0.00	0.104	o	|	|	|	|	0.15
204.917	0.00	0.00	0.104	o	|	|	|	|	0.15
205.000	0.00	0.00	0.104	o	|	|	|	|	0.15
205.083	0.00	0.00	0.104	o	|	|	|	|	0.15
205.167	0.00	0.00	0.104	o	|	|	|	|	0.15

Remaining water in basin = 0.10 (Ac.Ft)

```
**************************HYDROGRAPH DATA**************************
               Number of intervals =  2462
               Time interval =    5.0 (Min.)
               Maximum/Peak flow rate =        0.647 (CFS)
               Total volume =       4.895 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
*******************************************************************************

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BASIN ROUTING
5-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 02/17/22

EXETER BSS BUILDING 3
5-YR 24-HR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH5YR245.rte
**********HYDROGRAPH DATA**********
Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 11.295 (CFS)
Total volume = 6.873 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
2.000	2.065	0.482	2.063	2.067
2.500	2.745	0.543	2.743	2.747
3.000	3.453	0.598	3.451	3.455
3.490	4.167	0.647	4.165	4.169
3.500	4.182	0.720	4.180	4.184
4.000	4.923	1.210	4.919	4.927
4.500	5.670	1.464	5.665	5.675
5.000	6.418	1.667	6.412	6.424
5.500	7.159	1.843	7.153	7.165
6.000	7.887	2.000	7.880	7.894
6.500	8.595	2.145	8.588	8.602
7.000	9.275	2.279	9.267	9.283
7.500	9.916	2.406	9.908	9.924
8.000	10.499	2.525	10.490	10.508
8.500	10.984	2.639	10.975	10.993

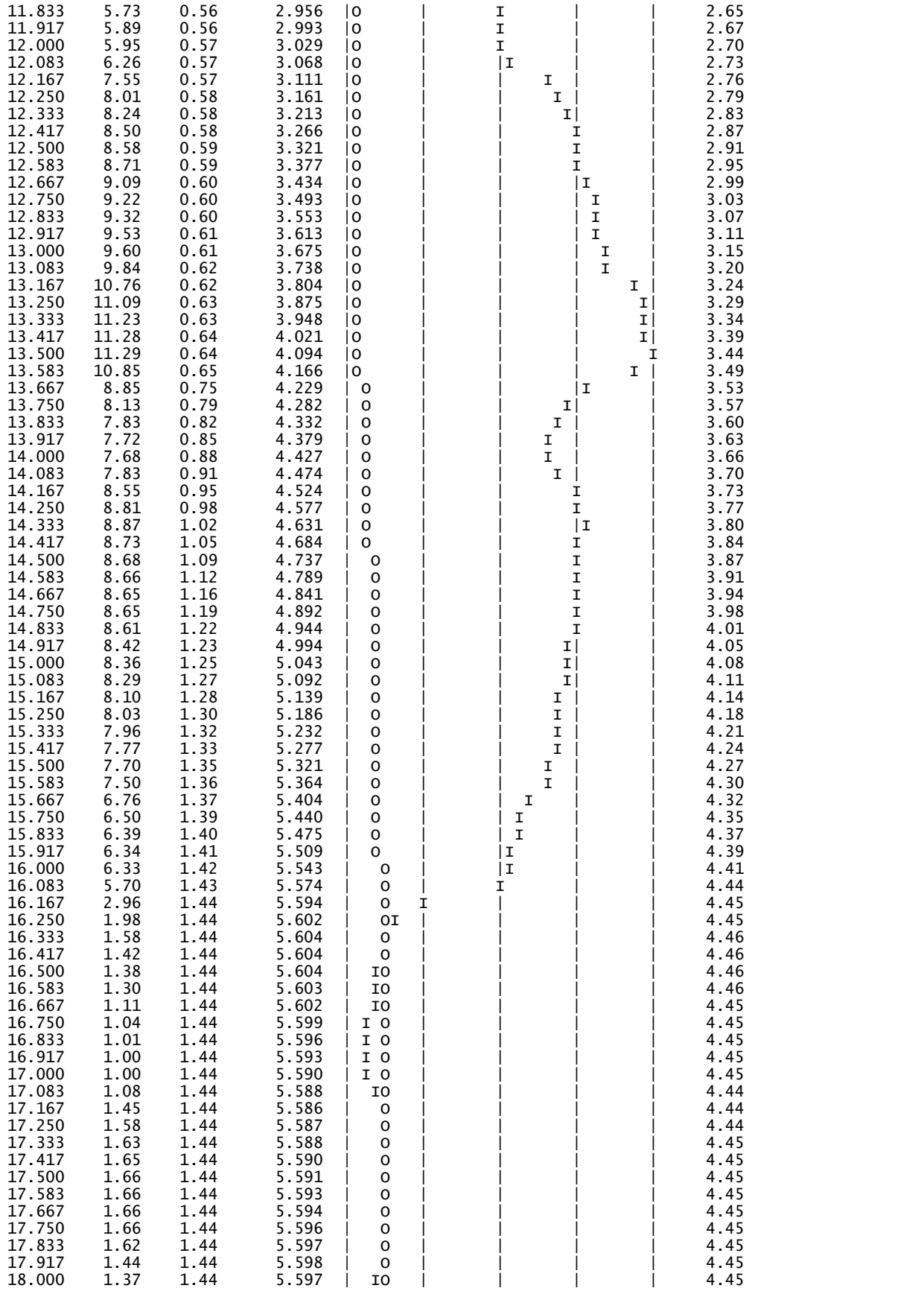
9.000 11.340 2.749 11.331 11.349

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 2.8 5.65 8.47 11.29	Depth (Ft.)
0.083	0.08	0.00	0.000	O | | | |	0.00
0.167	0.45	0.00	0.002	OI | | | |	0.00
0.250	0.58	0.00	0.006	OI | | | |	0.01
0.333	0.67	0.00	0.010	OI | | | |	0.01
0.417	0.88	0.00	0.015	O I | | | |	0.02
0.500	0.95	0.00	0.022	O I | | | |	0.03
0.583	0.98	0.00	0.028	O I | | | |	0.04
0.667	0.99	0.00	0.035	O I | | | |	0.05
0.750	0.99	0.00	0.042	O I | | | |	0.06
0.833	1.04	0.00	0.049	O I | | | |	0.07
0.917	1.22	0.00	0.057	O I | | | |	0.08
1.000	1.29	0.00	0.065	O I | | | |	0.09
1.083	1.27	0.00	0.074	O I | | | |	0.10
1.167	1.10	0.00	0.082	O I | | | |	0.12
1.250	1.04	0.00	0.090	O I | | | |	0.13
1.333	1.01	0.00	0.097	O I | | | |	0.14
1.417	1.00	0.00	0.104	O I | | | |	0.15
1.500	1.00	0.01	0.110	O I | | | |	0.16
1.583	1.00	0.01	0.117	O I | | | |	0.16
1.667	1.00	0.02	0.124	O I | | | |	0.17
1.750	1.00	0.02	0.131	O I | | | |	0.18
1.833	1.04	0.03	0.138	O I | | | |	0.19
1.917	1.22	0.04	0.145	O I | | | |	0.20
2.000	1.29	0.04	0.154	O I | | | |	0.22
2.083	1.31	0.05	0.162	O I | | | |	0.23
2.167	1.32	0.06	0.171	O I | | | |	0.24
2.250	1.33	0.06	0.180	O I | | | |	0.25
2.333	1.33	0.07	0.188	O I | | | |	0.26
2.417	1.33	0.08	0.197	O I | | | |	0.28
2.500	1.33	0.09	0.206	O I | | | |	0.29
2.583	1.37	0.09	0.214	O I | | | |	0.30
2.667	1.55	0.10	0.224	O I | | | |	0.31
2.750	1.62	0.11	0.234	O I | | | |	0.33
2.833	1.65	0.12	0.244	O I | | | |	0.34
2.917	1.66	0.13	0.255	O I | | | |	0.36
3.000	1.66	0.14	0.265	O I | | | |	0.37
3.083	1.66	0.14	0.276	O I | | | |	0.39
3.167	1.66	0.15	0.286	O I | | | |	0.40
3.250	1.66	0.16	0.297	O I | | | |	0.42
3.333	1.66	0.17	0.307	O I | | | |	0.43
3.417	1.66	0.18	0.317	O I | | | |	0.45
3.500	1.66	0.19	0.327	O I | | | |	0.46
3.583	1.66	0.20	0.338	O I | | | |	0.47
3.667	1.66	0.20	0.348	O I | | | |	0.49
3.750	1.66	0.21	0.358	O I | | | |	0.50
3.833	1.70	0.21	0.368	O I | | | |	0.51
3.917	1.89	0.22	0.379	O I | | | |	0.52
4.000	1.95	0.22	0.390	O I | | | |	0.54
4.083	1.98	0.22	0.402	O I | | | |	0.55
4.167	1.99	0.23	0.415	O I | | | |	0.56
4.250	1.99	0.23	0.427	O I | | | |	0.57
4.333	2.04	0.23	0.439	O I | | | |	0.59
4.417	2.22	0.23	0.452	O I | | | |	0.60
4.500	2.28	0.24	0.466	O I | | | |	0.61
4.583	2.31	0.24	0.480	O I | | | |	0.63
4.667	2.32	0.24	0.494	O I | | | |	0.64
4.750	2.33	0.25	0.509	O I | | | |	0.66
4.833	2.37	0.25	0.523	O I | | | |	0.67
4.917	2.55	0.25	0.538	O I | | | |	0.69
5.000	2.62	0.26	0.554	O I | | | |	0.70
5.083	2.56	0.26	0.570	O I | | | |	0.72
5.167	2.21	0.27	0.585	O I | | | |	0.74
5.250	2.08	0.27	0.598	O I | | | |	0.75
5.333	2.07	0.27	0.610	O I | | | |	0.76
5.417	2.23	0.27	0.623	O I | | | |	0.78
5.500	2.29	0.28	0.637	O I | | | |	0.79

5.583	2.36	0.28	0.651	o	I	|	|	|	0.80
5.667	2.55	0.29	0.666	o	I	|	|	|	0.82
5.750	2.61	0.29	0.682	o	I	|	|	|	0.84
5.833	2.64	0.29	0.698	o	I	|	|	|	0.85
5.917	2.65	0.30	0.714	o	I	|	|	|	0.87
6.000	2.66	0.30	0.730	o	I	|	|	|	0.89
6.083	2.70	0.30	0.747	o	I	|	|	|	0.90
6.167	2.88	0.31	0.764	o	I	|	|	|	0.92
6.250	2.95	0.31	0.782	o	I	|	|	|	0.94
6.333	2.98	0.32	0.800	o	I	|	|	|	0.96
6.417	2.99	0.32	0.818	o	I	|	|	|	0.98
6.500	2.99	0.33	0.837	o	I	|	|	|	1.00
6.583	3.03	0.33	0.855	o	I	|	|	|	1.01
6.667	3.22	0.33	0.875	o	I	|	|	|	1.03
6.750	3.28	0.33	0.895	o	I	|	|	|	1.04
6.833	3.31	0.34	0.915	o	I	|	|	|	1.06
6.917	3.32	0.34	0.936	o	I	|	|	|	1.08
7.000	3.32	0.34	0.956	o	I	|	|	|	1.09
7.083	3.33	0.34	0.977	o	I	|	|	|	1.11
7.167	3.33	0.35	0.997	o	I	|	|	|	1.13
7.250	3.33	0.35	1.018	o	I	|	|	|	1.14
7.333	3.37	0.35	1.038	o	I	|	|	|	1.16
7.417	3.55	0.35	1.060	o	I	|	|	|	1.18
7.500	3.62	0.36	1.082	o	I	|	|	|	1.20
7.583	3.68	0.36	1.105	o	I	|	|	|	1.22
7.667	3.88	0.36	1.128	o	I	|	|	|	1.23
7.750	3.95	0.37	1.152	o	I	|	|	|	1.25
7.833	4.02	0.37	1.177	o	I	|	|	|	1.27
7.917	4.21	0.37	1.203	o	I	|	|	|	1.30
8.000	4.28	0.38	1.230	o	I	|	|	|	1.32
8.083	4.39	0.38	1.257	o	I	|	|	|	1.34
8.167	4.77	0.38	1.286	o	I	|	|	|	1.36
8.250	4.90	0.39	1.317	o	I	|	|	|	1.39
8.333	4.96	0.39	1.348	o	I	|	|	|	1.41
8.417	4.98	0.40	1.379	o	I	|	|	|	1.44
8.500	4.98	0.40	1.411	o	I	|	|	|	1.47
8.583	5.03	0.40	1.443	o	I	|	|	|	1.49
8.667	5.21	0.41	1.475	o	I	|	|	|	1.52
8.750	5.28	0.41	1.508	o	I	|	|	|	1.55
8.833	5.35	0.42	1.542	o	I	|	|	|	1.57
8.917	5.54	0.42	1.577	o	I	|	|	|	1.60
9.000	5.61	0.42	1.612	o	I	|	|	|	1.63
9.083	5.72	0.43	1.648	o	I	|	|	|	1.66
9.167	6.10	0.43	1.686	o	I	|	|	|	1.69
9.250	6.23	0.44	1.725	o	I	|	|	|	1.72
9.333	6.33	0.44	1.766	o	I	|	|	|	1.76
9.417	6.53	0.45	1.807	o	I	|	|	|	1.79
9.500	6.60	0.45	1.849	o	I	|	|	|	1.82
9.583	6.68	0.46	1.892	o	I	|	|	|	1.86
9.667	6.87	0.47	1.935	o	I	|	|	|	1.89
9.750	6.94	0.47	1.979	o	I	|	|	|	1.93
9.833	7.01	0.48	2.024	o	I	|	|	|	1.97
9.917	7.20	0.48	2.070	o	I	|	|	|	2.00
10.000	7.27	0.49	2.116	o	I	|	|	|	2.04
10.083	7.01	0.49	2.162	o	I	|	|	|	2.07
10.167	5.75	0.49	2.203	o	I	|	|	|	2.10
10.250	5.29	0.50	2.237	o	I	|	|	|	2.13
10.333	5.10	0.50	2.270	o	I	|	|	|	2.15
10.417	5.03	0.50	2.301	o	I	|	|	|	2.17
10.500	5.01	0.51	2.332	o	I	|	|	|	2.20
10.583	5.20	0.51	2.364	o	I	|	|	|	2.22
10.667	6.11	0.51	2.399	o	I	|	|	|	2.25
10.750	6.44	0.52	2.439	o	I	|	|	|	2.27
10.833	6.57	0.52	2.480	o	I	|	|	|	2.31
10.917	6.62	0.52	2.522	o	I	|	|	|	2.34
11.000	6.64	0.53	2.564	o	I	|	|	|	2.37
11.083	6.61	0.53	2.606	o	I	|	|	|	2.40
11.167	6.43	0.53	2.647	o	I	|	|	|	2.43
11.250	6.36	0.54	2.688	o	I	|	|	|	2.46
11.333	6.34	0.54	2.728	o	I	|	|	|	2.49
11.417	6.33	0.54	2.767	o	I	|	|	|	2.52
11.500	6.32	0.55	2.807	o	I	|	|	|	2.54
11.583	6.24	0.55	2.847	o	I	|	|	|	2.57
11.667	5.87	0.55	2.885	o	I	|	|	|	2.60
11.750	5.74	0.56	2.921	o	I	|	|	|	2.62



18.083	1.35	1.44	5.597	IO				4.45
18.167	1.34	1.44	5.596	IO				4.45
18.250	1.33	1.44	5.596	IO				4.45
18.333	1.33	1.44	5.595	IO				4.45
18.417	1.33	1.44	5.594	IO				4.45
18.500	1.33	1.44	5.593	IO				4.45
18.583	1.29	1.44	5.592	IO				4.45
18.667	1.11	1.44	5.591	IO				4.45
18.750	1.04	1.44	5.588	I O				4.45
18.833	0.97	1.44	5.585	I O				4.44
18.917	0.78	1.43	5.581	I O				4.44
19.000	0.71	1.43	5.577	I O				4.44
19.083	0.72	1.43	5.572	I O				4.43
19.167	0.90	1.43	5.568	I O				4.43
19.250	0.96	1.43	5.564	I O				4.43
19.333	1.02	1.43	5.561	I O				4.43
19.417	1.22	1.43	5.559	IO				4.43
19.500	1.28	1.43	5.558	IO				4.42
19.583	1.27	1.43	5.557	IO				4.42
19.667	1.10	1.42	5.555	IO				4.42
19.750	1.04	1.42	5.553	I O				4.42
19.833	0.97	1.42	5.550	I O				4.42
19.917	0.78	1.42	5.546	I O				4.42
20.000	0.71	1.42	5.541	I O				4.41
20.083	0.72	1.42	5.537	I O				4.41
20.167	0.90	1.42	5.532	I O				4.41
20.250	0.96	1.42	5.529	I O				4.41
20.333	0.98	1.42	5.526	I O				4.40
20.417	0.99	1.41	5.523	I O				4.40
20.500	0.99	1.41	5.520	I O				4.40
20.583	1.00	1.41	5.517	I O				4.40
20.667	1.00	1.41	5.514	IO				4.40
20.750	1.00	1.41	5.511	IO				4.39
20.833	0.96	1.41	5.509	IO				4.39
20.917	0.77	1.41	5.505	IO				4.39
21.000	0.71	1.41	5.500	IO				4.39
21.083	0.72	1.40	5.495	IO				4.38
21.167	0.90	1.40	5.491	IO				4.38
21.250	0.96	1.40	5.488	IO				4.38
21.333	0.94	1.40	5.485	IO				4.38
21.417	0.77	1.40	5.481	IO				4.37
21.500	0.71	1.40	5.477	I O				4.37
21.583	0.72	1.40	5.472	IO				4.37
21.667	0.90	1.40	5.468	IO				4.36
21.750	0.96	1.39	5.465	IO				4.36
21.833	0.94	1.39	5.462	IO				4.36
21.917	0.77	1.39	5.458	IO				4.36
22.000	0.71	1.39	5.453	I O				4.36
22.083	0.72	1.39	5.449	IO				4.35
22.167	0.90	1.39	5.445	IO				4.35
22.250	0.96	1.39	5.442	IO				4.35
22.333	0.94	1.39	5.439	IO				4.35
22.417	0.77	1.38	5.435	IO				4.34
22.500	0.71	1.38	5.430	I O				4.34
22.583	0.68	1.38	5.426	I O				4.34
22.667	0.67	1.38	5.421	I O				4.33
22.750	0.67	1.38	5.416	I O				4.33
22.833	0.67	1.38	5.411	I O				4.33
22.917	0.67	1.37	5.406	I O				4.32
23.000	0.67	1.37	5.401	I O				4.32
23.083	0.67	1.37	5.396	I O				4.32
23.167	0.67	1.37	5.392	I O				4.31
23.250	0.67	1.37	5.387	I O				4.31
23.333	0.67	1.37	5.382	I O				4.31
23.417	0.67	1.36	5.377	I O				4.30
23.500	0.67	1.36	5.372	I O				4.30
23.583	0.67	1.36	5.368	I O				4.30
23.667	0.67	1.36	5.363	I O				4.29
23.750	0.67	1.36	5.358	I O				4.29
23.833	0.67	1.36	5.353	I O				4.29
23.917	0.67	1.35	5.348	I O				4.28
24.000	0.67	1.35	5.344	I O				4.28
24.083	0.58	1.35	5.339	I O				4.28
24.167	0.22	1.35	5.332	I O				4.27
24.250	0.09	1.35	5.324	I O				4.27

24.333	0.03	1.34	5.315	I	o	|	|	|	|	4.26
24.417	0.01	1.34	5.306	I	o	|	|	|	|	4.26
24.500	0.01	1.34	5.297	I	o	|	|	|	|	4.25
24.583	0.00	1.33	5.288	I	o	|	|	|	|	4.24
24.667	0.00	1.33	5.278	I	o	|	|	|	|	4.24
24.750	0.00	1.33	5.269	I	o	|	|	|	|	4.23
24.833	0.00	1.32	5.260	I	o	|	|	|	|	4.23
24.917	0.00	1.32	5.251	I	o	|	|	|	|	4.22
25.000	0.00	1.32	5.242	I	o	|	|	|	|	4.21
25.083	0.00	1.32	5.233	I	o	|	|	|	|	4.21
25.167	0.00	1.31	5.224	I	o	|	|	|	|	4.20
25.250	0.00	1.31	5.215	I	o	|	|	|	|	4.20
25.333	0.00	1.31	5.206	I	o	|	|	|	|	4.19
25.417	0.00	1.30	5.197	I	o	|	|	|	|	4.18
25.500	0.00	1.30	5.188	I	o	|	|	|	|	4.18
25.583	0.00	1.30	5.179	I	o	|	|	|	|	4.17
25.667	0.00	1.29	5.170	I	o	|	|	|	|	4.17
25.750	0.00	1.29	5.161	I	o	|	|	|	|	4.16
25.833	0.00	1.29	5.152	I	o	|	|	|	|	4.15
25.917	0.00	1.28	5.143	I	o	|	|	|	|	4.15
26.000	0.00	1.28	5.135	I	o	|	|	|	|	4.14
26.083	0.00	1.28	5.126	I	o	|	|	|	|	4.14
26.167	0.00	1.28	5.117	I	o	|	|	|	|	4.13
26.250	0.00	1.27	5.108	I	o	|	|	|	|	4.12
26.333	0.00	1.27	5.099	I	o	|	|	|	|	4.12
26.417	0.00	1.27	5.091	I	o	|	|	|	|	4.11
26.500	0.00	1.26	5.082	I	o	|	|	|	|	4.11
26.583	0.00	1.26	5.073	I	o	|	|	|	|	4.10
26.667	0.00	1.26	5.065	I	o	|	|	|	|	4.09
26.750	0.00	1.26	5.056	I	o	|	|	|	|	4.09
26.833	0.00	1.25	5.047	I	o	|	|	|	|	4.08
26.917	0.00	1.25	5.039	I	o	|	|	|	|	4.08
27.000	0.00	1.25	5.030	I	o	|	|	|	|	4.07
27.083	0.00	1.24	5.021	I	o	|	|	|	|	4.07
27.167	0.00	1.24	5.013	I	o	|	|	|	|	4.06
27.250	0.00	1.24	5.004	I	o	|	|	|	|	4.05
27.333	0.00	1.23	4.996	I	o	|	|	|	|	4.05
27.417	0.00	1.23	4.987	I	o	|	|	|	|	4.04
27.500	0.00	1.23	4.979	I	o	|	|	|	|	4.04
27.583	0.00	1.23	4.970	I	o	|	|	|	|	4.03
27.667	0.00	1.22	4.962	I	o	|	|	|	|	4.03
27.750	0.00	1.22	4.954	I	o	|	|	|	|	4.02
27.833	0.00	1.22	4.945	I	o	|	|	|	|	4.01
27.917	0.00	1.21	4.937	I	o	|	|	|	|	4.01
28.000	0.00	1.21	4.928	I	o	|	|	|	|	4.00
28.083	0.00	1.21	4.920	I	o	|	|	|	|	4.00
28.167	0.00	1.20	4.912	I	o	|	|	|	|	3.99
28.250	0.00	1.20	4.904	I	o	|	|	|	|	3.99
28.333	0.00	1.19	4.895	I	o	|	|	|	|	3.98
28.417	0.00	1.19	4.887	I	o	|	|	|	|	3.98
28.500	0.00	1.18	4.879	I	o	|	|	|	|	3.97
28.583	0.00	1.18	4.871	I	o	|	|	|	|	3.96
28.667	0.00	1.17	4.863	I	o	|	|	|	|	3.96
28.750	0.00	1.16	4.855	I	o	|	|	|	|	3.95
28.833	0.00	1.16	4.847	I	o	|	|	|	|	3.95
28.917	0.00	1.15	4.839	I	o	|	|	|	|	3.94
29.000	0.00	1.15	4.831	I	o	|	|	|	|	3.94
29.083	0.00	1.14	4.823	I	o	|	|	|	|	3.93
29.167	0.00	1.14	4.815	I	o	|	|	|	|	3.93
29.250	0.00	1.13	4.807	I	o	|	|	|	|	3.92
29.333	0.00	1.13	4.800	I	o	|	|	|	|	3.92
29.417	0.00	1.12	4.792	I	o	|	|	|	|	3.91
29.500	0.00	1.12	4.784	I	o	|	|	|	|	3.91
29.583	0.00	1.11	4.776	I	o	|	|	|	|	3.90
29.667	0.00	1.11	4.769	I	o	|	|	|	|	3.90
29.750	0.00	1.10	4.761	I	o	|	|	|	|	3.89
29.833	0.00	1.10	4.754	I	o	|	|	|	|	3.89
29.917	0.00	1.09	4.746	I	o	|	|	|	|	3.88
30.000	0.00	1.09	4.738	I	o	|	|	|	|	3.88
30.083	0.00	1.08	4.731	I	o	|	|	|	|	3.87
30.167	0.00	1.08	4.724	I	o	|	|	|	|	3.87
30.250	0.00	1.07	4.716	I	o	|	|	|	|	3.86
30.333	0.00	1.07	4.709	I	o	|	|	|	|	3.86
30.417	0.00	1.06	4.701	I	o	|	|	|	|	3.85
30.500	0.00	1.06	4.694	I	o	|	|	|	|	3.85

30.583	0.00	1.05	4.687	I	O	|	|	|	3.84
30.667	0.00	1.05	4.680	I	O	|	|	|	3.84
30.750	0.00	1.04	4.672	I	O	|	|	|	3.83
30.833	0.00	1.04	4.665	I	O	|	|	|	3.83
30.917	0.00	1.03	4.658	I	O	|	|	|	3.82
31.000	0.00	1.03	4.651	I	O	|	|	|	3.82
31.083	0.00	1.03	4.644	I	O	|	|	|	3.81
31.167	0.00	1.02	4.637	I	O	|	|	|	3.81
31.250	0.00	1.02	4.630	I	O	|	|	|	3.80
31.333	0.00	1.01	4.623	I	O	|	|	|	3.80
31.417	0.00	1.01	4.616	I	O	|	|	|	3.79
31.500	0.00	1.00	4.609	I	O	|	|	|	3.79
31.583	0.00	1.00	4.602	I	O	|	|	|	3.78
31.667	0.00	0.99	4.595	I	O	|	|	|	3.78
31.750	0.00	0.99	4.588	I	O	|	|	|	3.77
31.833	0.00	0.98	4.582	I	O	|	|	|	3.77
31.917	0.00	0.98	4.575	I	O	|	|	|	3.77
32.000	0.00	0.98	4.568	I	O	|	|	|	3.76
32.083	0.00	0.97	4.561	I	O	|	|	|	3.76
32.167	0.00	0.97	4.555	I	O	|	|	|	3.75
32.250	0.00	0.96	4.548	I	O	|	|	|	3.75
32.333	0.00	0.96	4.541	I	O	|	|	|	3.74
32.417	0.00	0.95	4.535	I	O	|	|	|	3.74
32.500	0.00	0.95	4.528	I	O	|	|	|	3.73
32.583	0.00	0.94	4.522	I	O	|	|	|	3.73
32.667	0.00	0.94	4.515	I	O	|	|	|	3.72
32.750	0.00	0.94	4.509	I	O	|	|	|	3.72
32.833	0.00	0.93	4.502	I	O	|	|	|	3.72
32.917	0.00	0.93	4.496	I	O	|	|	|	3.71
33.000	0.00	0.92	4.490	I	O	|	|	|	3.71
33.083	0.00	0.92	4.483	I	O	|	|	|	3.70
33.167	0.00	0.92	4.477	I	O	|	|	|	3.70
33.250	0.00	0.91	4.471	I	O	|	|	|	3.69
33.333	0.00	0.91	4.464	I	O	|	|	|	3.69
33.417	0.00	0.90	4.458	I	O	|	|	|	3.69
33.500	0.00	0.90	4.452	I	O	|	|	|	3.68
33.583	0.00	0.89	4.446	I	O	|	|	|	3.68
33.667	0.00	0.89	4.440	I	O	|	|	|	3.67
33.750	0.00	0.89	4.434	I	O	|	|	|	3.67
33.833	0.00	0.88	4.428	I	O	|	|	|	3.67
33.917	0.00	0.88	4.421	I	O	|	|	|	3.66
34.000	0.00	0.87	4.415	I	O	|	|	|	3.66
34.083	0.00	0.87	4.409	I	O	|	|	|	3.65
34.167	0.00	0.87	4.403	I	O	|	|	|	3.65
34.250	0.00	0.86	4.397	I	O	|	|	|	3.65
34.333	0.00	0.86	4.392	I	O	|	|	|	3.64
34.417	0.00	0.85	4.386	I	O	|	|	|	3.64
34.500	0.00	0.85	4.380	I	O	|	|	|	3.63
34.583	0.00	0.85	4.374	I	O	|	|	|	3.63
34.667	0.00	0.84	4.368	I	O	|	|	|	3.63
34.750	0.00	0.84	4.362	I	O	|	|	|	3.62
34.833	0.00	0.84	4.357	I	O	|	|	|	3.62
34.917	0.00	0.83	4.351	I	O	|	|	|	3.61
35.000	0.00	0.83	4.345	I	O	|	|	|	3.61
35.083	0.00	0.82	4.339	I	O	|	|	|	3.61
35.167	0.00	0.82	4.334	I	O	|	|	|	3.60
35.250	0.00	0.82	4.328	I	O	|	|	|	3.60
35.333	0.00	0.81	4.322	I	O	|	|	|	3.59
35.417	0.00	0.81	4.317	I	O	|	|	|	3.59
35.500	0.00	0.81	4.311	I	O	|	|	|	3.59
35.583	0.00	0.80	4.306	I	O	|	|	|	3.58
35.667	0.00	0.80	4.300	I	O	|	|	|	3.58
35.750	0.00	0.79	4.295	I	O	|	|	|	3.58
35.833	0.00	0.79	4.289	I	O	|	|	|	3.57
35.917	0.00	0.79	4.284	I	O	|	|	|	3.57
36.000	0.00	0.78	4.279	I	O	|	|	|	3.57
36.083	0.00	0.78	4.273	I	O	|	|	|	3.56
36.167	0.00	0.78	4.268	I	O	|	|	|	3.56
36.250	0.00	0.77	4.262	I	O	|	|	|	3.55
36.333	0.00	0.77	4.257	I	O	|	|	|	3.55
36.417	0.00	0.77	4.252	I	O	|	|	|	3.55
36.500	0.00	0.76	4.247	I	O	|	|	|	3.54
36.583	0.00	0.76	4.241	I	O	|	|	|	3.54
36.667	0.00	0.76	4.236	I	O	|	|	|	3.54
36.750	0.00	0.75	4.231	I	O	|	|	|	3.53

36.833	0.00	0.75	4.226	I O	|	|	|	|	3.53
36.917	0.00	0.75	4.221	I O	|	|	|	|	3.53
37.000	0.00	0.74	4.215	I O	|	|	|	|	3.52
37.083	0.00	0.74	4.210	I O	|	|	|	|	3.52
37.167	0.00	0.74	4.205	I O	|	|	|	|	3.52
37.250	0.00	0.73	4.200	I O	|	|	|	|	3.51
37.333	0.00	0.73	4.195	I O	|	|	|	|	3.51
37.417	0.00	0.73	4.190	I O	|	|	|	|	3.51
37.500	0.00	0.72	4.185	I O	|	|	|	|	3.50
37.583	0.00	0.71	4.180	I O	|	|	|	|	3.50
37.667	0.00	0.69	4.175	IO	|	|	|	|	3.50
37.750	0.00	0.67	4.171	IO	|	|	|	|	3.49
37.833	0.00	0.65	4.166	IO	|	|	|	|	3.49
37.917	0.00	0.65	4.162	IO	|	|	|	|	3.49
38.000	0.00	0.65	4.157	IO	|	|	|	|	3.48
38.083	0.00	0.65	4.153	IO	|	|	|	|	3.48
38.167	0.00	0.65	4.148	IO	|	|	|	|	3.48
38.250	0.00	0.65	4.144	IO	|	|	|	|	3.47
38.333	0.00	0.65	4.140	IO	|	|	|	|	3.47
38.417	0.00	0.64	4.135	IO	|	|	|	|	3.47
38.500	0.00	0.64	4.131	IO	|	|	|	|	3.47
38.583	0.00	0.64	4.126	IO	|	|	|	|	3.46
38.667	0.00	0.64	4.122	IO	|	|	|	|	3.46
38.750	0.00	0.64	4.117	IO	|	|	|	|	3.46
38.833	0.00	0.64	4.113	IO	|	|	|	|	3.45
38.917	0.00	0.64	4.109	IO	|	|	|	|	3.45
39.000	0.00	0.64	4.104	IO	|	|	|	|	3.45
39.083	0.00	0.64	4.100	IO	|	|	|	|	3.44
39.167	0.00	0.64	4.095	IO	|	|	|	|	3.44
39.250	0.00	0.64	4.091	IO	|	|	|	|	3.44
39.333	0.00	0.64	4.086	IO	|	|	|	|	3.43
39.417	0.00	0.64	4.082	IO	|	|	|	|	3.43
39.500	0.00	0.64	4.078	IO	|	|	|	|	3.43
39.583	0.00	0.64	4.073	IO	|	|	|	|	3.43
39.667	0.00	0.64	4.069	IO	|	|	|	|	3.42
39.750	0.00	0.64	4.064	IO	|	|	|	|	3.42
39.833	0.00	0.64	4.060	IO	|	|	|	|	3.42
39.917	0.00	0.64	4.056	IO	|	|	|	|	3.41
40.000	0.00	0.64	4.051	IO	|	|	|	|	3.41
40.083	0.00	0.64	4.047	IO	|	|	|	|	3.41
40.167	0.00	0.64	4.042	IO	|	|	|	|	3.40
40.250	0.00	0.64	4.038	IO	|	|	|	|	3.40
40.333	0.00	0.64	4.034	IO	|	|	|	|	3.40
40.417	0.00	0.64	4.029	IO	|	|	|	|	3.40
40.500	0.00	0.64	4.025	IO	|	|	|	|	3.39
40.583	0.00	0.64	4.020	IO	|	|	|	|	3.39
40.667	0.00	0.64	4.016	IO	|	|	|	|	3.39
40.750	0.00	0.64	4.012	IO	|	|	|	|	3.38
40.833	0.00	0.64	4.007	IO	|	|	|	|	3.38
40.917	0.00	0.64	4.003	IO	|	|	|	|	3.38
41.000	0.00	0.64	3.998	IO	|	|	|	|	3.37
41.083	0.00	0.64	3.994	IO	|	|	|	|	3.37
41.167	0.00	0.63	3.990	IO	|	|	|	|	3.37
41.250	0.00	0.63	3.985	IO	|	|	|	|	3.37
41.333	0.00	0.63	3.981	IO	|	|	|	|	3.36
41.417	0.00	0.63	3.977	IO	|	|	|	|	3.36
41.500	0.00	0.63	3.972	IO	|	|	|	|	3.36
41.583	0.00	0.63	3.968	IO	|	|	|	|	3.35
41.667	0.00	0.63	3.964	IO	|	|	|	|	3.35
41.750	0.00	0.63	3.959	IO	|	|	|	|	3.35
41.833	0.00	0.63	3.955	IO	|	|	|	|	3.34
41.917	0.00	0.63	3.950	IO	|	|	|	|	3.34
42.000	0.00	0.63	3.946	IO	|	|	|	|	3.34
42.083	0.00	0.63	3.942	IO	|	|	|	|	3.34
42.167	0.00	0.63	3.937	IO	|	|	|	|	3.33
42.250	0.00	0.63	3.933	IO	|	|	|	|	3.33
42.333	0.00	0.63	3.929	IO	|	|	|	|	3.33
42.417	0.00	0.63	3.924	IO	|	|	|	|	3.32
42.500	0.00	0.63	3.920	IO	|	|	|	|	3.32
42.583	0.00	0.63	3.916	IO	|	|	|	|	3.32
42.667	0.00	0.63	3.911	IO	|	|	|	|	3.31
42.750	0.00	0.63	3.907	IO	|	|	|	|	3.31
42.833	0.00	0.63	3.903	IO	|	|	|	|	3.31
42.917	0.00	0.63	3.898	IO	|	|	|	|	3.31
43.000	0.00	0.63	3.894	IO	|	|	|	|	3.30

43.083	0.00	0.63	3.890	IO					3.30
43.167	0.00	0.63	3.885	IO					3.30
43.250	0.00	0.63	3.881	IO					3.29
43.333	0.00	0.63	3.877	IO					3.29
43.417	0.00	0.63	3.872	IO					3.29
43.500	0.00	0.63	3.868	IO					3.28
43.583	0.00	0.63	3.864	IO					3.28
43.667	0.00	0.63	3.859	IO					3.28
43.750	0.00	0.63	3.855	IO					3.28
43.833	0.00	0.63	3.851	IO					3.27
43.917	0.00	0.63	3.847	IO					3.27
44.000	0.00	0.62	3.842	IO					3.27
44.083	0.00	0.62	3.838	IO					3.26
44.167	0.00	0.62	3.834	IO					3.26
44.250	0.00	0.62	3.829	IO					3.26
44.333	0.00	0.62	3.825	IO					3.26
44.417	0.00	0.62	3.821	IO					3.25
44.500	0.00	0.62	3.816	IO					3.25
44.583	0.00	0.62	3.812	IO					3.25
44.667	0.00	0.62	3.808	IO					3.24
44.750	0.00	0.62	3.804	IO					3.24
44.833	0.00	0.62	3.799	IO					3.24
44.917	0.00	0.62	3.795	IO					3.23
45.000	0.00	0.62	3.791	IO					3.23
45.083	0.00	0.62	3.786	IO					3.23
45.167	0.00	0.62	3.782	IO					3.23
45.250	0.00	0.62	3.778	IO					3.22
45.333	0.00	0.62	3.774	IO					3.22
45.417	0.00	0.62	3.769	IO					3.22
45.500	0.00	0.62	3.765	IO					3.21
45.583	0.00	0.62	3.761	IO					3.21
45.667	0.00	0.62	3.757	IO					3.21
45.750	0.00	0.62	3.752	IO					3.21
45.833	0.00	0.62	3.748	IO					3.20
45.917	0.00	0.62	3.744	IO					3.20
46.000	0.00	0.62	3.740	IO					3.20
46.083	0.00	0.62	3.735	IO					3.19
46.167	0.00	0.62	3.731	IO					3.19
46.250	0.00	0.62	3.727	IO					3.19
46.333	0.00	0.62	3.723	IO					3.19
46.417	0.00	0.62	3.718	IO					3.18
46.500	0.00	0.62	3.714	IO					3.18
46.583	0.00	0.62	3.710	IO					3.18
46.667	0.00	0.62	3.706	IO					3.17
46.750	0.00	0.62	3.701	IO					3.17
46.833	0.00	0.61	3.697	IO					3.17
46.917	0.00	0.61	3.693	IO					3.16
47.000	0.00	0.61	3.689	IO					3.16
47.083	0.00	0.61	3.684	IO					3.16
47.167	0.00	0.61	3.680	IO					3.16
47.250	0.00	0.61	3.676	IO					3.15
47.333	0.00	0.61	3.672	IO					3.15
47.417	0.00	0.61	3.668	IO					3.15
47.500	0.00	0.61	3.663	IO					3.14
47.583	0.00	0.61	3.659	IO					3.14
47.667	0.00	0.61	3.655	IO					3.14
47.750	0.00	0.61	3.651	IO					3.14
47.833	0.00	0.61	3.646	IO					3.13
47.917	0.00	0.61	3.642	IO					3.13
48.000	0.00	0.61	3.638	IO					3.13
48.083	0.00	0.61	3.634	IO					3.12
48.167	0.00	0.61	3.630	IO					3.12
48.250	0.00	0.61	3.625	IO					3.12
48.333	0.00	0.61	3.621	IO					3.12
48.417	0.00	0.61	3.617	IO					3.11
48.500	0.00	0.61	3.613	IO					3.11
48.583	0.00	0.61	3.609	IO					3.11
48.667	0.00	0.61	3.604	IO					3.10
48.750	0.00	0.61	3.600	IO					3.10
48.833	0.00	0.61	3.596	IO					3.10
48.917	0.00	0.61	3.592	IO					3.10
49.000	0.00	0.61	3.588	IO					3.09
49.083	0.00	0.61	3.584	IO					3.09
49.167	0.00	0.61	3.579	IO					3.09
49.250	0.00	0.61	3.575	IO					3.08

49.333	0.00	0.61	3.571	IO					3.08
49.417	0.00	0.61	3.567	IO					3.08
49.500	0.00	0.61	3.563	IO					3.08
49.583	0.00	0.61	3.559	IO					3.07
49.667	0.00	0.60	3.554	IO					3.07
49.750	0.00	0.60	3.550	IO					3.07
49.833	0.00	0.60	3.546	IO					3.06
49.917	0.00	0.60	3.542	IO					3.06
50.000	0.00	0.60	3.538	IO					3.06
50.083	0.00	0.60	3.534	IO					3.06
50.167	0.00	0.60	3.529	IO					3.05
50.250	0.00	0.60	3.525	IO					3.05
50.333	0.00	0.60	3.521	IO					3.05
50.417	0.00	0.60	3.517	IO					3.04
50.500	0.00	0.60	3.513	IO					3.04
50.583	0.00	0.60	3.509	IO					3.04
50.667	0.00	0.60	3.504	IO					3.04
50.750	0.00	0.60	3.500	IO					3.03
50.833	0.00	0.60	3.496	IO					3.03
50.917	0.00	0.60	3.492	IO					3.03
51.000	0.00	0.60	3.488	IO					3.02
51.083	0.00	0.60	3.484	IO					3.02
51.167	0.00	0.60	3.480	IO					3.02
51.250	0.00	0.60	3.476	IO					3.02
51.333	0.00	0.60	3.471	IO					3.01
51.417	0.00	0.60	3.467	IO					3.01
51.500	0.00	0.60	3.463	IO					3.01
51.583	0.00	0.60	3.459	IO					3.00
51.667	0.00	0.60	3.455	IO					3.00
51.750	0.00	0.60	3.451	IO					3.00
51.833	0.00	0.60	3.447	IO					3.00
51.917	0.00	0.60	3.443	IO					2.99
52.000	0.00	0.60	3.438	IO					2.99
52.083	0.00	0.60	3.434	IO					2.99
52.167	0.00	0.60	3.430	IO					2.98
52.250	0.00	0.60	3.426	IO					2.98
52.333	0.00	0.60	3.422	IO					2.98
52.417	0.00	0.60	3.418	IO					2.98
52.500	0.00	0.59	3.414	IO					2.97
52.583	0.00	0.59	3.410	IO					2.97
52.667	0.00	0.59	3.406	IO					2.97
52.750	0.00	0.59	3.402	IO					2.96
52.833	0.00	0.59	3.397	IO					2.96
52.917	0.00	0.59	3.393	IO					2.96
53.000	0.00	0.59	3.389	IO					2.96
53.083	0.00	0.59	3.385	IO					2.95
53.167	0.00	0.59	3.381	IO					2.95
53.250	0.00	0.59	3.377	IO					2.95
53.333	0.00	0.59	3.373	IO					2.94
53.417	0.00	0.59	3.369	IO					2.94
53.500	0.00	0.59	3.365	IO					2.94
53.583	0.00	0.59	3.361	IO					2.93
53.667	0.00	0.59	3.357	IO					2.93
53.750	0.00	0.59	3.353	IO					2.93
53.833	0.00	0.59	3.349	IO					2.93
53.917	0.00	0.59	3.344	IO					2.92
54.000	0.00	0.59	3.340	IO					2.92
54.083	0.00	0.59	3.336	IO					2.92
54.167	0.00	0.59	3.332	IO					2.91
54.250	0.00	0.59	3.328	IO					2.91
54.333	0.00	0.59	3.324	IO					2.91
54.417	0.00	0.59	3.320	IO					2.91
54.500	0.00	0.59	3.316	IO					2.90
54.583	0.00	0.59	3.312	IO					2.90
54.667	0.00	0.59	3.308	IO					2.90
54.750	0.00	0.59	3.304	IO					2.89
54.833	0.00	0.59	3.300	IO					2.89
54.917	0.00	0.59	3.296	IO					2.89
55.000	0.00	0.59	3.292	IO					2.89
55.083	0.00	0.59	3.288	IO					2.88
55.167	0.00	0.58	3.284	IO					2.88
55.250	0.00	0.58	3.280	IO					2.88
55.333	0.00	0.58	3.276	IO					2.87
55.417	0.00	0.58	3.272	IO					2.87
55.500	0.00	0.58	3.268	IO					2.87

55.583	0.00	0.58	3.264	IO				2.87
55.667	0.00	0.58	3.260	IO				2.86
55.750	0.00	0.58	3.256	IO				2.86
55.833	0.00	0.58	3.252	IO				2.86
55.917	0.00	0.58	3.248	IO				2.85
56.000	0.00	0.58	3.244	IO				2.85
56.083	0.00	0.58	3.240	IO				2.85
56.167	0.00	0.58	3.236	IO				2.85
56.250	0.00	0.58	3.232	IO				2.84
56.333	0.00	0.58	3.228	IO				2.84
56.417	0.00	0.58	3.224	IO				2.84
56.500	0.00	0.58	3.220	IO				2.84
56.583	0.00	0.58	3.216	IO				2.83
56.667	0.00	0.58	3.212	IO				2.83
56.750	0.00	0.58	3.208	IO				2.83
56.833	0.00	0.58	3.204	IO				2.82
56.917	0.00	0.58	3.200	IO				2.82
57.000	0.00	0.58	3.196	IO				2.82
57.083	0.00	0.58	3.192	IO				2.82
57.167	0.00	0.58	3.188	IO				2.81
57.250	0.00	0.58	3.184	IO				2.81
57.333	0.00	0.58	3.180	IO				2.81
57.417	0.00	0.58	3.176	IO				2.80
57.500	0.00	0.58	3.172	IO				2.80
57.583	0.00	0.58	3.168	IO				2.80
57.667	0.00	0.58	3.164	IO				2.80
57.750	0.00	0.58	3.160	IO				2.79
57.833	0.00	0.57	3.156	IO				2.79
57.917	0.00	0.57	3.152	IO				2.79
58.000	0.00	0.57	3.148	IO				2.78
58.083	0.00	0.57	3.144	IO				2.78
58.167	0.00	0.57	3.140	IO				2.78
58.250	0.00	0.57	3.136	IO				2.78
58.333	0.00	0.57	3.132	IO				2.77
58.417	0.00	0.57	3.128	IO				2.77
58.500	0.00	0.57	3.124	IO				2.77
58.583	0.00	0.57	3.120	IO				2.77
58.667	0.00	0.57	3.117	IO				2.76
58.750	0.00	0.57	3.113	IO				2.76
58.833	0.00	0.57	3.109	IO				2.76
58.917	0.00	0.57	3.105	IO				2.75
59.000	0.00	0.57	3.101	IO				2.75
59.083	0.00	0.57	3.097	IO				2.75
59.167	0.00	0.57	3.093	IO				2.75
59.250	0.00	0.57	3.089	IO				2.74
59.333	0.00	0.57	3.085	IO				2.74
59.417	0.00	0.57	3.081	IO				2.74
59.500	0.00	0.57	3.077	IO				2.73
59.583	0.00	0.57	3.073	IO				2.73
59.667	0.00	0.57	3.069	IO				2.73
59.750	0.00	0.57	3.066	IO				2.73
59.833	0.00	0.57	3.062	IO				2.72
59.917	0.00	0.57	3.058	IO				2.72
60.000	0.00	0.57	3.054	IO				2.72
60.083	0.00	0.57	3.050	IO				2.72
60.167	0.00	0.57	3.046	IO				2.71
60.250	0.00	0.57	3.042	IO				2.71
60.333	0.00	0.57	3.038	IO				2.71
60.417	0.00	0.57	3.034	IO				2.70
60.500	0.00	0.57	3.030	IO				2.70
60.583	0.00	0.56	3.027	IO				2.70
60.667	0.00	0.56	3.023	IO				2.70
60.750	0.00	0.56	3.019	IO				2.69
60.833	0.00	0.56	3.015	IO				2.69
60.917	0.00	0.56	3.011	IO				2.69
61.000	0.00	0.56	3.007	IO				2.69
61.083	0.00	0.56	3.003	IO				2.68
61.167	0.00	0.56	2.999	IO				2.68
61.250	0.00	0.56	2.995	IO				2.68
61.333	0.00	0.56	2.992	IO				2.67
61.417	0.00	0.56	2.988	IO				2.67
61.500	0.00	0.56	2.984	IO				2.67
61.583	0.00	0.56	2.980	IO				2.67
61.667	0.00	0.56	2.976	IO				2.66
61.750	0.00	0.56	2.972	IO				2.66

61.833	0.00	0.56	2.968	IO					2.66
61.917	0.00	0.56	2.965	IO					2.66
62.000	0.00	0.56	2.961	IO					2.65
62.083	0.00	0.56	2.957	IO					2.65
62.167	0.00	0.56	2.953	IO					2.65
62.250	0.00	0.56	2.949	IO					2.64
62.333	0.00	0.56	2.945	IO					2.64
62.417	0.00	0.56	2.941	IO					2.64
62.500	0.00	0.56	2.938	IO					2.64
62.583	0.00	0.56	2.934	IO					2.63
62.667	0.00	0.56	2.930	IO					2.63
62.750	0.00	0.56	2.926	IO					2.63
62.833	0.00	0.56	2.922	IO					2.63
62.917	0.00	0.56	2.918	IO					2.62
63.000	0.00	0.56	2.915	IO					2.62
63.083	0.00	0.56	2.911	IO					2.62
63.167	0.00	0.56	2.907	IO					2.61
63.250	0.00	0.56	2.903	IO					2.61
63.333	0.00	0.55	2.899	IO					2.61
63.417	0.00	0.55	2.895	IO					2.61
63.500	0.00	0.55	2.892	IO					2.60
63.583	0.00	0.55	2.888	IO					2.60
63.667	0.00	0.55	2.884	IO					2.60
63.750	0.00	0.55	2.880	IO					2.60
63.833	0.00	0.55	2.876	IO					2.59
63.917	0.00	0.55	2.873	IO					2.59
64.000	0.00	0.55	2.869	IO					2.59
64.083	0.00	0.55	2.865	IO					2.58
64.167	0.00	0.55	2.861	IO					2.58
64.250	0.00	0.55	2.857	IO					2.58
64.333	0.00	0.55	2.854	IO					2.58
64.417	0.00	0.55	2.850	IO					2.57
64.500	0.00	0.55	2.846	IO					2.57
64.583	0.00	0.55	2.842	IO					2.57
64.667	0.00	0.55	2.838	IO					2.57
64.750	0.00	0.55	2.835	IO					2.56
64.833	0.00	0.55	2.831	IO					2.56
64.917	0.00	0.55	2.827	IO					2.56
65.000	0.00	0.55	2.823	IO					2.56
65.083	0.00	0.55	2.819	IO					2.55
65.167	0.00	0.55	2.816	IO					2.55
65.250	0.00	0.55	2.812	IO					2.55
65.333	0.00	0.55	2.808	IO					2.54
65.417	0.00	0.55	2.804	IO					2.54
65.500	0.00	0.55	2.801	IO					2.54
65.583	0.00	0.55	2.797	IO					2.54
65.667	0.00	0.55	2.793	IO					2.53
65.750	0.00	0.55	2.789	IO					2.53
65.833	0.00	0.55	2.786	IO					2.53
65.917	0.00	0.55	2.782	IO					2.53
66.000	0.00	0.55	2.778	IO					2.52
66.083	0.00	0.55	2.774	IO					2.52
66.167	0.00	0.54	2.770	IO					2.52
66.250	0.00	0.54	2.767	IO					2.52
66.333	0.00	0.54	2.763	IO					2.51
66.417	0.00	0.54	2.759	IO					2.51
66.500	0.00	0.54	2.755	IO					2.51
66.583	0.00	0.54	2.752	IO					2.50
66.667	0.00	0.54	2.748	IO					2.50
66.750	0.00	0.54	2.744	IO					2.50
66.833	0.00	0.54	2.741	IO					2.50
66.917	0.00	0.54	2.737	IO					2.49
67.000	0.00	0.54	2.733	IO					2.49
67.083	0.00	0.54	2.729	IO					2.49
67.167	0.00	0.54	2.726	IO					2.49
67.250	0.00	0.54	2.722	IO					2.48
67.333	0.00	0.54	2.718	IO					2.48
67.417	0.00	0.54	2.714	IO					2.48
67.500	0.00	0.54	2.711	IO					2.47
67.583	0.00	0.54	2.707	IO					2.47
67.667	0.00	0.54	2.703	IO					2.47
67.750	0.00	0.54	2.700	IO					2.47
67.833	0.00	0.54	2.696	IO					2.46
67.917	0.00	0.54	2.692	IO					2.46
68.000	0.00	0.54	2.688	IO					2.46

68.083	0.00	0.54	2.685	IO					2.46
68.167	0.00	0.54	2.681	IO					2.45
68.250	0.00	0.54	2.677	IO					2.45
68.333	0.00	0.54	2.674	IO					2.45
68.417	0.00	0.54	2.670	IO					2.44
68.500	0.00	0.54	2.666	IO					2.44
68.583	0.00	0.54	2.663	IO					2.44
68.667	0.00	0.54	2.659	IO					2.44
68.750	0.00	0.53	2.655	IO					2.43
68.833	0.00	0.53	2.651	IO					2.43
68.917	0.00	0.53	2.648	IO					2.43
69.000	0.00	0.53	2.644	IO					2.43
69.083	0.00	0.53	2.640	IO					2.42
69.167	0.00	0.53	2.637	IO					2.42
69.250	0.00	0.53	2.633	IO					2.42
69.333	0.00	0.53	2.629	IO					2.42
69.417	0.00	0.53	2.626	IO					2.41
69.500	0.00	0.53	2.622	IO					2.41
69.583	0.00	0.53	2.618	IO					2.41
69.667	0.00	0.53	2.615	IO					2.40
69.750	0.00	0.53	2.611	IO					2.40
69.833	0.00	0.53	2.607	IO					2.40
69.917	0.00	0.53	2.604	IO					2.40
70.000	0.00	0.53	2.600	IO					2.39
70.083	0.00	0.53	2.597	IO					2.39
70.167	0.00	0.53	2.593	IO					2.39
70.250	0.00	0.53	2.589	IO					2.39
70.333	0.00	0.53	2.586	IO					2.38
70.417	0.00	0.53	2.582	IO					2.38
70.500	0.00	0.53	2.578	IO					2.38
70.583	0.00	0.53	2.575	IO					2.37
70.667	0.00	0.53	2.571	IO					2.37
70.750	0.00	0.53	2.567	IO					2.37
70.833	0.00	0.53	2.564	IO					2.37
70.917	0.00	0.53	2.560	IO					2.36
71.000	0.00	0.53	2.557	IO					2.36
71.083	0.00	0.53	2.553	IO					2.36
71.167	0.00	0.53	2.549	IO					2.36
71.250	0.00	0.53	2.546	IO					2.35
71.333	0.00	0.52	2.542	IO					2.35
71.417	0.00	0.52	2.538	IO					2.35
71.500	0.00	0.52	2.535	IO					2.35
71.583	0.00	0.52	2.531	IO					2.34
71.667	0.00	0.52	2.528	IO					2.34
71.750	0.00	0.52	2.524	IO					2.34
71.833	0.00	0.52	2.520	IO					2.33
71.917	0.00	0.52	2.517	IO					2.33
72.000	0.00	0.52	2.513	IO					2.33
72.083	0.00	0.52	2.510	IO					2.33
72.167	0.00	0.52	2.506	IO					2.32
72.250	0.00	0.52	2.502	IO					2.32
72.333	0.00	0.52	2.499	IO					2.32
72.417	0.00	0.52	2.495	IO					2.32
72.500	0.00	0.52	2.492	IO					2.31
72.583	0.00	0.52	2.488	IO					2.31
72.667	0.00	0.52	2.485	IO					2.31
72.750	0.00	0.52	2.481	IO					2.31
72.833	0.00	0.52	2.477	IO					2.30
72.917	0.00	0.52	2.474	IO					2.30
73.000	0.00	0.52	2.470	IO					2.30
73.083	0.00	0.52	2.467	IO					2.30
73.167	0.00	0.52	2.463	IO					2.29
73.250	0.00	0.52	2.460	IO					2.29
73.333	0.00	0.52	2.456	IO					2.29
73.417	0.00	0.52	2.452	IO					2.28
73.500	0.00	0.52	2.449	IO					2.28
73.583	0.00	0.52	2.445	IO					2.28
73.667	0.00	0.52	2.442	IO					2.28
73.750	0.00	0.52	2.438	IO					2.27
73.833	0.00	0.52	2.435	IO					2.27
73.917	0.00	0.51	2.431	IO					2.27
74.000	0.00	0.51	2.428	IO					2.27
74.083	0.00	0.51	2.424	IO					2.26
74.167	0.00	0.51	2.420	IO					2.26
74.250	0.00	0.51	2.417	IO					2.26

74.333	0.00	0.51	2.413	IO					2.26
74.417	0.00	0.51	2.410	IO					2.25
74.500	0.00	0.51	2.406	IO					2.25
74.583	0.00	0.51	2.403	IO					2.25
74.667	0.00	0.51	2.399	IO					2.25
74.750	0.00	0.51	2.396	IO					2.24
74.833	0.00	0.51	2.392	IO					2.24
74.917	0.00	0.51	2.389	IO					2.24
75.000	0.00	0.51	2.385	IO					2.24
75.083	0.00	0.51	2.382	IO					2.23
75.167	0.00	0.51	2.378	IO					2.23
75.250	0.00	0.51	2.375	IO					2.23
75.333	0.00	0.51	2.371	IO					2.23
75.417	0.00	0.51	2.368	IO					2.22
75.500	0.00	0.51	2.364	IO					2.22
75.583	0.00	0.51	2.361	IO					2.22
75.667	0.00	0.51	2.357	IO					2.21
75.750	0.00	0.51	2.354	IO					2.21
75.833	0.00	0.51	2.350	IO					2.21
75.917	0.00	0.51	2.347	IO					2.21
76.000	0.00	0.51	2.343	IO					2.20
76.083	0.00	0.51	2.340	IO					2.20
76.167	0.00	0.51	2.336	IO					2.20
76.250	0.00	0.51	2.333	IO					2.20
76.333	0.00	0.51	2.329	IO					2.19
76.417	0.00	0.51	2.326	IO					2.19
76.500	0.00	0.51	2.322	IO					2.19
76.583	0.00	0.50	2.319	IO					2.19
76.667	0.00	0.50	2.315	IO					2.18
76.750	0.00	0.50	2.312	IO					2.18
76.833	0.00	0.50	2.308	IO					2.18
76.917	0.00	0.50	2.305	IO					2.18
77.000	0.00	0.50	2.301	IO					2.17
77.083	0.00	0.50	2.298	IO					2.17
77.167	0.00	0.50	2.294	IO					2.17
77.250	0.00	0.50	2.291	IO					2.17
77.333	0.00	0.50	2.288	IO					2.16
77.417	0.00	0.50	2.284	IO					2.16
77.500	0.00	0.50	2.281	IO					2.16
77.583	0.00	0.50	2.277	IO					2.16
77.667	0.00	0.50	2.274	IO					2.15
77.750	0.00	0.50	2.270	IO					2.15
77.833	0.00	0.50	2.267	IO					2.15
77.917	0.00	0.50	2.263	IO					2.15
78.000	0.00	0.50	2.260	IO					2.14
78.083	0.00	0.50	2.257	IO					2.14
78.167	0.00	0.50	2.253	IO					2.14
78.250	0.00	0.50	2.250	IO					2.14
78.333	0.00	0.50	2.246	IO					2.13
78.417	0.00	0.50	2.243	IO					2.13
78.500	0.00	0.50	2.239	IO					2.13
78.583	0.00	0.50	2.236	IO					2.13
78.667	0.00	0.50	2.232	IO					2.12
78.750	0.00	0.50	2.229	IO					2.12
78.833	0.00	0.50	2.226	IO					2.12
78.917	0.00	0.50	2.222	IO					2.12
79.000	0.00	0.50	2.219	IO					2.11
79.083	0.00	0.50	2.215	IO					2.11
79.167	0.00	0.50	2.212	IO					2.11
79.250	0.00	0.49	2.209	IO					2.11
79.333	0.00	0.49	2.205	IO					2.10
79.417	0.00	0.49	2.202	IO					2.10
79.500	0.00	0.49	2.198	IO					2.10
79.583	0.00	0.49	2.195	IO					2.10
79.667	0.00	0.49	2.192	IO					2.09
79.750	0.00	0.49	2.188	IO					2.09
79.833	0.00	0.49	2.185	IO					2.09
79.917	0.00	0.49	2.181	IO					2.09
80.000	0.00	0.49	2.178	IO					2.08
80.083	0.00	0.49	2.175	IO					2.08
80.167	0.00	0.49	2.171	IO					2.08
80.250	0.00	0.49	2.168	IO					2.08
80.333	0.00	0.49	2.164	IO					2.07
80.417	0.00	0.49	2.161	IO					2.07
80.500	0.00	0.49	2.158	IO					2.07

80.583	0.00	0.49	2.154	IO					2.07
80.667	0.00	0.49	2.151	IO					2.06
80.750	0.00	0.49	2.148	IO					2.06
80.833	0.00	0.49	2.144	IO					2.06
80.917	0.00	0.49	2.141	IO					2.06
81.000	0.00	0.49	2.137	IO					2.05
81.083	0.00	0.49	2.134	IO					2.05
81.167	0.00	0.49	2.131	IO					2.05
81.250	0.00	0.49	2.127	IO					2.05
81.333	0.00	0.49	2.124	IO					2.04
81.417	0.00	0.49	2.121	IO					2.04
81.500	0.00	0.49	2.117	IO					2.04
81.583	0.00	0.49	2.114	IO					2.04
81.667	0.00	0.49	2.111	IO					2.03
81.750	0.00	0.49	2.107	IO					2.03
81.833	0.00	0.49	2.104	IO					2.03
81.917	0.00	0.49	2.101	IO					2.03
82.000	0.00	0.48	2.097	IO					2.02
82.083	0.00	0.48	2.094	IO					2.02
82.167	0.00	0.48	2.091	IO					2.02
82.250	0.00	0.48	2.087	IO					2.02
82.333	0.00	0.48	2.084	IO					2.01
82.417	0.00	0.48	2.081	IO					2.01
82.500	0.00	0.48	2.077	IO					2.01
82.583	0.00	0.48	2.074	IO					2.01
82.667	0.00	0.48	2.071	IO					2.00
82.750	0.00	0.48	2.067	IO					2.00
82.833	0.00	0.48	2.064	IO					2.00
82.917	0.00	0.48	2.061	IO					2.00
83.000	0.00	0.48	2.057	IO					1.99
83.083	0.00	0.48	2.054	IO					1.99
83.167	0.00	0.48	2.051	IO					1.99
83.250	0.00	0.48	2.047	IO					1.99
83.333	0.00	0.48	2.044	IO					1.98
83.417	0.00	0.48	2.041	IO					1.98
83.500	0.00	0.48	2.037	IO					1.98
83.583	0.00	0.48	2.034	IO					1.97
83.667	0.00	0.48	2.031	IO					1.97
83.750	0.00	0.48	2.028	IO					1.97
83.833	0.00	0.48	2.024	IO					1.97
83.917	0.00	0.48	2.021	IO					1.96
84.000	0.00	0.48	2.018	IO					1.96
84.083	0.00	0.48	2.014	IO					1.96
84.167	0.00	0.48	2.011	IO					1.96
84.250	0.00	0.47	2.008	IO					1.95
84.333	0.00	0.47	2.005	IO					1.95
84.417	0.00	0.47	2.001	IO					1.95
84.500	0.00	0.47	1.998	IO					1.95
84.583	0.00	0.47	1.995	IO					1.94
84.667	0.00	0.47	1.992	IO					1.94
84.750	0.00	0.47	1.988	IO					1.94
84.833	0.00	0.47	1.985	IO					1.93
84.917	0.00	0.47	1.982	IO					1.93
85.000	0.00	0.47	1.979	IO					1.93
85.083	0.00	0.47	1.975	IO					1.93
85.167	0.00	0.47	1.972	IO					1.92
85.250	0.00	0.47	1.969	IO					1.92
85.333	0.00	0.47	1.966	IO					1.92
85.417	0.00	0.47	1.962	IO					1.92
85.500	0.00	0.47	1.959	IO					1.91
85.583	0.00	0.47	1.956	IO					1.91
85.667	0.00	0.47	1.953	IO					1.91
85.750	0.00	0.47	1.950	IO					1.91
85.833	0.00	0.47	1.946	IO					1.90
85.917	0.00	0.47	1.943	IO					1.90
86.000	0.00	0.47	1.940	IO					1.90
86.083	0.00	0.47	1.937	IO					1.90
86.167	0.00	0.47	1.933	IO					1.89
86.250	0.00	0.46	1.930	IO					1.89
86.333	0.00	0.46	1.927	IO					1.89
86.417	0.00	0.46	1.924	IO					1.88
86.500	0.00	0.46	1.921	IO					1.88
86.583	0.00	0.46	1.918	IO					1.88
86.667	0.00	0.46	1.914	IO					1.88
86.750	0.00	0.46	1.911	IO					1.87

86.833	0.00	0.46	1.908	IO				1.87
86.917	0.00	0.46	1.905	IO				1.87
87.000	0.00	0.46	1.902	IO				1.87
87.083	0.00	0.46	1.898	IO				1.86
87.167	0.00	0.46	1.895	IO				1.86
87.250	0.00	0.46	1.892	IO				1.86
87.333	0.00	0.46	1.889	IO				1.86
87.417	0.00	0.46	1.886	IO				1.85
87.500	0.00	0.46	1.883	IO				1.85
87.583	0.00	0.46	1.879	IO				1.85
87.667	0.00	0.46	1.876	IO				1.85
87.750	0.00	0.46	1.873	IO				1.84
87.833	0.00	0.46	1.870	IO				1.84
87.917	0.00	0.46	1.867	IO				1.84
88.000	0.00	0.46	1.864	IO				1.84
88.083	0.00	0.46	1.861	IO				1.83
88.167	0.00	0.46	1.857	IO				1.83
88.250	0.00	0.46	1.854	IO				1.83
88.333	0.00	0.45	1.851	IO				1.83
88.417	0.00	0.45	1.848	IO				1.82
88.500	0.00	0.45	1.845	IO				1.82
88.583	0.00	0.45	1.842	IO				1.82
88.667	0.00	0.45	1.839	IO				1.82
88.750	0.00	0.45	1.835	IO				1.81
88.833	0.00	0.45	1.832	IO				1.81
88.917	0.00	0.45	1.829	IO				1.81
89.000	0.00	0.45	1.826	IO				1.80
89.083	0.00	0.45	1.823	IO				1.80
89.167	0.00	0.45	1.820	IO				1.80
89.250	0.00	0.45	1.817	IO				1.80
89.333	0.00	0.45	1.814	IO				1.79
89.417	0.00	0.45	1.811	IO				1.79
89.500	0.00	0.45	1.808	IO				1.79
89.583	0.00	0.45	1.804	IO				1.79
89.667	0.00	0.45	1.801	IO				1.78
89.750	0.00	0.45	1.798	IO				1.78
89.833	0.00	0.45	1.795	IO				1.78
89.917	0.00	0.45	1.792	IO				1.78
90.000	0.00	0.45	1.789	IO				1.77
90.083	0.00	0.45	1.786	IO				1.77
90.167	0.00	0.45	1.783	IO				1.77
90.250	0.00	0.45	1.780	IO				1.77
90.333	0.00	0.45	1.777	IO				1.76
90.417	0.00	0.45	1.774	IO				1.76
90.500	0.00	0.44	1.771	IO				1.76
90.583	0.00	0.44	1.768	IO				1.76
90.667	0.00	0.44	1.764	IO				1.75
90.750	0.00	0.44	1.761	IO				1.75
90.833	0.00	0.44	1.758	IO				1.75
90.917	0.00	0.44	1.755	IO				1.75
91.000	0.00	0.44	1.752	IO				1.74
91.083	0.00	0.44	1.749	IO				1.74
91.167	0.00	0.44	1.746	IO				1.74
91.250	0.00	0.44	1.743	IO				1.74
91.333	0.00	0.44	1.740	IO				1.73
91.417	0.00	0.44	1.737	IO				1.73
91.500	0.00	0.44	1.734	IO				1.73
91.583	0.00	0.44	1.731	IO				1.73
91.667	0.00	0.44	1.728	IO				1.72
91.750	0.00	0.44	1.725	IO				1.72
91.833	0.00	0.44	1.722	IO				1.72
91.917	0.00	0.44	1.719	IO				1.72
92.000	0.00	0.44	1.716	IO				1.71
92.083	0.00	0.44	1.713	IO				1.71
92.167	0.00	0.44	1.710	IO				1.71
92.250	0.00	0.44	1.707	IO				1.71
92.333	0.00	0.44	1.704	IO				1.70
92.417	0.00	0.44	1.701	IO				1.70
92.500	0.00	0.44	1.698	IO				1.70
92.583	0.00	0.44	1.695	IO				1.70
92.667	0.00	0.43	1.692	IO				1.70
92.750	0.00	0.43	1.689	IO				1.69
92.833	0.00	0.43	1.686	IO				1.69
92.917	0.00	0.43	1.683	IO				1.69
93.000	0.00	0.43	1.680	IO				1.69

93.083	0.00	0.43	1.677	IO					1.68
93.167	0.00	0.43	1.674	IO					1.68
93.250	0.00	0.43	1.671	IO					1.68
93.333	0.00	0.43	1.668	IO					1.68
93.417	0.00	0.43	1.665	IO					1.67
93.500	0.00	0.43	1.662	IO					1.67
93.583	0.00	0.43	1.659	IO					1.67
93.667	0.00	0.43	1.656	IO					1.67
93.750	0.00	0.43	1.653	IO					1.66
93.833	0.00	0.43	1.650	IO					1.66
93.917	0.00	0.43	1.647	IO					1.66
94.000	0.00	0.43	1.644	IO					1.66
94.083	0.00	0.43	1.641	IO					1.65
94.167	0.00	0.43	1.638	IO					1.65
94.250	0.00	0.43	1.635	IO					1.65
94.333	0.00	0.43	1.632	IO					1.65
94.417	0.00	0.43	1.630	IO					1.64
94.500	0.00	0.43	1.627	IO					1.64
94.583	0.00	0.43	1.624	IO					1.64
94.667	0.00	0.43	1.621	IO					1.64
94.750	0.00	0.43	1.618	IO					1.63
94.833	0.00	0.42	1.615	IO					1.63
94.917	0.00	0.42	1.612	IO					1.63
95.000	0.00	0.42	1.609	IO					1.63
95.083	0.00	0.42	1.606	IO					1.63
95.167	0.00	0.42	1.603	IO					1.62
95.250	0.00	0.42	1.600	IO					1.62
95.333	0.00	0.42	1.597	IO					1.62
95.417	0.00	0.42	1.594	IO					1.62
95.500	0.00	0.42	1.592	IO					1.61
95.583	0.00	0.42	1.589	IO					1.61
95.667	0.00	0.42	1.586	IO					1.61
95.750	0.00	0.42	1.583	IO					1.61
95.833	0.00	0.42	1.580	IO					1.60
95.917	0.00	0.42	1.577	IO					1.60
96.000	0.00	0.42	1.574	IO					1.60
96.083	0.00	0.42	1.571	IO					1.60
96.167	0.00	0.42	1.568	IO					1.59
96.250	0.00	0.42	1.565	IO					1.59
96.333	0.00	0.42	1.563	IO					1.59
96.417	0.00	0.42	1.560	IO					1.59
96.500	0.00	0.42	1.557	IO					1.58
96.583	0.00	0.42	1.554	IO					1.58
96.667	0.00	0.42	1.551	IO					1.58
96.750	0.00	0.42	1.548	IO					1.58
96.833	0.00	0.42	1.545	IO					1.58
96.917	0.00	0.42	1.542	IO					1.57
97.000	0.00	0.42	1.540	IO					1.57
97.083	0.00	0.42	1.537	IO					1.57
97.167	0.00	0.41	1.534	IO					1.57
97.250	0.00	0.41	1.531	IO					1.56
97.333	0.00	0.41	1.528	IO					1.56
97.417	0.00	0.41	1.525	IO					1.56
97.500	0.00	0.41	1.522	IO					1.56
97.583	0.00	0.41	1.520	IO					1.55
97.667	0.00	0.41	1.517	IO					1.55
97.750	0.00	0.41	1.514	IO					1.55
97.833	0.00	0.41	1.511	IO					1.55
97.917	0.00	0.41	1.508	IO					1.55
98.000	0.00	0.41	1.505	IO					1.54
98.083	0.00	0.41	1.503	IO					1.54
98.167	0.00	0.41	1.500	IO					1.54
98.250	0.00	0.41	1.497	IO					1.54
98.333	0.00	0.41	1.494	IO					1.53
98.417	0.00	0.41	1.491	IO					1.53
98.500	0.00	0.41	1.489	IO					1.53
98.583	0.00	0.41	1.486	IO					1.53
98.667	0.00	0.41	1.483	IO					1.52
98.750	0.00	0.41	1.480	IO					1.52
98.833	0.00	0.41	1.477	IO					1.52
98.917	0.00	0.41	1.474	IO					1.52
99.000	0.00	0.41	1.472	IO					1.52
99.083	0.00	0.41	1.469	IO					1.51
99.167	0.00	0.41	1.466	IO					1.51
99.250	0.00	0.41	1.463	IO					1.51

99.333	0.00	0.41	1.460	IO				1.51
99.417	0.00	0.41	1.458	IO				1.50
99.500	0.00	0.40	1.455	IO				1.50
99.583	0.00	0.40	1.452	IO				1.50
99.667	0.00	0.40	1.449	IO				1.50
99.750	0.00	0.40	1.447	IO				1.49
99.833	0.00	0.40	1.444	IO				1.49
99.917	0.00	0.40	1.441	IO				1.49
100.000	0.00	0.40	1.438	IO				1.49
100.083	0.00	0.40	1.435	IO				1.49
100.167	0.00	0.40	1.433	IO				1.48
100.250	0.00	0.40	1.430	IO				1.48
100.333	0.00	0.40	1.427	IO				1.48
100.417	0.00	0.40	1.424	IO				1.48
100.500	0.00	0.40	1.422	IO				1.47
100.583	0.00	0.40	1.419	IO				1.47
100.667	0.00	0.40	1.416	IO				1.47
100.750	0.00	0.40	1.413	IO				1.47
100.833	0.00	0.40	1.411	IO				1.47
100.917	0.00	0.40	1.408	IO				1.46
101.000	0.00	0.40	1.405	IO				1.46
101.083	0.00	0.40	1.402	IO				1.46
101.167	0.00	0.40	1.400	IO				1.46
101.250	0.00	0.40	1.397	IO				1.45
101.333	0.00	0.40	1.394	IO				1.45
101.417	0.00	0.40	1.391	IO				1.45
101.500	0.00	0.40	1.389	IO				1.45
101.583	0.00	0.40	1.386	IO				1.45
101.667	0.00	0.40	1.383	IO				1.44
101.750	0.00	0.40	1.381	IO				1.44
101.833	0.00	0.39	1.378	IO				1.44
101.917	0.00	0.39	1.375	IO				1.44
102.000	0.00	0.39	1.372	IO				1.43
102.083	0.00	0.39	1.370	IO				1.43
102.167	0.00	0.39	1.367	IO				1.43
102.250	0.00	0.39	1.364	IO				1.43
102.333	0.00	0.39	1.362	IO				1.43
102.417	0.00	0.39	1.359	IO				1.42
102.500	0.00	0.39	1.356	IO				1.42
102.583	0.00	0.39	1.353	IO				1.42
102.667	0.00	0.39	1.351	IO				1.42
102.750	0.00	0.39	1.348	IO				1.41
102.833	0.00	0.39	1.345	IO				1.41
102.917	0.00	0.39	1.343	IO				1.41
103.000	0.00	0.39	1.340	IO				1.41
103.083	0.00	0.39	1.337	IO				1.41
103.167	0.00	0.39	1.335	IO				1.40
103.250	0.00	0.39	1.332	IO				1.40
103.333	0.00	0.39	1.329	IO				1.40
103.417	0.00	0.39	1.327	IO				1.40
103.500	0.00	0.39	1.324	IO				1.39
103.583	0.00	0.39	1.321	IO				1.39
103.667	0.00	0.39	1.319	IO				1.39
103.750	0.00	0.39	1.316	IO				1.39
103.833	0.00	0.39	1.313	IO				1.39
103.917	0.00	0.39	1.311	IO				1.38
104.000	0.00	0.39	1.308	IO				1.38
104.083	0.00	0.39	1.305	IO				1.38
104.167	0.00	0.39	1.303	IO				1.38
104.250	0.00	0.39	1.300	IO				1.37
104.333	0.00	0.38	1.297	IO				1.37
104.417	0.00	0.38	1.295	IO				1.37
104.500	0.00	0.38	1.292	IO				1.37
104.583	0.00	0.38	1.289	IO				1.37
104.667	0.00	0.38	1.287	IO				1.36
104.750	0.00	0.38	1.284	IO				1.36
104.833	0.00	0.38	1.281	IO				1.36
104.917	0.00	0.38	1.279	IO				1.36
105.000	0.00	0.38	1.276	IO				1.36
105.083	0.00	0.38	1.273	IO				1.35
105.167	0.00	0.38	1.271	IO				1.35
105.250	0.00	0.38	1.268	IO				1.35
105.333	0.00	0.38	1.266	IO				1.35
105.417	0.00	0.38	1.263	IO				1.34
105.500	0.00	0.38	1.260	IO				1.34

105.583	0.00	0.38	1.258	IO	|	|	|	|	1.34
105.667	0.00	0.38	1.255	IO	|	|	|	|	1.34
105.750	0.00	0.38	1.253	IO	|	|	|	|	1.34
105.833	0.00	0.38	1.250	IO	|	|	|	|	1.33
105.917	0.00	0.38	1.247	IO	|	|	|	|	1.33
106.000	0.00	0.38	1.245	IO	|	|	|	|	1.33
106.083	0.00	0.38	1.242	IO	|	|	|	|	1.33
106.167	0.00	0.38	1.239	IO	|	|	|	|	1.33
106.250	0.00	0.38	1.237	IO	|	|	|	|	1.32
106.333	0.00	0.38	1.234	IO	|	|	|	|	1.32
106.417	0.00	0.38	1.232	IO	|	|	|	|	1.32
106.500	0.00	0.38	1.229	IO	|	|	|	|	1.32
106.583	0.00	0.38	1.227	IO	|	|	|	|	1.31
106.667	0.00	0.38	1.224	IO	|	|	|	|	1.31
106.750	0.00	0.38	1.221	IO	|	|	|	|	1.31
106.833	0.00	0.37	1.219	IO	|	|	|	|	1.31
106.917	0.00	0.37	1.216	IO	|	|	|	|	1.31
107.000	0.00	0.37	1.214	IO	|	|	|	|	1.30
107.083	0.00	0.37	1.211	IO	|	|	|	|	1.30
107.167	0.00	0.37	1.208	IO	|	|	|	|	1.30
107.250	0.00	0.37	1.206	IO	|	|	|	|	1.30
107.333	0.00	0.37	1.203	IO	|	|	|	|	1.30
107.417	0.00	0.37	1.201	IO	|	|	|	|	1.29
107.500	0.00	0.37	1.198	IO	|	|	|	|	1.29
107.583	0.00	0.37	1.196	IO	|	|	|	|	1.29
107.667	0.00	0.37	1.193	IO	|	|	|	|	1.29
107.750	0.00	0.37	1.191	IO	|	|	|	|	1.29
107.833	0.00	0.37	1.188	IO	|	|	|	|	1.28
107.917	0.00	0.37	1.185	IO	|	|	|	|	1.28
108.000	0.00	0.37	1.183	IO	|	|	|	|	1.28
108.083	0.00	0.37	1.180	IO	|	|	|	|	1.28
108.167	0.00	0.37	1.178	IO	|	|	|	|	1.28
108.250	0.00	0.37	1.175	IO	|	|	|	|	1.27
108.333	0.00	0.37	1.173	IO	|	|	|	|	1.27
108.417	0.00	0.37	1.170	IO	|	|	|	|	1.27
108.500	0.00	0.37	1.168	IO	|	|	|	|	1.27
108.583	0.00	0.37	1.165	IO	|	|	|	|	1.26
108.667	0.00	0.37	1.163	IO	|	|	|	|	1.26
108.750	0.00	0.37	1.160	IO	|	|	|	|	1.26
108.833	0.00	0.37	1.157	IO	|	|	|	|	1.26
108.917	0.00	0.37	1.155	IO	|	|	|	|	1.26
109.000	0.00	0.37	1.152	IO	|	|	|	|	1.25
109.083	0.00	0.37	1.150	IO	|	|	|	|	1.25
109.167	0.00	0.37	1.147	IO	|	|	|	|	1.25
109.250	0.00	0.37	1.145	IO	|	|	|	|	1.25
109.333	0.00	0.37	1.142	IO	|	|	|	|	1.25
109.417	0.00	0.36	1.140	IO	|	|	|	|	1.24
109.500	0.00	0.36	1.137	IO	|	|	|	|	1.24
109.583	0.00	0.36	1.135	IO	|	|	|	|	1.24
109.667	0.00	0.36	1.132	IO	|	|	|	|	1.24
109.750	0.00	0.36	1.130	IO	|	|	|	|	1.24
109.833	0.00	0.36	1.127	IO	|	|	|	|	1.23
109.917	0.00	0.36	1.125	IO	|	|	|	|	1.23
110.000	0.00	0.36	1.122	IO	|	|	|	|	1.23
110.083	0.00	0.36	1.120	IO	|	|	|	|	1.23
110.167	0.00	0.36	1.117	IO	|	|	|	|	1.23
110.250	0.00	0.36	1.115	IO	|	|	|	|	1.22
110.333	0.00	0.36	1.112	IO	|	|	|	|	1.22
110.417	0.00	0.36	1.110	IO	|	|	|	|	1.22
110.500	0.00	0.36	1.107	IO	|	|	|	|	1.22
110.583	0.00	0.36	1.105	IO	|	|	|	|	1.22
110.667	0.00	0.36	1.102	IO	|	|	|	|	1.21
110.750	0.00	0.36	1.100	IO	|	|	|	|	1.21
110.833	0.00	0.36	1.097	IO	|	|	|	|	1.21
110.917	0.00	0.36	1.095	IO	|	|	|	|	1.21
111.000	0.00	0.36	1.092	IO	|	|	|	|	1.21
111.083	0.00	0.36	1.090	IO	|	|	|	|	1.20
111.167	0.00	0.36	1.088	IO	|	|	|	|	1.20
111.250	0.00	0.36	1.085	IO	|	|	|	|	1.20
111.333	0.00	0.36	1.083	IO	|	|	|	|	1.20
111.417	0.00	0.36	1.080	IO	|	|	|	|	1.20
111.500	0.00	0.36	1.078	IO	|	|	|	|	1.19
111.583	0.00	0.36	1.075	IO	|	|	|	|	1.19
111.667	0.00	0.36	1.073	IO	|	|	|	|	1.19
111.750	0.00	0.36	1.070	IO	|	|	|	|	1.19

111.833	0.00	0.36	1.068	IO				1.19
111.917	0.00	0.36	1.065	IO				1.18
112.000	0.00	0.36	1.063	IO				1.18
112.083	0.00	0.35	1.061	IO				1.18
112.167	0.00	0.35	1.058	IO				1.18
112.250	0.00	0.35	1.056	IO				1.18
112.333	0.00	0.35	1.053	IO				1.17
112.417	0.00	0.35	1.051	IO				1.17
112.500	0.00	0.35	1.048	IO				1.17
112.583	0.00	0.35	1.046	O				1.17
112.667	0.00	0.35	1.043	O				1.17
112.750	0.00	0.35	1.041	O				1.16
112.833	0.00	0.35	1.039	O				1.16
112.917	0.00	0.35	1.036	O				1.16
113.000	0.00	0.35	1.034	O				1.16
113.083	0.00	0.35	1.031	O				1.16
113.167	0.00	0.35	1.029	O				1.15
113.250	0.00	0.35	1.027	O				1.15
113.333	0.00	0.35	1.024	O				1.15
113.417	0.00	0.35	1.022	O				1.15
113.500	0.00	0.35	1.019	O				1.15
113.583	0.00	0.35	1.017	O				1.14
113.667	0.00	0.35	1.014	O				1.14
113.750	0.00	0.35	1.012	O				1.14
113.833	0.00	0.35	1.010	O				1.14
113.917	0.00	0.35	1.007	O				1.14
114.000	0.00	0.35	1.005	O				1.13
114.083	0.00	0.35	1.002	O				1.13
114.167	0.00	0.35	1.000	O				1.13
114.250	0.00	0.35	0.998	O				1.13
114.333	0.00	0.35	0.995	O				1.13
114.417	0.00	0.35	0.993	O				1.12
114.500	0.00	0.35	0.991	O				1.12
114.583	0.00	0.35	0.988	O				1.12
114.667	0.00	0.35	0.986	O				1.12
114.750	0.00	0.35	0.983	O				1.12
114.833	0.00	0.34	0.981	O				1.11
114.917	0.00	0.34	0.979	O				1.11
115.000	0.00	0.34	0.976	O				1.11
115.083	0.00	0.34	0.974	O				1.11
115.167	0.00	0.34	0.972	O				1.11
115.250	0.00	0.34	0.969	O				1.10
115.333	0.00	0.34	0.967	O				1.10
115.417	0.00	0.34	0.964	O				1.10
115.500	0.00	0.34	0.962	O				1.10
115.583	0.00	0.34	0.960	O				1.10
115.667	0.00	0.34	0.957	O				1.10
115.750	0.00	0.34	0.955	O				1.09
115.833	0.00	0.34	0.953	O				1.09
115.917	0.00	0.34	0.950	O				1.09
116.000	0.00	0.34	0.948	O				1.09
116.083	0.00	0.34	0.946	O				1.09
116.167	0.00	0.34	0.943	O				1.08
116.250	0.00	0.34	0.941	O				1.08
116.333	0.00	0.34	0.939	O				1.08
116.417	0.00	0.34	0.936	O				1.08
116.500	0.00	0.34	0.934	O				1.08
116.583	0.00	0.34	0.932	O				1.07
116.667	0.00	0.34	0.929	O				1.07
116.750	0.00	0.34	0.927	O				1.07
116.833	0.00	0.34	0.925	O				1.07
116.917	0.00	0.34	0.922	O				1.07
117.000	0.00	0.34	0.920	O				1.06
117.083	0.00	0.34	0.918	O				1.06
117.167	0.00	0.34	0.915	O				1.06
117.250	0.00	0.34	0.913	O				1.06
117.333	0.00	0.34	0.911	O				1.06
117.417	0.00	0.34	0.908	O				1.06
117.500	0.00	0.34	0.906	O				1.05
117.583	0.00	0.33	0.904	O				1.05
117.667	0.00	0.33	0.901	O				1.05
117.750	0.00	0.33	0.899	O				1.05
117.833	0.00	0.33	0.897	O				1.05
117.917	0.00	0.33	0.895	O				1.04
118.000	0.00	0.33	0.892	O				1.04

118.083	0.00	0.33	0.890	o	|	|	|	|	1.04
118.167	0.00	0.33	0.888	o	|	|	|	|	1.04
118.250	0.00	0.33	0.885	o	|	|	|	|	1.04
118.333	0.00	0.33	0.883	o	|	|	|	|	1.03
118.417	0.00	0.33	0.881	o	|	|	|	|	1.03
118.500	0.00	0.33	0.879	o	|	|	|	|	1.03
118.583	0.00	0.33	0.876	o	|	|	|	|	1.03
118.667	0.00	0.33	0.874	o	|	|	|	|	1.03
118.750	0.00	0.33	0.872	o	|	|	|	|	1.03
118.833	0.00	0.33	0.869	o	|	|	|	|	1.02
118.917	0.00	0.33	0.867	o	|	|	|	|	1.02
119.000	0.00	0.33	0.865	o	|	|	|	|	1.02
119.083	0.00	0.33	0.863	o	|	|	|	|	1.02
119.167	0.00	0.33	0.860	o	|	|	|	|	1.02
119.250	0.00	0.33	0.858	o	|	|	|	|	1.01
119.333	0.00	0.33	0.856	o	|	|	|	|	1.01
119.417	0.00	0.33	0.854	o	|	|	|	|	1.01
119.500	0.00	0.33	0.851	o	|	|	|	|	1.01
119.583	0.00	0.33	0.849	o	|	|	|	|	1.01
119.667	0.00	0.33	0.847	o	|	|	|	|	1.00
119.750	0.00	0.33	0.844	o	|	|	|	|	1.00
119.833	0.00	0.33	0.842	o	|	|	|	|	1.00
119.917	0.00	0.33	0.840	o	|	|	|	|	1.00
120.000	0.00	0.33	0.838	o	|	|	|	|	1.00
120.083	0.00	0.33	0.835	o	|	|	|	|	0.99
120.167	0.00	0.33	0.833	o	|	|	|	|	0.99
120.250	0.00	0.32	0.831	o	|	|	|	|	0.99
120.333	0.00	0.32	0.829	o	|	|	|	|	0.99
120.417	0.00	0.32	0.827	o	|	|	|	|	0.99
120.500	0.00	0.32	0.824	o	|	|	|	|	0.98
120.583	0.00	0.32	0.822	o	|	|	|	|	0.98
120.667	0.00	0.32	0.820	o	|	|	|	|	0.98
120.750	0.00	0.32	0.818	o	|	|	|	|	0.98
120.833	0.00	0.32	0.815	o	|	|	|	|	0.97
120.917	0.00	0.32	0.813	o	|	|	|	|	0.97
121.000	0.00	0.32	0.811	o	|	|	|	|	0.97
121.083	0.00	0.32	0.809	o	|	|	|	|	0.97
121.167	0.00	0.32	0.807	o	|	|	|	|	0.96
121.250	0.00	0.32	0.804	o	|	|	|	|	0.96
121.333	0.00	0.32	0.802	o	|	|	|	|	0.96
121.417	0.00	0.32	0.800	o	|	|	|	|	0.96
121.500	0.00	0.32	0.798	o	|	|	|	|	0.96
121.583	0.00	0.32	0.796	o	|	|	|	|	0.95
121.667	0.00	0.32	0.794	o	|	|	|	|	0.95
121.750	0.00	0.32	0.791	o	|	|	|	|	0.95
121.833	0.00	0.31	0.789	o	|	|	|	|	0.95
121.917	0.00	0.31	0.787	o	|	|	|	|	0.94
122.000	0.00	0.31	0.785	o	|	|	|	|	0.94
122.083	0.00	0.31	0.783	o	|	|	|	|	0.94
122.167	0.00	0.31	0.781	o	|	|	|	|	0.94
122.250	0.00	0.31	0.778	o	|	|	|	|	0.94
122.333	0.00	0.31	0.776	o	|	|	|	|	0.93
122.417	0.00	0.31	0.774	o	|	|	|	|	0.93
122.500	0.00	0.31	0.772	o	|	|	|	|	0.93
122.583	0.00	0.31	0.770	o	|	|	|	|	0.93
122.667	0.00	0.31	0.768	o	|	|	|	|	0.92
122.750	0.00	0.31	0.766	o	|	|	|	|	0.92
122.833	0.00	0.31	0.763	o	|	|	|	|	0.92
122.917	0.00	0.31	0.761	o	|	|	|	|	0.92
123.000	0.00	0.31	0.759	o	|	|	|	|	0.92
123.083	0.00	0.31	0.757	o	|	|	|	|	0.91
123.167	0.00	0.31	0.755	o	|	|	|	|	0.91
123.250	0.00	0.31	0.753	o	|	|	|	|	0.91
123.333	0.00	0.31	0.751	o	|	|	|	|	0.91
123.417	0.00	0.30	0.749	o	|	|	|	|	0.90
123.500	0.00	0.30	0.747	o	|	|	|	|	0.90
123.583	0.00	0.30	0.744	o	|	|	|	|	0.90
123.667	0.00	0.30	0.742	o	|	|	|	|	0.90
123.750	0.00	0.30	0.740	o	|	|	|	|	0.90
123.833	0.00	0.30	0.738	o	|	|	|	|	0.89
123.917	0.00	0.30	0.736	o	|	|	|	|	0.89
124.000	0.00	0.30	0.734	o	|	|	|	|	0.89
124.083	0.00	0.30	0.732	o	|	|	|	|	0.89
124.167	0.00	0.30	0.730	o	|	|	|	|	0.89
124.250	0.00	0.30	0.728	o	|	|	|	|	0.88

124.333	0.00	0.30	0.726	o	|	|	|	|	0.88
124.417	0.00	0.30	0.724	o	|	|	|	|	0.88
124.500	0.00	0.30	0.722	o	|	|	|	|	0.88
124.583	0.00	0.30	0.720	o	|	|	|	|	0.87
124.667	0.00	0.30	0.718	o	|	|	|	|	0.87
124.750	0.00	0.30	0.716	o	|	|	|	|	0.87
124.833	0.00	0.30	0.713	o	|	|	|	|	0.87
124.917	0.00	0.30	0.711	o	|	|	|	|	0.87
125.000	0.00	0.30	0.709	o	|	|	|	|	0.86
125.083	0.00	0.30	0.707	o	|	|	|	|	0.86
125.167	0.00	0.29	0.705	o	|	|	|	|	0.86
125.250	0.00	0.29	0.703	o	|	|	|	|	0.86
125.333	0.00	0.29	0.701	o	|	|	|	|	0.86
125.417	0.00	0.29	0.699	o	|	|	|	|	0.85
125.500	0.00	0.29	0.697	o	|	|	|	|	0.85
125.583	0.00	0.29	0.695	o	|	|	|	|	0.85
125.667	0.00	0.29	0.693	o	|	|	|	|	0.85
125.750	0.00	0.29	0.691	o	|	|	|	|	0.85
125.833	0.00	0.29	0.689	o	|	|	|	|	0.84
125.917	0.00	0.29	0.687	o	|	|	|	|	0.84
126.000	0.00	0.29	0.685	o	|	|	|	|	0.84
126.083	0.00	0.29	0.683	o	|	|	|	|	0.84
126.167	0.00	0.29	0.681	o	|	|	|	|	0.84
126.250	0.00	0.29	0.679	o	|	|	|	|	0.83
126.333	0.00	0.29	0.677	o	|	|	|	|	0.83
126.417	0.00	0.29	0.675	o	|	|	|	|	0.83
126.500	0.00	0.29	0.673	o	|	|	|	|	0.83
126.583	0.00	0.29	0.671	o	|	|	|	|	0.83
126.667	0.00	0.29	0.669	o	|	|	|	|	0.82
126.750	0.00	0.29	0.667	o	|	|	|	|	0.82
126.833	0.00	0.29	0.665	o	|	|	|	|	0.82
126.917	0.00	0.28	0.663	o	|	|	|	|	0.82
127.000	0.00	0.28	0.661	o	|	|	|	|	0.81
127.083	0.00	0.28	0.660	o	|	|	|	|	0.81
127.167	0.00	0.28	0.658	o	|	|	|	|	0.81
127.250	0.00	0.28	0.656	o	|	|	|	|	0.81
127.333	0.00	0.28	0.654	o	|	|	|	|	0.81
127.417	0.00	0.28	0.652	o	|	|	|	|	0.80
127.500	0.00	0.28	0.650	o	|	|	|	|	0.80
127.583	0.00	0.28	0.648	o	|	|	|	|	0.80
127.667	0.00	0.28	0.646	o	|	|	|	|	0.80
127.750	0.00	0.28	0.644	o	|	|	|	|	0.80
127.833	0.00	0.28	0.642	o	|	|	|	|	0.79
127.917	0.00	0.28	0.640	o	|	|	|	|	0.79
128.000	0.00	0.28	0.638	o	|	|	|	|	0.79
128.083	0.00	0.28	0.636	o	|	|	|	|	0.79
128.167	0.00	0.28	0.634	o	|	|	|	|	0.79
128.250	0.00	0.28	0.633	o	|	|	|	|	0.79
128.333	0.00	0.28	0.631	o	|	|	|	|	0.78
128.417	0.00	0.28	0.629	o	|	|	|	|	0.78
128.500	0.00	0.28	0.627	o	|	|	|	|	0.78
128.583	0.00	0.28	0.625	o	|	|	|	|	0.78
128.667	0.00	0.27	0.623	o	|	|	|	|	0.78
128.750	0.00	0.27	0.621	o	|	|	|	|	0.77
128.833	0.00	0.27	0.619	o	|	|	|	|	0.77
128.917	0.00	0.27	0.617	o	|	|	|	|	0.77
129.000	0.00	0.27	0.615	o	|	|	|	|	0.77
129.083	0.00	0.27	0.614	o	|	|	|	|	0.77
129.167	0.00	0.27	0.612	o	|	|	|	|	0.76
129.250	0.00	0.27	0.610	o	|	|	|	|	0.76
129.333	0.00	0.27	0.608	o	|	|	|	|	0.76
129.417	0.00	0.27	0.606	o	|	|	|	|	0.76
129.500	0.00	0.27	0.604	o	|	|	|	|	0.76
129.583	0.00	0.27	0.602	o	|	|	|	|	0.75
129.667	0.00	0.27	0.601	o	|	|	|	|	0.75
129.750	0.00	0.27	0.599	o	|	|	|	|	0.75
129.833	0.00	0.27	0.597	o	|	|	|	|	0.75
129.917	0.00	0.27	0.595	o	|	|	|	|	0.75
130.000	0.00	0.27	0.593	o	|	|	|	|	0.74
130.083	0.00	0.27	0.591	o	|	|	|	|	0.74
130.167	0.00	0.27	0.589	o	|	|	|	|	0.74
130.250	0.00	0.27	0.588	o	|	|	|	|	0.74
130.333	0.00	0.27	0.586	o	|	|	|	|	0.74
130.417	0.00	0.27	0.584	o	|	|	|	|	0.73
130.500	0.00	0.27	0.582	o	|	|	|	|	0.73

130.583	0.00	0.26	0.580	o	|	|	|	|	0.73
130.667	0.00	0.26	0.578	o	|	|	|	|	0.73
130.750	0.00	0.26	0.577	o	|	|	|	|	0.73
130.833	0.00	0.26	0.575	o	|	|	|	|	0.73
130.917	0.00	0.26	0.573	o	|	|	|	|	0.72
131.000	0.00	0.26	0.571	o	|	|	|	|	0.72
131.083	0.00	0.26	0.569	o	|	|	|	|	0.72
131.167	0.00	0.26	0.568	o	|	|	|	|	0.72
131.250	0.00	0.26	0.566	o	|	|	|	|	0.72
131.333	0.00	0.26	0.564	o	|	|	|	|	0.71
131.417	0.00	0.26	0.562	o	|	|	|	|	0.71
131.500	0.00	0.26	0.560	o	|	|	|	|	0.71
131.583	0.00	0.26	0.559	o	|	|	|	|	0.71
131.667	0.00	0.26	0.557	o	|	|	|	|	0.71
131.750	0.00	0.26	0.555	o	|	|	|	|	0.71
131.833	0.00	0.26	0.553	o	|	|	|	|	0.70
131.917	0.00	0.26	0.551	o	|	|	|	|	0.70
132.000	0.00	0.26	0.550	o	|	|	|	|	0.70
132.083	0.00	0.26	0.548	o	|	|	|	|	0.70
132.167	0.00	0.26	0.546	o	|	|	|	|	0.70
132.250	0.00	0.26	0.544	o	|	|	|	|	0.69
132.333	0.00	0.26	0.543	o	|	|	|	|	0.69
132.417	0.00	0.26	0.541	o	|	|	|	|	0.69
132.500	0.00	0.25	0.539	o	|	|	|	|	0.69
132.583	0.00	0.25	0.537	o	|	|	|	|	0.69
132.667	0.00	0.25	0.536	o	|	|	|	|	0.69
132.750	0.00	0.25	0.534	o	|	|	|	|	0.68
132.833	0.00	0.25	0.532	o	|	|	|	|	0.68
132.917	0.00	0.25	0.530	o	|	|	|	|	0.68
133.000	0.00	0.25	0.529	o	|	|	|	|	0.68
133.083	0.00	0.25	0.527	o	|	|	|	|	0.68
133.167	0.00	0.25	0.525	o	|	|	|	|	0.67
133.250	0.00	0.25	0.523	o	|	|	|	|	0.67
133.333	0.00	0.25	0.522	o	|	|	|	|	0.67
133.417	0.00	0.25	0.520	o	|	|	|	|	0.67
133.500	0.00	0.25	0.518	o	|	|	|	|	0.67
133.583	0.00	0.25	0.517	o	|	|	|	|	0.67
133.667	0.00	0.25	0.515	o	|	|	|	|	0.66
133.750	0.00	0.25	0.513	o	|	|	|	|	0.66
133.833	0.00	0.25	0.511	o	|	|	|	|	0.66
133.917	0.00	0.25	0.510	o	|	|	|	|	0.66
134.000	0.00	0.25	0.508	o	|	|	|	|	0.66
134.083	0.00	0.25	0.506	o	|	|	|	|	0.65
134.167	0.00	0.25	0.505	o	|	|	|	|	0.65
134.250	0.00	0.25	0.503	o	|	|	|	|	0.65
134.333	0.00	0.25	0.501	o	|	|	|	|	0.65
134.417	0.00	0.25	0.500	o	|	|	|	|	0.65
134.500	0.00	0.24	0.498	o	|	|	|	|	0.65
134.583	0.00	0.24	0.496	o	|	|	|	|	0.64
134.667	0.00	0.24	0.494	o	|	|	|	|	0.64
134.750	0.00	0.24	0.493	o	|	|	|	|	0.64
134.833	0.00	0.24	0.491	o	|	|	|	|	0.64
134.917	0.00	0.24	0.489	o	|	|	|	|	0.64
135.000	0.00	0.24	0.488	o	|	|	|	|	0.64
135.083	0.00	0.24	0.486	o	|	|	|	|	0.63
135.167	0.00	0.24	0.484	o	|	|	|	|	0.63
135.250	0.00	0.24	0.483	o	|	|	|	|	0.63
135.333	0.00	0.24	0.481	o	|	|	|	|	0.63
135.417	0.00	0.24	0.479	o	|	|	|	|	0.63
135.500	0.00	0.24	0.478	o	|	|	|	|	0.63
135.583	0.00	0.24	0.476	o	|	|	|	|	0.62
135.667	0.00	0.24	0.475	o	|	|	|	|	0.62
135.750	0.00	0.24	0.473	o	|	|	|	|	0.62
135.833	0.00	0.24	0.471	o	|	|	|	|	0.62
135.917	0.00	0.24	0.470	o	|	|	|	|	0.62
136.000	0.00	0.24	0.468	o	|	|	|	|	0.62
136.083	0.00	0.24	0.466	o	|	|	|	|	0.61
136.167	0.00	0.24	0.465	o	|	|	|	|	0.61
136.250	0.00	0.24	0.463	o	|	|	|	|	0.61
136.333	0.00	0.24	0.461	o	|	|	|	|	0.61
136.417	0.00	0.24	0.460	o	|	|	|	|	0.61
136.500	0.00	0.24	0.458	o	|	|	|	|	0.61
136.583	0.00	0.24	0.457	o	|	|	|	|	0.60
136.667	0.00	0.23	0.455	o	|	|	|	|	0.60
136.750	0.00	0.23	0.453	o	|	|	|	|	0.60

136.833	0.00	0.23	0.452	o	|	|	|	|	0.60
136.917	0.00	0.23	0.450	o	|	|	|	|	0.60
137.000	0.00	0.23	0.448	o	|	|	|	|	0.60
137.083	0.00	0.23	0.447	o	|	|	|	|	0.59
137.167	0.00	0.23	0.445	o	|	|	|	|	0.59
137.250	0.00	0.23	0.444	o	|	|	|	|	0.59
137.333	0.00	0.23	0.442	o	|	|	|	|	0.59
137.417	0.00	0.23	0.440	o	|	|	|	|	0.59
137.500	0.00	0.23	0.439	o	|	|	|	|	0.59
137.583	0.00	0.23	0.437	o	|	|	|	|	0.58
137.667	0.00	0.23	0.436	o	|	|	|	|	0.58
137.750	0.00	0.23	0.434	o	|	|	|	|	0.58
137.833	0.00	0.23	0.433	o	|	|	|	|	0.58
137.917	0.00	0.23	0.431	o	|	|	|	|	0.58
138.000	0.00	0.23	0.429	o	|	|	|	|	0.58
138.083	0.00	0.23	0.428	o	|	|	|	|	0.57
138.167	0.00	0.23	0.426	o	|	|	|	|	0.57
138.250	0.00	0.23	0.425	o	|	|	|	|	0.57
138.333	0.00	0.23	0.423	o	|	|	|	|	0.57
138.417	0.00	0.23	0.422	o	|	|	|	|	0.57
138.500	0.00	0.23	0.420	o	|	|	|	|	0.57
138.583	0.00	0.23	0.418	o	|	|	|	|	0.56
138.667	0.00	0.23	0.417	o	|	|	|	|	0.56
138.750	0.00	0.23	0.415	o	|	|	|	|	0.56
138.833	0.00	0.22	0.414	o	|	|	|	|	0.56
138.917	0.00	0.22	0.412	o	|	|	|	|	0.56
139.000	0.00	0.22	0.411	o	|	|	|	|	0.56
139.083	0.00	0.22	0.409	o	|	|	|	|	0.55
139.167	0.00	0.22	0.408	o	|	|	|	|	0.55
139.250	0.00	0.22	0.406	o	|	|	|	|	0.55
139.333	0.00	0.22	0.405	o	|	|	|	|	0.55
139.417	0.00	0.22	0.403	o	|	|	|	|	0.55
139.500	0.00	0.22	0.401	o	|	|	|	|	0.55
139.583	0.00	0.22	0.400	o	|	|	|	|	0.55
139.667	0.00	0.22	0.398	o	|	|	|	|	0.54
139.750	0.00	0.22	0.397	o	|	|	|	|	0.54
139.833	0.00	0.22	0.395	o	|	|	|	|	0.54
139.917	0.00	0.22	0.394	o	|	|	|	|	0.54
140.000	0.00	0.22	0.392	o	|	|	|	|	0.54
140.083	0.00	0.22	0.391	o	|	|	|	|	0.54
140.167	0.00	0.22	0.389	o	|	|	|	|	0.53
140.250	0.00	0.22	0.388	o	|	|	|	|	0.53
140.333	0.00	0.22	0.386	o	|	|	|	|	0.53
140.417	0.00	0.22	0.385	o	|	|	|	|	0.53
140.500	0.00	0.22	0.383	o	|	|	|	|	0.53
140.583	0.00	0.22	0.382	o	|	|	|	|	0.53
140.667	0.00	0.22	0.380	o	|	|	|	|	0.53
140.750	0.00	0.22	0.379	o	|	|	|	|	0.52
140.833	0.00	0.22	0.377	o	|	|	|	|	0.52
140.917	0.00	0.22	0.376	o	|	|	|	|	0.52
141.000	0.00	0.22	0.374	o	|	|	|	|	0.52
141.083	0.00	0.22	0.373	o	|	|	|	|	0.52
141.167	0.00	0.21	0.371	o	|	|	|	|	0.52
141.250	0.00	0.21	0.370	o	|	|	|	|	0.51
141.333	0.00	0.21	0.368	o	|	|	|	|	0.51
141.417	0.00	0.21	0.367	o	|	|	|	|	0.51
141.500	0.00	0.21	0.366	o	|	|	|	|	0.51
141.583	0.00	0.21	0.364	o	|	|	|	|	0.51
141.667	0.00	0.21	0.363	o	|	|	|	|	0.51
141.750	0.00	0.21	0.361	o	|	|	|	|	0.51
141.833	0.00	0.21	0.360	o	|	|	|	|	0.50
141.917	0.00	0.21	0.358	o	|	|	|	|	0.50
142.000	0.00	0.21	0.357	o	|	|	|	|	0.50
142.083	0.00	0.21	0.355	o	|	|	|	|	0.50
142.167	0.00	0.21	0.354	o	|	|	|	|	0.50
142.250	0.00	0.21	0.352	o	|	|	|	|	0.49
142.333	0.00	0.21	0.351	o	|	|	|	|	0.49
142.417	0.00	0.21	0.350	o	|	|	|	|	0.49
142.500	0.00	0.20	0.348	o	|	|	|	|	0.49
142.583	0.00	0.20	0.347	o	|	|	|	|	0.49
142.667	0.00	0.20	0.345	o	|	|	|	|	0.49
142.750	0.00	0.20	0.344	o	|	|	|	|	0.48
142.833	0.00	0.20	0.343	o	|	|	|	|	0.48
142.917	0.00	0.20	0.341	o	|	|	|	|	0.48
143.000	0.00	0.20	0.340	o	|	|	|	|	0.48

143.083	0.00	0.20	0.338	o	|	|	|	|	0.48
143.167	0.00	0.20	0.337	o	|	|	|	|	0.47
143.250	0.00	0.19	0.336	o	|	|	|	|	0.47
143.333	0.00	0.19	0.334	o	|	|	|	|	0.47
143.417	0.00	0.19	0.333	o	|	|	|	|	0.47
143.500	0.00	0.19	0.332	o	|	|	|	|	0.47
143.583	0.00	0.19	0.331	o	|	|	|	|	0.46
143.667	0.00	0.19	0.329	o	|	|	|	|	0.46
143.750	0.00	0.19	0.328	o	|	|	|	|	0.46
143.833	0.00	0.19	0.327	o	|	|	|	|	0.46
143.917	0.00	0.19	0.325	o	|	|	|	|	0.46
144.000	0.00	0.18	0.324	o	|	|	|	|	0.46
144.083	0.00	0.18	0.323	o	|	|	|	|	0.45
144.167	0.00	0.18	0.322	o	|	|	|	|	0.45
144.250	0.00	0.18	0.320	o	|	|	|	|	0.45
144.333	0.00	0.18	0.319	o	|	|	|	|	0.45
144.417	0.00	0.18	0.318	o	|	|	|	|	0.45
144.500	0.00	0.18	0.317	o	|	|	|	|	0.44
144.583	0.00	0.18	0.315	o	|	|	|	|	0.44
144.667	0.00	0.18	0.314	o	|	|	|	|	0.44
144.750	0.00	0.18	0.313	o	|	|	|	|	0.44
144.833	0.00	0.17	0.312	o	|	|	|	|	0.44
144.917	0.00	0.17	0.311	o	|	|	|	|	0.44
145.000	0.00	0.17	0.309	o	|	|	|	|	0.43
145.083	0.00	0.17	0.308	o	|	|	|	|	0.43
145.167	0.00	0.17	0.307	o	|	|	|	|	0.43
145.250	0.00	0.17	0.306	o	|	|	|	|	0.43
145.333	0.00	0.17	0.305	o	|	|	|	|	0.43
145.417	0.00	0.17	0.304	o	|	|	|	|	0.43
145.500	0.00	0.17	0.302	o	|	|	|	|	0.42
145.583	0.00	0.17	0.301	o	|	|	|	|	0.42
145.667	0.00	0.16	0.300	o	|	|	|	|	0.42
145.750	0.00	0.16	0.299	o	|	|	|	|	0.42
145.833	0.00	0.16	0.298	o	|	|	|	|	0.42
145.917	0.00	0.16	0.297	o	|	|	|	|	0.42
146.000	0.00	0.16	0.296	o	|	|	|	|	0.42
146.083	0.00	0.16	0.294	o	|	|	|	|	0.41
146.167	0.00	0.16	0.293	o	|	|	|	|	0.41
146.250	0.00	0.16	0.292	o	|	|	|	|	0.41
146.333	0.00	0.16	0.291	o	|	|	|	|	0.41
146.417	0.00	0.16	0.290	o	|	|	|	|	0.41
146.500	0.00	0.16	0.289	o	|	|	|	|	0.41
146.583	0.00	0.15	0.288	o	|	|	|	|	0.40
146.667	0.00	0.15	0.287	o	|	|	|	|	0.40
146.750	0.00	0.15	0.286	o	|	|	|	|	0.40
146.833	0.00	0.15	0.285	o	|	|	|	|	0.40
146.917	0.00	0.15	0.284	o	|	|	|	|	0.40
147.000	0.00	0.15	0.283	o	|	|	|	|	0.40
147.083	0.00	0.15	0.282	o	|	|	|	|	0.40
147.167	0.00	0.15	0.281	o	|	|	|	|	0.39
147.250	0.00	0.15	0.280	o	|	|	|	|	0.39
147.333	0.00	0.15	0.279	o	|	|	|	|	0.39
147.417	0.00	0.15	0.278	o	|	|	|	|	0.39
147.500	0.00	0.14	0.277	o	|	|	|	|	0.39
147.583	0.00	0.14	0.276	o	|	|	|	|	0.39
147.667	0.00	0.14	0.275	o	|	|	|	|	0.39
147.750	0.00	0.14	0.274	o	|	|	|	|	0.38
147.833	0.00	0.14	0.273	o	|	|	|	|	0.38
147.917	0.00	0.14	0.272	o	|	|	|	|	0.38
148.000	0.00	0.14	0.271	o	|	|	|	|	0.38
148.083	0.00	0.14	0.270	o	|	|	|	|	0.38
148.167	0.00	0.14	0.269	o	|	|	|	|	0.38
148.250	0.00	0.14	0.268	o	|	|	|	|	0.38
148.333	0.00	0.14	0.267	o	|	|	|	|	0.37
148.417	0.00	0.14	0.266	o	|	|	|	|	0.37
148.500	0.00	0.14	0.265	o	|	|	|	|	0.37
148.583	0.00	0.13	0.264	o	|	|	|	|	0.37
148.667	0.00	0.13	0.263	o	|	|	|	|	0.37
148.750	0.00	0.13	0.262	o	|	|	|	|	0.37
148.833	0.00	0.13	0.261	o	|	|	|	|	0.37
148.917	0.00	0.13	0.261	o	|	|	|	|	0.37
149.000	0.00	0.13	0.260	o	|	|	|	|	0.36
149.083	0.00	0.13	0.259	o	|	|	|	|	0.36
149.167	0.00	0.13	0.258	o	|	|	|	|	0.36
149.250	0.00	0.13	0.257	o	|	|	|	|	0.36

149.333	0.00	0.13	0.256	o	|	|	|	|	0.36
149.417	0.00	0.13	0.255	o	|	|	|	|	0.36
149.500	0.00	0.13	0.254	o	|	|	|	|	0.36
149.583	0.00	0.13	0.253	o	|	|	|	|	0.36
149.667	0.00	0.12	0.253	o	|	|	|	|	0.35
149.750	0.00	0.12	0.252	o	|	|	|	|	0.35
149.833	0.00	0.12	0.251	o	|	|	|	|	0.35
149.917	0.00	0.12	0.250	o	|	|	|	|	0.35
150.000	0.00	0.12	0.249	o	|	|	|	|	0.35
150.083	0.00	0.12	0.248	o	|	|	|	|	0.35
150.167	0.00	0.12	0.248	o	|	|	|	|	0.35
150.250	0.00	0.12	0.247	o	|	|	|	|	0.35
150.333	0.00	0.12	0.246	o	|	|	|	|	0.35
150.417	0.00	0.12	0.245	o	|	|	|	|	0.34
150.500	0.00	0.12	0.244	o	|	|	|	|	0.34
150.583	0.00	0.12	0.243	o	|	|	|	|	0.34
150.667	0.00	0.12	0.243	o	|	|	|	|	0.34
150.750	0.00	0.12	0.242	o	|	|	|	|	0.34
150.833	0.00	0.12	0.241	o	|	|	|	|	0.34
150.917	0.00	0.11	0.240	o	|	|	|	|	0.34
151.000	0.00	0.11	0.239	o	|	|	|	|	0.34
151.083	0.00	0.11	0.239	o	|	|	|	|	0.34
151.167	0.00	0.11	0.238	o	|	|	|	|	0.33
151.250	0.00	0.11	0.237	o	|	|	|	|	0.33
151.333	0.00	0.11	0.236	o	|	|	|	|	0.33
151.417	0.00	0.11	0.236	o	|	|	|	|	0.33
151.500	0.00	0.11	0.235	o	|	|	|	|	0.33
151.583	0.00	0.11	0.234	o	|	|	|	|	0.33
151.667	0.00	0.11	0.233	o	|	|	|	|	0.33
151.750	0.00	0.11	0.233	o	|	|	|	|	0.33
151.833	0.00	0.11	0.232	o	|	|	|	|	0.33
151.917	0.00	0.11	0.231	o	|	|	|	|	0.32
152.000	0.00	0.11	0.230	o	|	|	|	|	0.32
152.083	0.00	0.11	0.230	o	|	|	|	|	0.32
152.167	0.00	0.11	0.229	o	|	|	|	|	0.32
152.250	0.00	0.10	0.228	o	|	|	|	|	0.32
152.333	0.00	0.10	0.227	o	|	|	|	|	0.32
152.417	0.00	0.10	0.227	o	|	|	|	|	0.32
152.500	0.00	0.10	0.226	o	|	|	|	|	0.32
152.583	0.00	0.10	0.225	o	|	|	|	|	0.32
152.667	0.00	0.10	0.225	o	|	|	|	|	0.32
152.750	0.00	0.10	0.224	o	|	|	|	|	0.31
152.833	0.00	0.10	0.223	o	|	|	|	|	0.31
152.917	0.00	0.10	0.223	o	|	|	|	|	0.31
153.000	0.00	0.10	0.222	o	|	|	|	|	0.31
153.083	0.00	0.10	0.221	o	|	|	|	|	0.31
153.167	0.00	0.10	0.220	o	|	|	|	|	0.31
153.250	0.00	0.10	0.220	o	|	|	|	|	0.31
153.333	0.00	0.10	0.219	o	|	|	|	|	0.31
153.417	0.00	0.10	0.218	o	|	|	|	|	0.31
153.500	0.00	0.10	0.218	o	|	|	|	|	0.31
153.583	0.00	0.10	0.217	o	|	|	|	|	0.30
153.667	0.00	0.09	0.217	o	|	|	|	|	0.30
153.750	0.00	0.09	0.216	o	|	|	|	|	0.30
153.833	0.00	0.09	0.215	o	|	|	|	|	0.30
153.917	0.00	0.09	0.215	o	|	|	|	|	0.30
154.000	0.00	0.09	0.214	o	|	|	|	|	0.30
154.083	0.00	0.09	0.213	o	|	|	|	|	0.30
154.167	0.00	0.09	0.213	o	|	|	|	|	0.30
154.250	0.00	0.09	0.212	o	|	|	|	|	0.30
154.333	0.00	0.09	0.211	o	|	|	|	|	0.30
154.417	0.00	0.09	0.211	o	|	|	|	|	0.30
154.500	0.00	0.09	0.210	o	|	|	|	|	0.30
154.583	0.00	0.09	0.210	o	|	|	|	|	0.29
154.667	0.00	0.09	0.209	o	|	|	|	|	0.29
154.750	0.00	0.09	0.208	o	|	|	|	|	0.29
154.833	0.00	0.09	0.208	o	|	|	|	|	0.29
154.917	0.00	0.09	0.207	o	|	|	|	|	0.29
155.000	0.00	0.09	0.207	o	|	|	|	|	0.29
155.083	0.00	0.09	0.206	o	|	|	|	|	0.29
155.167	0.00	0.09	0.205	o	|	|	|	|	0.29
155.250	0.00	0.08	0.205	o	|	|	|	|	0.29
155.333	0.00	0.08	0.204	o	|	|	|	|	0.29
155.417	0.00	0.08	0.204	o	|	|	|	|	0.29
155.500	0.00	0.08	0.203	o	|	|	|	|	0.29

155.583	0.00	0.08	0.202	o	|	|	|	|	0.28
155.667	0.00	0.08	0.202	o	|	|	|	|	0.28
155.750	0.00	0.08	0.201	o	|	|	|	|	0.28
155.833	0.00	0.08	0.201	o	|	|	|	|	0.28
155.917	0.00	0.08	0.200	o	|	|	|	|	0.28
156.000	0.00	0.08	0.200	o	|	|	|	|	0.28
156.083	0.00	0.08	0.199	o	|	|	|	|	0.28
156.167	0.00	0.08	0.199	o	|	|	|	|	0.28
156.250	0.00	0.08	0.198	o	|	|	|	|	0.28
156.333	0.00	0.08	0.197	o	|	|	|	|	0.28
156.417	0.00	0.08	0.197	o	|	|	|	|	0.28
156.500	0.00	0.08	0.196	o	|	|	|	|	0.28
156.583	0.00	0.08	0.196	o	|	|	|	|	0.27
156.667	0.00	0.08	0.195	o	|	|	|	|	0.27
156.750	0.00	0.08	0.195	o	|	|	|	|	0.27
156.833	0.00	0.08	0.194	o	|	|	|	|	0.27
156.917	0.00	0.08	0.194	o	|	|	|	|	0.27
157.000	0.00	0.08	0.193	o	|	|	|	|	0.27
157.083	0.00	0.07	0.193	o	|	|	|	|	0.27
157.167	0.00	0.07	0.192	o	|	|	|	|	0.27
157.250	0.00	0.07	0.192	o	|	|	|	|	0.27
157.333	0.00	0.07	0.191	o	|	|	|	|	0.27
157.417	0.00	0.07	0.191	o	|	|	|	|	0.27
157.500	0.00	0.07	0.190	o	|	|	|	|	0.27
157.583	0.00	0.07	0.190	o	|	|	|	|	0.27
157.667	0.00	0.07	0.189	o	|	|	|	|	0.27
157.750	0.00	0.07	0.189	o	|	|	|	|	0.26
157.833	0.00	0.07	0.188	o	|	|	|	|	0.26
157.917	0.00	0.07	0.188	o	|	|	|	|	0.26
158.000	0.00	0.07	0.187	o	|	|	|	|	0.26
158.083	0.00	0.07	0.187	o	|	|	|	|	0.26
158.167	0.00	0.07	0.186	o	|	|	|	|	0.26
158.250	0.00	0.07	0.186	o	|	|	|	|	0.26
158.333	0.00	0.07	0.185	o	|	|	|	|	0.26
158.417	0.00	0.07	0.185	o	|	|	|	|	0.26
158.500	0.00	0.07	0.184	o	|	|	|	|	0.26
158.583	0.00	0.07	0.184	o	|	|	|	|	0.26
158.667	0.00	0.07	0.183	o	|	|	|	|	0.26
158.750	0.00	0.07	0.183	o	|	|	|	|	0.26
158.833	0.00	0.07	0.182	o	|	|	|	|	0.26
158.917	0.00	0.07	0.182	o	|	|	|	|	0.26
159.000	0.00	0.07	0.182	o	|	|	|	|	0.25
159.083	0.00	0.07	0.181	o	|	|	|	|	0.25
159.167	0.00	0.06	0.181	o	|	|	|	|	0.25
159.250	0.00	0.06	0.180	o	|	|	|	|	0.25
159.333	0.00	0.06	0.180	o	|	|	|	|	0.25
159.417	0.00	0.06	0.179	o	|	|	|	|	0.25
159.500	0.00	0.06	0.179	o	|	|	|	|	0.25
159.583	0.00	0.06	0.178	o	|	|	|	|	0.25
159.667	0.00	0.06	0.178	o	|	|	|	|	0.25
159.750	0.00	0.06	0.178	o	|	|	|	|	0.25
159.833	0.00	0.06	0.177	o	|	|	|	|	0.25
159.917	0.00	0.06	0.177	o	|	|	|	|	0.25
160.000	0.00	0.06	0.176	o	|	|	|	|	0.25
160.083	0.00	0.06	0.176	o	|	|	|	|	0.25
160.167	0.00	0.06	0.175	o	|	|	|	|	0.25
160.250	0.00	0.06	0.175	o	|	|	|	|	0.25
160.333	0.00	0.06	0.175	o	|	|	|	|	0.25
160.417	0.00	0.06	0.174	o	|	|	|	|	0.24
160.500	0.00	0.06	0.174	o	|	|	|	|	0.24
160.583	0.00	0.06	0.173	o	|	|	|	|	0.24
160.667	0.00	0.06	0.173	o	|	|	|	|	0.24
160.750	0.00	0.06	0.173	o	|	|	|	|	0.24
160.833	0.00	0.06	0.172	o	|	|	|	|	0.24
160.917	0.00	0.06	0.172	o	|	|	|	|	0.24
161.000	0.00	0.06	0.171	o	|	|	|	|	0.24
161.083	0.00	0.06	0.171	o	|	|	|	|	0.24
161.167	0.00	0.06	0.171	o	|	|	|	|	0.24
161.250	0.00	0.06	0.170	o	|	|	|	|	0.24
161.333	0.00	0.06	0.170	o	|	|	|	|	0.24
161.417	0.00	0.06	0.169	o	|	|	|	|	0.24
161.500	0.00	0.06	0.169	o	|	|	|	|	0.24
161.583	0.00	0.05	0.169	o	|	|	|	|	0.24
161.667	0.00	0.05	0.168	o	|	|	|	|	0.24
161.750	0.00	0.05	0.168	o	|	|	|	|	0.24

161.833	0.00	0.05	0.168	o	|	|	|	|	0.24
161.917	0.00	0.05	0.167	o	|	|	|	|	0.23
162.000	0.00	0.05	0.167	o	|	|	|	|	0.23
162.083	0.00	0.05	0.166	o	|	|	|	|	0.23
162.167	0.00	0.05	0.166	o	|	|	|	|	0.23
162.250	0.00	0.05	0.166	o	|	|	|	|	0.23
162.333	0.00	0.05	0.165	o	|	|	|	|	0.23
162.417	0.00	0.05	0.165	o	|	|	|	|	0.23
162.500	0.00	0.05	0.165	o	|	|	|	|	0.23
162.583	0.00	0.05	0.164	o	|	|	|	|	0.23
162.667	0.00	0.05	0.164	o	|	|	|	|	0.23
162.750	0.00	0.05	0.164	o	|	|	|	|	0.23
162.833	0.00	0.05	0.163	o	|	|	|	|	0.23
162.917	0.00	0.05	0.163	o	|	|	|	|	0.23
163.000	0.00	0.05	0.163	o	|	|	|	|	0.23
163.083	0.00	0.05	0.162	o	|	|	|	|	0.23
163.167	0.00	0.05	0.162	o	|	|	|	|	0.23
163.250	0.00	0.05	0.162	o	|	|	|	|	0.23
163.333	0.00	0.05	0.161	o	|	|	|	|	0.23
163.417	0.00	0.05	0.161	o	|	|	|	|	0.23
163.500	0.00	0.05	0.161	o	|	|	|	|	0.23
163.583	0.00	0.05	0.160	o	|	|	|	|	0.22
163.667	0.00	0.05	0.160	o	|	|	|	|	0.22
163.750	0.00	0.05	0.160	o	|	|	|	|	0.22
163.833	0.00	0.05	0.159	o	|	|	|	|	0.22
163.917	0.00	0.05	0.159	o	|	|	|	|	0.22
164.000	0.00	0.05	0.159	o	|	|	|	|	0.22
164.083	0.00	0.05	0.158	o	|	|	|	|	0.22
164.167	0.00	0.05	0.158	o	|	|	|	|	0.22
164.250	0.00	0.05	0.158	o	|	|	|	|	0.22
164.333	0.00	0.05	0.157	o	|	|	|	|	0.22
164.417	0.00	0.05	0.157	o	|	|	|	|	0.22
164.500	0.00	0.04	0.157	o	|	|	|	|	0.22
164.583	0.00	0.04	0.156	o	|	|	|	|	0.22
164.667	0.00	0.04	0.156	o	|	|	|	|	0.22
164.750	0.00	0.04	0.156	o	|	|	|	|	0.22
164.833	0.00	0.04	0.155	o	|	|	|	|	0.22
164.917	0.00	0.04	0.155	o	|	|	|	|	0.22
165.000	0.00	0.04	0.155	o	|	|	|	|	0.22
165.083	0.00	0.04	0.155	o	|	|	|	|	0.22
165.167	0.00	0.04	0.154	o	|	|	|	|	0.22
165.250	0.00	0.04	0.154	o	|	|	|	|	0.22
165.333	0.00	0.04	0.154	o	|	|	|	|	0.22
165.417	0.00	0.04	0.153	o	|	|	|	|	0.22
165.500	0.00	0.04	0.153	o	|	|	|	|	0.22
165.583	0.00	0.04	0.153	o	|	|	|	|	0.21
165.667	0.00	0.04	0.153	o	|	|	|	|	0.21
165.750	0.00	0.04	0.152	o	|	|	|	|	0.21
165.833	0.00	0.04	0.152	o	|	|	|	|	0.21
165.917	0.00	0.04	0.152	o	|	|	|	|	0.21
166.000	0.00	0.04	0.151	o	|	|	|	|	0.21
166.083	0.00	0.04	0.151	o	|	|	|	|	0.21
166.167	0.00	0.04	0.151	o	|	|	|	|	0.21
166.250	0.00	0.04	0.151	o	|	|	|	|	0.21
166.333	0.00	0.04	0.150	o	|	|	|	|	0.21
166.417	0.00	0.04	0.150	o	|	|	|	|	0.21
166.500	0.00	0.04	0.150	o	|	|	|	|	0.21
166.583	0.00	0.04	0.150	o	|	|	|	|	0.21
166.667	0.00	0.04	0.149	o	|	|	|	|	0.21
166.750	0.00	0.04	0.149	o	|	|	|	|	0.21
166.833	0.00	0.04	0.149	o	|	|	|	|	0.21
166.917	0.00	0.04	0.148	o	|	|	|	|	0.21
167.000	0.00	0.04	0.148	o	|	|	|	|	0.21
167.083	0.00	0.04	0.148	o	|	|	|	|	0.21
167.167	0.00	0.04	0.148	o	|	|	|	|	0.21
167.250	0.00	0.04	0.147	o	|	|	|	|	0.21
167.333	0.00	0.04	0.147	o	|	|	|	|	0.21
167.417	0.00	0.04	0.147	o	|	|	|	|	0.21
167.500	0.00	0.04	0.147	o	|	|	|	|	0.21
167.583	0.00	0.04	0.146	o	|	|	|	|	0.21
167.667	0.00	0.04	0.146	o	|	|	|	|	0.21
167.750	0.00	0.04	0.146	o	|	|	|	|	0.20
167.833	0.00	0.04	0.146	o	|	|	|	|	0.20
167.917	0.00	0.04	0.145	o	|	|	|	|	0.20
168.000	0.00	0.04	0.145	o	|	|	|	|	0.20

168.083	0.00	0.04	0.145	o	|	|	|	|	0.20
168.167	0.00	0.03	0.145	o	|	|	|	|	0.20
168.250	0.00	0.03	0.144	o	|	|	|	|	0.20
168.333	0.00	0.03	0.144	o	|	|	|	|	0.20
168.417	0.00	0.03	0.144	o	|	|	|	|	0.20
168.500	0.00	0.03	0.144	o	|	|	|	|	0.20
168.583	0.00	0.03	0.144	o	|	|	|	|	0.20
168.667	0.00	0.03	0.143	o	|	|	|	|	0.20
168.750	0.00	0.03	0.143	o	|	|	|	|	0.20
168.833	0.00	0.03	0.143	o	|	|	|	|	0.20
168.917	0.00	0.03	0.143	o	|	|	|	|	0.20
169.000	0.00	0.03	0.142	o	|	|	|	|	0.20
169.083	0.00	0.03	0.142	o	|	|	|	|	0.20
169.167	0.00	0.03	0.142	o	|	|	|	|	0.20
169.250	0.00	0.03	0.142	o	|	|	|	|	0.20
169.333	0.00	0.03	0.141	o	|	|	|	|	0.20
169.417	0.00	0.03	0.141	o	|	|	|	|	0.20
169.500	0.00	0.03	0.141	o	|	|	|	|	0.20
169.583	0.00	0.03	0.141	o	|	|	|	|	0.20
169.667	0.00	0.03	0.141	o	|	|	|	|	0.20
169.750	0.00	0.03	0.140	o	|	|	|	|	0.20
169.833	0.00	0.03	0.140	o	|	|	|	|	0.20
169.917	0.00	0.03	0.140	o	|	|	|	|	0.20
170.000	0.00	0.03	0.140	o	|	|	|	|	0.20
170.083	0.00	0.03	0.140	o	|	|	|	|	0.20
170.167	0.00	0.03	0.139	o	|	|	|	|	0.20
170.250	0.00	0.03	0.139	o	|	|	|	|	0.20
170.333	0.00	0.03	0.139	o	|	|	|	|	0.20
170.417	0.00	0.03	0.139	o	|	|	|	|	0.19
170.500	0.00	0.03	0.138	o	|	|	|	|	0.19
170.583	0.00	0.03	0.138	o	|	|	|	|	0.19
170.667	0.00	0.03	0.138	o	|	|	|	|	0.19
170.750	0.00	0.03	0.138	o	|	|	|	|	0.19
170.833	0.00	0.03	0.138	o	|	|	|	|	0.19
170.917	0.00	0.03	0.137	o	|	|	|	|	0.19
171.000	0.00	0.03	0.137	o	|	|	|	|	0.19
171.083	0.00	0.03	0.137	o	|	|	|	|	0.19
171.167	0.00	0.03	0.137	o	|	|	|	|	0.19
171.250	0.00	0.03	0.137	o	|	|	|	|	0.19
171.333	0.00	0.03	0.136	o	|	|	|	|	0.19
171.417	0.00	0.03	0.136	o	|	|	|	|	0.19
171.500	0.00	0.03	0.136	o	|	|	|	|	0.19
171.583	0.00	0.03	0.136	o	|	|	|	|	0.19
171.667	0.00	0.03	0.136	o	|	|	|	|	0.19
171.750	0.00	0.03	0.136	o	|	|	|	|	0.19
171.833	0.00	0.03	0.135	o	|	|	|	|	0.19
171.917	0.00	0.03	0.135	o	|	|	|	|	0.19
172.000	0.00	0.03	0.135	o	|	|	|	|	0.19
172.083	0.00	0.03	0.135	o	|	|	|	|	0.19
172.167	0.00	0.03	0.135	o	|	|	|	|	0.19
172.250	0.00	0.03	0.134	o	|	|	|	|	0.19
172.333	0.00	0.03	0.134	o	|	|	|	|	0.19
172.417	0.00	0.03	0.134	o	|	|	|	|	0.19
172.500	0.00	0.03	0.134	o	|	|	|	|	0.19
172.583	0.00	0.03	0.134	o	|	|	|	|	0.19
172.667	0.00	0.03	0.134	o	|	|	|	|	0.19
172.750	0.00	0.03	0.133	o	|	|	|	|	0.19
172.833	0.00	0.03	0.133	o	|	|	|	|	0.19
172.917	0.00	0.03	0.133	o	|	|	|	|	0.19
173.000	0.00	0.03	0.133	o	|	|	|	|	0.19
173.083	0.00	0.02	0.133	o	|	|	|	|	0.19
173.167	0.00	0.02	0.132	o	|	|	|	|	0.19
173.250	0.00	0.02	0.132	o	|	|	|	|	0.19
173.333	0.00	0.02	0.132	o	|	|	|	|	0.19
173.417	0.00	0.02	0.132	o	|	|	|	|	0.19
173.500	0.00	0.02	0.132	o	|	|	|	|	0.19
173.583	0.00	0.02	0.132	o	|	|	|	|	0.18
173.667	0.00	0.02	0.131	o	|	|	|	|	0.18
173.750	0.00	0.02	0.131	o	|	|	|	|	0.18
173.833	0.00	0.02	0.131	o	|	|	|	|	0.18
173.917	0.00	0.02	0.131	o	|	|	|	|	0.18
174.000	0.00	0.02	0.131	o	|	|	|	|	0.18
174.083	0.00	0.02	0.131	o	|	|	|	|	0.18
174.167	0.00	0.02	0.131	o	|	|	|	|	0.18
174.250	0.00	0.02	0.130	o	|	|	|	|	0.18

174.333	0.00	0.02	0.130	o					0.18
174.417	0.00	0.02	0.130	o					0.18
174.500	0.00	0.02	0.130	o					0.18
174.583	0.00	0.02	0.130	o					0.18
174.667	0.00	0.02	0.130	o					0.18
174.750	0.00	0.02	0.129	o					0.18
174.833	0.00	0.02	0.129	o					0.18
174.917	0.00	0.02	0.129	o					0.18
175.000	0.00	0.02	0.129	o					0.18
175.083	0.00	0.02	0.129	o					0.18
175.167	0.00	0.02	0.129	o					0.18
175.250	0.00	0.02	0.129	o					0.18
175.333	0.00	0.02	0.128	o					0.18
175.417	0.00	0.02	0.128	o					0.18
175.500	0.00	0.02	0.128	o					0.18
175.583	0.00	0.02	0.128	o					0.18
175.667	0.00	0.02	0.128	o					0.18
175.750	0.00	0.02	0.128	o					0.18
175.833	0.00	0.02	0.128	o					0.18
175.917	0.00	0.02	0.127	o					0.18
176.000	0.00	0.02	0.127	o					0.18
176.083	0.00	0.02	0.127	o					0.18
176.167	0.00	0.02	0.127	o					0.18
176.250	0.00	0.02	0.127	o					0.18
176.333	0.00	0.02	0.127	o					0.18
176.417	0.00	0.02	0.127	o					0.18
176.500	0.00	0.02	0.126	o					0.18
176.583	0.00	0.02	0.126	o					0.18
176.667	0.00	0.02	0.126	o					0.18
176.750	0.00	0.02	0.126	o					0.18
176.833	0.00	0.02	0.126	o					0.18
176.917	0.00	0.02	0.126	o					0.18
177.000	0.00	0.02	0.126	o					0.18
177.083	0.00	0.02	0.125	o					0.18
177.167	0.00	0.02	0.125	o					0.18
177.250	0.00	0.02	0.125	o					0.18
177.333	0.00	0.02	0.125	o					0.18
177.417	0.00	0.02	0.125	o					0.18
177.500	0.00	0.02	0.125	o					0.18
177.583	0.00	0.02	0.125	o					0.18
177.667	0.00	0.02	0.125	o					0.17
177.750	0.00	0.02	0.124	o					0.17
177.833	0.00	0.02	0.124	o					0.17
177.917	0.00	0.02	0.124	o					0.17
178.000	0.00	0.02	0.124	o					0.17
178.083	0.00	0.02	0.124	o					0.17
178.167	0.00	0.02	0.124	o					0.17
178.250	0.00	0.02	0.124	o					0.17
178.333	0.00	0.02	0.124	o					0.17
178.417	0.00	0.02	0.123	o					0.17
178.500	0.00	0.02	0.123	o					0.17
178.583	0.00	0.02	0.123	o					0.17
178.667	0.00	0.02	0.123	o					0.17
178.750	0.00	0.02	0.123	o					0.17
178.833	0.00	0.02	0.123	o					0.17
178.917	0.00	0.02	0.123	o					0.17
179.000	0.00	0.02	0.123	o					0.17
179.083	0.00	0.02	0.123	o					0.17
179.167	0.00	0.02	0.122	o					0.17
179.250	0.00	0.02	0.122	o					0.17
179.333	0.00	0.02	0.122	o					0.17
179.417	0.00	0.02	0.122	o					0.17
179.500	0.00	0.02	0.122	o					0.17
179.583	0.00	0.02	0.122	o					0.17
179.667	0.00	0.02	0.122	o					0.17
179.750	0.00	0.02	0.122	o					0.17
179.833	0.00	0.02	0.122	o					0.17
179.917	0.00	0.02	0.121	o					0.17
180.000	0.00	0.02	0.121	o					0.17
180.083	0.00	0.02	0.121	o					0.17
180.167	0.00	0.02	0.121	o					0.17
180.250	0.00	0.02	0.121	o					0.17
180.333	0.00	0.02	0.121	o					0.17
180.417	0.00	0.02	0.121	o					0.17
180.500	0.00	0.01	0.121	o					0.17

180.583	0.00	0.01	0.121	o	|	|	|	|	0.17
180.667	0.00	0.01	0.121	o	|	|	|	|	0.17
180.750	0.00	0.01	0.120	o	|	|	|	|	0.17
180.833	0.00	0.01	0.120	o	|	|	|	|	0.17
180.917	0.00	0.01	0.120	o	|	|	|	|	0.17
181.000	0.00	0.01	0.120	o	|	|	|	|	0.17
181.083	0.00	0.01	0.120	o	|	|	|	|	0.17
181.167	0.00	0.01	0.120	o	|	|	|	|	0.17
181.250	0.00	0.01	0.120	o	|	|	|	|	0.17
181.333	0.00	0.01	0.120	o	|	|	|	|	0.17
181.417	0.00	0.01	0.120	o	|	|	|	|	0.17
181.500	0.00	0.01	0.120	o	|	|	|	|	0.17
181.583	0.00	0.01	0.119	o	|	|	|	|	0.17
181.667	0.00	0.01	0.119	o	|	|	|	|	0.17
181.750	0.00	0.01	0.119	o	|	|	|	|	0.17
181.833	0.00	0.01	0.119	o	|	|	|	|	0.17
181.917	0.00	0.01	0.119	o	|	|	|	|	0.17
182.000	0.00	0.01	0.119	o	|	|	|	|	0.17
182.083	0.00	0.01	0.119	o	|	|	|	|	0.17
182.167	0.00	0.01	0.119	o	|	|	|	|	0.17
182.250	0.00	0.01	0.119	o	|	|	|	|	0.17
182.333	0.00	0.01	0.119	o	|	|	|	|	0.17
182.417	0.00	0.01	0.118	o	|	|	|	|	0.17
182.500	0.00	0.01	0.118	o	|	|	|	|	0.17
182.583	0.00	0.01	0.118	o	|	|	|	|	0.17
182.667	0.00	0.01	0.118	o	|	|	|	|	0.17
182.750	0.00	0.01	0.118	o	|	|	|	|	0.17
182.833	0.00	0.01	0.118	o	|	|	|	|	0.17
182.917	0.00	0.01	0.118	o	|	|	|	|	0.17
183.000	0.00	0.01	0.118	o	|	|	|	|	0.17
183.083	0.00	0.01	0.118	o	|	|	|	|	0.17
183.167	0.00	0.01	0.118	o	|	|	|	|	0.17
183.250	0.00	0.01	0.118	o	|	|	|	|	0.17
183.333	0.00	0.01	0.118	o	|	|	|	|	0.17
183.417	0.00	0.01	0.117	o	|	|	|	|	0.16
183.500	0.00	0.01	0.117	o	|	|	|	|	0.16
183.583	0.00	0.01	0.117	o	|	|	|	|	0.16
183.667	0.00	0.01	0.117	o	|	|	|	|	0.16
183.750	0.00	0.01	0.117	o	|	|	|	|	0.16
183.833	0.00	0.01	0.117	o	|	|	|	|	0.16
183.917	0.00	0.01	0.117	o	|	|	|	|	0.16
184.000	0.00	0.01	0.117	o	|	|	|	|	0.16
184.083	0.00	0.01	0.117	o	|	|	|	|	0.16
184.167	0.00	0.01	0.117	o	|	|	|	|	0.16
184.250	0.00	0.01	0.117	o	|	|	|	|	0.16
184.333	0.00	0.01	0.117	o	|	|	|	|	0.16
184.417	0.00	0.01	0.116	o	|	|	|	|	0.16
184.500	0.00	0.01	0.116	o	|	|	|	|	0.16
184.583	0.00	0.01	0.116	o	|	|	|	|	0.16
184.667	0.00	0.01	0.116	o	|	|	|	|	0.16
184.750	0.00	0.01	0.116	o	|	|	|	|	0.16
184.833	0.00	0.01	0.116	o	|	|	|	|	0.16
184.917	0.00	0.01	0.116	o	|	|	|	|	0.16
185.000	0.00	0.01	0.116	o	|	|	|	|	0.16
185.083	0.00	0.01	0.116	o	|	|	|	|	0.16
185.167	0.00	0.01	0.116	o	|	|	|	|	0.16
185.250	0.00	0.01	0.116	o	|	|	|	|	0.16
185.333	0.00	0.01	0.116	o	|	|	|	|	0.16
185.417	0.00	0.01	0.116	o	|	|	|	|	0.16
185.500	0.00	0.01	0.115	o	|	|	|	|	0.16
185.583	0.00	0.01	0.115	o	|	|	|	|	0.16
185.667	0.00	0.01	0.115	o	|	|	|	|	0.16
185.750	0.00	0.01	0.115	o	|	|	|	|	0.16
185.833	0.00	0.01	0.115	o	|	|	|	|	0.16
185.917	0.00	0.01	0.115	o	|	|	|	|	0.16
186.000	0.00	0.01	0.115	o	|	|	|	|	0.16
186.083	0.00	0.01	0.115	o	|	|	|	|	0.16
186.167	0.00	0.01	0.115	o	|	|	|	|	0.16
186.250	0.00	0.01	0.115	o	|	|	|	|	0.16
186.333	0.00	0.01	0.115	o	|	|	|	|	0.16
186.417	0.00	0.01	0.115	o	|	|	|	|	0.16
186.500	0.00	0.01	0.115	o	|	|	|	|	0.16
186.583	0.00	0.01	0.115	o	|	|	|	|	0.16
186.667	0.00	0.01	0.115	o	|	|	|	|	0.16
186.750	0.00	0.01	0.114	o	|	|	|	|	0.16

186.833	0.00	0.01	0.114	o	|	|	|	|	0.16
186.917	0.00	0.01	0.114	o	|	|	|	|	0.16
187.000	0.00	0.01	0.114	o	|	|	|	|	0.16
187.083	0.00	0.01	0.114	o	|	|	|	|	0.16
187.167	0.00	0.01	0.114	o	|	|	|	|	0.16
187.250	0.00	0.01	0.114	o	|	|	|	|	0.16
187.333	0.00	0.01	0.114	o	|	|	|	|	0.16
187.417	0.00	0.01	0.114	o	|	|	|	|	0.16
187.500	0.00	0.01	0.114	o	|	|	|	|	0.16
187.583	0.00	0.01	0.114	o	|	|	|	|	0.16
187.667	0.00	0.01	0.114	o	|	|	|	|	0.16
187.750	0.00	0.01	0.114	o	|	|	|	|	0.16
187.833	0.00	0.01	0.114	o	|	|	|	|	0.16
187.917	0.00	0.01	0.114	o	|	|	|	|	0.16
188.000	0.00	0.01	0.113	o	|	|	|	|	0.16
188.083	0.00	0.01	0.113	o	|	|	|	|	0.16
188.167	0.00	0.01	0.113	o	|	|	|	|	0.16
188.250	0.00	0.01	0.113	o	|	|	|	|	0.16
188.333	0.00	0.01	0.113	o	|	|	|	|	0.16
188.417	0.00	0.01	0.113	o	|	|	|	|	0.16
188.500	0.00	0.01	0.113	o	|	|	|	|	0.16
188.583	0.00	0.01	0.113	o	|	|	|	|	0.16
188.667	0.00	0.01	0.113	o	|	|	|	|	0.16
188.750	0.00	0.01	0.113	o	|	|	|	|	0.16
188.833	0.00	0.01	0.113	o	|	|	|	|	0.16
188.917	0.00	0.01	0.113	o	|	|	|	|	0.16
189.000	0.00	0.01	0.113	o	|	|	|	|	0.16
189.083	0.00	0.01	0.113	o	|	|	|	|	0.16
189.167	0.00	0.01	0.113	o	|	|	|	|	0.16
189.250	0.00	0.01	0.113	o	|	|	|	|	0.16
189.333	0.00	0.01	0.113	o	|	|	|	|	0.16
189.417	0.00	0.01	0.112	o	|	|	|	|	0.16
189.500	0.00	0.01	0.112	o	|	|	|	|	0.16
189.583	0.00	0.01	0.112	o	|	|	|	|	0.16
189.667	0.00	0.01	0.112	o	|	|	|	|	0.16
189.750	0.00	0.01	0.112	o	|	|	|	|	0.16
189.833	0.00	0.01	0.112	o	|	|	|	|	0.16
189.917	0.00	0.01	0.112	o	|	|	|	|	0.16
190.000	0.00	0.01	0.112	o	|	|	|	|	0.16
190.083	0.00	0.01	0.112	o	|	|	|	|	0.16
190.167	0.00	0.01	0.112	o	|	|	|	|	0.16
190.250	0.00	0.01	0.112	o	|	|	|	|	0.16
190.333	0.00	0.01	0.112	o	|	|	|	|	0.16
190.417	0.00	0.01	0.112	o	|	|	|	|	0.16
190.500	0.00	0.01	0.112	o	|	|	|	|	0.16
190.583	0.00	0.01	0.112	o	|	|	|	|	0.16
190.667	0.00	0.01	0.112	o	|	|	|	|	0.16
190.750	0.00	0.01	0.112	o	|	|	|	|	0.16
190.833	0.00	0.01	0.112	o	|	|	|	|	0.16
190.917	0.00	0.01	0.112	o	|	|	|	|	0.16
191.000	0.00	0.01	0.111	o	|	|	|	|	0.16
191.083	0.00	0.01	0.111	o	|	|	|	|	0.16
191.167	0.00	0.01	0.111	o	|	|	|	|	0.16
191.250	0.00	0.01	0.111	o	|	|	|	|	0.16
191.333	0.00	0.01	0.111	o	|	|	|	|	0.16
191.417	0.00	0.01	0.111	o	|	|	|	|	0.16
191.500	0.00	0.01	0.111	o	|	|	|	|	0.16
191.583	0.00	0.01	0.111	o	|	|	|	|	0.16
191.667	0.00	0.01	0.111	o	|	|	|	|	0.16
191.750	0.00	0.01	0.111	o	|	|	|	|	0.16
191.833	0.00	0.01	0.111	o	|	|	|	|	0.16
191.917	0.00	0.01	0.111	o	|	|	|	|	0.16
192.000	0.00	0.01	0.111	o	|	|	|	|	0.16
192.083	0.00	0.01	0.111	o	|	|	|	|	0.16
192.167	0.00	0.01	0.111	o	|	|	|	|	0.16
192.250	0.00	0.01	0.111	o	|	|	|	|	0.16
192.333	0.00	0.01	0.111	o	|	|	|	|	0.16
192.417	0.00	0.01	0.111	o	|	|	|	|	0.16
192.500	0.00	0.01	0.111	o	|	|	|	|	0.16
192.583	0.00	0.01	0.111	o	|	|	|	|	0.16
192.667	0.00	0.01	0.111	o	|	|	|	|	0.16
192.750	0.00	0.01	0.111	o	|	|	|	|	0.16
192.833	0.00	0.01	0.110	o	|	|	|	|	0.16
192.917	0.00	0.01	0.110	o	|	|	|	|	0.16
193.000	0.00	0.01	0.110	o	|	|	|	|	0.15

193.083	0.00	0.01	0.110	o	|	|	|	|	0.15
193.167	0.00	0.01	0.110	o	|	|	|	|	0.15
193.250	0.00	0.01	0.110	o	|	|	|	|	0.15
193.333	0.00	0.01	0.110	o	|	|	|	|	0.15
193.417	0.00	0.01	0.110	o	|	|	|	|	0.15
193.500	0.00	0.01	0.110	o	|	|	|	|	0.15
193.583	0.00	0.01	0.110	o	|	|	|	|	0.15
193.667	0.00	0.01	0.110	o	|	|	|	|	0.15
193.750	0.00	0.01	0.110	o	|	|	|	|	0.15
193.833	0.00	0.01	0.110	o	|	|	|	|	0.15
193.917	0.00	0.01	0.110	o	|	|	|	|	0.15
194.000	0.00	0.01	0.110	o	|	|	|	|	0.15
194.083	0.00	0.01	0.110	o	|	|	|	|	0.15
194.167	0.00	0.01	0.110	o	|	|	|	|	0.15
194.250	0.00	0.01	0.110	o	|	|	|	|	0.15
194.333	0.00	0.01	0.110	o	|	|	|	|	0.15
194.417	0.00	0.01	0.110	o	|	|	|	|	0.15
194.500	0.00	0.01	0.110	o	|	|	|	|	0.15
194.583	0.00	0.01	0.110	o	|	|	|	|	0.15
194.667	0.00	0.01	0.110	o	|	|	|	|	0.15
194.750	0.00	0.01	0.110	o	|	|	|	|	0.15
194.833	0.00	0.01	0.109	o	|	|	|	|	0.15
194.917	0.00	0.01	0.109	o	|	|	|	|	0.15
195.000	0.00	0.01	0.109	o	|	|	|	|	0.15
195.083	0.00	0.01	0.109	o	|	|	|	|	0.15
195.167	0.00	0.01	0.109	o	|	|	|	|	0.15
195.250	0.00	0.01	0.109	o	|	|	|	|	0.15
195.333	0.00	0.01	0.109	o	|	|	|	|	0.15
195.417	0.00	0.01	0.109	o	|	|	|	|	0.15
195.500	0.00	0.01	0.109	o	|	|	|	|	0.15
195.583	0.00	0.01	0.109	o	|	|	|	|	0.15
195.667	0.00	0.01	0.109	o	|	|	|	|	0.15
195.750	0.00	0.01	0.109	o	|	|	|	|	0.15
195.833	0.00	0.01	0.109	o	|	|	|	|	0.15
195.917	0.00	0.01	0.109	o	|	|	|	|	0.15
196.000	0.00	0.01	0.109	o	|	|	|	|	0.15
196.083	0.00	0.01	0.109	o	|	|	|	|	0.15
196.167	0.00	0.01	0.109	o	|	|	|	|	0.15
196.250	0.00	0.01	0.109	o	|	|	|	|	0.15
196.333	0.00	0.01	0.109	o	|	|	|	|	0.15
196.417	0.00	0.00	0.109	o	|	|	|	|	0.15
196.500	0.00	0.00	0.109	o	|	|	|	|	0.15
196.583	0.00	0.00	0.109	o	|	|	|	|	0.15
196.667	0.00	0.00	0.109	o	|	|	|	|	0.15
196.750	0.00	0.00	0.109	o	|	|	|	|	0.15
196.833	0.00	0.00	0.109	o	|	|	|	|	0.15
196.917	0.00	0.00	0.109	o	|	|	|	|	0.15
197.000	0.00	0.00	0.109	o	|	|	|	|	0.15
197.083	0.00	0.00	0.109	o	|	|	|	|	0.15
197.167	0.00	0.00	0.108	o	|	|	|	|	0.15
197.250	0.00	0.00	0.108	o	|	|	|	|	0.15
197.333	0.00	0.00	0.108	o	|	|	|	|	0.15
197.417	0.00	0.00	0.108	o	|	|	|	|	0.15
197.500	0.00	0.00	0.108	o	|	|	|	|	0.15
197.583	0.00	0.00	0.108	o	|	|	|	|	0.15
197.667	0.00	0.00	0.108	o	|	|	|	|	0.15
197.750	0.00	0.00	0.108	o	|	|	|	|	0.15
197.833	0.00	0.00	0.108	o	|	|	|	|	0.15
197.917	0.00	0.00	0.108	o	|	|	|	|	0.15
198.000	0.00	0.00	0.108	o	|	|	|	|	0.15
198.083	0.00	0.00	0.108	o	|	|	|	|	0.15
198.167	0.00	0.00	0.108	o	|	|	|	|	0.15
198.250	0.00	0.00	0.108	o	|	|	|	|	0.15
198.333	0.00	0.00	0.108	o	|	|	|	|	0.15
198.417	0.00	0.00	0.108	o	|	|	|	|	0.15
198.500	0.00	0.00	0.108	o	|	|	|	|	0.15
198.583	0.00	0.00	0.108	o	|	|	|	|	0.15
198.667	0.00	0.00	0.108	o	|	|	|	|	0.15
198.750	0.00	0.00	0.108	o	|	|	|	|	0.15
198.833	0.00	0.00	0.108	o	|	|	|	|	0.15
198.917	0.00	0.00	0.108	o	|	|	|	|	0.15
199.000	0.00	0.00	0.108	o	|	|	|	|	0.15
199.083	0.00	0.00	0.108	o	|	|	|	|	0.15
199.167	0.00	0.00	0.108	o	|	|	|	|	0.15
199.250	0.00	0.00	0.108	o	|	|	|	|	0.15

199.333	0.00	0.00	0.108	o	|	|	|	|	0.15
199.417	0.00	0.00	0.108	o	|	|	|	|	0.15
199.500	0.00	0.00	0.108	o	|	|	|	|	0.15
199.583	0.00	0.00	0.108	o	|	|	|	|	0.15
199.667	0.00	0.00	0.108	o	|	|	|	|	0.15
199.750	0.00	0.00	0.108	o	|	|	|	|	0.15
199.833	0.00	0.00	0.108	o	|	|	|	|	0.15
199.917	0.00	0.00	0.108	o	|	|	|	|	0.15
200.000	0.00	0.00	0.107	o	|	|	|	|	0.15
200.083	0.00	0.00	0.107	o	|	|	|	|	0.15
200.167	0.00	0.00	0.107	o	|	|	|	|	0.15
200.250	0.00	0.00	0.107	o	|	|	|	|	0.15
200.333	0.00	0.00	0.107	o	|	|	|	|	0.15
200.417	0.00	0.00	0.107	o	|	|	|	|	0.15
200.500	0.00	0.00	0.107	o	|	|	|	|	0.15
200.583	0.00	0.00	0.107	o	|	|	|	|	0.15
200.667	0.00	0.00	0.107	o	|	|	|	|	0.15
200.750	0.00	0.00	0.107	o	|	|	|	|	0.15
200.833	0.00	0.00	0.107	o	|	|	|	|	0.15
200.917	0.00	0.00	0.107	o	|	|	|	|	0.15
201.000	0.00	0.00	0.107	o	|	|	|	|	0.15
201.083	0.00	0.00	0.107	o	|	|	|	|	0.15
201.167	0.00	0.00	0.107	o	|	|	|	|	0.15
201.250	0.00	0.00	0.107	o	|	|	|	|	0.15
201.333	0.00	0.00	0.107	o	|	|	|	|	0.15
201.417	0.00	0.00	0.107	o	|	|	|	|	0.15
201.500	0.00	0.00	0.107	o	|	|	|	|	0.15
201.583	0.00	0.00	0.107	o	|	|	|	|	0.15
201.667	0.00	0.00	0.107	o	|	|	|	|	0.15
201.750	0.00	0.00	0.107	o	|	|	|	|	0.15
201.833	0.00	0.00	0.107	o	|	|	|	|	0.15
201.917	0.00	0.00	0.107	o	|	|	|	|	0.15
202.000	0.00	0.00	0.107	o	|	|	|	|	0.15
202.083	0.00	0.00	0.107	o	|	|	|	|	0.15
202.167	0.00	0.00	0.107	o	|	|	|	|	0.15
202.250	0.00	0.00	0.107	o	|	|	|	|	0.15
202.333	0.00	0.00	0.107	o	|	|	|	|	0.15
202.417	0.00	0.00	0.107	o	|	|	|	|	0.15
202.500	0.00	0.00	0.107	o	|	|	|	|	0.15
202.583	0.00	0.00	0.107	o	|	|	|	|	0.15
202.667	0.00	0.00	0.107	o	|	|	|	|	0.15
202.750	0.00	0.00	0.107	o	|	|	|	|	0.15
202.833	0.00	0.00	0.107	o	|	|	|	|	0.15
202.917	0.00	0.00	0.107	o	|	|	|	|	0.15
203.000	0.00	0.00	0.107	o	|	|	|	|	0.15
203.083	0.00	0.00	0.107	o	|	|	|	|	0.15
203.167	0.00	0.00	0.107	o	|	|	|	|	0.15
203.250	0.00	0.00	0.107	o	|	|	|	|	0.15
203.333	0.00	0.00	0.107	o	|	|	|	|	0.15
203.417	0.00	0.00	0.106	o	|	|	|	|	0.15
203.500	0.00	0.00	0.106	o	|	|	|	|	0.15
203.583	0.00	0.00	0.106	o	|	|	|	|	0.15
203.667	0.00	0.00	0.106	o	|	|	|	|	0.15
203.750	0.00	0.00	0.106	o	|	|	|	|	0.15
203.833	0.00	0.00	0.106	o	|	|	|	|	0.15
203.917	0.00	0.00	0.106	o	|	|	|	|	0.15
204.000	0.00	0.00	0.106	o	|	|	|	|	0.15
204.083	0.00	0.00	0.106	o	|	|	|	|	0.15
204.167	0.00	0.00	0.106	o	|	|	|	|	0.15
204.250	0.00	0.00	0.106	o	|	|	|	|	0.15
204.333	0.00	0.00	0.106	o	|	|	|	|	0.15
204.417	0.00	0.00	0.106	o	|	|	|	|	0.15
204.500	0.00	0.00	0.106	o	|	|	|	|	0.15
204.583	0.00	0.00	0.106	o	|	|	|	|	0.15
204.667	0.00	0.00	0.106	o	|	|	|	|	0.15
204.750	0.00	0.00	0.106	o	|	|	|	|	0.15
204.833	0.00	0.00	0.106	o	|	|	|	|	0.15
204.917	0.00	0.00	0.106	o	|	|	|	|	0.15
205.000	0.00	0.00	0.106	o	|	|	|	|	0.15
205.083	0.00	0.00	0.106	o	|	|	|	|	0.15
205.167	0.00	0.00	0.106	o	|	|	|	|	0.15
205.250	0.00	0.00	0.106	o	|	|	|	|	0.15
205.333	0.00	0.00	0.106	o	|	|	|	|	0.15
205.417	0.00	0.00	0.106	o	|	|	|	|	0.15
205.500	0.00	0.00	0.106	o	|	|	|	|	0.15

205.583	0.00	0.00	0.106	o	|	|	|	|	0.15
205.667	0.00	0.00	0.106	o	|	|	|	|	0.15
205.750	0.00	0.00	0.106	o	|	|	|	|	0.15
205.833	0.00	0.00	0.106	o	|	|	|	|	0.15
205.917	0.00	0.00	0.106	o	|	|	|	|	0.15
206.000	0.00	0.00	0.106	o	|	|	|	|	0.15
206.083	0.00	0.00	0.106	o	|	|	|	|	0.15
206.167	0.00	0.00	0.106	o	|	|	|	|	0.15
206.250	0.00	0.00	0.106	o	|	|	|	|	0.15
206.333	0.00	0.00	0.106	o	|	|	|	|	0.15
206.417	0.00	0.00	0.106	o	|	|	|	|	0.15
206.500	0.00	0.00	0.106	o	|	|	|	|	0.15
206.583	0.00	0.00	0.106	o	|	|	|	|	0.15
206.667	0.00	0.00	0.106	o	|	|	|	|	0.15
206.750	0.00	0.00	0.106	o	|	|	|	|	0.15
206.833	0.00	0.00	0.106	o	|	|	|	|	0.15
206.917	0.00	0.00	0.106	o	|	|	|	|	0.15
207.000	0.00	0.00	0.106	o	|	|	|	|	0.15
207.083	0.00	0.00	0.106	o	|	|	|	|	0.15
207.167	0.00	0.00	0.106	o	|	|	|	|	0.15
207.250	0.00	0.00	0.106	o	|	|	|	|	0.15
207.333	0.00	0.00	0.106	o	|	|	|	|	0.15
207.417	0.00	0.00	0.106	o	|	|	|	|	0.15
207.500	0.00	0.00	0.106	o	|	|	|	|	0.15
207.583	0.00	0.00	0.106	o	|	|	|	|	0.15
207.667	0.00	0.00	0.106	o	|	|	|	|	0.15
207.750	0.00	0.00	0.106	o	|	|	|	|	0.15
207.833	0.00	0.00	0.106	o	|	|	|	|	0.15
207.917	0.00	0.00	0.106	o	|	|	|	|	0.15
208.000	0.00	0.00	0.105	o	|	|	|	|	0.15
208.083	0.00	0.00	0.105	o	|	|	|	|	0.15
208.167	0.00	0.00	0.105	o	|	|	|	|	0.15
208.250	0.00	0.00	0.105	o	|	|	|	|	0.15
208.333	0.00	0.00	0.105	o	|	|	|	|	0.15
208.417	0.00	0.00	0.105	o	|	|	|	|	0.15
208.500	0.00	0.00	0.105	o	|	|	|	|	0.15
208.583	0.00	0.00	0.105	o	|	|	|	|	0.15
208.667	0.00	0.00	0.105	o	|	|	|	|	0.15
208.750	0.00	0.00	0.105	o	|	|	|	|	0.15
208.833	0.00	0.00	0.105	o	|	|	|	|	0.15
208.917	0.00	0.00	0.105	o	|	|	|	|	0.15
209.000	0.00	0.00	0.105	o	|	|	|	|	0.15
209.083	0.00	0.00	0.105	o	|	|	|	|	0.15
209.167	0.00	0.00	0.105	o	|	|	|	|	0.15
209.250	0.00	0.00	0.105	o	|	|	|	|	0.15
209.333	0.00	0.00	0.105	o	|	|	|	|	0.15
209.417	0.00	0.00	0.105	o	|	|	|	|	0.15
209.500	0.00	0.00	0.105	o	|	|	|	|	0.15
209.583	0.00	0.00	0.105	o	|	|	|	|	0.15
209.667	0.00	0.00	0.105	o	|	|	|	|	0.15
209.750	0.00	0.00	0.105	o	|	|	|	|	0.15
209.833	0.00	0.00	0.105	o	|	|	|	|	0.15
209.917	0.00	0.00	0.105	o	|	|	|	|	0.15
210.000	0.00	0.00	0.105	o	|	|	|	|	0.15
210.083	0.00	0.00	0.105	o	|	|	|	|	0.15
210.167	0.00	0.00	0.105	o	|	|	|	|	0.15
210.250	0.00	0.00	0.105	o	|	|	|	|	0.15
210.333	0.00	0.00	0.105	o	|	|	|	|	0.15
210.417	0.00	0.00	0.105	o	|	|	|	|	0.15
210.500	0.00	0.00	0.105	o	|	|	|	|	0.15
210.583	0.00	0.00	0.105	o	|	|	|	|	0.15
210.667	0.00	0.00	0.105	o	|	|	|	|	0.15
210.750	0.00	0.00	0.105	o	|	|	|	|	0.15
210.833	0.00	0.00	0.105	o	|	|	|	|	0.15
210.917	0.00	0.00	0.105	o	|	|	|	|	0.15
211.000	0.00	0.00	0.105	o	|	|	|	|	0.15
211.083	0.00	0.00	0.105	o	|	|	|	|	0.15
211.167	0.00	0.00	0.105	o	|	|	|	|	0.15
211.250	0.00	0.00	0.105	o	|	|	|	|	0.15
211.333	0.00	0.00	0.105	o	|	|	|	|	0.15
211.417	0.00	0.00	0.105	o	|	|	|	|	0.15
211.500	0.00	0.00	0.105	o	|	|	|	|	0.15
211.583	0.00	0.00	0.105	o	|	|	|	|	0.15
211.667	0.00	0.00	0.105	o	|	|	|	|	0.15
211.750	0.00	0.00	0.105	o	|	|	|	|	0.15

211.833	0.00	0.00	0.105	o	|	|	|	|	0.15
211.917	0.00	0.00	0.105	o	|	|	|	|	0.15
212.000	0.00	0.00	0.105	o	|	|	|	|	0.15
212.083	0.00	0.00	0.105	o	|	|	|	|	0.15
212.167	0.00	0.00	0.105	o	|	|	|	|	0.15
212.250	0.00	0.00	0.105	o	|	|	|	|	0.15
212.333	0.00	0.00	0.105	o	|	|	|	|	0.15
212.417	0.00	0.00	0.105	o	|	|	|	|	0.15
212.500	0.00	0.00	0.105	o	|	|	|	|	0.15
212.583	0.00	0.00	0.105	o	|	|	|	|	0.15
212.667	0.00	0.00	0.105	o	|	|	|	|	0.15
212.750	0.00	0.00	0.105	o	|	|	|	|	0.15
212.833	0.00	0.00	0.105	o	|	|	|	|	0.15
212.917	0.00	0.00	0.105	o	|	|	|	|	0.15
213.000	0.00	0.00	0.105	o	|	|	|	|	0.15
213.083	0.00	0.00	0.105	o	|	|	|	|	0.15
213.167	0.00	0.00	0.105	o	|	|	|	|	0.15
213.250	0.00	0.00	0.105	o	|	|	|	|	0.15
213.333	0.00	0.00	0.105	o	|	|	|	|	0.15
213.417	0.00	0.00	0.105	o	|	|	|	|	0.15
213.500	0.00	0.00	0.105	o	|	|	|	|	0.15
213.583	0.00	0.00	0.105	o	|	|	|	|	0.15
213.667	0.00	0.00	0.105	o	|	|	|	|	0.15
213.750	0.00	0.00	0.105	o	|	|	|	|	0.15
213.833	0.00	0.00	0.105	o	|	|	|	|	0.15
213.917	0.00	0.00	0.105	o	|	|	|	|	0.15
214.000	0.00	0.00	0.105	o	|	|	|	|	0.15
214.083	0.00	0.00	0.105	o	|	|	|	|	0.15
214.167	0.00	0.00	0.105	o	|	|	|	|	0.15
214.250	0.00	0.00	0.105	o	|	|	|	|	0.15
214.333	0.00	0.00	0.105	o	|	|	|	|	0.15
214.417	0.00	0.00	0.105	o	|	|	|	|	0.15
214.500	0.00	0.00	0.105	o	|	|	|	|	0.15
214.583	0.00	0.00	0.105	o	|	|	|	|	0.15
214.667	0.00	0.00	0.105	o	|	|	|	|	0.15
214.750	0.00	0.00	0.104	o	|	|	|	|	0.15
214.833	0.00	0.00	0.104	o	|	|	|	|	0.15
214.917	0.00	0.00	0.104	o	|	|	|	|	0.15
215.000	0.00	0.00	0.104	o	|	|	|	|	0.15
215.083	0.00	0.00	0.104	o	|	|	|	|	0.15
215.167	0.00	0.00	0.104	o	|	|	|	|	0.15
215.250	0.00	0.00	0.104	o	|	|	|	|	0.15
215.333	0.00	0.00	0.104	o	|	|	|	|	0.15
215.417	0.00	0.00	0.104	o	|	|	|	|	0.15
215.500	0.00	0.00	0.104	o	|	|	|	|	0.15
215.583	0.00	0.00	0.104	o	|	|	|	|	0.15
215.667	0.00	0.00	0.104	o	|	|	|	|	0.15
215.750	0.00	0.00	0.104	o	|	|	|	|	0.15
215.833	0.00	0.00	0.104	o	|	|	|	|	0.15
215.917	0.00	0.00	0.104	o	|	|	|	|	0.15
216.000	0.00	0.00	0.104	o	|	|	|	|	0.15
216.083	0.00	0.00	0.104	o	|	|	|	|	0.15
216.167	0.00	0.00	0.104	o	|	|	|	|	0.15
216.250	0.00	0.00	0.104	o	|	|	|	|	0.15
216.333	0.00	0.00	0.104	o	|	|	|	|	0.15
216.417	0.00	0.00	0.104	o	|	|	|	|	0.15
216.500	0.00	0.00	0.104	o	|	|	|	|	0.15
216.583	0.00	0.00	0.104	o	|	|	|	|	0.15
216.667	0.00	0.00	0.104	o	|	|	|	|	0.15
216.750	0.00	0.00	0.104	o	|	|	|	|	0.15
216.833	0.00	0.00	0.104	o	|	|	|	|	0.15
216.917	0.00	0.00	0.104	o	|	|	|	|	0.15
217.000	0.00	0.00	0.104	o	|	|	|	|	0.15
217.083	0.00	0.00	0.104	o	|	|	|	|	0.15
217.167	0.00	0.00	0.104	o	|	|	|	|	0.15
217.250	0.00	0.00	0.104	o	|	|	|	|	0.15
217.333	0.00	0.00	0.104	o	|	|	|	|	0.15
217.417	0.00	0.00	0.104	o	|	|	|	|	0.15
217.500	0.00	0.00	0.104	o	|	|	|	|	0.15
217.583	0.00	0.00	0.104	o	|	|	|	|	0.15
217.667	0.00	0.00	0.104	o	|	|	|	|	0.15
217.750	0.00	0.00	0.104	o	|	|	|	|	0.15
217.833	0.00	0.00	0.104	o	|	|	|	|	0.15
217.917	0.00	0.00	0.104	o	|	|	|	|	0.15
218.000	0.00	0.00	0.104	o	|	|	|	|	0.15

218.083	0.00	0.00	0.104	o	|	|	|	0.15
218.167	0.00	0.00	0.104	o	|	|	|	0.15
218.250	0.00	0.00	0.104	o	|	|	|	0.15
218.333	0.00	0.00	0.104	o	|	|	|	0.15
218.417	0.00	0.00	0.104	o	|	|	|	0.15
218.500	0.00	0.00	0.104	o	|	|	|	0.15
218.583	0.00	0.00	0.104	o	|	|	|	0.15
218.667	0.00	0.00	0.104	o	|	|	|	0.15
218.750	0.00	0.00	0.104	o	|	|	|	0.15
218.833	0.00	0.00	0.104	o	|	|	|	0.15
218.917	0.00	0.00	0.104	o	|	|	|	0.15
219.000	0.00	0.00	0.104	o	|	|	|	0.15
219.083	0.00	0.00	0.104	o	|	|	|	0.15
219.167	0.00	0.00	0.104	o	|	|	|	0.15
219.250	0.00	0.00	0.104	o	|	|	|	0.15
219.333	0.00	0.00	0.104	o	|	|	|	0.15
219.417	0.00	0.00	0.104	o	|	|	|	0.15
219.500	0.00	0.00	0.104	o	|	|	|	0.15
219.583	0.00	0.00	0.104	o	|	|	|	0.15
219.667	0.00	0.00	0.104	o	|	|	|	0.15
219.750	0.00	0.00	0.104	o	|	|	|	0.15
219.833	0.00	0.00	0.104	o	|	|	|	0.15

Remaining water in basin = 0.10 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 2638
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 1.442 (CFS)
Total volume = 6.769 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

BASIN ROUTING
10-YEAR, 24-HOUR -HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 02/17/22

EXETER BSS BUILDING 3

10-YR 24-HR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH10YR2410.rte

**********HYDROGRAPH DATA**********

Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 14.444 (CFS)
Total volume = 8.323 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000

**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
2.000	2.065	0.482	2.063	2.067
3.000	3.453	0.598	3.451	3.455
3.490	4.167	0.647	4.165	4.169
3.500	4.182	0.720	4.180	4.184
4.000	4.923	1.210	4.919	4.927
4.460	5.610	1.446	5.605	5.615
4.500	5.670	1.483	5.665	5.675
5.000	6.418	2.619	6.409	6.427
5.500	7.159	4.388	7.144	7.174
6.000	7.887	6.587	7.864	7.910
6.500	8.595	9.138	8.564	8.626
7.000	9.275	11.995	9.234	9.316
7.500	9.916	15.127	9.864	9.968
8.000	10.499	18.511	10.435	10.563
8.500	10.984	22.128	10.908	11.060

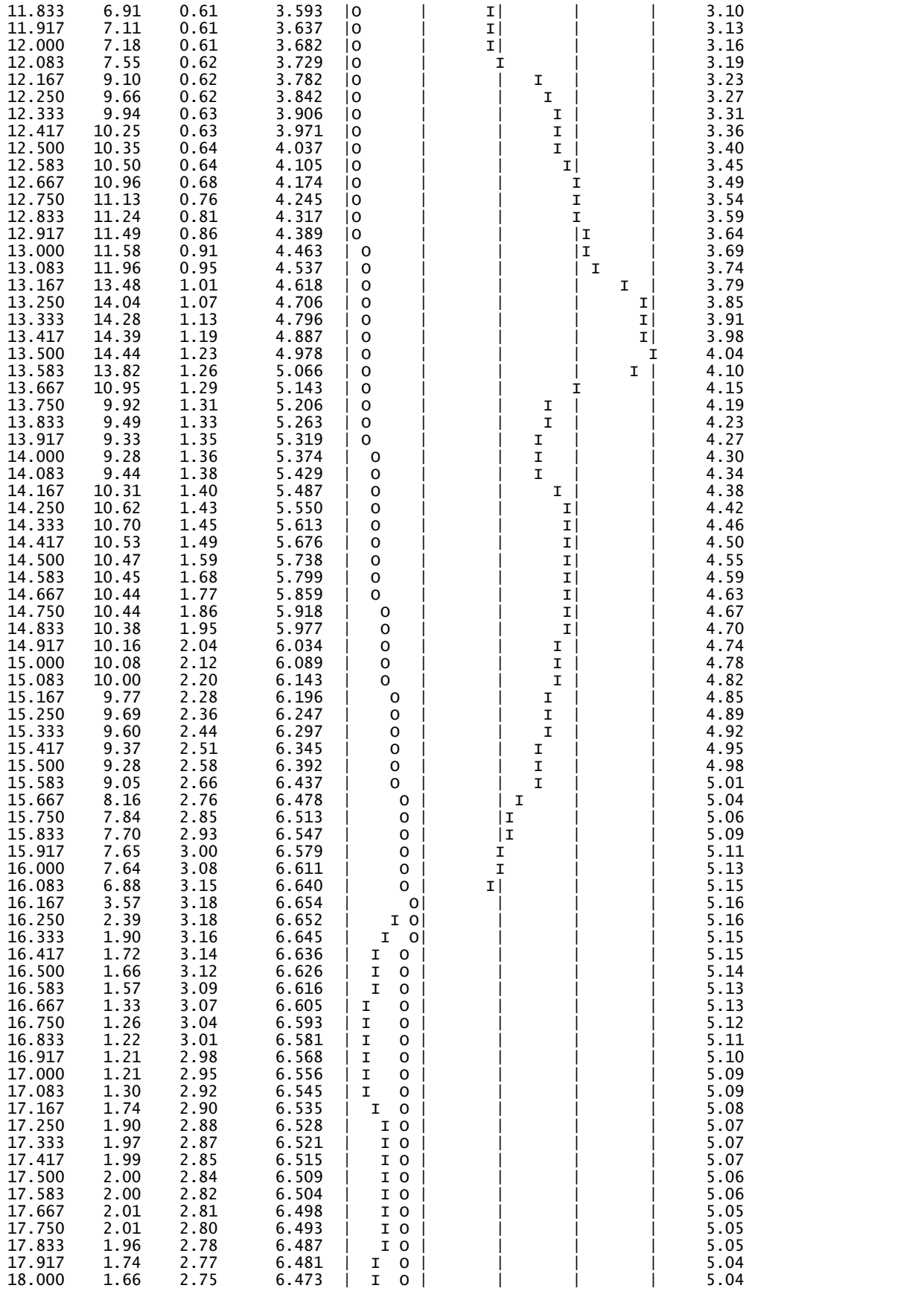
9.000 11.340 25.965 11.251 11.429

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 3.6 7.22 10.83 14.44	Depth (Ft.)
0.083	0.10	0.00	0.000	O | | | |	0.00
0.167	0.54	0.00	0.003	OI | | | |	0.00
0.250	0.70	0.00	0.007	OI | | | |	0.01
0.333	0.81	0.00	0.012	OI | | | |	0.02
0.417	1.06	0.00	0.018	O I | | | |	0.03
0.500	1.14	0.00	0.026	O I | | | |	0.04
0.583	1.18	0.00	0.034	O I | | | |	0.05
0.667	1.20	0.00	0.042	O I | | | |	0.06
0.750	1.20	0.00	0.050	O I | | | |	0.07
0.833	1.25	0.00	0.059	O I | | | |	0.08
0.917	1.47	0.00	0.068	O I | | | |	0.10
1.000	1.55	0.00	0.079	O I | | | |	0.11
1.083	1.53	0.00	0.089	O I | | | |	0.13
1.167	1.33	0.00	0.099	O I | | | |	0.14
1.250	1.25	0.00	0.108	O I | | | |	0.15
1.333	1.22	0.01	0.117	O I | | | |	0.16
1.417	1.21	0.02	0.125	O I | | | |	0.18
1.500	1.21	0.03	0.133	O I | | | |	0.19
1.583	1.20	0.03	0.141	O I | | | |	0.20
1.667	1.20	0.04	0.149	O I | | | |	0.21
1.750	1.20	0.05	0.157	O I | | | |	0.22
1.833	1.25	0.05	0.165	O I | | | |	0.23
1.917	1.47	0.06	0.174	O I | | | |	0.24
2.000	1.55	0.07	0.184	O I | | | |	0.26
2.083	1.58	0.08	0.195	O I | | | |	0.27
2.167	1.60	0.09	0.205	O I | | | |	0.29
2.250	1.60	0.09	0.215	O I | | | |	0.30
2.333	1.60	0.10	0.226	O I | | | |	0.32
2.417	1.60	0.11	0.236	O I | | | |	0.33
2.500	1.60	0.12	0.246	O I | | | |	0.35
2.583	1.65	0.13	0.257	O I | | | |	0.36
2.667	1.87	0.14	0.268	O I | | | |	0.38
2.750	1.95	0.15	0.280	O I | | | |	0.39
2.833	1.99	0.16	0.293	O I | | | |	0.41
2.917	2.00	0.17	0.305	O I | | | |	0.43
3.000	2.00	0.18	0.318	O I | | | |	0.45
3.083	2.01	0.19	0.330	O I | | | |	0.46
3.167	2.01	0.20	0.343	O I | | | |	0.48
3.250	2.01	0.21	0.355	O I | | | |	0.50
3.333	2.01	0.21	0.368	O I | | | |	0.51
3.417	2.01	0.22	0.380	O I | | | |	0.52
3.500	2.01	0.22	0.392	O I | | | |	0.54
3.583	2.01	0.22	0.405	O I | | | |	0.55
3.667	2.01	0.23	0.417	O I | | | |	0.56
3.750	2.01	0.23	0.429	O I | | | |	0.58
3.833	2.06	0.23	0.441	O I | | | |	0.59
3.917	2.28	0.23	0.455	O I | | | |	0.60
4.000	2.35	0.24	0.469	O I | | | |	0.62
4.083	2.39	0.24	0.484	O I | | | |	0.63
4.167	2.40	0.25	0.499	O I | | | |	0.65
4.250	2.40	0.25	0.513	O I | | | |	0.66
4.333	2.46	0.25	0.528	O I | | | |	0.68
4.417	2.68	0.26	0.544	O I | | | |	0.69
4.500	2.76	0.26	0.561	O I | | | |	0.71
4.583	2.79	0.26	0.579	O I | | | |	0.73
4.667	2.80	0.27	0.596	O I | | | |	0.75
4.750	2.81	0.27	0.613	O I | | | |	0.77
4.833	2.86	0.28	0.631	O I | | | |	0.78
4.917	3.08	0.28	0.650	O I | | | |	0.80
5.000	3.16	0.29	0.669	O I | | | |	0.82
5.083	3.09	0.29	0.689	O I | | | |	0.84
5.167	2.66	0.29	0.706	O I | | | |	0.86
5.250	2.51	0.30	0.722	O I | | | |	0.88
5.333	2.50	0.30	0.737	O I | | | |	0.89
5.417	2.69	0.31	0.753	O I | | | |	0.91
5.500	2.76	0.31	0.770	O I | | | |	0.93

5.583	2.84	0.31	0.787	o	I	|	|	|	0.94
5.667	3.07	0.32	0.805	o	I	|	|	|	0.96
5.750	3.15	0.32	0.824	o	I	|	|	|	0.98
5.833	3.19	0.33	0.844	o	I	|	|	|	1.00
5.917	3.20	0.33	0.864	o	I	|	|	|	1.02
6.000	3.21	0.33	0.883	o	I	|	|	|	1.03
6.083	3.26	0.33	0.903	o	I	|	|	|	1.05
6.167	3.48	0.34	0.924	o	I	|	|	|	1.07
6.250	3.56	0.34	0.946	o	I	|	|	|	1.09
6.333	3.59	0.34	0.968	o	I	|	|	|	1.10
6.417	3.60	0.35	0.991	o	I	|	|	|	1.12
6.500	3.61	0.35	1.013	o	I	|	|	|	1.14
6.583	3.66	0.35	1.036	o	I	|	|	|	1.16
6.667	3.88	0.35	1.059	o	I	|	|	|	1.18
6.750	3.96	0.36	1.084	o	I	|	|	|	1.20
6.833	3.99	0.36	1.109	o	I	|	|	|	1.22
6.917	4.00	0.36	1.134	o	I	|	|	|	1.24
7.000	4.01	0.37	1.159	o	I	|	|	|	1.26
7.083	4.01	0.37	1.184	o	I	|	|	|	1.28
7.167	4.01	0.37	1.209	o	I	|	|	|	1.30
7.250	4.01	0.38	1.234	o	I	|	|	|	1.32
7.333	4.06	0.38	1.259	o	|I	|	|	|	1.34
7.417	4.28	0.38	1.286	o	|I	|	|	|	1.36
7.500	4.36	0.39	1.313	o	|I	|	|	|	1.39
7.583	4.44	0.39	1.340	o	|I	|	|	|	1.41
7.667	4.68	0.39	1.369	o	| I	|	|	|	1.43
7.750	4.76	0.40	1.399	o	| I	|	|	|	1.46
7.833	4.84	0.40	1.429	o	| I	|	|	|	1.48
7.917	5.08	0.41	1.460	o	| I	|	|	|	1.51
8.000	5.16	0.41	1.493	o	| I	|	|	|	1.53
8.083	5.30	0.41	1.526	o	| I	|	|	|	1.56
8.167	5.75	0.42	1.561	o	| I	|	|	|	1.59
8.250	5.91	0.42	1.598	o	| I	|	|	|	1.62
8.333	5.98	0.43	1.636	o	| I	|	|	|	1.65
8.417	6.00	0.43	1.675	o	| I	|	|	|	1.68
8.500	6.01	0.44	1.713	o	| I	|	|	|	1.71
8.583	6.07	0.44	1.752	o	| I	|	|	|	1.74
8.667	6.29	0.45	1.791	o	| I	|	|	|	1.78
8.750	6.37	0.45	1.832	|o	| I	|	|	|	1.81
8.833	6.45	0.46	1.873	|o	| I	|	|	|	1.84
8.917	6.68	0.46	1.915	|o	| I	|	|	|	1.88
9.000	6.76	0.47	1.958	|o	| I	|	|	|	1.91
9.083	6.90	0.47	2.002	|o	| I	|	|	|	1.95
9.167	7.35	0.48	2.047	|o	| I	|	|	|	1.99
9.250	7.51	0.48	2.095	|o	| I	|	|	|	2.02
9.333	7.63	0.49	2.144	|o	| I	|	|	|	2.06
9.417	7.88	0.49	2.194	|o	| |I	|	|	|	2.09
9.500	7.96	0.50	2.245	|o	| |I	|	|	|	2.13
9.583	8.05	0.50	2.297	|o	| |I	|	|	|	2.17
9.667	8.29	0.51	2.350	|o	| | I	|	|	|	2.21
9.750	8.37	0.51	2.404	|o	| | I	|	|	|	2.24
9.833	8.45	0.51	2.458	|o	| | I	|	|	|	2.28
9.917	8.69	0.52	2.514	|o	| | I	|	|	|	2.32
10.000	8.77	0.52	2.570	|o	| | I	|	|	|	2.36
10.083	8.46	0.53	2.626	|o	| | I	|	|	|	2.40
10.167	6.93	0.53	2.675	|o	| I|	|	|	|	2.44
10.250	6.38	0.54	2.717	|o	| I |	|	|	|	2.47
10.333	6.16	0.54	2.757	|o	| I |	|	|	|	2.50
10.417	6.07	0.54	2.795	|o	| I |	|	|	|	2.53
10.500	6.04	0.55	2.833	|o	| I |	|	|	|	2.55
10.583	6.28	0.55	2.872	|o	| I |	|	|	|	2.58
10.667	7.37	0.55	2.915	|o	| | I	|	|	|	2.61
10.750	7.76	0.56	2.963	|o	| | |I	|	|	|	2.65
10.833	7.92	0.56	3.013	|o	| | |I	|	|	|	2.68
10.917	7.99	0.57	3.064	|o	| | |I	|	|	|	2.72
11.000	8.01	0.57	3.115	|o	| | |I	|	|	|	2.76
11.083	7.97	0.57	3.167	|o	| | |I	|	|	|	2.79
11.167	7.75	0.58	3.217	|o	| | |I	|	|	|	2.83
11.250	7.68	0.58	3.266	|o	| | |I	|	|	|	2.87
11.333	7.64	0.59	3.315	|o	| | I	|	|	|	2.90
11.417	7.63	0.59	3.363	|o	| | I	|	|	|	2.94
11.500	7.63	0.59	3.412	|o	| | I	|	|	|	2.97
11.583	7.52	0.60	3.460	|o	| | I	|	|	|	3.00
11.667	7.08	0.60	3.506	|o	| | I|	|	|	|	3.04
11.750	6.93	0.60	3.550	|o	| | I|	|	|	|	3.07



18.083	1.62	2.73	6.466	| I O |	|	|	|	5.03
18.167	1.61	2.71	6.458	| I O |	|	|	|	5.03
18.250	1.61	2.70	6.451	| I O |	|	|	|	5.02
18.333	1.61	2.68	6.443	| I O |	|	|	|	5.02
18.417	1.60	2.66	6.436	| I O |	|	|	|	5.01
18.500	1.60	2.64	6.429	| I O |	|	|	|	5.01
18.583	1.55	2.63	6.421	| I O |	|	|	|	5.00
18.667	1.33	2.61	6.413	| I O |	|	|	|	5.00
18.750	1.26	2.60	6.404	| I O |	|	|	|	4.99
18.833	1.17	2.58	6.395	| I O |	|	|	|	4.98
18.917	0.94	2.57	6.384	| I O |	|	|	|	4.98
19.000	0.86	2.55	6.373	|I O |	|	|	|	4.97
19.083	0.87	2.53	6.361	|I O |	|	|	|	4.96
19.167	1.08	2.52	6.351	| I O |	|	|	|	4.95
19.250	1.15	2.50	6.341	| I O |	|	|	|	4.95
19.333	1.23	2.49	6.332	| I O |	|	|	|	4.94
19.417	1.47	2.48	6.324	| I O |	|	|	|	4.94
19.500	1.55	2.47	6.318	| I O |	|	|	|	4.93
19.583	1.53	2.46	6.311	| I O |	|	|	|	4.93
19.667	1.33	2.45	6.304	| I O |	|	|	|	4.92
19.750	1.25	2.43	6.296	| I O |	|	|	|	4.92
19.833	1.17	2.42	6.288	| I O |	|	|	|	4.91
19.917	0.94	2.41	6.279	| I O |	|	|	|	4.91
20.000	0.86	2.39	6.268	|I O |	|	|	|	4.90
20.083	0.87	2.38	6.258	|I O |	|	|	|	4.89
20.167	1.08	2.36	6.248	| I O |	|	|	|	4.89
20.250	1.15	2.35	6.240	| I O |	|	|	|	4.88
20.333	1.18	2.34	6.232	| I O |	|	|	|	4.88
20.417	1.20	2.32	6.224	| I O |	|	|	|	4.87
20.500	1.20	2.31	6.216	| I O |	|	|	|	4.87
20.583	1.20	2.30	6.208	| I O |	|	|	|	4.86
20.667	1.20	2.29	6.201	| I O |	|	|	|	4.85
20.750	1.20	2.28	6.194	| I O |	|	|	|	4.85
20.833	1.15	2.27	6.186	| I O |	|	|	|	4.84
20.917	0.93	2.25	6.178	| I O |	|	|	|	4.84
21.000	0.85	2.24	6.168	|I O |	|	|	|	4.83
21.083	0.87	2.23	6.159	|I O |	|	|	|	4.83
21.167	1.08	2.21	6.150	| I O |	|	|	|	4.82
21.250	1.15	2.20	6.143	| I O |	|	|	|	4.82
21.333	1.13	2.19	6.136	| I O |	|	|	|	4.81
21.417	0.93	2.18	6.128	| I O |	|	|	|	4.81
21.500	0.85	2.16	6.119	|I O |	|	|	|	4.80
21.583	0.87	2.15	6.110	|I O |	|	|	|	4.79
21.667	1.08	2.14	6.102	| I O |	|	|	|	4.79
21.750	1.15	2.13	6.095	| I O |	|	|	|	4.78
21.833	1.13	2.12	6.088	| I O |	|	|	|	4.78
21.917	0.93	2.11	6.081	| I O |	|	|	|	4.77
22.000	0.85	2.09	6.072	|I O |	|	|	|	4.77
22.083	0.87	2.08	6.064	|I O |	|	|	|	4.76
22.167	1.08	2.07	6.056	| I O |	|	|	|	4.76
22.250	1.15	2.06	6.050	| I O |	|	|	|	4.75
22.333	1.13	2.05	6.043	| I O |	|	|	|	4.75
22.417	0.93	2.04	6.037	| I O |	|	|	|	4.74
22.500	0.85	2.03	6.029	|I O |	|	|	|	4.74
22.583	0.82	2.02	6.020	|I O |	|	|	|	4.73
22.667	0.81	2.00	6.012	|I O |	|	|	|	4.73
22.750	0.81	1.99	6.004	|I O |	|	|	|	4.72
22.833	0.80	1.98	5.996	|I O |	|	|	|	4.72
22.917	0.80	1.97	5.988	|I O |	|	|	|	4.71
23.000	0.80	1.95	5.980	|I O |	|	|	|	4.71
23.083	0.80	1.94	5.972	|I O |	|	|	|	4.70
23.167	0.80	1.93	5.964	|I O |	|	|	|	4.70
23.250	0.80	1.92	5.956	|I O |	|	|	|	4.69
23.333	0.80	1.91	5.949	|I O |	|	|	|	4.69
23.417	0.80	1.90	5.941	|I O |	|	|	|	4.68
23.500	0.80	1.88	5.934	|I O |	|	|	|	4.68
23.583	0.80	1.87	5.926	|I O |	|	|	|	4.67
23.667	0.80	1.86	5.919	|I O |	|	|	|	4.67
23.750	0.80	1.85	5.912	|I O |	|	|	|	4.66
23.833	0.80	1.84	5.905	|I O |	|	|	|	4.66
23.917	0.80	1.83	5.898	|I O |	|	|	|	4.65
24.000	0.80	1.82	5.890	|I O |	|	|	|	4.65
24.083	0.70	1.81	5.883	|I O |	|	|	|	4.64
24.167	0.26	1.79	5.874	I O |	|	|	|	4.64
24.250	0.10	1.78	5.863	I O |	|	|	|	4.63

24.333	0.04	1.76	5.851	I o	|	|	|	4.62
24.417	0.01	1.74	5.840	I o	|	|	|	4.61
24.500	0.01	1.72	5.828	I o	|	|	|	4.61
24.583	0.00	1.70	5.816	I o	|	|	|	4.60
24.667	0.00	1.69	5.804	I o	|	|	|	4.59
24.750	0.00	1.67	5.793	I o	|	|	|	4.58
24.833	0.00	1.65	5.781	I o	|	|	|	4.57
24.917	0.00	1.63	5.770	I o	|	|	|	4.57
25.000	0.00	1.62	5.759	I o	|	|	|	4.56
25.083	0.00	1.60	5.748	I o	|	|	|	4.55
25.167	0.00	1.58	5.737	I o	|	|	|	4.54
25.250	0.00	1.57	5.726	I o	|	|	|	4.54
25.333	0.00	1.55	5.715	I o	|	|	|	4.53
25.417	0.00	1.54	5.704	I o	|	|	|	4.52
25.500	0.00	1.52	5.694	I o	|	|	|	4.52
25.583	0.00	1.50	5.684	I o	|	|	|	4.51
25.667	0.00	1.49	5.673	I o	|	|	|	4.50
25.750	0.00	1.48	5.663	I o	|	|	|	4.50
25.833	0.00	1.47	5.653	I o	|	|	|	4.49
25.917	0.00	1.47	5.643	I o	|	|	|	4.48
26.000	0.00	1.46	5.633	I o	|	|	|	4.48
26.083	0.00	1.45	5.623	I o	|	|	|	4.47
26.167	0.00	1.45	5.613	I o	|	|	|	4.46
26.250	0.00	1.44	5.603	I o	|	|	|	4.46
26.333	0.00	1.44	5.593	I o	|	|	|	4.45
26.417	0.00	1.44	5.583	I o	|	|	|	4.44
26.500	0.00	1.43	5.573	I o	|	|	|	4.44
26.583	0.00	1.43	5.563	I o	|	|	|	4.43
26.667	0.00	1.43	5.553	I o	|	|	|	4.42
26.750	0.00	1.42	5.543	I o	|	|	|	4.42
26.833	0.00	1.42	5.534	I o	|	|	|	4.41
26.917	0.00	1.42	5.524	I o	|	|	|	4.40
27.000	0.00	1.41	5.514	I o	|	|	|	4.40
27.083	0.00	1.41	5.504	I o	|	|	|	4.39
27.167	0.00	1.41	5.495	I o	|	|	|	4.38
27.250	0.00	1.40	5.485	I o	|	|	|	4.38
27.333	0.00	1.40	5.475	I o	|	|	|	4.37
27.417	0.00	1.40	5.466	I o	|	|	|	4.36
27.500	0.00	1.39	5.456	I o	|	|	|	4.36
27.583	0.00	1.39	5.447	I o	|	|	|	4.35
27.667	0.00	1.39	5.437	I o	|	|	|	4.34
27.750	0.00	1.38	5.428	I o	|	|	|	4.34
27.833	0.00	1.38	5.418	I o	|	|	|	4.33
27.917	0.00	1.38	5.409	I o	|	|	|	4.33
28.000	0.00	1.37	5.399	I o	|	|	|	4.32
28.083	0.00	1.37	5.390	I o	|	|	|	4.31
28.167	0.00	1.37	5.380	I o	|	|	|	4.31
28.250	0.00	1.36	5.371	I o	|	|	|	4.30
28.333	0.00	1.36	5.361	I o	|	|	|	4.29
28.417	0.00	1.36	5.352	I o	|	|	|	4.29
28.500	0.00	1.35	5.343	I o	|	|	|	4.28
28.583	0.00	1.35	5.333	I o	|	|	|	4.27
28.667	0.00	1.35	5.324	I o	|	|	|	4.27
28.750	0.00	1.34	5.315	I o	|	|	|	4.26
28.833	0.00	1.34	5.306	I o	|	|	|	4.26
28.917	0.00	1.34	5.296	I o	|	|	|	4.25
29.000	0.00	1.34	5.287	I o	|	|	|	4.24
29.083	0.00	1.33	5.278	I o	|	|	|	4.24
29.167	0.00	1.33	5.269	I o	|	|	|	4.23
29.250	0.00	1.33	5.260	I o	|	|	|	4.23
29.333	0.00	1.32	5.251	I o	|	|	|	4.22
29.417	0.00	1.32	5.241	I o	|	|	|	4.21
29.500	0.00	1.32	5.232	I o	|	|	|	4.21
29.583	0.00	1.31	5.223	I o	|	|	|	4.20
29.667	0.00	1.31	5.214	I o	|	|	|	4.20
29.750	0.00	1.31	5.205	I o	|	|	|	4.19
29.833	0.00	1.30	5.196	I o	|	|	|	4.18
29.917	0.00	1.30	5.187	I o	|	|	|	4.18
30.000	0.00	1.30	5.178	I o	|	|	|	4.17
30.083	0.00	1.29	5.169	I o	|	|	|	4.16
30.167	0.00	1.29	5.160	I o	|	|	|	4.16
30.250	0.00	1.29	5.152	I o	|	|	|	4.15
30.333	0.00	1.29	5.143	I o	|	|	|	4.15
30.417	0.00	1.28	5.134	I o	|	|	|	4.14
30.500	0.00	1.28	5.125	I o	|	|	|	4.14

30.583	0.00	1.28	5.116	I O	|	|	|	4.13
30.667	0.00	1.27	5.108	I O	|	|	|	4.12
30.750	0.00	1.27	5.099	I O	|	|	|	4.12
30.833	0.00	1.27	5.090	I O	|	|	|	4.11
30.917	0.00	1.26	5.081	I O	|	|	|	4.11
31.000	0.00	1.26	5.073	I O	|	|	|	4.10
31.083	0.00	1.26	5.064	I O	|	|	|	4.09
31.167	0.00	1.26	5.055	I O	|	|	|	4.09
31.250	0.00	1.25	5.047	I O	|	|	|	4.08
31.333	0.00	1.25	5.038	I O	|	|	|	4.08
31.417	0.00	1.25	5.029	I O	|	|	|	4.07
31.500	0.00	1.24	5.021	I O	|	|	|	4.07
31.583	0.00	1.24	5.012	I O	|	|	|	4.06
31.667	0.00	1.24	5.004	I O	|	|	|	4.05
31.750	0.00	1.23	4.995	I O	|	|	|	4.05
31.833	0.00	1.23	4.987	I O	|	|	|	4.04
31.917	0.00	1.23	4.978	I O	|	|	|	4.04
32.000	0.00	1.23	4.970	I O	|	|	|	4.03
32.083	0.00	1.22	4.961	I O	|	|	|	4.03
32.167	0.00	1.22	4.953	I O	|	|	|	4.02
32.250	0.00	1.22	4.945	I O	|	|	|	4.01
32.333	0.00	1.21	4.936	I O	|	|	|	4.01
32.417	0.00	1.21	4.928	I O	|	|	|	4.00
32.500	0.00	1.21	4.920	I O	|	|	|	4.00
32.583	0.00	1.20	4.911	I O	|	|	|	3.99
32.667	0.00	1.20	4.903	I O	|	|	|	3.99
32.750	0.00	1.19	4.895	I O	|	|	|	3.98
32.833	0.00	1.19	4.887	I O	|	|	|	3.98
32.917	0.00	1.18	4.878	I O	|	|	|	3.97
33.000	0.00	1.18	4.870	I O	|	|	|	3.96
33.083	0.00	1.17	4.862	I O	|	|	|	3.96
33.167	0.00	1.16	4.854	I O	|	|	|	3.95
33.250	0.00	1.16	4.846	I O	|	|	|	3.95
33.333	0.00	1.15	4.838	I O	|	|	|	3.94
33.417	0.00	1.15	4.830	I O	|	|	|	3.94
33.500	0.00	1.14	4.822	I O	|	|	|	3.93
33.583	0.00	1.14	4.815	I O	|	|	|	3.93
33.667	0.00	1.13	4.807	I O	|	|	|	3.92
33.750	0.00	1.13	4.799	I O	|	|	|	3.92
33.833	0.00	1.12	4.791	I O	|	|	|	3.91
33.917	0.00	1.12	4.783	I O	|	|	|	3.91
34.000	0.00	1.11	4.776	I O	|	|	|	3.90
34.083	0.00	1.11	4.768	I O	|	|	|	3.90
34.167	0.00	1.10	4.761	I O	|	|	|	3.89
34.250	0.00	1.10	4.753	I O	|	|	|	3.89
34.333	0.00	1.09	4.745	I O	|	|	|	3.88
34.417	0.00	1.09	4.738	I O	|	|	|	3.88
34.500	0.00	1.08	4.730	I O	|	|	|	3.87
34.583	0.00	1.08	4.723	I O	|	|	|	3.87
34.667	0.00	1.07	4.716	I O	|	|	|	3.86
34.750	0.00	1.07	4.708	I O	|	|	|	3.86
34.833	0.00	1.06	4.701	I O	|	|	|	3.85
34.917	0.00	1.06	4.694	I O	|	|	|	3.85
35.000	0.00	1.05	4.686	I O	|	|	|	3.84
35.083	0.00	1.05	4.679	I O	|	|	|	3.84
35.167	0.00	1.04	4.672	I O	|	|	|	3.83
35.250	0.00	1.04	4.665	I O	|	|	|	3.83
35.333	0.00	1.03	4.658	I O	|	|	|	3.82
35.417	0.00	1.03	4.650	I O	|	|	|	3.82
35.500	0.00	1.03	4.643	I O	|	|	|	3.81
35.583	0.00	1.02	4.636	I O	|	|	|	3.81
35.667	0.00	1.02	4.629	I O	|	|	|	3.80
35.750	0.00	1.01	4.622	I O	|	|	|	3.80
35.833	0.00	1.01	4.615	I O	|	|	|	3.79
35.917	0.00	1.00	4.608	I O	|	|	|	3.79
36.000	0.00	1.00	4.602	I O	|	|	|	3.78
36.083	0.00	0.99	4.595	I O	|	|	|	3.78
36.167	0.00	0.99	4.588	I O	|	|	|	3.77
36.250	0.00	0.98	4.581	I O	|	|	|	3.77
36.333	0.00	0.98	4.574	I O	|	|	|	3.76
36.417	0.00	0.97	4.568	I O	|	|	|	3.76
36.500	0.00	0.97	4.561	I O	|	|	|	3.76
36.583	0.00	0.97	4.554	I O	|	|	|	3.75
36.667	0.00	0.96	4.548	I O	|	|	|	3.75
36.750	0.00	0.96	4.541	I O	|	|	|	3.74

36.833	0.00	0.95	4.534	I O	|	|	|	|	3.74
36.917	0.00	0.95	4.528	I O	|	|	|	|	3.73
37.000	0.00	0.94	4.521	I O	|	|	|	|	3.73
37.083	0.00	0.94	4.515	I O	|	|	|	|	3.72
37.167	0.00	0.94	4.508	I O	|	|	|	|	3.72
37.250	0.00	0.93	4.502	I O	|	|	|	|	3.72
37.333	0.00	0.93	4.496	I O	|	|	|	|	3.71
37.417	0.00	0.92	4.489	I O	|	|	|	|	3.71
37.500	0.00	0.92	4.483	I O	|	|	|	|	3.70
37.583	0.00	0.91	4.477	I O	|	|	|	|	3.70
37.667	0.00	0.91	4.470	I O	|	|	|	|	3.69
37.750	0.00	0.91	4.464	I O	|	|	|	|	3.69
37.833	0.00	0.90	4.458	IO	|	|	|	|	3.69
37.917	0.00	0.90	4.452	IO	|	|	|	|	3.68
38.000	0.00	0.89	4.445	IO	|	|	|	|	3.68
38.083	0.00	0.89	4.439	IO	|	|	|	|	3.67
38.167	0.00	0.89	4.433	IO	|	|	|	|	3.67
38.250	0.00	0.88	4.427	IO	|	|	|	|	3.67
38.333	0.00	0.88	4.421	IO	|	|	|	|	3.66
38.417	0.00	0.87	4.415	IO	|	|	|	|	3.66
38.500	0.00	0.87	4.409	IO	|	|	|	|	3.65
38.583	0.00	0.87	4.403	IO	|	|	|	|	3.65
38.667	0.00	0.86	4.397	IO	|	|	|	|	3.65
38.750	0.00	0.86	4.391	IO	|	|	|	|	3.64
38.833	0.00	0.85	4.385	IO	|	|	|	|	3.64
38.917	0.00	0.85	4.379	IO	|	|	|	|	3.63
39.000	0.00	0.85	4.373	IO	|	|	|	|	3.63
39.083	0.00	0.84	4.368	IO	|	|	|	|	3.63
39.167	0.00	0.84	4.362	IO	|	|	|	|	3.62
39.250	0.00	0.84	4.356	IO	|	|	|	|	3.62
39.333	0.00	0.83	4.350	IO	|	|	|	|	3.61
39.417	0.00	0.83	4.345	IO	|	|	|	|	3.61
39.500	0.00	0.82	4.339	IO	|	|	|	|	3.61
39.583	0.00	0.82	4.333	IO	|	|	|	|	3.60
39.667	0.00	0.82	4.328	IO	|	|	|	|	3.60
39.750	0.00	0.81	4.322	IO	|	|	|	|	3.59
39.833	0.00	0.81	4.316	IO	|	|	|	|	3.59
39.917	0.00	0.81	4.311	IO	|	|	|	|	3.59
40.000	0.00	0.80	4.305	IO	|	|	|	|	3.58
40.083	0.00	0.80	4.300	IO	|	|	|	|	3.58
40.167	0.00	0.79	4.294	IO	|	|	|	|	3.58
40.250	0.00	0.79	4.289	IO	|	|	|	|	3.57
40.333	0.00	0.79	4.283	IO	|	|	|	|	3.57
40.417	0.00	0.78	4.278	IO	|	|	|	|	3.56
40.500	0.00	0.78	4.273	IO	|	|	|	|	3.56
40.583	0.00	0.78	4.267	IO	|	|	|	|	3.56
40.667	0.00	0.77	4.262	IO	|	|	|	|	3.55
40.750	0.00	0.77	4.257	IO	|	|	|	|	3.55
40.833	0.00	0.77	4.251	IO	|	|	|	|	3.55
40.917	0.00	0.76	4.246	IO	|	|	|	|	3.54
41.000	0.00	0.76	4.241	IO	|	|	|	|	3.54
41.083	0.00	0.76	4.236	IO	|	|	|	|	3.54
41.167	0.00	0.75	4.230	IO	|	|	|	|	3.53
41.250	0.00	0.75	4.225	IO	|	|	|	|	3.53
41.333	0.00	0.75	4.220	IO	|	|	|	|	3.53
41.417	0.00	0.74	4.215	IO	|	|	|	|	3.52
41.500	0.00	0.74	4.210	IO	|	|	|	|	3.52
41.583	0.00	0.74	4.205	IO	|	|	|	|	3.52
41.667	0.00	0.73	4.200	IO	|	|	|	|	3.51
41.750	0.00	0.73	4.195	IO	|	|	|	|	3.51
41.833	0.00	0.73	4.190	IO	|	|	|	|	3.51
41.917	0.00	0.72	4.185	IO	|	|	|	|	3.50
42.000	0.00	0.71	4.180	IO	|	|	|	|	3.50
42.083	0.00	0.69	4.175	IO	|	|	|	|	3.50
42.167	0.00	0.66	4.170	IO	|	|	|	|	3.49
42.250	0.00	0.65	4.166	IO	|	|	|	|	3.49
42.333	0.00	0.65	4.161	IO	|	|	|	|	3.49
42.417	0.00	0.65	4.157	IO	|	|	|	|	3.48
42.500	0.00	0.65	4.153	IO	|	|	|	|	3.48
42.583	0.00	0.65	4.148	IO	|	|	|	|	3.48
42.667	0.00	0.65	4.144	IO	|	|	|	|	3.47
42.750	0.00	0.65	4.139	IO	|	|	|	|	3.47
42.833	0.00	0.64	4.135	IO	|	|	|	|	3.47
42.917	0.00	0.64	4.130	IO	|	|	|	|	3.46
43.000	0.00	0.64	4.126	IO	|	|	|	|	3.46

43.083	0.00	0.64	4.121	IO					3.46
43.167	0.00	0.64	4.117	IO					3.46
43.250	0.00	0.64	4.113	IO					3.45
43.333	0.00	0.64	4.108	IO					3.45
43.417	0.00	0.64	4.104	IO					3.45
43.500	0.00	0.64	4.099	IO					3.44
43.583	0.00	0.64	4.095	IO					3.44
43.667	0.00	0.64	4.090	IO					3.44
43.750	0.00	0.64	4.086	IO					3.43
43.833	0.00	0.64	4.082	IO					3.43
43.917	0.00	0.64	4.077	IO					3.43
44.000	0.00	0.64	4.073	IO					3.43
44.083	0.00	0.64	4.068	IO					3.42
44.167	0.00	0.64	4.064	IO					3.42
44.250	0.00	0.64	4.060	IO					3.42
44.333	0.00	0.64	4.055	IO					3.41
44.417	0.00	0.64	4.051	IO					3.41
44.500	0.00	0.64	4.046	IO					3.41
44.583	0.00	0.64	4.042	IO					3.40
44.667	0.00	0.64	4.038	IO					3.40
44.750	0.00	0.64	4.033	IO					3.40
44.833	0.00	0.64	4.029	IO					3.40
44.917	0.00	0.64	4.024	IO					3.39
45.000	0.00	0.64	4.020	IO					3.39
45.083	0.00	0.64	4.016	IO					3.39
45.167	0.00	0.64	4.011	IO					3.38
45.250	0.00	0.64	4.007	IO					3.38
45.333	0.00	0.64	4.003	IO					3.38
45.417	0.00	0.64	3.998	IO					3.37
45.500	0.00	0.64	3.994	IO					3.37
45.583	0.00	0.63	3.989	IO					3.37
45.667	0.00	0.63	3.985	IO					3.37
45.750	0.00	0.63	3.981	IO					3.36
45.833	0.00	0.63	3.976	IO					3.36
45.917	0.00	0.63	3.972	IO					3.36
46.000	0.00	0.63	3.968	IO					3.35
46.083	0.00	0.63	3.963	IO					3.35
46.167	0.00	0.63	3.959	IO					3.35
46.250	0.00	0.63	3.954	IO					3.34
46.333	0.00	0.63	3.950	IO					3.34
46.417	0.00	0.63	3.946	IO					3.34
46.500	0.00	0.63	3.941	IO					3.34
46.583	0.00	0.63	3.937	IO					3.33
46.667	0.00	0.63	3.933	IO					3.33
46.750	0.00	0.63	3.928	IO					3.33
46.833	0.00	0.63	3.924	IO					3.32
46.917	0.00	0.63	3.920	IO					3.32
47.000	0.00	0.63	3.915	IO					3.32
47.083	0.00	0.63	3.911	IO					3.31
47.167	0.00	0.63	3.907	IO					3.31
47.250	0.00	0.63	3.902	IO					3.31
47.333	0.00	0.63	3.898	IO					3.31
47.417	0.00	0.63	3.894	IO					3.30
47.500	0.00	0.63	3.889	IO					3.30
47.583	0.00	0.63	3.885	IO					3.30
47.667	0.00	0.63	3.881	IO					3.29
47.750	0.00	0.63	3.876	IO					3.29
47.833	0.00	0.63	3.872	IO					3.29
47.917	0.00	0.63	3.868	IO					3.28
48.000	0.00	0.63	3.863	IO					3.28
48.083	0.00	0.63	3.859	IO					3.28
48.167	0.00	0.63	3.855	IO					3.28
48.250	0.00	0.63	3.851	IO					3.27
48.333	0.00	0.62	3.846	IO					3.27
48.417	0.00	0.62	3.842	IO					3.27
48.500	0.00	0.62	3.838	IO					3.26
48.583	0.00	0.62	3.833	IO					3.26
48.667	0.00	0.62	3.829	IO					3.26
48.750	0.00	0.62	3.825	IO					3.26
48.833	0.00	0.62	3.820	IO					3.25
48.917	0.00	0.62	3.816	IO					3.25
49.000	0.00	0.62	3.812	IO					3.25
49.083	0.00	0.62	3.808	IO					3.24
49.167	0.00	0.62	3.803	IO					3.24
49.250	0.00	0.62	3.799	IO					3.24

49.333	0.00	0.62	3.795	IO					3.23
49.417	0.00	0.62	3.790	IO					3.23
49.500	0.00	0.62	3.786	IO					3.23
49.583	0.00	0.62	3.782	IO					3.23
49.667	0.00	0.62	3.778	IO					3.22
49.750	0.00	0.62	3.773	IO					3.22
49.833	0.00	0.62	3.769	IO					3.22
49.917	0.00	0.62	3.765	IO					3.21
50.000	0.00	0.62	3.761	IO					3.21
50.083	0.00	0.62	3.756	IO					3.21
50.167	0.00	0.62	3.752	IO					3.21
50.250	0.00	0.62	3.748	IO					3.20
50.333	0.00	0.62	3.744	IO					3.20
50.417	0.00	0.62	3.739	IO					3.20
50.500	0.00	0.62	3.735	IO					3.19
50.583	0.00	0.62	3.731	IO					3.19
50.667	0.00	0.62	3.726	IO					3.19
50.750	0.00	0.62	3.722	IO					3.18
50.833	0.00	0.62	3.718	IO					3.18
50.917	0.00	0.62	3.714	IO					3.18
51.000	0.00	0.62	3.710	IO					3.18
51.083	0.00	0.62	3.705	IO					3.17
51.167	0.00	0.62	3.701	IO					3.17
51.250	0.00	0.61	3.697	IO					3.17
51.333	0.00	0.61	3.693	IO					3.16
51.417	0.00	0.61	3.688	IO					3.16
51.500	0.00	0.61	3.684	IO					3.16
51.583	0.00	0.61	3.680	IO					3.16
51.667	0.00	0.61	3.676	IO					3.15
51.750	0.00	0.61	3.671	IO					3.15
51.833	0.00	0.61	3.667	IO					3.15
51.917	0.00	0.61	3.663	IO					3.14
52.000	0.00	0.61	3.659	IO					3.14
52.083	0.00	0.61	3.655	IO					3.14
52.167	0.00	0.61	3.650	IO					3.14
52.250	0.00	0.61	3.646	IO					3.13
52.333	0.00	0.61	3.642	IO					3.13
52.417	0.00	0.61	3.638	IO					3.13
52.500	0.00	0.61	3.634	IO					3.12
52.583	0.00	0.61	3.629	IO					3.12
52.667	0.00	0.61	3.625	IO					3.12
52.750	0.00	0.61	3.621	IO					3.12
52.833	0.00	0.61	3.617	IO					3.11
52.917	0.00	0.61	3.613	IO					3.11
53.000	0.00	0.61	3.608	IO					3.11
53.083	0.00	0.61	3.604	IO					3.10
53.167	0.00	0.61	3.600	IO					3.10
53.250	0.00	0.61	3.596	IO					3.10
53.333	0.00	0.61	3.592	IO					3.10
53.417	0.00	0.61	3.587	IO					3.09
53.500	0.00	0.61	3.583	IO					3.09
53.583	0.00	0.61	3.579	IO					3.09
53.667	0.00	0.61	3.575	IO					3.08
53.750	0.00	0.61	3.571	IO					3.08
53.833	0.00	0.61	3.567	IO					3.08
53.917	0.00	0.61	3.562	IO					3.08
54.000	0.00	0.61	3.558	IO					3.07
54.083	0.00	0.60	3.554	IO					3.07
54.167	0.00	0.60	3.550	IO					3.07
54.250	0.00	0.60	3.546	IO					3.06
54.333	0.00	0.60	3.542	IO					3.06
54.417	0.00	0.60	3.537	IO					3.06
54.500	0.00	0.60	3.533	IO					3.06
54.583	0.00	0.60	3.529	IO					3.05
54.667	0.00	0.60	3.525	IO					3.05
54.750	0.00	0.60	3.521	IO					3.05
54.833	0.00	0.60	3.517	IO					3.04
54.917	0.00	0.60	3.512	IO					3.04
55.000	0.00	0.60	3.508	IO					3.04
55.083	0.00	0.60	3.504	IO					3.04
55.167	0.00	0.60	3.500	IO					3.03
55.250	0.00	0.60	3.496	IO					3.03
55.333	0.00	0.60	3.492	IO					3.03
55.417	0.00	0.60	3.488	IO					3.02
55.500	0.00	0.60	3.483	IO					3.02

55.583	0.00	0.60	3.479	IO					3.02
55.667	0.00	0.60	3.475	IO					3.02
55.750	0.00	0.60	3.471	IO					3.01
55.833	0.00	0.60	3.467	IO					3.01
55.917	0.00	0.60	3.463	IO					3.01
56.000	0.00	0.60	3.459	IO					3.00
56.083	0.00	0.60	3.455	IO					3.00
56.167	0.00	0.60	3.450	IO					3.00
56.250	0.00	0.60	3.446	IO					3.00
56.333	0.00	0.60	3.442	IO					2.99
56.417	0.00	0.60	3.438	IO					2.99
56.500	0.00	0.60	3.434	IO					2.99
56.583	0.00	0.60	3.430	IO					2.98
56.667	0.00	0.60	3.426	IO					2.98
56.750	0.00	0.60	3.422	IO					2.98
56.833	0.00	0.60	3.418	IO					2.97
56.917	0.00	0.59	3.414	IO					2.97
57.000	0.00	0.59	3.409	IO					2.97
57.083	0.00	0.59	3.405	IO					2.97
57.167	0.00	0.59	3.401	IO					2.96
57.250	0.00	0.59	3.397	IO					2.96
57.333	0.00	0.59	3.393	IO					2.96
57.417	0.00	0.59	3.389	IO					2.95
57.500	0.00	0.59	3.385	IO					2.95
57.583	0.00	0.59	3.381	IO					2.95
57.667	0.00	0.59	3.377	IO					2.95
57.750	0.00	0.59	3.373	IO					2.94
57.833	0.00	0.59	3.369	IO					2.94
57.917	0.00	0.59	3.365	IO					2.94
58.000	0.00	0.59	3.360	IO					2.93
58.083	0.00	0.59	3.356	IO					2.93
58.167	0.00	0.59	3.352	IO					2.93
58.250	0.00	0.59	3.348	IO					2.92
58.333	0.00	0.59	3.344	IO					2.92
58.417	0.00	0.59	3.340	IO					2.92
58.500	0.00	0.59	3.336	IO					2.92
58.583	0.00	0.59	3.332	IO					2.91
58.667	0.00	0.59	3.328	IO					2.91
58.750	0.00	0.59	3.324	IO					2.91
58.833	0.00	0.59	3.320	IO					2.90
58.917	0.00	0.59	3.316	IO					2.90
59.000	0.00	0.59	3.312	IO					2.90
59.083	0.00	0.59	3.308	IO					2.90
59.167	0.00	0.59	3.304	IO					2.89
59.250	0.00	0.59	3.300	IO					2.89
59.333	0.00	0.58	3.296	IO					2.89
59.417	0.00	0.58	3.292	IO					2.88
59.500	0.00	0.58	3.288	IO					2.88
59.583	0.00	0.58	3.284	IO					2.88
59.667	0.00	0.58	3.280	IO					2.88
59.750	0.00	0.58	3.276	IO					2.87
59.833	0.00	0.58	3.272	IO					2.87
59.917	0.00	0.58	3.268	IO					2.87
60.000	0.00	0.58	3.264	IO					2.86
60.083	0.00	0.58	3.260	IO					2.86
60.167	0.00	0.58	3.256	IO					2.86
60.250	0.00	0.58	3.252	IO					2.85
60.333	0.00	0.58	3.248	IO					2.85
60.417	0.00	0.58	3.244	IO					2.85
60.500	0.00	0.58	3.240	IO					2.85
60.583	0.00	0.58	3.236	IO					2.84
60.667	0.00	0.58	3.232	IO					2.84
60.750	0.00	0.58	3.228	IO					2.84
60.833	0.00	0.58	3.224	IO					2.83
60.917	0.00	0.58	3.220	IO					2.83
61.000	0.00	0.58	3.216	IO					2.83
61.083	0.00	0.58	3.212	IO					2.83
61.167	0.00	0.58	3.208	IO					2.82
61.250	0.00	0.58	3.204	IO					2.82
61.333	0.00	0.58	3.200	IO					2.82
61.417	0.00	0.58	3.196	IO					2.81
61.500	0.00	0.58	3.192	IO					2.81
61.583	0.00	0.58	3.188	IO					2.81
61.667	0.00	0.58	3.184	IO					2.81
61.750	0.00	0.58	3.180	IO					2.80

61.833	0.00	0.57	3.176	IO					2.80
61.917	0.00	0.57	3.172	IO					2.80
62.000	0.00	0.57	3.168	IO					2.79
62.083	0.00	0.57	3.164	IO					2.79
62.167	0.00	0.57	3.160	IO					2.79
62.250	0.00	0.57	3.156	IO					2.79
62.333	0.00	0.57	3.152	IO					2.78
62.417	0.00	0.57	3.148	IO					2.78
62.500	0.00	0.57	3.144	IO					2.78
62.583	0.00	0.57	3.140	IO					2.77
62.667	0.00	0.57	3.136	IO					2.77
62.750	0.00	0.57	3.133	IO					2.77
62.833	0.00	0.57	3.129	IO					2.77
62.917	0.00	0.57	3.125	IO					2.76
63.000	0.00	0.57	3.121	IO					2.76
63.083	0.00	0.57	3.117	IO					2.76
63.167	0.00	0.57	3.113	IO					2.75
63.250	0.00	0.57	3.109	IO					2.75
63.333	0.00	0.57	3.105	IO					2.75
63.417	0.00	0.57	3.101	IO					2.75
63.500	0.00	0.57	3.097	IO					2.74
63.583	0.00	0.57	3.093	IO					2.74
63.667	0.00	0.57	3.089	IO					2.74
63.750	0.00	0.57	3.085	IO					2.74
63.833	0.00	0.57	3.082	IO					2.73
63.917	0.00	0.57	3.078	IO					2.73
64.000	0.00	0.57	3.074	IO					2.73
64.083	0.00	0.57	3.070	IO					2.72
64.167	0.00	0.57	3.066	IO					2.72
64.250	0.00	0.57	3.062	IO					2.72
64.333	0.00	0.57	3.058	IO					2.72
64.417	0.00	0.56	3.054	IO					2.71
64.500	0.00	0.56	3.050	IO					2.71
64.583	0.00	0.56	3.047	IO					2.71
64.667	0.00	0.56	3.043	IO					2.70
64.750	0.00	0.56	3.039	IO					2.70
64.833	0.00	0.56	3.035	IO					2.70
64.917	0.00	0.56	3.031	IO					2.70
65.000	0.00	0.56	3.027	IO					2.69
65.083	0.00	0.56	3.023	IO					2.69
65.167	0.00	0.56	3.019	IO					2.69
65.250	0.00	0.56	3.016	IO					2.68
65.333	0.00	0.56	3.012	IO					2.68
65.417	0.00	0.56	3.008	IO					2.68
65.500	0.00	0.56	3.004	IO					2.68
65.583	0.00	0.56	3.000	IO					2.67
65.667	0.00	0.56	2.996	IO					2.67
65.750	0.00	0.56	2.992	IO					2.67
65.833	0.00	0.56	2.988	IO					2.67
65.917	0.00	0.56	2.985	IO					2.66
66.000	0.00	0.56	2.981	IO					2.66
66.083	0.00	0.56	2.977	IO					2.66
66.167	0.00	0.56	2.973	IO					2.65
66.250	0.00	0.56	2.969	IO					2.65
66.333	0.00	0.56	2.965	IO					2.65
66.417	0.00	0.56	2.962	IO					2.65
66.500	0.00	0.56	2.958	IO					2.64
66.583	0.00	0.56	2.954	IO					2.64
66.667	0.00	0.56	2.950	IO					2.64
66.750	0.00	0.56	2.946	IO					2.63
66.833	0.00	0.56	2.942	IO					2.63
66.917	0.00	0.56	2.939	IO					2.63
67.000	0.00	0.55	2.935	IO					2.63
67.083	0.00	0.55	2.931	IO					2.62
67.167	0.00	0.55	2.927	IO					2.62
67.250	0.00	0.55	2.923	IO					2.62
67.333	0.00	0.55	2.920	IO					2.62
67.417	0.00	0.55	2.916	IO					2.61
67.500	0.00	0.55	2.912	IO					2.61
67.583	0.00	0.55	2.908	IO					2.61
67.667	0.00	0.55	2.904	IO					2.60
67.750	0.00	0.55	2.901	IO					2.60
67.833	0.00	0.55	2.897	IO					2.60
67.917	0.00	0.55	2.893	IO					2.60
68.000	0.00	0.55	2.889	IO					2.59

68.083	0.00	0.55	2.885	IO					2.59
68.167	0.00	0.55	2.882	IO					2.59
68.250	0.00	0.55	2.878	IO					2.59
68.333	0.00	0.55	2.874	IO					2.58
68.417	0.00	0.55	2.870	IO					2.58
68.500	0.00	0.55	2.866	IO					2.58
68.583	0.00	0.55	2.863	IO					2.57
68.667	0.00	0.55	2.859	IO					2.57
68.750	0.00	0.55	2.855	IO					2.57
68.833	0.00	0.55	2.851	IO					2.57
68.917	0.00	0.55	2.848	IO					2.56
69.000	0.00	0.55	2.844	IO					2.56
69.083	0.00	0.55	2.840	IO					2.56
69.167	0.00	0.55	2.836	IO					2.56
69.250	0.00	0.55	2.832	IO					2.55
69.333	0.00	0.55	2.829	IO					2.55
69.417	0.00	0.55	2.825	IO					2.55
69.500	0.00	0.55	2.821	IO					2.54
69.583	0.00	0.54	2.817	IO					2.54
69.667	0.00	0.54	2.814	IO					2.54
69.750	0.00	0.54	2.810	IO					2.54
69.833	0.00	0.54	2.806	IO					2.53
69.917	0.00	0.54	2.802	IO					2.53
70.000	0.00	0.54	2.799	IO					2.53
70.083	0.00	0.54	2.795	IO					2.53
70.167	0.00	0.54	2.791	IO					2.52
70.250	0.00	0.54	2.787	IO					2.52
70.333	0.00	0.54	2.784	IO					2.52
70.417	0.00	0.54	2.780	IO					2.52
70.500	0.00	0.54	2.776	IO					2.51
70.583	0.00	0.54	2.773	IO					2.51
70.667	0.00	0.54	2.769	IO					2.51
70.750	0.00	0.54	2.765	IO					2.50
70.833	0.00	0.54	2.761	IO					2.50
70.917	0.00	0.54	2.758	IO					2.50
71.000	0.00	0.54	2.754	IO					2.50
71.083	0.00	0.54	2.750	IO					2.49
71.167	0.00	0.54	2.747	IO					2.49
71.250	0.00	0.54	2.743	IO					2.49
71.333	0.00	0.54	2.739	IO					2.49
71.417	0.00	0.54	2.735	IO					2.48
71.500	0.00	0.54	2.732	IO					2.48
71.583	0.00	0.54	2.728	IO					2.48
71.667	0.00	0.54	2.724	IO					2.47
71.750	0.00	0.54	2.721	IO					2.47
71.833	0.00	0.54	2.717	IO					2.47
71.917	0.00	0.54	2.713	IO					2.47
72.000	0.00	0.54	2.709	IO					2.46
72.083	0.00	0.54	2.706	IO					2.46
72.167	0.00	0.54	2.702	IO					2.46
72.250	0.00	0.53	2.698	IO					2.46
72.333	0.00	0.53	2.695	IO					2.45
72.417	0.00	0.53	2.691	IO					2.45
72.500	0.00	0.53	2.687	IO					2.45
72.583	0.00	0.53	2.684	IO					2.45
72.667	0.00	0.53	2.680	IO					2.44
72.750	0.00	0.53	2.676	IO					2.44
72.833	0.00	0.53	2.673	IO					2.44
72.917	0.00	0.53	2.669	IO					2.44
73.000	0.00	0.53	2.665	IO					2.43
73.083	0.00	0.53	2.662	IO					2.43
73.167	0.00	0.53	2.658	IO					2.43
73.250	0.00	0.53	2.654	IO					2.42
73.333	0.00	0.53	2.651	IO					2.42
73.417	0.00	0.53	2.647	IO					2.42
73.500	0.00	0.53	2.643	IO					2.42
73.583	0.00	0.53	2.640	IO					2.41
73.667	0.00	0.53	2.636	IO					2.41
73.750	0.00	0.53	2.632	IO					2.41
73.833	0.00	0.53	2.629	IO					2.41
73.917	0.00	0.53	2.625	IO					2.40
74.000	0.00	0.53	2.622	IO					2.40
74.083	0.00	0.53	2.618	IO					2.40
74.167	0.00	0.53	2.614	IO					2.40
74.250	0.00	0.53	2.611	IO					2.39

74.333	0.00	0.53	2.607	IO					2.39
74.417	0.00	0.53	2.603	IO					2.39
74.500	0.00	0.53	2.600	IO					2.39
74.583	0.00	0.53	2.596	IO					2.38
74.667	0.00	0.53	2.592	IO					2.38
74.750	0.00	0.53	2.589	IO					2.38
74.833	0.00	0.53	2.585	IO					2.37
74.917	0.00	0.53	2.582	IO					2.37
75.000	0.00	0.52	2.578	IO					2.37
75.083	0.00	0.52	2.574	IO					2.37
75.167	0.00	0.52	2.571	IO					2.36
75.250	0.00	0.52	2.567	IO					2.36
75.333	0.00	0.52	2.564	IO					2.36
75.417	0.00	0.52	2.560	IO					2.36
75.500	0.00	0.52	2.556	IO					2.35
75.583	0.00	0.52	2.553	IO					2.35
75.667	0.00	0.52	2.549	IO					2.35
75.750	0.00	0.52	2.546	IO					2.35
75.833	0.00	0.52	2.542	IO					2.34
75.917	0.00	0.52	2.538	IO					2.34
76.000	0.00	0.52	2.535	IO					2.34
76.083	0.00	0.52	2.531	IO					2.34
76.167	0.00	0.52	2.528	IO					2.33
76.250	0.00	0.52	2.524	IO					2.33
76.333	0.00	0.52	2.520	IO					2.33
76.417	0.00	0.52	2.517	IO					2.33
76.500	0.00	0.52	2.513	IO					2.32
76.583	0.00	0.52	2.510	IO					2.32
76.667	0.00	0.52	2.506	IO					2.32
76.750	0.00	0.52	2.503	IO					2.32
76.833	0.00	0.52	2.499	IO					2.31
76.917	0.00	0.52	2.495	IO					2.31
77.000	0.00	0.52	2.492	IO					2.31
77.083	0.00	0.52	2.488	IO					2.30
77.167	0.00	0.52	2.485	IO					2.30
77.250	0.00	0.52	2.481	IO					2.30
77.333	0.00	0.52	2.478	IO					2.30
77.417	0.00	0.52	2.474	IO					2.29
77.500	0.00	0.52	2.470	IO					2.29
77.583	0.00	0.52	2.467	IO					2.29
77.667	0.00	0.52	2.463	IO					2.29
77.750	0.00	0.51	2.460	IO					2.28
77.833	0.00	0.51	2.456	IO					2.28
77.917	0.00	0.51	2.453	IO					2.28
78.000	0.00	0.51	2.449	IO					2.28
78.083	0.00	0.51	2.446	IO					2.27
78.167	0.00	0.51	2.442	IO					2.27
78.250	0.00	0.51	2.439	IO					2.27
78.333	0.00	0.51	2.435	IO					2.27
78.417	0.00	0.51	2.432	IO					2.26
78.500	0.00	0.51	2.428	IO					2.26
78.583	0.00	0.51	2.424	IO					2.26
78.667	0.00	0.51	2.421	IO					2.26
78.750	0.00	0.51	2.417	IO					2.25
78.833	0.00	0.51	2.414	IO					2.25
78.917	0.00	0.51	2.410	IO					2.25
79.000	0.00	0.51	2.407	IO					2.25
79.083	0.00	0.51	2.403	IO					2.24
79.167	0.00	0.51	2.400	IO					2.24
79.250	0.00	0.51	2.396	IO					2.24
79.333	0.00	0.51	2.393	IO					2.24
79.417	0.00	0.51	2.389	IO					2.23
79.500	0.00	0.51	2.386	IO					2.23
79.583	0.00	0.51	2.382	IO					2.23
79.667	0.00	0.51	2.379	IO					2.23
79.750	0.00	0.51	2.375	IO					2.22
79.833	0.00	0.51	2.372	IO					2.22
79.917	0.00	0.51	2.368	IO					2.22
80.000	0.00	0.51	2.365	IO					2.22
80.083	0.00	0.51	2.361	IO					2.21
80.167	0.00	0.51	2.358	IO					2.21
80.250	0.00	0.51	2.354	IO					2.21
80.333	0.00	0.51	2.351	IO					2.21
80.417	0.00	0.51	2.347	IO					2.20
80.500	0.00	0.51	2.344	IO					2.20

80.583	0.00	0.51	2.340	IO				2.20
80.667	0.00	0.50	2.337	IO				2.20
80.750	0.00	0.50	2.333	IO				2.19
80.833	0.00	0.50	2.330	IO				2.19
80.917	0.00	0.50	2.327	IO				2.19
81.000	0.00	0.50	2.323	IO				2.19
81.083	0.00	0.50	2.320	IO				2.18
81.167	0.00	0.50	2.316	IO				2.18
81.250	0.00	0.50	2.313	IO				2.18
81.333	0.00	0.50	2.309	IO				2.18
81.417	0.00	0.50	2.306	IO				2.17
81.500	0.00	0.50	2.302	IO				2.17
81.583	0.00	0.50	2.299	IO				2.17
81.667	0.00	0.50	2.295	IO				2.17
81.750	0.00	0.50	2.292	IO				2.16
81.833	0.00	0.50	2.288	IO				2.16
81.917	0.00	0.50	2.285	IO				2.16
82.000	0.00	0.50	2.282	IO				2.16
82.083	0.00	0.50	2.278	IO				2.15
82.167	0.00	0.50	2.275	IO				2.15
82.250	0.00	0.50	2.271	IO				2.15
82.333	0.00	0.50	2.268	IO				2.15
82.417	0.00	0.50	2.264	IO				2.14
82.500	0.00	0.50	2.261	IO				2.14
82.583	0.00	0.50	2.258	IO				2.14
82.667	0.00	0.50	2.254	IO				2.14
82.750	0.00	0.50	2.251	IO				2.13
82.833	0.00	0.50	2.247	IO				2.13
82.917	0.00	0.50	2.244	IO				2.13
83.000	0.00	0.50	2.240	IO				2.13
83.083	0.00	0.50	2.237	IO				2.12
83.167	0.00	0.50	2.234	IO				2.12
83.250	0.00	0.50	2.230	IO				2.12
83.333	0.00	0.50	2.227	IO				2.12
83.417	0.00	0.50	2.223	IO				2.11
83.500	0.00	0.49	2.220	IO				2.11
83.583	0.00	0.49	2.217	IO				2.11
83.667	0.00	0.49	2.213	IO				2.11
83.750	0.00	0.49	2.210	IO				2.10
83.833	0.00	0.49	2.206	IO				2.10
83.917	0.00	0.49	2.203	IO				2.10
84.000	0.00	0.49	2.199	IO				2.10
84.083	0.00	0.49	2.196	IO				2.09
84.167	0.00	0.49	2.193	IO				2.09
84.250	0.00	0.49	2.189	IO				2.09
84.333	0.00	0.49	2.186	IO				2.09
84.417	0.00	0.49	2.183	IO				2.08
84.500	0.00	0.49	2.179	IO				2.08
84.583	0.00	0.49	2.176	IO				2.08
84.667	0.00	0.49	2.172	IO				2.08
84.750	0.00	0.49	2.169	IO				2.07
84.833	0.00	0.49	2.166	IO				2.07
84.917	0.00	0.49	2.162	IO				2.07
85.000	0.00	0.49	2.159	IO				2.07
85.083	0.00	0.49	2.155	IO				2.07
85.167	0.00	0.49	2.152	IO				2.06
85.250	0.00	0.49	2.149	IO				2.06
85.333	0.00	0.49	2.145	IO				2.06
85.417	0.00	0.49	2.142	IO				2.06
85.500	0.00	0.49	2.139	IO				2.05
85.583	0.00	0.49	2.135	IO				2.05
85.667	0.00	0.49	2.132	IO				2.05
85.750	0.00	0.49	2.129	IO				2.05
85.833	0.00	0.49	2.125	IO				2.04
85.917	0.00	0.49	2.122	IO				2.04
86.000	0.00	0.49	2.119	IO				2.04
86.083	0.00	0.49	2.115	IO				2.04
86.167	0.00	0.49	2.112	IO				2.03
86.250	0.00	0.49	2.108	IO				2.03
86.333	0.00	0.49	2.105	IO				2.03
86.417	0.00	0.49	2.102	IO				2.03
86.500	0.00	0.48	2.098	IO				2.02
86.583	0.00	0.48	2.095	IO				2.02
86.667	0.00	0.48	2.092	IO				2.02
86.750	0.00	0.48	2.088	IO				2.02

86.833	0.00	0.48	2.085	IO					2.01
86.917	0.00	0.48	2.082	IO					2.01
87.000	0.00	0.48	2.078	IO					2.01
87.083	0.00	0.48	2.075	IO					2.01
87.167	0.00	0.48	2.072	IO					2.00
87.250	0.00	0.48	2.068	IO					2.00
87.333	0.00	0.48	2.065	IO					2.00
87.417	0.00	0.48	2.062	IO					2.00
87.500	0.00	0.48	2.059	IO					1.99
87.583	0.00	0.48	2.055	IO					1.99
87.667	0.00	0.48	2.052	IO					1.99
87.750	0.00	0.48	2.049	IO					1.99
87.833	0.00	0.48	2.045	IO					1.98
87.917	0.00	0.48	2.042	IO					1.98
88.000	0.00	0.48	2.039	IO					1.98
88.083	0.00	0.48	2.035	IO					1.98
88.167	0.00	0.48	2.032	IO					1.97
88.250	0.00	0.48	2.029	IO					1.97
88.333	0.00	0.48	2.026	IO					1.97
88.417	0.00	0.48	2.022	IO					1.97
88.500	0.00	0.48	2.019	IO					1.96
88.583	0.00	0.48	2.016	IO					1.96
88.667	0.00	0.48	2.012	IO					1.96
88.750	0.00	0.47	2.009	IO					1.95
88.833	0.00	0.47	2.006	IO					1.95
88.917	0.00	0.47	2.003	IO					1.95
89.000	0.00	0.47	1.999	IO					1.95
89.083	0.00	0.47	1.996	IO					1.94
89.167	0.00	0.47	1.993	IO					1.94
89.250	0.00	0.47	1.990	IO					1.94
89.333	0.00	0.47	1.986	IO					1.94
89.417	0.00	0.47	1.983	IO					1.93
89.500	0.00	0.47	1.980	IO					1.93
89.583	0.00	0.47	1.977	IO					1.93
89.667	0.00	0.47	1.973	IO					1.93
89.750	0.00	0.47	1.970	IO					1.92
89.833	0.00	0.47	1.967	IO					1.92
89.917	0.00	0.47	1.964	IO					1.92
90.000	0.00	0.47	1.960	IO					1.91
90.083	0.00	0.47	1.957	IO					1.91
90.167	0.00	0.47	1.954	IO					1.91
90.250	0.00	0.47	1.951	IO					1.91
90.333	0.00	0.47	1.948	IO					1.90
90.417	0.00	0.47	1.944	IO					1.90
90.500	0.00	0.47	1.941	IO					1.90
90.583	0.00	0.47	1.938	IO					1.90
90.667	0.00	0.47	1.935	IO					1.89
90.750	0.00	0.47	1.931	IO					1.89
90.833	0.00	0.46	1.928	IO					1.89
90.917	0.00	0.46	1.925	IO					1.89
91.000	0.00	0.46	1.922	IO					1.88
91.083	0.00	0.46	1.919	IO					1.88
91.167	0.00	0.46	1.915	IO					1.88
91.250	0.00	0.46	1.912	IO					1.88
91.333	0.00	0.46	1.909	IO					1.87
91.417	0.00	0.46	1.906	IO					1.87
91.500	0.00	0.46	1.903	IO					1.87
91.583	0.00	0.46	1.900	IO					1.86
91.667	0.00	0.46	1.896	IO					1.86
91.750	0.00	0.46	1.893	IO					1.86
91.833	0.00	0.46	1.890	IO					1.86
91.917	0.00	0.46	1.887	IO					1.85
92.000	0.00	0.46	1.884	IO					1.85
92.083	0.00	0.46	1.881	IO					1.85
92.167	0.00	0.46	1.877	IO					1.85
92.250	0.00	0.46	1.874	IO					1.84
92.333	0.00	0.46	1.871	IO					1.84
92.417	0.00	0.46	1.868	IO					1.84
92.500	0.00	0.46	1.865	IO					1.84
92.583	0.00	0.46	1.862	IO					1.83
92.667	0.00	0.46	1.859	IO					1.83
92.750	0.00	0.46	1.855	IO					1.83
92.833	0.00	0.46	1.852	IO					1.83
92.917	0.00	0.45	1.849	IO					1.82
93.000	0.00	0.45	1.846	IO					1.82

93.083	0.00	0.45	1.843	IO					1.82
93.167	0.00	0.45	1.840	IO					1.82
93.250	0.00	0.45	1.837	IO					1.81
93.333	0.00	0.45	1.833	IO					1.81
93.417	0.00	0.45	1.830	IO					1.81
93.500	0.00	0.45	1.827	IO					1.81
93.583	0.00	0.45	1.824	IO					1.80
93.667	0.00	0.45	1.821	O					1.80
93.750	0.00	0.45	1.818	O					1.80
93.833	0.00	0.45	1.815	O					1.80
93.917	0.00	0.45	1.812	O					1.79
94.000	0.00	0.45	1.809	O					1.79
94.083	0.00	0.45	1.806	O					1.79
94.167	0.00	0.45	1.802	O					1.79
94.250	0.00	0.45	1.799	O					1.78
94.333	0.00	0.45	1.796	O					1.78
94.417	0.00	0.45	1.793	O					1.78
94.500	0.00	0.45	1.790	O					1.78
94.583	0.00	0.45	1.787	O					1.77
94.667	0.00	0.45	1.784	O					1.77
94.750	0.00	0.45	1.781	O					1.77
94.833	0.00	0.45	1.778	O					1.77
94.917	0.00	0.45	1.775	O					1.76
95.000	0.00	0.44	1.772	O					1.76
95.083	0.00	0.44	1.769	O					1.76
95.167	0.00	0.44	1.766	O					1.76
95.250	0.00	0.44	1.763	O					1.75
95.333	0.00	0.44	1.759	O					1.75
95.417	0.00	0.44	1.756	O					1.75
95.500	0.00	0.44	1.753	O					1.75
95.583	0.00	0.44	1.750	O					1.74
95.667	0.00	0.44	1.747	O					1.74
95.750	0.00	0.44	1.744	O					1.74
95.833	0.00	0.44	1.741	O					1.74
95.917	0.00	0.44	1.738	O					1.73
96.000	0.00	0.44	1.735	O					1.73
96.083	0.00	0.44	1.732	O					1.73
96.167	0.00	0.44	1.729	O					1.73
96.250	0.00	0.44	1.726	O					1.72
96.333	0.00	0.44	1.723	O					1.72
96.417	0.00	0.44	1.720	O					1.72
96.500	0.00	0.44	1.717	O					1.72
96.583	0.00	0.44	1.714	O					1.71
96.667	0.00	0.44	1.711	O					1.71
96.750	0.00	0.44	1.708	O					1.71
96.833	0.00	0.44	1.705	O					1.71
96.917	0.00	0.44	1.702	O					1.70
97.000	0.00	0.44	1.699	O					1.70
97.083	0.00	0.44	1.696	O					1.70
97.167	0.00	0.43	1.693	O					1.70
97.250	0.00	0.43	1.690	O					1.69
97.333	0.00	0.43	1.687	O					1.69
97.417	0.00	0.43	1.684	O					1.69
97.500	0.00	0.43	1.681	O					1.69
97.583	0.00	0.43	1.678	O					1.68
97.667	0.00	0.43	1.675	O					1.68
97.750	0.00	0.43	1.672	O					1.68
97.833	0.00	0.43	1.669	O					1.68
97.917	0.00	0.43	1.666	O					1.67
98.000	0.00	0.43	1.663	O					1.67
98.083	0.00	0.43	1.660	O					1.67
98.167	0.00	0.43	1.657	O					1.67
98.250	0.00	0.43	1.654	O					1.66
98.333	0.00	0.43	1.651	O					1.66
98.417	0.00	0.43	1.648	O					1.66
98.500	0.00	0.43	1.645	O					1.66
98.583	0.00	0.43	1.642	O					1.65
98.667	0.00	0.43	1.639	O					1.65
98.750	0.00	0.43	1.636	O					1.65
98.833	0.00	0.43	1.634	O					1.65
98.917	0.00	0.43	1.631	O					1.65
99.000	0.00	0.43	1.628	O					1.64
99.083	0.00	0.43	1.625	O					1.64
99.167	0.00	0.43	1.622	O					1.64
99.250	0.00	0.43	1.619	O					1.64

99.333	0.00	0.43	1.616	o	|	|	|	|	1.63
99.417	0.00	0.42	1.613	o	|	|	|	|	1.63
99.500	0.00	0.42	1.610	o	|	|	|	|	1.63
99.583	0.00	0.42	1.607	o	|	|	|	|	1.63
99.667	0.00	0.42	1.604	o	|	|	|	|	1.62
99.750	0.00	0.42	1.601	o	|	|	|	|	1.62
99.833	0.00	0.42	1.598	o	|	|	|	|	1.62
99.917	0.00	0.42	1.595	o	|	|	|	|	1.62
100.000	0.00	0.42	1.593	o	|	|	|	|	1.61
100.083	0.00	0.42	1.590	o	|	|	|	|	1.61
100.167	0.00	0.42	1.587	o	|	|	|	|	1.61
100.250	0.00	0.42	1.584	o	|	|	|	|	1.61
100.333	0.00	0.42	1.581	o	|	|	|	|	1.60
100.417	0.00	0.42	1.578	o	|	|	|	|	1.60
100.500	0.00	0.42	1.575	o	|	|	|	|	1.60
100.583	0.00	0.42	1.572	o	|	|	|	|	1.60
100.667	0.00	0.42	1.569	o	|	|	|	|	1.60
100.750	0.00	0.42	1.567	o	|	|	|	|	1.59
100.833	0.00	0.42	1.564	o	|	|	|	|	1.59
100.917	0.00	0.42	1.561	o	|	|	|	|	1.59
101.000	0.00	0.42	1.558	o	|	|	|	|	1.59
101.083	0.00	0.42	1.555	o	|	|	|	|	1.58
101.167	0.00	0.42	1.552	o	|	|	|	|	1.58
101.250	0.00	0.42	1.549	o	|	|	|	|	1.58
101.333	0.00	0.42	1.546	o	|	|	|	|	1.58
101.417	0.00	0.42	1.544	o	|	|	|	|	1.57
101.500	0.00	0.42	1.541	o	|	|	|	|	1.57
101.583	0.00	0.42	1.538	o	|	|	|	|	1.57
101.667	0.00	0.41	1.535	o	|	|	|	|	1.57
101.750	0.00	0.41	1.532	o	|	|	|	|	1.56
101.833	0.00	0.41	1.529	o	|	|	|	|	1.56
101.917	0.00	0.41	1.526	o	|	|	|	|	1.56
102.000	0.00	0.41	1.524	o	|	|	|	|	1.56
102.083	0.00	0.41	1.521	o	|	|	|	|	1.56
102.167	0.00	0.41	1.518	o	|	|	|	|	1.55
102.250	0.00	0.41	1.515	o	|	|	|	|	1.55
102.333	0.00	0.41	1.512	o	|	|	|	|	1.55
102.417	0.00	0.41	1.509	o	|	|	|	|	1.55
102.500	0.00	0.41	1.506	o	|	|	|	|	1.54
102.583	0.00	0.41	1.504	o	|	|	|	|	1.54
102.667	0.00	0.41	1.501	o	|	|	|	|	1.54
102.750	0.00	0.41	1.498	o	|	|	|	|	1.54
102.833	0.00	0.41	1.495	o	|	|	|	|	1.53
102.917	0.00	0.41	1.492	o	|	|	|	|	1.53
103.000	0.00	0.41	1.490	o	|	|	|	|	1.53
103.083	0.00	0.41	1.487	o	|	|	|	|	1.53
103.167	0.00	0.41	1.484	o	|	|	|	|	1.53
103.250	0.00	0.41	1.481	o	|	|	|	|	1.52
103.333	0.00	0.41	1.478	o	|	|	|	|	1.52
103.417	0.00	0.41	1.475	o	|	|	|	|	1.52
103.500	0.00	0.41	1.473	o	|	|	|	|	1.52
103.583	0.00	0.41	1.470	o	|	|	|	|	1.51
103.667	0.00	0.41	1.467	o	|	|	|	|	1.51
103.750	0.00	0.41	1.464	o	|	|	|	|	1.51
103.833	0.00	0.41	1.461	o	|	|	|	|	1.51
103.917	0.00	0.41	1.459	o	|	|	|	|	1.50
104.000	0.00	0.40	1.456	o	|	|	|	|	1.50
104.083	0.00	0.40	1.453	o	|	|	|	|	1.50
104.167	0.00	0.40	1.450	o	|	|	|	|	1.50
104.250	0.00	0.40	1.448	o	|	|	|	|	1.50
104.333	0.00	0.40	1.445	o	|	|	|	|	1.49
104.417	0.00	0.40	1.442	o	|	|	|	|	1.49
104.500	0.00	0.40	1.439	o	|	|	|	|	1.49
104.583	0.00	0.40	1.436	o	|	|	|	|	1.49
104.667	0.00	0.40	1.434	o	|	|	|	|	1.48
104.750	0.00	0.40	1.431	o	|	|	|	|	1.48
104.833	0.00	0.40	1.428	o	|	|	|	|	1.48
104.917	0.00	0.40	1.425	o	|	|	|	|	1.48
105.000	0.00	0.40	1.423	o	|	|	|	|	1.48
105.083	0.00	0.40	1.420	o	|	|	|	|	1.47
105.167	0.00	0.40	1.417	o	|	|	|	|	1.47
105.250	0.00	0.40	1.414	o	|	|	|	|	1.47
105.333	0.00	0.40	1.412	o	|	|	|	|	1.47
105.417	0.00	0.40	1.409	o	|	|	|	|	1.46
105.500	0.00	0.40	1.406	o	|	|	|	|	1.46

105.583	0.00	0.40	1.403	o	|	|	|	|	1.46
105.667	0.00	0.40	1.401	o	|	|	|	|	1.46
105.750	0.00	0.40	1.398	o	|	|	|	|	1.45
105.833	0.00	0.40	1.395	o	|	|	|	|	1.45
105.917	0.00	0.40	1.392	o	|	|	|	|	1.45
106.000	0.00	0.40	1.390	o	|	|	|	|	1.45
106.083	0.00	0.40	1.387	o	|	|	|	|	1.45
106.167	0.00	0.40	1.384	o	|	|	|	|	1.44
106.250	0.00	0.40	1.381	o	|	|	|	|	1.44
106.333	0.00	0.40	1.379	o	|	|	|	|	1.44
106.417	0.00	0.39	1.376	o	|	|	|	|	1.44
106.500	0.00	0.39	1.373	o	|	|	|	|	1.43
106.583	0.00	0.39	1.371	o	|	|	|	|	1.43
106.667	0.00	0.39	1.368	o	|	|	|	|	1.43
106.750	0.00	0.39	1.365	o	|	|	|	|	1.43
106.833	0.00	0.39	1.362	o	|	|	|	|	1.43
106.917	0.00	0.39	1.360	o	|	|	|	|	1.42
107.000	0.00	0.39	1.357	o	|	|	|	|	1.42
107.083	0.00	0.39	1.354	o	|	|	|	|	1.42
107.167	0.00	0.39	1.352	o	|	|	|	|	1.42
107.250	0.00	0.39	1.349	o	|	|	|	|	1.42
107.333	0.00	0.39	1.346	o	|	|	|	|	1.41
107.417	0.00	0.39	1.344	o	|	|	|	|	1.41
107.500	0.00	0.39	1.341	o	|	|	|	|	1.41
107.583	0.00	0.39	1.338	o	|	|	|	|	1.41
107.667	0.00	0.39	1.336	o	|	|	|	|	1.40
107.750	0.00	0.39	1.333	o	|	|	|	|	1.40
107.833	0.00	0.39	1.330	o	|	|	|	|	1.40
107.917	0.00	0.39	1.328	o	|	|	|	|	1.40
108.000	0.00	0.39	1.325	o	|	|	|	|	1.40
108.083	0.00	0.39	1.322	o	|	|	|	|	1.39
108.167	0.00	0.39	1.319	o	|	|	|	|	1.39
108.250	0.00	0.39	1.317	o	|	|	|	|	1.39
108.333	0.00	0.39	1.314	o	|	|	|	|	1.39
108.417	0.00	0.39	1.311	o	|	|	|	|	1.38
108.500	0.00	0.39	1.309	o	|	|	|	|	1.38
108.583	0.00	0.39	1.306	o	|	|	|	|	1.38
108.667	0.00	0.39	1.304	o	|	|	|	|	1.38
108.750	0.00	0.39	1.301	o	|	|	|	|	1.38
108.833	0.00	0.38	1.298	o	|	|	|	|	1.37
108.917	0.00	0.38	1.296	o	|	|	|	|	1.37
109.000	0.00	0.38	1.293	o	|	|	|	|	1.37
109.083	0.00	0.38	1.290	o	|	|	|	|	1.37
109.167	0.00	0.38	1.288	o	|	|	|	|	1.36
109.250	0.00	0.38	1.285	o	|	|	|	|	1.36
109.333	0.00	0.38	1.282	o	|	|	|	|	1.36
109.417	0.00	0.38	1.280	o	|	|	|	|	1.36
109.500	0.00	0.38	1.277	o	|	|	|	|	1.36
109.583	0.00	0.38	1.274	o	|	|	|	|	1.35
109.667	0.00	0.38	1.272	o	|	|	|	|	1.35
109.750	0.00	0.38	1.269	o	|	|	|	|	1.35
109.833	0.00	0.38	1.267	o	|	|	|	|	1.35
109.917	0.00	0.38	1.264	o	|	|	|	|	1.35
110.000	0.00	0.38	1.261	o	|	|	|	|	1.34
110.083	0.00	0.38	1.259	o	|	|	|	|	1.34
110.167	0.00	0.38	1.256	o	|	|	|	|	1.34
110.250	0.00	0.38	1.253	o	|	|	|	|	1.34
110.333	0.00	0.38	1.251	o	|	|	|	|	1.33
110.417	0.00	0.38	1.248	o	|	|	|	|	1.33
110.500	0.00	0.38	1.246	o	|	|	|	|	1.33
110.583	0.00	0.38	1.243	o	|	|	|	|	1.33
110.667	0.00	0.38	1.240	o	|	|	|	|	1.33
110.750	0.00	0.38	1.238	o	|	|	|	|	1.32
110.833	0.00	0.38	1.235	o	|	|	|	|	1.32
110.917	0.00	0.38	1.233	o	|	|	|	|	1.32
111.000	0.00	0.38	1.230	o	|	|	|	|	1.32
111.083	0.00	0.38	1.227	o	|	|	|	|	1.32
111.167	0.00	0.38	1.225	o	|	|	|	|	1.31
111.250	0.00	0.38	1.222	o	|	|	|	|	1.31
111.333	0.00	0.37	1.220	o	|	|	|	|	1.31
111.417	0.00	0.37	1.217	o	|	|	|	|	1.31
111.500	0.00	0.37	1.215	o	|	|	|	|	1.31
111.583	0.00	0.37	1.212	o	|	|	|	|	1.30
111.667	0.00	0.37	1.209	o	|	|	|	|	1.30
111.750	0.00	0.37	1.207	o	|	|	|	|	1.30

111.833	0.00	0.37	1.204	o	|	|	|	|	1.30
111.917	0.00	0.37	1.202	o	|	|	|	|	1.29
112.000	0.00	0.37	1.199	o	|	|	|	|	1.29
112.083	0.00	0.37	1.197	o	|	|	|	|	1.29
112.167	0.00	0.37	1.194	o	|	|	|	|	1.29
112.250	0.00	0.37	1.191	o	|	|	|	|	1.29
112.333	0.00	0.37	1.189	o	|	|	|	|	1.28
112.417	0.00	0.37	1.186	o	|	|	|	|	1.28
112.500	0.00	0.37	1.184	o	|	|	|	|	1.28
112.583	0.00	0.37	1.181	o	|	|	|	|	1.28
112.667	0.00	0.37	1.179	o	|	|	|	|	1.28
112.750	0.00	0.37	1.176	o	|	|	|	|	1.27
112.833	0.00	0.37	1.174	o	|	|	|	|	1.27
112.917	0.00	0.37	1.171	o	|	|	|	|	1.27
113.000	0.00	0.37	1.169	o	|	|	|	|	1.27
113.083	0.00	0.37	1.166	o	|	|	|	|	1.27
113.167	0.00	0.37	1.163	o	|	|	|	|	1.26
113.250	0.00	0.37	1.161	o	|	|	|	|	1.26
113.333	0.00	0.37	1.158	o	|	|	|	|	1.26
113.417	0.00	0.37	1.156	o	|	|	|	|	1.26
113.500	0.00	0.37	1.153	o	|	|	|	|	1.26
113.583	0.00	0.37	1.151	o	|	|	|	|	1.25
113.667	0.00	0.37	1.148	o	|	|	|	|	1.25
113.750	0.00	0.37	1.146	o	|	|	|	|	1.25
113.833	0.00	0.37	1.143	o	|	|	|	|	1.25
113.917	0.00	0.36	1.141	o	|	|	|	|	1.24
114.000	0.00	0.36	1.138	o	|	|	|	|	1.24
114.083	0.00	0.36	1.136	o	|	|	|	|	1.24
114.167	0.00	0.36	1.133	o	|	|	|	|	1.24
114.250	0.00	0.36	1.131	o	|	|	|	|	1.24
114.333	0.00	0.36	1.128	o	|	|	|	|	1.23
114.417	0.00	0.36	1.126	o	|	|	|	|	1.23
114.500	0.00	0.36	1.123	o	|	|	|	|	1.23
114.583	0.00	0.36	1.121	o	|	|	|	|	1.23
114.667	0.00	0.36	1.118	o	|	|	|	|	1.23
114.750	0.00	0.36	1.116	o	|	|	|	|	1.22
114.833	0.00	0.36	1.113	o	|	|	|	|	1.22
114.917	0.00	0.36	1.111	o	|	|	|	|	1.22
115.000	0.00	0.36	1.108	o	|	|	|	|	1.22
115.083	0.00	0.36	1.106	o	|	|	|	|	1.22
115.167	0.00	0.36	1.103	o	|	|	|	|	1.21
115.250	0.00	0.36	1.101	o	|	|	|	|	1.21
115.333	0.00	0.36	1.098	o	|	|	|	|	1.21
115.417	0.00	0.36	1.096	o	|	|	|	|	1.21
115.500	0.00	0.36	1.093	o	|	|	|	|	1.21
115.583	0.00	0.36	1.091	o	|	|	|	|	1.20
115.667	0.00	0.36	1.088	o	|	|	|	|	1.20
115.750	0.00	0.36	1.086	o	|	|	|	|	1.20
115.833	0.00	0.36	1.083	o	|	|	|	|	1.20
115.917	0.00	0.36	1.081	o	|	|	|	|	1.20
116.000	0.00	0.36	1.079	o	|	|	|	|	1.19
116.083	0.00	0.36	1.076	o	|	|	|	|	1.19
116.167	0.00	0.36	1.074	o	|	|	|	|	1.19
116.250	0.00	0.36	1.071	o	|	|	|	|	1.19
116.333	0.00	0.36	1.069	o	|	|	|	|	1.19
116.417	0.00	0.36	1.066	o	|	|	|	|	1.18
116.500	0.00	0.36	1.064	o	|	|	|	|	1.18
116.583	0.00	0.35	1.061	o	|	|	|	|	1.18
116.667	0.00	0.35	1.059	o	|	|	|	|	1.18
116.750	0.00	0.35	1.057	o	|	|	|	|	1.18
116.833	0.00	0.35	1.054	o	|	|	|	|	1.17
116.917	0.00	0.35	1.052	o	|	|	|	|	1.17
117.000	0.00	0.35	1.049	o	|	|	|	|	1.17
117.083	0.00	0.35	1.047	o	|	|	|	|	1.17
117.167	0.00	0.35	1.044	o	|	|	|	|	1.17
117.250	0.00	0.35	1.042	o	|	|	|	|	1.16
117.333	0.00	0.35	1.039	o	|	|	|	|	1.16
117.417	0.00	0.35	1.037	o	|	|	|	|	1.16
117.500	0.00	0.35	1.035	o	|	|	|	|	1.16
117.583	0.00	0.35	1.032	o	|	|	|	|	1.16
117.667	0.00	0.35	1.030	o	|	|	|	|	1.15
117.750	0.00	0.35	1.027	o	|	|	|	|	1.15
117.833	0.00	0.35	1.025	o	|	|	|	|	1.15
117.917	0.00	0.35	1.023	o	|	|	|	|	1.15
118.000	0.00	0.35	1.020	o	|	|	|	|	1.15

118.083	0.00	0.35	1.018	o	|	|	|	|	1.14
118.167	0.00	0.35	1.015	o	|	|	|	|	1.14
118.250	0.00	0.35	1.013	o	|	|	|	|	1.14
118.333	0.00	0.35	1.011	o	|	|	|	|	1.14
118.417	0.00	0.35	1.008	o	|	|	|	|	1.14
118.500	0.00	0.35	1.006	o	|	|	|	|	1.13
118.583	0.00	0.35	1.003	o	|	|	|	|	1.13
118.667	0.00	0.35	1.001	o	|	|	|	|	1.13
118.750	0.00	0.35	0.999	o	|	|	|	|	1.13
118.833	0.00	0.35	0.996	o	|	|	|	|	1.13
118.917	0.00	0.35	0.994	o	|	|	|	|	1.12
119.000	0.00	0.35	0.991	o	|	|	|	|	1.12
119.083	0.00	0.35	0.989	o	|	|	|	|	1.12
119.167	0.00	0.35	0.987	o	|	|	|	|	1.12
119.250	0.00	0.35	0.984	o	|	|	|	|	1.12
119.333	0.00	0.34	0.982	o	|	|	|	|	1.12
119.417	0.00	0.34	0.980	o	|	|	|	|	1.11
119.500	0.00	0.34	0.977	o	|	|	|	|	1.11
119.583	0.00	0.34	0.975	o	|	|	|	|	1.11
119.667	0.00	0.34	0.972	o	|	|	|	|	1.11
119.750	0.00	0.34	0.970	o	|	|	|	|	1.11
119.833	0.00	0.34	0.968	o	|	|	|	|	1.10
119.917	0.00	0.34	0.965	o	|	|	|	|	1.10
120.000	0.00	0.34	0.963	o	|	|	|	|	1.10
120.083	0.00	0.34	0.961	o	|	|	|	|	1.10
120.167	0.00	0.34	0.958	o	|	|	|	|	1.10
120.250	0.00	0.34	0.956	o	|	|	|	|	1.09
120.333	0.00	0.34	0.954	o	|	|	|	|	1.09
120.417	0.00	0.34	0.951	o	|	|	|	|	1.09
120.500	0.00	0.34	0.949	o	|	|	|	|	1.09
120.583	0.00	0.34	0.947	o	|	|	|	|	1.09
120.667	0.00	0.34	0.944	o	|	|	|	|	1.08
120.750	0.00	0.34	0.942	o	|	|	|	|	1.08
120.833	0.00	0.34	0.939	o	|	|	|	|	1.08
120.917	0.00	0.34	0.937	o	|	|	|	|	1.08
121.000	0.00	0.34	0.935	o	|	|	|	|	1.08
121.083	0.00	0.34	0.932	o	|	|	|	|	1.07
121.167	0.00	0.34	0.930	o	|	|	|	|	1.07
121.250	0.00	0.34	0.928	o	|	|	|	|	1.07
121.333	0.00	0.34	0.925	o	|	|	|	|	1.07
121.417	0.00	0.34	0.923	o	|	|	|	|	1.07
121.500	0.00	0.34	0.921	o	|	|	|	|	1.07
121.583	0.00	0.34	0.919	o	|	|	|	|	1.06
121.667	0.00	0.34	0.916	o	|	|	|	|	1.06
121.750	0.00	0.34	0.914	o	|	|	|	|	1.06
121.833	0.00	0.34	0.912	o	|	|	|	|	1.06
121.917	0.00	0.34	0.909	o	|	|	|	|	1.06
122.000	0.00	0.34	0.907	o	|	|	|	|	1.05
122.083	0.00	0.34	0.905	o	|	|	|	|	1.05
122.167	0.00	0.33	0.902	o	|	|	|	|	1.05
122.250	0.00	0.33	0.900	o	|	|	|	|	1.05
122.333	0.00	0.33	0.898	o	|	|	|	|	1.05
122.417	0.00	0.33	0.895	o	|	|	|	|	1.04
122.500	0.00	0.33	0.893	o	|	|	|	|	1.04
122.583	0.00	0.33	0.891	o	|	|	|	|	1.04
122.667	0.00	0.33	0.889	o	|	|	|	|	1.04
122.750	0.00	0.33	0.886	o	|	|	|	|	1.04
122.833	0.00	0.33	0.884	o	|	|	|	|	1.04
122.917	0.00	0.33	0.882	o	|	|	|	|	1.03
123.000	0.00	0.33	0.879	o	|	|	|	|	1.03
123.083	0.00	0.33	0.877	o	|	|	|	|	1.03
123.167	0.00	0.33	0.875	o	|	|	|	|	1.03
123.250	0.00	0.33	0.873	o	|	|	|	|	1.03
123.333	0.00	0.33	0.870	o	|	|	|	|	1.02
123.417	0.00	0.33	0.868	o	|	|	|	|	1.02
123.500	0.00	0.33	0.866	o	|	|	|	|	1.02
123.583	0.00	0.33	0.863	o	|	|	|	|	1.02
123.667	0.00	0.33	0.861	o	|	|	|	|	1.02
123.750	0.00	0.33	0.859	o	|	|	|	|	1.01
123.833	0.00	0.33	0.857	o	|	|	|	|	1.01
123.917	0.00	0.33	0.854	o	|	|	|	|	1.01
124.000	0.00	0.33	0.852	o	|	|	|	|	1.01
124.083	0.00	0.33	0.850	o	|	|	|	|	1.01
124.167	0.00	0.33	0.848	o	|	|	|	|	1.01
124.250	0.00	0.33	0.845	o	|	|	|	|	1.00

124.333	0.00	0.33	0.843	o	|	|	|	1.00
124.417	0.00	0.33	0.841	o	|	|	|	1.00
124.500	0.00	0.33	0.839	o	|	|	|	1.00
124.583	0.00	0.33	0.836	o	|	|	|	1.00
124.667	0.00	0.33	0.834	o	|	|	|	0.99
124.750	0.00	0.32	0.832	o	|	|	|	0.99
124.833	0.00	0.32	0.830	o	|	|	|	0.99
124.917	0.00	0.32	0.827	o	|	|	|	0.99
125.000	0.00	0.32	0.825	o	|	|	|	0.98
125.083	0.00	0.32	0.823	o	|	|	|	0.98
125.167	0.00	0.32	0.821	o	|	|	|	0.98
125.250	0.00	0.32	0.818	o	|	|	|	0.98
125.333	0.00	0.32	0.816	o	|	|	|	0.97
125.417	0.00	0.32	0.814	o	|	|	|	0.97
125.500	0.00	0.32	0.812	o	|	|	|	0.97
125.583	0.00	0.32	0.810	o	|	|	|	0.97
125.667	0.00	0.32	0.807	o	|	|	|	0.97
125.750	0.00	0.32	0.805	o	|	|	|	0.96
125.833	0.00	0.32	0.803	o	|	|	|	0.96
125.917	0.00	0.32	0.801	o	|	|	|	0.96
126.000	0.00	0.32	0.799	o	|	|	|	0.96
126.083	0.00	0.32	0.797	o	|	|	|	0.95
126.167	0.00	0.32	0.794	o	|	|	|	0.95
126.250	0.00	0.32	0.792	o	|	|	|	0.95
126.333	0.00	0.31	0.790	o	|	|	|	0.95
126.417	0.00	0.31	0.788	o	|	|	|	0.95
126.500	0.00	0.31	0.786	o	|	|	|	0.94
126.583	0.00	0.31	0.784	o	|	|	|	0.94
126.667	0.00	0.31	0.781	o	|	|	|	0.94
126.750	0.00	0.31	0.779	o	|	|	|	0.94
126.833	0.00	0.31	0.777	o	|	|	|	0.93
126.917	0.00	0.31	0.775	o	|	|	|	0.93
127.000	0.00	0.31	0.773	o	|	|	|	0.93
127.083	0.00	0.31	0.771	o	|	|	|	0.93
127.167	0.00	0.31	0.768	o	|	|	|	0.93
127.250	0.00	0.31	0.766	o	|	|	|	0.92
127.333	0.00	0.31	0.764	o	|	|	|	0.92
127.417	0.00	0.31	0.762	o	|	|	|	0.92
127.500	0.00	0.31	0.760	o	|	|	|	0.92
127.583	0.00	0.31	0.758	o	|	|	|	0.91
127.667	0.00	0.31	0.756	o	|	|	|	0.91
127.750	0.00	0.31	0.754	o	|	|	|	0.91
127.833	0.00	0.31	0.752	o	|	|	|	0.91
127.917	0.00	0.31	0.749	o	|	|	|	0.91
128.000	0.00	0.30	0.747	o	|	|	|	0.90
128.083	0.00	0.30	0.745	o	|	|	|	0.90
128.167	0.00	0.30	0.743	o	|	|	|	0.90
128.250	0.00	0.30	0.741	o	|	|	|	0.90
128.333	0.00	0.30	0.739	o	|	|	|	0.89
128.417	0.00	0.30	0.737	o	|	|	|	0.89
128.500	0.00	0.30	0.735	o	|	|	|	0.89
128.583	0.00	0.30	0.733	o	|	|	|	0.89
128.667	0.00	0.30	0.731	o	|	|	|	0.89
128.750	0.00	0.30	0.729	o	|	|	|	0.88
128.833	0.00	0.30	0.727	o	|	|	|	0.88
128.917	0.00	0.30	0.724	o	|	|	|	0.88
129.000	0.00	0.30	0.722	o	|	|	|	0.88
129.083	0.00	0.30	0.720	o	|	|	|	0.88
129.167	0.00	0.30	0.718	o	|	|	|	0.87
129.250	0.00	0.30	0.716	o	|	|	|	0.87
129.333	0.00	0.30	0.714	o	|	|	|	0.87
129.417	0.00	0.30	0.712	o	|	|	|	0.87
129.500	0.00	0.30	0.710	o	|	|	|	0.87
129.583	0.00	0.30	0.708	o	|	|	|	0.86
129.667	0.00	0.29	0.706	o	|	|	|	0.86
129.750	0.00	0.29	0.704	o	|	|	|	0.86
129.833	0.00	0.29	0.702	o	|	|	|	0.86
129.917	0.00	0.29	0.700	o	|	|	|	0.85
130.000	0.00	0.29	0.698	o	|	|	|	0.85
130.083	0.00	0.29	0.696	o	|	|	|	0.85
130.167	0.00	0.29	0.694	o	|	|	|	0.85
130.250	0.00	0.29	0.692	o	|	|	|	0.85
130.333	0.00	0.29	0.690	o	|	|	|	0.84
130.417	0.00	0.29	0.688	o	|	|	|	0.84
130.500	0.00	0.29	0.686	o	|	|	|	0.84

130.583	0.00	0.29	0.684	o	|	|	|	|	0.84
130.667	0.00	0.29	0.682	o	|	|	|	|	0.84
130.750	0.00	0.29	0.680	o	|	|	|	|	0.83
130.833	0.00	0.29	0.678	o	|	|	|	|	0.83
130.917	0.00	0.29	0.676	o	|	|	|	|	0.83
131.000	0.00	0.29	0.674	o	|	|	|	|	0.83
131.083	0.00	0.29	0.672	o	|	|	|	|	0.83
131.167	0.00	0.29	0.670	o	|	|	|	|	0.82
131.250	0.00	0.29	0.668	o	|	|	|	|	0.82
131.333	0.00	0.29	0.666	o	|	|	|	|	0.82
131.417	0.00	0.28	0.664	o	|	|	|	|	0.82
131.500	0.00	0.28	0.662	o	|	|	|	|	0.82
131.583	0.00	0.28	0.660	o	|	|	|	|	0.81
131.667	0.00	0.28	0.658	o	|	|	|	|	0.81
131.750	0.00	0.28	0.656	o	|	|	|	|	0.81
131.833	0.00	0.28	0.654	o	|	|	|	|	0.81
131.917	0.00	0.28	0.652	o	|	|	|	|	0.81
132.000	0.00	0.28	0.651	o	|	|	|	|	0.80
132.083	0.00	0.28	0.649	o	|	|	|	|	0.80
132.167	0.00	0.28	0.647	o	|	|	|	|	0.80
132.250	0.00	0.28	0.645	o	|	|	|	|	0.80
132.333	0.00	0.28	0.643	o	|	|	|	|	0.80
132.417	0.00	0.28	0.641	o	|	|	|	|	0.79
132.500	0.00	0.28	0.639	o	|	|	|	|	0.79
132.583	0.00	0.28	0.637	o	|	|	|	|	0.79
132.667	0.00	0.28	0.635	o	|	|	|	|	0.79
132.750	0.00	0.28	0.633	o	|	|	|	|	0.79
132.833	0.00	0.28	0.631	o	|	|	|	|	0.78
132.917	0.00	0.28	0.629	o	|	|	|	|	0.78
133.000	0.00	0.28	0.627	o	|	|	|	|	0.78
133.083	0.00	0.28	0.626	o	|	|	|	|	0.78
133.167	0.00	0.28	0.624	o	|	|	|	|	0.78
133.250	0.00	0.27	0.622	o	|	|	|	|	0.77
133.333	0.00	0.27	0.620	o	|	|	|	|	0.77
133.417	0.00	0.27	0.618	o	|	|	|	|	0.77
133.500	0.00	0.27	0.616	o	|	|	|	|	0.77
133.583	0.00	0.27	0.614	o	|	|	|	|	0.77
133.667	0.00	0.27	0.612	o	|	|	|	|	0.76
133.750	0.00	0.27	0.611	o	|	|	|	|	0.76
133.833	0.00	0.27	0.609	o	|	|	|	|	0.76
133.917	0.00	0.27	0.607	o	|	|	|	|	0.76
134.000	0.00	0.27	0.605	o	|	|	|	|	0.76
134.083	0.00	0.27	0.603	o	|	|	|	|	0.75
134.167	0.00	0.27	0.601	o	|	|	|	|	0.75
134.250	0.00	0.27	0.599	o	|	|	|	|	0.75
134.333	0.00	0.27	0.597	o	|	|	|	|	0.75
134.417	0.00	0.27	0.596	o	|	|	|	|	0.75
134.500	0.00	0.27	0.594	o	|	|	|	|	0.75
134.583	0.00	0.27	0.592	o	|	|	|	|	0.74
134.667	0.00	0.27	0.590	o	|	|	|	|	0.74
134.750	0.00	0.27	0.588	o	|	|	|	|	0.74
134.833	0.00	0.27	0.586	o	|	|	|	|	0.74
134.917	0.00	0.27	0.585	o	|	|	|	|	0.74
135.000	0.00	0.27	0.583	o	|	|	|	|	0.73
135.083	0.00	0.26	0.581	o	|	|	|	|	0.73
135.167	0.00	0.26	0.579	o	|	|	|	|	0.73
135.250	0.00	0.26	0.577	o	|	|	|	|	0.73
135.333	0.00	0.26	0.575	o	|	|	|	|	0.73
135.417	0.00	0.26	0.574	o	|	|	|	|	0.72
135.500	0.00	0.26	0.572	o	|	|	|	|	0.72
135.583	0.00	0.26	0.570	o	|	|	|	|	0.72
135.667	0.00	0.26	0.568	o	|	|	|	|	0.72
135.750	0.00	0.26	0.566	o	|	|	|	|	0.72
135.833	0.00	0.26	0.565	o	|	|	|	|	0.72
135.917	0.00	0.26	0.563	o	|	|	|	|	0.71
136.000	0.00	0.26	0.561	o	|	|	|	|	0.71
136.083	0.00	0.26	0.559	o	|	|	|	|	0.71
136.167	0.00	0.26	0.557	o	|	|	|	|	0.71
136.250	0.00	0.26	0.556	o	|	|	|	|	0.71
136.333	0.00	0.26	0.554	o	|	|	|	|	0.70
136.417	0.00	0.26	0.552	o	|	|	|	|	0.70
136.500	0.00	0.26	0.550	o	|	|	|	|	0.70
136.583	0.00	0.26	0.549	o	|	|	|	|	0.70
136.667	0.00	0.26	0.547	o	|	|	|	|	0.70
136.750	0.00	0.26	0.545	o	|	|	|	|	0.69

136.833	0.00	0.26	0.543	o					0.69
136.917	0.00	0.26	0.542	o					0.69
137.000	0.00	0.25	0.540	o					0.69
137.083	0.00	0.25	0.538	o					0.69
137.167	0.00	0.25	0.536	o					0.69
137.250	0.00	0.25	0.535	o					0.68
137.333	0.00	0.25	0.533	o					0.68
137.417	0.00	0.25	0.531	o					0.68
137.500	0.00	0.25	0.529	o					0.68
137.583	0.00	0.25	0.528	o					0.68
137.667	0.00	0.25	0.526	o					0.68
137.750	0.00	0.25	0.524	o					0.67
137.833	0.00	0.25	0.522	o					0.67
137.917	0.00	0.25	0.521	o					0.67
138.000	0.00	0.25	0.519	o					0.67
138.083	0.00	0.25	0.517	o					0.67
138.167	0.00	0.25	0.515	o					0.66
138.250	0.00	0.25	0.514	o					0.66
138.333	0.00	0.25	0.512	o					0.66
138.417	0.00	0.25	0.510	o					0.66
138.500	0.00	0.25	0.509	o					0.66
138.583	0.00	0.25	0.507	o					0.66
138.667	0.00	0.25	0.505	o					0.65
138.750	0.00	0.25	0.504	o					0.65
138.833	0.00	0.25	0.502	o					0.65
138.917	0.00	0.25	0.500	o					0.65
139.000	0.00	0.25	0.498	o					0.65
139.083	0.00	0.24	0.497	o					0.65
139.167	0.00	0.24	0.495	o					0.64
139.250	0.00	0.24	0.493	o					0.64
139.333	0.00	0.24	0.492	o					0.64
139.417	0.00	0.24	0.490	o					0.64
139.500	0.00	0.24	0.488	o					0.64
139.583	0.00	0.24	0.487	o					0.63
139.667	0.00	0.24	0.485	o					0.63
139.750	0.00	0.24	0.483	o					0.63
139.833	0.00	0.24	0.482	o					0.63
139.917	0.00	0.24	0.480	o					0.63
140.000	0.00	0.24	0.478	o					0.63
140.083	0.00	0.24	0.477	o					0.62
140.167	0.00	0.24	0.475	o					0.62
140.250	0.00	0.24	0.473	o					0.62
140.333	0.00	0.24	0.472	o					0.62
140.417	0.00	0.24	0.470	o					0.62
140.500	0.00	0.24	0.469	o					0.62
140.583	0.00	0.24	0.467	o					0.61
140.667	0.00	0.24	0.465	o					0.61
140.750	0.00	0.24	0.464	o					0.61
140.833	0.00	0.24	0.462	o					0.61
140.917	0.00	0.24	0.460	o					0.61
141.000	0.00	0.24	0.459	o					0.61
141.083	0.00	0.24	0.457	o					0.60
141.167	0.00	0.23	0.456	o					0.60
141.250	0.00	0.23	0.454	o					0.60
141.333	0.00	0.23	0.452	o					0.60
141.417	0.00	0.23	0.451	o					0.60
141.500	0.00	0.23	0.449	o					0.60
141.583	0.00	0.23	0.447	o					0.59
141.667	0.00	0.23	0.446	o					0.59
141.750	0.00	0.23	0.444	o					0.59
141.833	0.00	0.23	0.443	o					0.59
141.917	0.00	0.23	0.441	o					0.59
142.000	0.00	0.23	0.439	o					0.59
142.083	0.00	0.23	0.438	o					0.58
142.167	0.00	0.23	0.436	o					0.58
142.250	0.00	0.23	0.435	o					0.58
142.333	0.00	0.23	0.433	o					0.58
142.417	0.00	0.23	0.432	o					0.58
142.500	0.00	0.23	0.430	o					0.58
142.583	0.00	0.23	0.428	o					0.57
142.667	0.00	0.23	0.427	o					0.57
142.750	0.00	0.23	0.425	o					0.57
142.833	0.00	0.23	0.424	o					0.57
142.917	0.00	0.23	0.422	o					0.57
143.000	0.00	0.23	0.421	o					0.57

143.083	0.00	0.23	0.419	o	|	|	|	|	0.56
143.167	0.00	0.23	0.417	o	|	|	|	|	0.56
143.250	0.00	0.23	0.416	o	|	|	|	|	0.56
143.333	0.00	0.22	0.414	o	|	|	|	|	0.56
143.417	0.00	0.22	0.413	o	|	|	|	|	0.56
143.500	0.00	0.22	0.411	o	|	|	|	|	0.56
143.583	0.00	0.22	0.410	o	|	|	|	|	0.56
143.667	0.00	0.22	0.408	o	|	|	|	|	0.55
143.750	0.00	0.22	0.407	o	|	|	|	|	0.55
143.833	0.00	0.22	0.405	o	|	|	|	|	0.55
143.917	0.00	0.22	0.404	o	|	|	|	|	0.55
144.000	0.00	0.22	0.402	o	|	|	|	|	0.55
144.083	0.00	0.22	0.401	o	|	|	|	|	0.55
144.167	0.00	0.22	0.399	o	|	|	|	|	0.54
144.250	0.00	0.22	0.397	o	|	|	|	|	0.54
144.333	0.00	0.22	0.396	o	|	|	|	|	0.54
144.417	0.00	0.22	0.394	o	|	|	|	|	0.54
144.500	0.00	0.22	0.393	o	|	|	|	|	0.54
144.583	0.00	0.22	0.391	o	|	|	|	|	0.54
144.667	0.00	0.22	0.390	o	|	|	|	|	0.53
144.750	0.00	0.22	0.388	o	|	|	|	|	0.53
144.833	0.00	0.22	0.387	o	|	|	|	|	0.53
144.917	0.00	0.22	0.385	o	|	|	|	|	0.53
145.000	0.00	0.22	0.384	o	|	|	|	|	0.53
145.083	0.00	0.22	0.382	o	|	|	|	|	0.53
145.167	0.00	0.22	0.381	o	|	|	|	|	0.53
145.250	0.00	0.22	0.379	o	|	|	|	|	0.52
145.333	0.00	0.22	0.378	o	|	|	|	|	0.52
145.417	0.00	0.22	0.376	o	|	|	|	|	0.52
145.500	0.00	0.22	0.375	o	|	|	|	|	0.52
145.583	0.00	0.22	0.373	o	|	|	|	|	0.52
145.667	0.00	0.21	0.372	o	|	|	|	|	0.52
145.750	0.00	0.21	0.370	o	|	|	|	|	0.51
145.833	0.00	0.21	0.369	o	|	|	|	|	0.51
145.917	0.00	0.21	0.368	o	|	|	|	|	0.51
146.000	0.00	0.21	0.366	o	|	|	|	|	0.51
146.083	0.00	0.21	0.365	o	|	|	|	|	0.51
146.167	0.00	0.21	0.363	o	|	|	|	|	0.51
146.250	0.00	0.21	0.362	o	|	|	|	|	0.51
146.333	0.00	0.21	0.360	o	|	|	|	|	0.50
146.417	0.00	0.21	0.359	o	|	|	|	|	0.50
146.500	0.00	0.21	0.357	o	|	|	|	|	0.50
146.583	0.00	0.21	0.356	o	|	|	|	|	0.50
146.667	0.00	0.21	0.354	o	|	|	|	|	0.50
146.750	0.00	0.21	0.353	o	|	|	|	|	0.50
146.833	0.00	0.21	0.352	o	|	|	|	|	0.49
146.917	0.00	0.21	0.350	o	|	|	|	|	0.49
147.000	0.00	0.20	0.349	o	|	|	|	|	0.49
147.083	0.00	0.20	0.347	o	|	|	|	|	0.49
147.167	0.00	0.20	0.346	o	|	|	|	|	0.49
147.250	0.00	0.20	0.344	o	|	|	|	|	0.48
147.333	0.00	0.20	0.343	o	|	|	|	|	0.48
147.417	0.00	0.20	0.342	o	|	|	|	|	0.48
147.500	0.00	0.20	0.340	o	|	|	|	|	0.48
147.583	0.00	0.20	0.339	o	|	|	|	|	0.48
147.667	0.00	0.20	0.338	o	|	|	|	|	0.47
147.750	0.00	0.19	0.336	o	|	|	|	|	0.47
147.833	0.00	0.19	0.335	o	|	|	|	|	0.47
147.917	0.00	0.19	0.334	o	|	|	|	|	0.47
148.000	0.00	0.19	0.332	o	|	|	|	|	0.47
148.083	0.00	0.19	0.331	o	|	|	|	|	0.46
148.167	0.00	0.19	0.330	o	|	|	|	|	0.46
148.250	0.00	0.19	0.328	o	|	|	|	|	0.46
148.333	0.00	0.19	0.327	o	|	|	|	|	0.46
148.417	0.00	0.19	0.326	o	|	|	|	|	0.46
148.500	0.00	0.18	0.325	o	|	|	|	|	0.46
148.583	0.00	0.18	0.323	o	|	|	|	|	0.45
148.667	0.00	0.18	0.322	o	|	|	|	|	0.45
148.750	0.00	0.18	0.321	o	|	|	|	|	0.45
148.833	0.00	0.18	0.320	o	|	|	|	|	0.45
148.917	0.00	0.18	0.318	o	|	|	|	|	0.45
149.000	0.00	0.18	0.317	o	|	|	|	|	0.45
149.083	0.00	0.18	0.316	o	|	|	|	|	0.44
149.167	0.00	0.18	0.315	o	|	|	|	|	0.44
149.250	0.00	0.18	0.313	o	|	|	|	|	0.44

149.333	0.00	0.17	0.312	o	|	|	|	|	0.44
149.417	0.00	0.17	0.311	o	|	|	|	|	0.44
149.500	0.00	0.17	0.310	o	|	|	|	|	0.44
149.583	0.00	0.17	0.309	o	|	|	|	|	0.43
149.667	0.00	0.17	0.307	o	|	|	|	|	0.43
149.750	0.00	0.17	0.306	o	|	|	|	|	0.43
149.833	0.00	0.17	0.305	o	|	|	|	|	0.43
149.917	0.00	0.17	0.304	o	|	|	|	|	0.43
150.000	0.00	0.17	0.303	o	|	|	|	|	0.43
150.083	0.00	0.17	0.302	o	|	|	|	|	0.42
150.167	0.00	0.16	0.300	o	|	|	|	|	0.42
150.250	0.00	0.16	0.299	o	|	|	|	|	0.42
150.333	0.00	0.16	0.298	o	|	|	|	|	0.42
150.417	0.00	0.16	0.297	o	|	|	|	|	0.42
150.500	0.00	0.16	0.296	o	|	|	|	|	0.42
150.583	0.00	0.16	0.295	o	|	|	|	|	0.41
150.667	0.00	0.16	0.294	o	|	|	|	|	0.41
150.750	0.00	0.16	0.293	o	|	|	|	|	0.41
150.833	0.00	0.16	0.292	o	|	|	|	|	0.41
150.917	0.00	0.16	0.291	o	|	|	|	|	0.41
151.000	0.00	0.16	0.289	o	|	|	|	|	0.41
151.083	0.00	0.15	0.288	o	|	|	|	|	0.41
151.167	0.00	0.15	0.287	o	|	|	|	|	0.40
151.250	0.00	0.15	0.286	o	|	|	|	|	0.40
151.333	0.00	0.15	0.285	o	|	|	|	|	0.40
151.417	0.00	0.15	0.284	o	|	|	|	|	0.40
151.500	0.00	0.15	0.283	o	|	|	|	|	0.40
151.583	0.00	0.15	0.282	o	|	|	|	|	0.40
151.667	0.00	0.15	0.281	o	|	|	|	|	0.39
151.750	0.00	0.15	0.280	o	|	|	|	|	0.39
151.833	0.00	0.15	0.279	o	|	|	|	|	0.39
151.917	0.00	0.15	0.278	o	|	|	|	|	0.39
152.000	0.00	0.15	0.277	o	|	|	|	|	0.39
152.083	0.00	0.14	0.276	o	|	|	|	|	0.39
152.167	0.00	0.14	0.275	o	|	|	|	|	0.39
152.250	0.00	0.14	0.274	o	|	|	|	|	0.38
152.333	0.00	0.14	0.273	o	|	|	|	|	0.38
152.417	0.00	0.14	0.272	o	|	|	|	|	0.38
152.500	0.00	0.14	0.271	o	|	|	|	|	0.38
152.583	0.00	0.14	0.270	o	|	|	|	|	0.38
152.667	0.00	0.14	0.269	o	|	|	|	|	0.38
152.750	0.00	0.14	0.268	o	|	|	|	|	0.38
152.833	0.00	0.14	0.267	o	|	|	|	|	0.38
152.917	0.00	0.14	0.266	o	|	|	|	|	0.37
153.000	0.00	0.14	0.265	o	|	|	|	|	0.37
153.083	0.00	0.13	0.265	o	|	|	|	|	0.37
153.167	0.00	0.13	0.264	o	|	|	|	|	0.37
153.250	0.00	0.13	0.263	o	|	|	|	|	0.37
153.333	0.00	0.13	0.262	o	|	|	|	|	0.37
153.417	0.00	0.13	0.261	o	|	|	|	|	0.37
153.500	0.00	0.13	0.260	o	|	|	|	|	0.37
153.583	0.00	0.13	0.259	o	|	|	|	|	0.36
153.667	0.00	0.13	0.258	o	|	|	|	|	0.36
153.750	0.00	0.13	0.257	o	|	|	|	|	0.36
153.833	0.00	0.13	0.256	o	|	|	|	|	0.36
153.917	0.00	0.13	0.255	o	|	|	|	|	0.36
154.000	0.00	0.13	0.255	o	|	|	|	|	0.36
154.083	0.00	0.13	0.254	o	|	|	|	|	0.36
154.167	0.00	0.13	0.253	o	|	|	|	|	0.36
154.250	0.00	0.12	0.252	o	|	|	|	|	0.35
154.333	0.00	0.12	0.251	o	|	|	|	|	0.35
154.417	0.00	0.12	0.250	o	|	|	|	|	0.35
154.500	0.00	0.12	0.249	o	|	|	|	|	0.35
154.583	0.00	0.12	0.249	o	|	|	|	|	0.35
154.667	0.00	0.12	0.248	o	|	|	|	|	0.35
154.750	0.00	0.12	0.247	o	|	|	|	|	0.35
154.833	0.00	0.12	0.246	o	|	|	|	|	0.35
154.917	0.00	0.12	0.245	o	|	|	|	|	0.34
155.000	0.00	0.12	0.245	o	|	|	|	|	0.34
155.083	0.00	0.12	0.244	o	|	|	|	|	0.34
155.167	0.00	0.12	0.243	o	|	|	|	|	0.34
155.250	0.00	0.12	0.242	o	|	|	|	|	0.34
155.333	0.00	0.12	0.241	o	|	|	|	|	0.34
155.417	0.00	0.11	0.241	o	|	|	|	|	0.34
155.500	0.00	0.11	0.240	o	|	|	|	|	0.34

155.583	0.00	0.11	0.239	o	|	|	|	|	0.34
155.667	0.00	0.11	0.238	o	|	|	|	|	0.33
155.750	0.00	0.11	0.237	o	|	|	|	|	0.33
155.833	0.00	0.11	0.237	o	|	|	|	|	0.33
155.917	0.00	0.11	0.236	o	|	|	|	|	0.33
156.000	0.00	0.11	0.235	o	|	|	|	|	0.33
156.083	0.00	0.11	0.234	o	|	|	|	|	0.33
156.167	0.00	0.11	0.234	o	|	|	|	|	0.33
156.250	0.00	0.11	0.233	o	|	|	|	|	0.33
156.333	0.00	0.11	0.232	o	|	|	|	|	0.33
156.417	0.00	0.11	0.231	o	|	|	|	|	0.32
156.500	0.00	0.11	0.231	o	|	|	|	|	0.32
156.583	0.00	0.11	0.230	o	|	|	|	|	0.32
156.667	0.00	0.11	0.229	o	|	|	|	|	0.32
156.750	0.00	0.10	0.228	o	|	|	|	|	0.32
156.833	0.00	0.10	0.228	o	|	|	|	|	0.32
156.917	0.00	0.10	0.227	o	|	|	|	|	0.32
157.000	0.00	0.10	0.226	o	|	|	|	|	0.32
157.083	0.00	0.10	0.226	o	|	|	|	|	0.32
157.167	0.00	0.10	0.225	o	|	|	|	|	0.32
157.250	0.00	0.10	0.224	o	|	|	|	|	0.31
157.333	0.00	0.10	0.223	o	|	|	|	|	0.31
157.417	0.00	0.10	0.223	o	|	|	|	|	0.31
157.500	0.00	0.10	0.222	o	|	|	|	|	0.31
157.583	0.00	0.10	0.221	o	|	|	|	|	0.31
157.667	0.00	0.10	0.221	o	|	|	|	|	0.31
157.750	0.00	0.10	0.220	o	|	|	|	|	0.31
157.833	0.00	0.10	0.219	o	|	|	|	|	0.31
157.917	0.00	0.10	0.219	o	|	|	|	|	0.31
158.000	0.00	0.10	0.218	o	|	|	|	|	0.31
158.083	0.00	0.10	0.217	o	|	|	|	|	0.31
158.167	0.00	0.09	0.217	o	|	|	|	|	0.30
158.250	0.00	0.09	0.216	o	|	|	|	|	0.30
158.333	0.00	0.09	0.215	o	|	|	|	|	0.30
158.417	0.00	0.09	0.215	o	|	|	|	|	0.30
158.500	0.00	0.09	0.214	o	|	|	|	|	0.30
158.583	0.00	0.09	0.214	o	|	|	|	|	0.30
158.667	0.00	0.09	0.213	o	|	|	|	|	0.30
158.750	0.00	0.09	0.212	o	|	|	|	|	0.30
158.833	0.00	0.09	0.212	o	|	|	|	|	0.30
158.917	0.00	0.09	0.211	o	|	|	|	|	0.30
159.000	0.00	0.09	0.210	o	|	|	|	|	0.30
159.083	0.00	0.09	0.210	o	|	|	|	|	0.29
159.167	0.00	0.09	0.209	o	|	|	|	|	0.29
159.250	0.00	0.09	0.209	o	|	|	|	|	0.29
159.333	0.00	0.09	0.208	o	|	|	|	|	0.29
159.417	0.00	0.09	0.207	o	|	|	|	|	0.29
159.500	0.00	0.09	0.207	o	|	|	|	|	0.29
159.583	0.00	0.09	0.206	o	|	|	|	|	0.29
159.667	0.00	0.09	0.206	o	|	|	|	|	0.29
159.750	0.00	0.09	0.205	o	|	|	|	|	0.29
159.833	0.00	0.08	0.204	o	|	|	|	|	0.29
159.917	0.00	0.08	0.204	o	|	|	|	|	0.29
160.000	0.00	0.08	0.203	o	|	|	|	|	0.29
160.083	0.00	0.08	0.203	o	|	|	|	|	0.28
160.167	0.00	0.08	0.202	o	|	|	|	|	0.28
160.250	0.00	0.08	0.202	o	|	|	|	|	0.28
160.333	0.00	0.08	0.201	o	|	|	|	|	0.28
160.417	0.00	0.08	0.200	o	|	|	|	|	0.28
160.500	0.00	0.08	0.200	o	|	|	|	|	0.28
160.583	0.00	0.08	0.199	o	|	|	|	|	0.28
160.667	0.00	0.08	0.199	o	|	|	|	|	0.28
160.750	0.00	0.08	0.198	o	|	|	|	|	0.28
160.833	0.00	0.08	0.198	o	|	|	|	|	0.28
160.917	0.00	0.08	0.197	o	|	|	|	|	0.28
161.000	0.00	0.08	0.197	o	|	|	|	|	0.28
161.083	0.00	0.08	0.196	o	|	|	|	|	0.28
161.167	0.00	0.08	0.195	o	|	|	|	|	0.27
161.250	0.00	0.08	0.195	o	|	|	|	|	0.27
161.333	0.00	0.08	0.194	o	|	|	|	|	0.27
161.417	0.00	0.08	0.194	o	|	|	|	|	0.27
161.500	0.00	0.08	0.193	o	|	|	|	|	0.27
161.583	0.00	0.08	0.193	o	|	|	|	|	0.27
161.667	0.00	0.07	0.192	o	|	|	|	|	0.27
161.750	0.00	0.07	0.192	o	|	|	|	|	0.27

161.833	0.00	0.07	0.191	o	|	|	|	|	0.27
161.917	0.00	0.07	0.191	o	|	|	|	|	0.27
162.000	0.00	0.07	0.190	o	|	|	|	|	0.27
162.083	0.00	0.07	0.190	o	|	|	|	|	0.27
162.167	0.00	0.07	0.189	o	|	|	|	|	0.27
162.250	0.00	0.07	0.189	o	|	|	|	|	0.27
162.333	0.00	0.07	0.188	o	|	|	|	|	0.26
162.417	0.00	0.07	0.188	o	|	|	|	|	0.26
162.500	0.00	0.07	0.187	o	|	|	|	|	0.26
162.583	0.00	0.07	0.187	o	|	|	|	|	0.26
162.667	0.00	0.07	0.186	o	|	|	|	|	0.26
162.750	0.00	0.07	0.186	o	|	|	|	|	0.26
162.833	0.00	0.07	0.185	o	|	|	|	|	0.26
162.917	0.00	0.07	0.185	o	|	|	|	|	0.26
163.000	0.00	0.07	0.184	o	|	|	|	|	0.26
163.083	0.00	0.07	0.184	o	|	|	|	|	0.26
163.167	0.00	0.07	0.184	o	|	|	|	|	0.26
163.250	0.00	0.07	0.183	o	|	|	|	|	0.26
163.333	0.00	0.07	0.183	o	|	|	|	|	0.26
163.417	0.00	0.07	0.182	o	|	|	|	|	0.26
163.500	0.00	0.07	0.182	o	|	|	|	|	0.26
163.583	0.00	0.07	0.181	o	|	|	|	|	0.25
163.667	0.00	0.07	0.181	o	|	|	|	|	0.25
163.750	0.00	0.06	0.180	o	|	|	|	|	0.25
163.833	0.00	0.06	0.180	o	|	|	|	|	0.25
163.917	0.00	0.06	0.179	o	|	|	|	|	0.25
164.000	0.00	0.06	0.179	o	|	|	|	|	0.25
164.083	0.00	0.06	0.179	o	|	|	|	|	0.25
164.167	0.00	0.06	0.178	o	|	|	|	|	0.25
164.250	0.00	0.06	0.178	o	|	|	|	|	0.25
164.333	0.00	0.06	0.177	o	|	|	|	|	0.25
164.417	0.00	0.06	0.177	o	|	|	|	|	0.25
164.500	0.00	0.06	0.176	o	|	|	|	|	0.25
164.583	0.00	0.06	0.176	o	|	|	|	|	0.25
164.667	0.00	0.06	0.176	o	|	|	|	|	0.25
164.750	0.00	0.06	0.175	o	|	|	|	|	0.25
164.833	0.00	0.06	0.175	o	|	|	|	|	0.25
164.917	0.00	0.06	0.174	o	|	|	|	|	0.24
165.000	0.00	0.06	0.174	o	|	|	|	|	0.24
165.083	0.00	0.06	0.174	o	|	|	|	|	0.24
165.167	0.00	0.06	0.173	o	|	|	|	|	0.24
165.250	0.00	0.06	0.173	o	|	|	|	|	0.24
165.333	0.00	0.06	0.172	o	|	|	|	|	0.24
165.417	0.00	0.06	0.172	o	|	|	|	|	0.24
165.500	0.00	0.06	0.172	o	|	|	|	|	0.24
165.583	0.00	0.06	0.171	o	|	|	|	|	0.24
165.667	0.00	0.06	0.171	o	|	|	|	|	0.24
165.750	0.00	0.06	0.170	o	|	|	|	|	0.24
165.833	0.00	0.06	0.170	o	|	|	|	|	0.24
165.917	0.00	0.06	0.170	o	|	|	|	|	0.24
166.000	0.00	0.06	0.169	o	|	|	|	|	0.24
166.083	0.00	0.06	0.169	o	|	|	|	|	0.24
166.167	0.00	0.05	0.168	o	|	|	|	|	0.24
166.250	0.00	0.05	0.168	o	|	|	|	|	0.24
166.333	0.00	0.05	0.168	o	|	|	|	|	0.24
166.417	0.00	0.05	0.167	o	|	|	|	|	0.24
166.500	0.00	0.05	0.167	o	|	|	|	|	0.23
166.583	0.00	0.05	0.167	o	|	|	|	|	0.23
166.667	0.00	0.05	0.166	o	|	|	|	|	0.23
166.750	0.00	0.05	0.166	o	|	|	|	|	0.23
166.833	0.00	0.05	0.166	o	|	|	|	|	0.23
166.917	0.00	0.05	0.165	o	|	|	|	|	0.23
167.000	0.00	0.05	0.165	o	|	|	|	|	0.23
167.083	0.00	0.05	0.164	o	|	|	|	|	0.23
167.167	0.00	0.05	0.164	o	|	|	|	|	0.23
167.250	0.00	0.05	0.164	o	|	|	|	|	0.23
167.333	0.00	0.05	0.163	o	|	|	|	|	0.23
167.417	0.00	0.05	0.163	o	|	|	|	|	0.23
167.500	0.00	0.05	0.163	o	|	|	|	|	0.23
167.583	0.00	0.05	0.162	o	|	|	|	|	0.23
167.667	0.00	0.05	0.162	o	|	|	|	|	0.23
167.750	0.00	0.05	0.162	o	|	|	|	|	0.23
167.833	0.00	0.05	0.161	o	|	|	|	|	0.23
167.917	0.00	0.05	0.161	o	|	|	|	|	0.23
168.000	0.00	0.05	0.161	o	|	|	|	|	0.23

168.083	0.00	0.05	0.160	o	|	|	|	|	0.23
168.167	0.00	0.05	0.160	o	|	|	|	|	0.22
168.250	0.00	0.05	0.160	o	|	|	|	|	0.22
168.333	0.00	0.05	0.159	o	|	|	|	|	0.22
168.417	0.00	0.05	0.159	o	|	|	|	|	0.22
168.500	0.00	0.05	0.159	o	|	|	|	|	0.22
168.583	0.00	0.05	0.158	o	|	|	|	|	0.22
168.667	0.00	0.05	0.158	o	|	|	|	|	0.22
168.750	0.00	0.05	0.158	o	|	|	|	|	0.22
168.833	0.00	0.05	0.157	o	|	|	|	|	0.22
168.917	0.00	0.05	0.157	o	|	|	|	|	0.22
169.000	0.00	0.05	0.157	o	|	|	|	|	0.22
169.083	0.00	0.04	0.157	o	|	|	|	|	0.22
169.167	0.00	0.04	0.156	o	|	|	|	|	0.22
169.250	0.00	0.04	0.156	o	|	|	|	|	0.22
169.333	0.00	0.04	0.156	o	|	|	|	|	0.22
169.417	0.00	0.04	0.155	o	|	|	|	|	0.22
169.500	0.00	0.04	0.155	o	|	|	|	|	0.22
169.583	0.00	0.04	0.155	o	|	|	|	|	0.22
169.667	0.00	0.04	0.154	o	|	|	|	|	0.22
169.750	0.00	0.04	0.154	o	|	|	|	|	0.22
169.833	0.00	0.04	0.154	o	|	|	|	|	0.22
169.917	0.00	0.04	0.154	o	|	|	|	|	0.22
170.000	0.00	0.04	0.153	o	|	|	|	|	0.22
170.083	0.00	0.04	0.153	o	|	|	|	|	0.21
170.167	0.00	0.04	0.153	o	|	|	|	|	0.21
170.250	0.00	0.04	0.152	o	|	|	|	|	0.21
170.333	0.00	0.04	0.152	o	|	|	|	|	0.21
170.417	0.00	0.04	0.152	o	|	|	|	|	0.21
170.500	0.00	0.04	0.152	o	|	|	|	|	0.21
170.583	0.00	0.04	0.151	o	|	|	|	|	0.21
170.667	0.00	0.04	0.151	o	|	|	|	|	0.21
170.750	0.00	0.04	0.151	o	|	|	|	|	0.21
170.833	0.00	0.04	0.150	o	|	|	|	|	0.21
170.917	0.00	0.04	0.150	o	|	|	|	|	0.21
171.000	0.00	0.04	0.150	o	|	|	|	|	0.21
171.083	0.00	0.04	0.150	o	|	|	|	|	0.21
171.167	0.00	0.04	0.149	o	|	|	|	|	0.21
171.250	0.00	0.04	0.149	o	|	|	|	|	0.21
171.333	0.00	0.04	0.149	o	|	|	|	|	0.21
171.417	0.00	0.04	0.149	o	|	|	|	|	0.21
171.500	0.00	0.04	0.148	o	|	|	|	|	0.21
171.583	0.00	0.04	0.148	o	|	|	|	|	0.21
171.667	0.00	0.04	0.148	o	|	|	|	|	0.21
171.750	0.00	0.04	0.148	o	|	|	|	|	0.21
171.833	0.00	0.04	0.147	o	|	|	|	|	0.21
171.917	0.00	0.04	0.147	o	|	|	|	|	0.21
172.000	0.00	0.04	0.147	o	|	|	|	|	0.21
172.083	0.00	0.04	0.146	o	|	|	|	|	0.21
172.167	0.00	0.04	0.146	o	|	|	|	|	0.21
172.250	0.00	0.04	0.146	o	|	|	|	|	0.20
172.333	0.00	0.04	0.146	o	|	|	|	|	0.20
172.417	0.00	0.04	0.146	o	|	|	|	|	0.20
172.500	0.00	0.04	0.145	o	|	|	|	|	0.20
172.583	0.00	0.04	0.145	o	|	|	|	|	0.20
172.667	0.00	0.03	0.145	o	|	|	|	|	0.20
172.750	0.00	0.03	0.145	o	|	|	|	|	0.20
172.833	0.00	0.03	0.144	o	|	|	|	|	0.20
172.917	0.00	0.03	0.144	o	|	|	|	|	0.20
173.000	0.00	0.03	0.144	o	|	|	|	|	0.20
173.083	0.00	0.03	0.144	o	|	|	|	|	0.20
173.167	0.00	0.03	0.143	o	|	|	|	|	0.20
173.250	0.00	0.03	0.143	o	|	|	|	|	0.20
173.333	0.00	0.03	0.143	o	|	|	|	|	0.20
173.417	0.00	0.03	0.143	o	|	|	|	|	0.20
173.500	0.00	0.03	0.142	o	|	|	|	|	0.20
173.583	0.00	0.03	0.142	o	|	|	|	|	0.20
173.667	0.00	0.03	0.142	o	|	|	|	|	0.20
173.750	0.00	0.03	0.142	o	|	|	|	|	0.20
173.833	0.00	0.03	0.142	o	|	|	|	|	0.20
173.917	0.00	0.03	0.141	o	|	|	|	|	0.20
174.000	0.00	0.03	0.141	o	|	|	|	|	0.20
174.083	0.00	0.03	0.141	o	|	|	|	|	0.20
174.167	0.00	0.03	0.141	o	|	|	|	|	0.20
174.250	0.00	0.03	0.140	o	|	|	|	|	0.20

174.333	0.00	0.03	0.140	o	|	|	|	|	0.20
174.417	0.00	0.03	0.140	o	|	|	|	|	0.20
174.500	0.00	0.03	0.140	o	|	|	|	|	0.20
174.583	0.00	0.03	0.140	o	|	|	|	|	0.20
174.667	0.00	0.03	0.139	o	|	|	|	|	0.20
174.750	0.00	0.03	0.139	o	|	|	|	|	0.20
174.833	0.00	0.03	0.139	o	|	|	|	|	0.20
174.917	0.00	0.03	0.139	o	|	|	|	|	0.19
175.000	0.00	0.03	0.139	o	|	|	|	|	0.19
175.083	0.00	0.03	0.138	o	|	|	|	|	0.19
175.167	0.00	0.03	0.138	o	|	|	|	|	0.19
175.250	0.00	0.03	0.138	o	|	|	|	|	0.19
175.333	0.00	0.03	0.138	o	|	|	|	|	0.19
175.417	0.00	0.03	0.138	o	|	|	|	|	0.19
175.500	0.00	0.03	0.137	o	|	|	|	|	0.19
175.583	0.00	0.03	0.137	o	|	|	|	|	0.19
175.667	0.00	0.03	0.137	o	|	|	|	|	0.19
175.750	0.00	0.03	0.137	o	|	|	|	|	0.19
175.833	0.00	0.03	0.137	o	|	|	|	|	0.19
175.917	0.00	0.03	0.136	o	|	|	|	|	0.19
176.000	0.00	0.03	0.136	o	|	|	|	|	0.19
176.083	0.00	0.03	0.136	o	|	|	|	|	0.19
176.167	0.00	0.03	0.136	o	|	|	|	|	0.19
176.250	0.00	0.03	0.136	o	|	|	|	|	0.19
176.333	0.00	0.03	0.135	o	|	|	|	|	0.19
176.417	0.00	0.03	0.135	o	|	|	|	|	0.19
176.500	0.00	0.03	0.135	o	|	|	|	|	0.19
176.583	0.00	0.03	0.135	o	|	|	|	|	0.19
176.667	0.00	0.03	0.135	o	|	|	|	|	0.19
176.750	0.00	0.03	0.134	o	|	|	|	|	0.19
176.833	0.00	0.03	0.134	o	|	|	|	|	0.19
176.917	0.00	0.03	0.134	o	|	|	|	|	0.19
177.000	0.00	0.03	0.134	o	|	|	|	|	0.19
177.083	0.00	0.03	0.134	o	|	|	|	|	0.19
177.167	0.00	0.03	0.134	o	|	|	|	|	0.19
177.250	0.00	0.03	0.133	o	|	|	|	|	0.19
177.333	0.00	0.03	0.133	o	|	|	|	|	0.19
177.417	0.00	0.03	0.133	o	|	|	|	|	0.19
177.500	0.00	0.03	0.133	o	|	|	|	|	0.19
177.583	0.00	0.02	0.133	o	|	|	|	|	0.19
177.667	0.00	0.02	0.133	o	|	|	|	|	0.19
177.750	0.00	0.02	0.132	o	|	|	|	|	0.19
177.833	0.00	0.02	0.132	o	|	|	|	|	0.19
177.917	0.00	0.02	0.132	o	|	|	|	|	0.19
178.000	0.00	0.02	0.132	o	|	|	|	|	0.19
178.083	0.00	0.02	0.132	o	|	|	|	|	0.18
178.167	0.00	0.02	0.132	o	|	|	|	|	0.18
178.250	0.00	0.02	0.131	o	|	|	|	|	0.18
178.333	0.00	0.02	0.131	o	|	|	|	|	0.18
178.417	0.00	0.02	0.131	o	|	|	|	|	0.18
178.500	0.00	0.02	0.131	o	|	|	|	|	0.18
178.583	0.00	0.02	0.131	o	|	|	|	|	0.18
178.667	0.00	0.02	0.131	o	|	|	|	|	0.18
178.750	0.00	0.02	0.130	o	|	|	|	|	0.18
178.833	0.00	0.02	0.130	o	|	|	|	|	0.18
178.917	0.00	0.02	0.130	o	|	|	|	|	0.18
179.000	0.00	0.02	0.130	o	|	|	|	|	0.18
179.083	0.00	0.02	0.130	o	|	|	|	|	0.18
179.167	0.00	0.02	0.130	o	|	|	|	|	0.18
179.250	0.00	0.02	0.129	o	|	|	|	|	0.18
179.333	0.00	0.02	0.129	o	|	|	|	|	0.18
179.417	0.00	0.02	0.129	o	|	|	|	|	0.18
179.500	0.00	0.02	0.129	o	|	|	|	|	0.18
179.583	0.00	0.02	0.129	o	|	|	|	|	0.18
179.667	0.00	0.02	0.129	o	|	|	|	|	0.18
179.750	0.00	0.02	0.129	o	|	|	|	|	0.18
179.833	0.00	0.02	0.128	o	|	|	|	|	0.18
179.917	0.00	0.02	0.128	o	|	|	|	|	0.18
180.000	0.00	0.02	0.128	o	|	|	|	|	0.18
180.083	0.00	0.02	0.128	o	|	|	|	|	0.18
180.167	0.00	0.02	0.128	o	|	|	|	|	0.18
180.250	0.00	0.02	0.128	o	|	|	|	|	0.18
180.333	0.00	0.02	0.128	o	|	|	|	|	0.18
180.417	0.00	0.02	0.127	o	|	|	|	|	0.18
180.500	0.00	0.02	0.127	o	|	|	|	|	0.18

180.583	0.00	0.02	0.127	o	|	|	|	|	0.18
180.667	0.00	0.02	0.127	o	|	|	|	|	0.18
180.750	0.00	0.02	0.127	o	|	|	|	|	0.18
180.833	0.00	0.02	0.127	o	|	|	|	|	0.18
180.917	0.00	0.02	0.127	o	|	|	|	|	0.18
181.000	0.00	0.02	0.126	o	|	|	|	|	0.18
181.083	0.00	0.02	0.126	o	|	|	|	|	0.18
181.167	0.00	0.02	0.126	o	|	|	|	|	0.18
181.250	0.00	0.02	0.126	o	|	|	|	|	0.18
181.333	0.00	0.02	0.126	o	|	|	|	|	0.18
181.417	0.00	0.02	0.126	o	|	|	|	|	0.18
181.500	0.00	0.02	0.126	o	|	|	|	|	0.18
181.583	0.00	0.02	0.126	o	|	|	|	|	0.18
181.667	0.00	0.02	0.125	o	|	|	|	|	0.18
181.750	0.00	0.02	0.125	o	|	|	|	|	0.18
181.833	0.00	0.02	0.125	o	|	|	|	|	0.18
181.917	0.00	0.02	0.125	o	|	|	|	|	0.18
182.000	0.00	0.02	0.125	o	|	|	|	|	0.18
182.083	0.00	0.02	0.125	o	|	|	|	|	0.18
182.167	0.00	0.02	0.125	o	|	|	|	|	0.17
182.250	0.00	0.02	0.124	o	|	|	|	|	0.17
182.333	0.00	0.02	0.124	o	|	|	|	|	0.17
182.417	0.00	0.02	0.124	o	|	|	|	|	0.17
182.500	0.00	0.02	0.124	o	|	|	|	|	0.17
182.583	0.00	0.02	0.124	o	|	|	|	|	0.17
182.667	0.00	0.02	0.124	o	|	|	|	|	0.17
182.750	0.00	0.02	0.124	o	|	|	|	|	0.17
182.833	0.00	0.02	0.124	o	|	|	|	|	0.17
182.917	0.00	0.02	0.124	o	|	|	|	|	0.17
183.000	0.00	0.02	0.123	o	|	|	|	|	0.17
183.083	0.00	0.02	0.123	o	|	|	|	|	0.17
183.167	0.00	0.02	0.123	o	|	|	|	|	0.17
183.250	0.00	0.02	0.123	o	|	|	|	|	0.17
183.333	0.00	0.02	0.123	o	|	|	|	|	0.17
183.417	0.00	0.02	0.123	o	|	|	|	|	0.17
183.500	0.00	0.02	0.123	o	|	|	|	|	0.17
183.583	0.00	0.02	0.123	o	|	|	|	|	0.17
183.667	0.00	0.02	0.122	o	|	|	|	|	0.17
183.750	0.00	0.02	0.122	o	|	|	|	|	0.17
183.833	0.00	0.02	0.122	o	|	|	|	|	0.17
183.917	0.00	0.02	0.122	o	|	|	|	|	0.17
184.000	0.00	0.02	0.122	o	|	|	|	|	0.17
184.083	0.00	0.02	0.122	o	|	|	|	|	0.17
184.167	0.00	0.02	0.122	o	|	|	|	|	0.17
184.250	0.00	0.02	0.122	o	|	|	|	|	0.17
184.333	0.00	0.02	0.122	o	|	|	|	|	0.17
184.417	0.00	0.02	0.121	o	|	|	|	|	0.17
184.500	0.00	0.02	0.121	o	|	|	|	|	0.17
184.583	0.00	0.02	0.121	o	|	|	|	|	0.17
184.667	0.00	0.02	0.121	o	|	|	|	|	0.17
184.750	0.00	0.02	0.121	o	|	|	|	|	0.17
184.833	0.00	0.02	0.121	o	|	|	|	|	0.17
184.917	0.00	0.02	0.121	o	|	|	|	|	0.17
185.000	0.00	0.01	0.121	o	|	|	|	|	0.17
185.083	0.00	0.01	0.121	o	|	|	|	|	0.17
185.167	0.00	0.01	0.121	o	|	|	|	|	0.17
185.250	0.00	0.01	0.120	o	|	|	|	|	0.17
185.333	0.00	0.01	0.120	o	|	|	|	|	0.17
185.417	0.00	0.01	0.120	o	|	|	|	|	0.17
185.500	0.00	0.01	0.120	o	|	|	|	|	0.17
185.583	0.00	0.01	0.120	o	|	|	|	|	0.17
185.667	0.00	0.01	0.120	o	|	|	|	|	0.17
185.750	0.00	0.01	0.120	o	|	|	|	|	0.17
185.833	0.00	0.01	0.120	o	|	|	|	|	0.17
185.917	0.00	0.01	0.120	o	|	|	|	|	0.17
186.000	0.00	0.01	0.120	o	|	|	|	|	0.17
186.083	0.00	0.01	0.119	o	|	|	|	|	0.17
186.167	0.00	0.01	0.119	o	|	|	|	|	0.17
186.250	0.00	0.01	0.119	o	|	|	|	|	0.17
186.333	0.00	0.01	0.119	o	|	|	|	|	0.17
186.417	0.00	0.01	0.119	o	|	|	|	|	0.17
186.500	0.00	0.01	0.119	o	|	|	|	|	0.17
186.583	0.00	0.01	0.119	o	|	|	|	|	0.17
186.667	0.00	0.01	0.119	o	|	|	|	|	0.17
186.750	0.00	0.01	0.119	o	|	|	|	|	0.17

186.833	0.00	0.01	0.119	o	|	|	|	|	0.17
186.917	0.00	0.01	0.119	o	|	|	|	|	0.17
187.000	0.00	0.01	0.118	o	|	|	|	|	0.17
187.083	0.00	0.01	0.118	o	|	|	|	|	0.17
187.167	0.00	0.01	0.118	o	|	|	|	|	0.17
187.250	0.00	0.01	0.118	o	|	|	|	|	0.17
187.333	0.00	0.01	0.118	o	|	|	|	|	0.17
187.417	0.00	0.01	0.118	o	|	|	|	|	0.17
187.500	0.00	0.01	0.118	o	|	|	|	|	0.17
187.583	0.00	0.01	0.118	o	|	|	|	|	0.17
187.667	0.00	0.01	0.118	o	|	|	|	|	0.17
187.750	0.00	0.01	0.118	o	|	|	|	|	0.17
187.833	0.00	0.01	0.118	o	|	|	|	|	0.17
187.917	0.00	0.01	0.117	o	|	|	|	|	0.16
188.000	0.00	0.01	0.117	o	|	|	|	|	0.16
188.083	0.00	0.01	0.117	o	|	|	|	|	0.16
188.167	0.00	0.01	0.117	o	|	|	|	|	0.16
188.250	0.00	0.01	0.117	o	|	|	|	|	0.16
188.333	0.00	0.01	0.117	o	|	|	|	|	0.16
188.417	0.00	0.01	0.117	o	|	|	|	|	0.16
188.500	0.00	0.01	0.117	o	|	|	|	|	0.16
188.583	0.00	0.01	0.117	o	|	|	|	|	0.16
188.667	0.00	0.01	0.117	o	|	|	|	|	0.16
188.750	0.00	0.01	0.117	o	|	|	|	|	0.16
188.833	0.00	0.01	0.117	o	|	|	|	|	0.16
188.917	0.00	0.01	0.117	o	|	|	|	|	0.16
189.000	0.00	0.01	0.116	o	|	|	|	|	0.16
189.083	0.00	0.01	0.116	o	|	|	|	|	0.16
189.167	0.00	0.01	0.116	o	|	|	|	|	0.16
189.250	0.00	0.01	0.116	o	|	|	|	|	0.16
189.333	0.00	0.01	0.116	o	|	|	|	|	0.16
189.417	0.00	0.01	0.116	o	|	|	|	|	0.16
189.500	0.00	0.01	0.116	o	|	|	|	|	0.16
189.583	0.00	0.01	0.116	o	|	|	|	|	0.16
189.667	0.00	0.01	0.116	o	|	|	|	|	0.16
189.750	0.00	0.01	0.116	o	|	|	|	|	0.16
189.833	0.00	0.01	0.116	o	|	|	|	|	0.16
189.917	0.00	0.01	0.116	o	|	|	|	|	0.16
190.000	0.00	0.01	0.116	o	|	|	|	|	0.16
190.083	0.00	0.01	0.115	o	|	|	|	|	0.16
190.167	0.00	0.01	0.115	o	|	|	|	|	0.16
190.250	0.00	0.01	0.115	o	|	|	|	|	0.16
190.333	0.00	0.01	0.115	o	|	|	|	|	0.16
190.417	0.00	0.01	0.115	o	|	|	|	|	0.16
190.500	0.00	0.01	0.115	o	|	|	|	|	0.16
190.583	0.00	0.01	0.115	o	|	|	|	|	0.16
190.667	0.00	0.01	0.115	o	|	|	|	|	0.16
190.750	0.00	0.01	0.115	o	|	|	|	|	0.16
190.833	0.00	0.01	0.115	o	|	|	|	|	0.16
190.917	0.00	0.01	0.115	o	|	|	|	|	0.16
191.000	0.00	0.01	0.115	o	|	|	|	|	0.16
191.083	0.00	0.01	0.115	o	|	|	|	|	0.16
191.167	0.00	0.01	0.115	o	|	|	|	|	0.16
191.250	0.00	0.01	0.114	o	|	|	|	|	0.16
191.333	0.00	0.01	0.114	o	|	|	|	|	0.16
191.417	0.00	0.01	0.114	o	|	|	|	|	0.16
191.500	0.00	0.01	0.114	o	|	|	|	|	0.16
191.583	0.00	0.01	0.114	o	|	|	|	|	0.16
191.667	0.00	0.01	0.114	o	|	|	|	|	0.16
191.750	0.00	0.01	0.114	o	|	|	|	|	0.16
191.833	0.00	0.01	0.114	o	|	|	|	|	0.16
191.917	0.00	0.01	0.114	o	|	|	|	|	0.16
192.000	0.00	0.01	0.114	o	|	|	|	|	0.16
192.083	0.00	0.01	0.114	o	|	|	|	|	0.16
192.167	0.00	0.01	0.114	o	|	|	|	|	0.16
192.250	0.00	0.01	0.114	o	|	|	|	|	0.16
192.333	0.00	0.01	0.114	o	|	|	|	|	0.16
192.417	0.00	0.01	0.114	o	|	|	|	|	0.16
192.500	0.00	0.01	0.114	o	|	|	|	|	0.16
192.583	0.00	0.01	0.113	o	|	|	|	|	0.16
192.667	0.00	0.01	0.113	o	|	|	|	|	0.16
192.750	0.00	0.01	0.113	o	|	|	|	|	0.16
192.833	0.00	0.01	0.113	o	|	|	|	|	0.16
192.917	0.00	0.01	0.113	o	|	|	|	|	0.16
193.000	0.00	0.01	0.113	o	|	|	|	|	0.16

193.083	0.00	0.01	0.113	o	|	|	|	|	0.16
193.167	0.00	0.01	0.113	o	|	|	|	|	0.16
193.250	0.00	0.01	0.113	o	|	|	|	|	0.16
193.333	0.00	0.01	0.113	o	|	|	|	|	0.16
193.417	0.00	0.01	0.113	o	|	|	|	|	0.16
193.500	0.00	0.01	0.113	o	|	|	|	|	0.16
193.583	0.00	0.01	0.113	o	|	|	|	|	0.16
193.667	0.00	0.01	0.113	o	|	|	|	|	0.16
193.750	0.00	0.01	0.113	o	|	|	|	|	0.16
193.833	0.00	0.01	0.113	o	|	|	|	|	0.16
193.917	0.00	0.01	0.113	o	|	|	|	|	0.16
194.000	0.00	0.01	0.112	o	|	|	|	|	0.16
194.083	0.00	0.01	0.112	o	|	|	|	|	0.16
194.167	0.00	0.01	0.112	o	|	|	|	|	0.16
194.250	0.00	0.01	0.112	o	|	|	|	|	0.16
194.333	0.00	0.01	0.112	o	|	|	|	|	0.16
194.417	0.00	0.01	0.112	o	|	|	|	|	0.16
194.500	0.00	0.01	0.112	o	|	|	|	|	0.16
194.583	0.00	0.01	0.112	o	|	|	|	|	0.16
194.667	0.00	0.01	0.112	o	|	|	|	|	0.16
194.750	0.00	0.01	0.112	o	|	|	|	|	0.16
194.833	0.00	0.01	0.112	o	|	|	|	|	0.16
194.917	0.00	0.01	0.112	o	|	|	|	|	0.16
195.000	0.00	0.01	0.112	o	|	|	|	|	0.16
195.083	0.00	0.01	0.112	o	|	|	|	|	0.16
195.167	0.00	0.01	0.112	o	|	|	|	|	0.16
195.250	0.00	0.01	0.112	o	|	|	|	|	0.16
195.333	0.00	0.01	0.112	o	|	|	|	|	0.16
195.417	0.00	0.01	0.112	o	|	|	|	|	0.16
195.500	0.00	0.01	0.112	o	|	|	|	|	0.16
195.583	0.00	0.01	0.111	o	|	|	|	|	0.16
195.667	0.00	0.01	0.111	o	|	|	|	|	0.16
195.750	0.00	0.01	0.111	o	|	|	|	|	0.16
195.833	0.00	0.01	0.111	o	|	|	|	|	0.16
195.917	0.00	0.01	0.111	o	|	|	|	|	0.16
196.000	0.00	0.01	0.111	o	|	|	|	|	0.16
196.083	0.00	0.01	0.111	o	|	|	|	|	0.16
196.167	0.00	0.01	0.111	o	|	|	|	|	0.16
196.250	0.00	0.01	0.111	o	|	|	|	|	0.16
196.333	0.00	0.01	0.111	o	|	|	|	|	0.16
196.417	0.00	0.01	0.111	o	|	|	|	|	0.16
196.500	0.00	0.01	0.111	o	|	|	|	|	0.16
196.583	0.00	0.01	0.111	o	|	|	|	|	0.16
196.667	0.00	0.01	0.111	o	|	|	|	|	0.16
196.750	0.00	0.01	0.111	o	|	|	|	|	0.16
196.833	0.00	0.01	0.111	o	|	|	|	|	0.16
196.917	0.00	0.01	0.111	o	|	|	|	|	0.16
197.000	0.00	0.01	0.111	o	|	|	|	|	0.16
197.083	0.00	0.01	0.111	o	|	|	|	|	0.16
197.167	0.00	0.01	0.111	o	|	|	|	|	0.16
197.250	0.00	0.01	0.111	o	|	|	|	|	0.16
197.333	0.00	0.01	0.110	o	|	|	|	|	0.16
197.417	0.00	0.01	0.110	o	|	|	|	|	0.16
197.500	0.00	0.01	0.110	o	|	|	|	|	0.15
197.583	0.00	0.01	0.110	o	|	|	|	|	0.15
197.667	0.00	0.01	0.110	o	|	|	|	|	0.15
197.750	0.00	0.01	0.110	o	|	|	|	|	0.15
197.833	0.00	0.01	0.110	o	|	|	|	|	0.15
197.917	0.00	0.01	0.110	o	|	|	|	|	0.15
198.000	0.00	0.01	0.110	o	|	|	|	|	0.15
198.083	0.00	0.01	0.110	o	|	|	|	|	0.15
198.167	0.00	0.01	0.110	o	|	|	|	|	0.15
198.250	0.00	0.01	0.110	o	|	|	|	|	0.15
198.333	0.00	0.01	0.110	o	|	|	|	|	0.15
198.417	0.00	0.01	0.110	o	|	|	|	|	0.15
198.500	0.00	0.01	0.110	o	|	|	|	|	0.15
198.583	0.00	0.01	0.110	o	|	|	|	|	0.15
198.667	0.00	0.01	0.110	o	|	|	|	|	0.15
198.750	0.00	0.01	0.110	o	|	|	|	|	0.15
198.833	0.00	0.01	0.110	o	|	|	|	|	0.15
198.917	0.00	0.01	0.110	o	|	|	|	|	0.15
199.000	0.00	0.01	0.110	o	|	|	|	|	0.15
199.083	0.00	0.01	0.110	o	|	|	|	|	0.15
199.167	0.00	0.01	0.110	o	|	|	|	|	0.15
199.250	0.00	0.01	0.110	o	|	|	|	|	0.15

199.333	0.00	0.01	0.109	o	|	|	|	|	0.15
199.417	0.00	0.01	0.109	o	|	|	|	|	0.15
199.500	0.00	0.01	0.109	o	|	|	|	|	0.15
199.583	0.00	0.01	0.109	o	|	|	|	|	0.15
199.667	0.00	0.01	0.109	o	|	|	|	|	0.15
199.750	0.00	0.01	0.109	o	|	|	|	|	0.15
199.833	0.00	0.01	0.109	o	|	|	|	|	0.15
199.917	0.00	0.01	0.109	o	|	|	|	|	0.15
200.000	0.00	0.01	0.109	o	|	|	|	|	0.15
200.083	0.00	0.01	0.109	o	|	|	|	|	0.15
200.167	0.00	0.01	0.109	o	|	|	|	|	0.15
200.250	0.00	0.01	0.109	o	|	|	|	|	0.15
200.333	0.00	0.01	0.109	o	|	|	|	|	0.15
200.417	0.00	0.01	0.109	o	|	|	|	|	0.15
200.500	0.00	0.01	0.109	o	|	|	|	|	0.15
200.583	0.00	0.01	0.109	o	|	|	|	|	0.15
200.667	0.00	0.01	0.109	o	|	|	|	|	0.15
200.750	0.00	0.01	0.109	o	|	|	|	|	0.15
200.833	0.00	0.01	0.109	o	|	|	|	|	0.15
200.917	0.00	0.00	0.109	o	|	|	|	|	0.15
201.000	0.00	0.00	0.109	o	|	|	|	|	0.15
201.083	0.00	0.00	0.109	o	|	|	|	|	0.15
201.167	0.00	0.00	0.109	o	|	|	|	|	0.15
201.250	0.00	0.00	0.109	o	|	|	|	|	0.15
201.333	0.00	0.00	0.109	o	|	|	|	|	0.15
201.417	0.00	0.00	0.109	o	|	|	|	|	0.15
201.500	0.00	0.00	0.109	o	|	|	|	|	0.15
201.583	0.00	0.00	0.109	o	|	|	|	|	0.15
201.667	0.00	0.00	0.108	o	|	|	|	|	0.15
201.750	0.00	0.00	0.108	o	|	|	|	|	0.15
201.833	0.00	0.00	0.108	o	|	|	|	|	0.15
201.917	0.00	0.00	0.108	o	|	|	|	|	0.15
202.000	0.00	0.00	0.108	o	|	|	|	|	0.15
202.083	0.00	0.00	0.108	o	|	|	|	|	0.15
202.167	0.00	0.00	0.108	o	|	|	|	|	0.15
202.250	0.00	0.00	0.108	o	|	|	|	|	0.15
202.333	0.00	0.00	0.108	o	|	|	|	|	0.15
202.417	0.00	0.00	0.108	o	|	|	|	|	0.15
202.500	0.00	0.00	0.108	o	|	|	|	|	0.15
202.583	0.00	0.00	0.108	o	|	|	|	|	0.15
202.667	0.00	0.00	0.108	o	|	|	|	|	0.15
202.750	0.00	0.00	0.108	o	|	|	|	|	0.15
202.833	0.00	0.00	0.108	o	|	|	|	|	0.15
202.917	0.00	0.00	0.108	o	|	|	|	|	0.15
203.000	0.00	0.00	0.108	o	|	|	|	|	0.15
203.083	0.00	0.00	0.108	o	|	|	|	|	0.15
203.167	0.00	0.00	0.108	o	|	|	|	|	0.15
203.250	0.00	0.00	0.108	o	|	|	|	|	0.15
203.333	0.00	0.00	0.108	o	|	|	|	|	0.15
203.417	0.00	0.00	0.108	o	|	|	|	|	0.15
203.500	0.00	0.00	0.108	o	|	|	|	|	0.15
203.583	0.00	0.00	0.108	o	|	|	|	|	0.15
203.667	0.00	0.00	0.108	o	|	|	|	|	0.15
203.750	0.00	0.00	0.108	o	|	|	|	|	0.15
203.833	0.00	0.00	0.108	o	|	|	|	|	0.15
203.917	0.00	0.00	0.108	o	|	|	|	|	0.15
204.000	0.00	0.00	0.108	o	|	|	|	|	0.15
204.083	0.00	0.00	0.108	o	|	|	|	|	0.15
204.167	0.00	0.00	0.108	o	|	|	|	|	0.15
204.250	0.00	0.00	0.108	o	|	|	|	|	0.15
204.333	0.00	0.00	0.108	o	|	|	|	|	0.15
204.417	0.00	0.00	0.108	o	|	|	|	|	0.15
204.500	0.00	0.00	0.107	o	|	|	|	|	0.15
204.583	0.00	0.00	0.107	o	|	|	|	|	0.15
204.667	0.00	0.00	0.107	o	|	|	|	|	0.15
204.750	0.00	0.00	0.107	o	|	|	|	|	0.15
204.833	0.00	0.00	0.107	o	|	|	|	|	0.15
204.917	0.00	0.00	0.107	o	|	|	|	|	0.15
205.000	0.00	0.00	0.107	o	|	|	|	|	0.15
205.083	0.00	0.00	0.107	o	|	|	|	|	0.15
205.167	0.00	0.00	0.107	o	|	|	|	|	0.15
205.250	0.00	0.00	0.107	o	|	|	|	|	0.15
205.333	0.00	0.00	0.107	o	|	|	|	|	0.15
205.417	0.00	0.00	0.107	o	|	|	|	|	0.15
205.500	0.00	0.00	0.107	o	|	|	|	|	0.15

205.583	0.00	0.00	0.107	o	|	|	|	|	0.15
205.667	0.00	0.00	0.107	o	|	|	|	|	0.15
205.750	0.00	0.00	0.107	o	|	|	|	|	0.15
205.833	0.00	0.00	0.107	o	|	|	|	|	0.15
205.917	0.00	0.00	0.107	o	|	|	|	|	0.15
206.000	0.00	0.00	0.107	o	|	|	|	|	0.15
206.083	0.00	0.00	0.107	o	|	|	|	|	0.15
206.167	0.00	0.00	0.107	o	|	|	|	|	0.15
206.250	0.00	0.00	0.107	o	|	|	|	|	0.15
206.333	0.00	0.00	0.107	o	|	|	|	|	0.15
206.417	0.00	0.00	0.107	o	|	|	|	|	0.15
206.500	0.00	0.00	0.107	o	|	|	|	|	0.15
206.583	0.00	0.00	0.107	o	|	|	|	|	0.15
206.667	0.00	0.00	0.107	o	|	|	|	|	0.15
206.750	0.00	0.00	0.107	o	|	|	|	|	0.15
206.833	0.00	0.00	0.107	o	|	|	|	|	0.15
206.917	0.00	0.00	0.107	o	|	|	|	|	0.15
207.000	0.00	0.00	0.107	o	|	|	|	|	0.15
207.083	0.00	0.00	0.107	o	|	|	|	|	0.15
207.167	0.00	0.00	0.107	o	|	|	|	|	0.15
207.250	0.00	0.00	0.107	o	|	|	|	|	0.15
207.333	0.00	0.00	0.107	o	|	|	|	|	0.15
207.417	0.00	0.00	0.107	o	|	|	|	|	0.15
207.500	0.00	0.00	0.107	o	|	|	|	|	0.15
207.583	0.00	0.00	0.107	o	|	|	|	|	0.15
207.667	0.00	0.00	0.107	o	|	|	|	|	0.15
207.750	0.00	0.00	0.107	o	|	|	|	|	0.15
207.833	0.00	0.00	0.107	o	|	|	|	|	0.15
207.917	0.00	0.00	0.107	o	|	|	|	|	0.15
208.000	0.00	0.00	0.106	o	|	|	|	|	0.15
208.083	0.00	0.00	0.106	o	|	|	|	|	0.15
208.167	0.00	0.00	0.106	o	|	|	|	|	0.15
208.250	0.00	0.00	0.106	o	|	|	|	|	0.15
208.333	0.00	0.00	0.106	o	|	|	|	|	0.15
208.417	0.00	0.00	0.106	o	|	|	|	|	0.15
208.500	0.00	0.00	0.106	o	|	|	|	|	0.15
208.583	0.00	0.00	0.106	o	|	|	|	|	0.15
208.667	0.00	0.00	0.106	o	|	|	|	|	0.15
208.750	0.00	0.00	0.106	o	|	|	|	|	0.15
208.833	0.00	0.00	0.106	o	|	|	|	|	0.15
208.917	0.00	0.00	0.106	o	|	|	|	|	0.15
209.000	0.00	0.00	0.106	o	|	|	|	|	0.15
209.083	0.00	0.00	0.106	o	|	|	|	|	0.15
209.167	0.00	0.00	0.106	o	|	|	|	|	0.15
209.250	0.00	0.00	0.106	o	|	|	|	|	0.15
209.333	0.00	0.00	0.106	o	|	|	|	|	0.15
209.417	0.00	0.00	0.106	o	|	|	|	|	0.15
209.500	0.00	0.00	0.106	o	|	|	|	|	0.15
209.583	0.00	0.00	0.106	o	|	|	|	|	0.15
209.667	0.00	0.00	0.106	o	|	|	|	|	0.15
209.750	0.00	0.00	0.106	o	|	|	|	|	0.15
209.833	0.00	0.00	0.106	o	|	|	|	|	0.15
209.917	0.00	0.00	0.106	o	|	|	|	|	0.15
210.000	0.00	0.00	0.106	o	|	|	|	|	0.15
210.083	0.00	0.00	0.106	o	|	|	|	|	0.15
210.167	0.00	0.00	0.106	o	|	|	|	|	0.15
210.250	0.00	0.00	0.106	o	|	|	|	|	0.15
210.333	0.00	0.00	0.106	o	|	|	|	|	0.15
210.417	0.00	0.00	0.106	o	|	|	|	|	0.15
210.500	0.00	0.00	0.106	o	|	|	|	|	0.15
210.583	0.00	0.00	0.106	o	|	|	|	|	0.15
210.667	0.00	0.00	0.106	o	|	|	|	|	0.15
210.750	0.00	0.00	0.106	o	|	|	|	|	0.15
210.833	0.00	0.00	0.106	o	|	|	|	|	0.15
210.917	0.00	0.00	0.106	o	|	|	|	|	0.15
211.000	0.00	0.00	0.106	o	|	|	|	|	0.15
211.083	0.00	0.00	0.106	o	|	|	|	|	0.15
211.167	0.00	0.00	0.106	o	|	|	|	|	0.15
211.250	0.00	0.00	0.106	o	|	|	|	|	0.15
211.333	0.00	0.00	0.106	o	|	|	|	|	0.15
211.417	0.00	0.00	0.106	o	|	|	|	|	0.15
211.500	0.00	0.00	0.106	o	|	|	|	|	0.15
211.583	0.00	0.00	0.106	o	|	|	|	|	0.15
211.667	0.00	0.00	0.106	o	|	|	|	|	0.15
211.750	0.00	0.00	0.106	o	|	|	|	|	0.15

211.833	0.00	0.00	0.106	o	|	|	|	|	0.15
211.917	0.00	0.00	0.106	o	|	|	|	|	0.15
212.000	0.00	0.00	0.106	o	|	|	|	|	0.15
212.083	0.00	0.00	0.106	o	|	|	|	|	0.15
212.167	0.00	0.00	0.106	o	|	|	|	|	0.15
212.250	0.00	0.00	0.106	o	|	|	|	|	0.15
212.333	0.00	0.00	0.106	o	|	|	|	|	0.15
212.417	0.00	0.00	0.106	o	|	|	|	|	0.15
212.500	0.00	0.00	0.106	o	|	|	|	|	0.15
212.583	0.00	0.00	0.105	o	|	|	|	|	0.15
212.667	0.00	0.00	0.105	o	|	|	|	|	0.15
212.750	0.00	0.00	0.105	o	|	|	|	|	0.15
212.833	0.00	0.00	0.105	o	|	|	|	|	0.15
212.917	0.00	0.00	0.105	o	|	|	|	|	0.15
213.000	0.00	0.00	0.105	o	|	|	|	|	0.15
213.083	0.00	0.00	0.105	o	|	|	|	|	0.15
213.167	0.00	0.00	0.105	o	|	|	|	|	0.15
213.250	0.00	0.00	0.105	o	|	|	|	|	0.15
213.333	0.00	0.00	0.105	o	|	|	|	|	0.15
213.417	0.00	0.00	0.105	o	|	|	|	|	0.15
213.500	0.00	0.00	0.105	o	|	|	|	|	0.15
213.583	0.00	0.00	0.105	o	|	|	|	|	0.15
213.667	0.00	0.00	0.105	o	|	|	|	|	0.15
213.750	0.00	0.00	0.105	o	|	|	|	|	0.15
213.833	0.00	0.00	0.105	o	|	|	|	|	0.15
213.917	0.00	0.00	0.105	o	|	|	|	|	0.15
214.000	0.00	0.00	0.105	o	|	|	|	|	0.15
214.083	0.00	0.00	0.105	o	|	|	|	|	0.15
214.167	0.00	0.00	0.105	o	|	|	|	|	0.15
214.250	0.00	0.00	0.105	o	|	|	|	|	0.15
214.333	0.00	0.00	0.105	o	|	|	|	|	0.15
214.417	0.00	0.00	0.105	o	|	|	|	|	0.15
214.500	0.00	0.00	0.105	o	|	|	|	|	0.15
214.583	0.00	0.00	0.105	o	|	|	|	|	0.15
214.667	0.00	0.00	0.105	o	|	|	|	|	0.15
214.750	0.00	0.00	0.105	o	|	|	|	|	0.15
214.833	0.00	0.00	0.105	o	|	|	|	|	0.15
214.917	0.00	0.00	0.105	o	|	|	|	|	0.15
215.000	0.00	0.00	0.105	o	|	|	|	|	0.15
215.083	0.00	0.00	0.105	o	|	|	|	|	0.15
215.167	0.00	0.00	0.105	o	|	|	|	|	0.15
215.250	0.00	0.00	0.105	o	|	|	|	|	0.15
215.333	0.00	0.00	0.105	o	|	|	|	|	0.15
215.417	0.00	0.00	0.105	o	|	|	|	|	0.15
215.500	0.00	0.00	0.105	o	|	|	|	|	0.15
215.583	0.00	0.00	0.105	o	|	|	|	|	0.15
215.667	0.00	0.00	0.105	o	|	|	|	|	0.15
215.750	0.00	0.00	0.105	o	|	|	|	|	0.15
215.833	0.00	0.00	0.105	o	|	|	|	|	0.15
215.917	0.00	0.00	0.105	o	|	|	|	|	0.15
216.000	0.00	0.00	0.105	o	|	|	|	|	0.15
216.083	0.00	0.00	0.105	o	|	|	|	|	0.15
216.167	0.00	0.00	0.105	o	|	|	|	|	0.15
216.250	0.00	0.00	0.105	o	|	|	|	|	0.15
216.333	0.00	0.00	0.105	o	|	|	|	|	0.15
216.417	0.00	0.00	0.105	o	|	|	|	|	0.15
216.500	0.00	0.00	0.105	o	|	|	|	|	0.15
216.583	0.00	0.00	0.105	o	|	|	|	|	0.15
216.667	0.00	0.00	0.105	o	|	|	|	|	0.15
216.750	0.00	0.00	0.105	o	|	|	|	|	0.15
216.833	0.00	0.00	0.105	o	|	|	|	|	0.15
216.917	0.00	0.00	0.105	o	|	|	|	|	0.15
217.000	0.00	0.00	0.105	o	|	|	|	|	0.15
217.083	0.00	0.00	0.105	o	|	|	|	|	0.15
217.167	0.00	0.00	0.105	o	|	|	|	|	0.15
217.250	0.00	0.00	0.105	o	|	|	|	|	0.15
217.333	0.00	0.00	0.105	o	|	|	|	|	0.15
217.417	0.00	0.00	0.105	o	|	|	|	|	0.15
217.500	0.00	0.00	0.105	o	|	|	|	|	0.15
217.583	0.00	0.00	0.105	o	|	|	|	|	0.15
217.667	0.00	0.00	0.105	o	|	|	|	|	0.15
217.750	0.00	0.00	0.105	o	|	|	|	|	0.15
217.833	0.00	0.00	0.105	o	|	|	|	|	0.15
217.917	0.00	0.00	0.105	o	|	|	|	|	0.15
218.000	0.00	0.00	0.105	o	|	|	|	|	0.15

218.083	0.00	0.00	0.105	o	|	|	|	|	0.15
218.167	0.00	0.00	0.105	o	|	|	|	|	0.15
218.250	0.00	0.00	0.105	o	|	|	|	|	0.15
218.333	0.00	0.00	0.105	o	|	|	|	|	0.15
218.417	0.00	0.00	0.105	o	|	|	|	|	0.15
218.500	0.00	0.00	0.105	o	|	|	|	|	0.15
218.583	0.00	0.00	0.105	o	|	|	|	|	0.15
218.667	0.00	0.00	0.105	o	|	|	|	|	0.15
218.750	0.00	0.00	0.105	o	|	|	|	|	0.15
218.833	0.00	0.00	0.105	o	|	|	|	|	0.15
218.917	0.00	0.00	0.105	o	|	|	|	|	0.15
219.000	0.00	0.00	0.105	o	|	|	|	|	0.15
219.083	0.00	0.00	0.105	o	|	|	|	|	0.15
219.167	0.00	0.00	0.105	o	|	|	|	|	0.15
219.250	0.00	0.00	0.104	o	|	|	|	|	0.15
219.333	0.00	0.00	0.104	o	|	|	|	|	0.15
219.417	0.00	0.00	0.104	o	|	|	|	|	0.15
219.500	0.00	0.00	0.104	o	|	|	|	|	0.15
219.583	0.00	0.00	0.104	o	|	|	|	|	0.15
219.667	0.00	0.00	0.104	o	|	|	|	|	0.15
219.750	0.00	0.00	0.104	o	|	|	|	|	0.15
219.833	0.00	0.00	0.104	o	|	|	|	|	0.15
219.917	0.00	0.00	0.104	o	|	|	|	|	0.15
220.000	0.00	0.00	0.104	o	|	|	|	|	0.15
220.083	0.00	0.00	0.104	o	|	|	|	|	0.15
220.167	0.00	0.00	0.104	o	|	|	|	|	0.15
220.250	0.00	0.00	0.104	o	|	|	|	|	0.15
220.333	0.00	0.00	0.104	o	|	|	|	|	0.15
220.417	0.00	0.00	0.104	o	|	|	|	|	0.15
220.500	0.00	0.00	0.104	o	|	|	|	|	0.15
220.583	0.00	0.00	0.104	o	|	|	|	|	0.15
220.667	0.00	0.00	0.104	o	|	|	|	|	0.15
220.750	0.00	0.00	0.104	o	|	|	|	|	0.15
220.833	0.00	0.00	0.104	o	|	|	|	|	0.15
220.917	0.00	0.00	0.104	o	|	|	|	|	0.15
221.000	0.00	0.00	0.104	o	|	|	|	|	0.15
221.083	0.00	0.00	0.104	o	|	|	|	|	0.15
221.167	0.00	0.00	0.104	o	|	|	|	|	0.15
221.250	0.00	0.00	0.104	o	|	|	|	|	0.15
221.333	0.00	0.00	0.104	o	|	|	|	|	0.15
221.417	0.00	0.00	0.104	o	|	|	|	|	0.15
221.500	0.00	0.00	0.104	o	|	|	|	|	0.15
221.583	0.00	0.00	0.104	o	|	|	|	|	0.15
221.667	0.00	0.00	0.104	o	|	|	|	|	0.15
221.750	0.00	0.00	0.104	o	|	|	|	|	0.15
221.833	0.00	0.00	0.104	o	|	|	|	|	0.15
221.917	0.00	0.00	0.104	o	|	|	|	|	0.15
222.000	0.00	0.00	0.104	o	|	|	|	|	0.15
222.083	0.00	0.00	0.104	o	|	|	|	|	0.15
222.167	0.00	0.00	0.104	o	|	|	|	|	0.15
222.250	0.00	0.00	0.104	o	|	|	|	|	0.15
222.333	0.00	0.00	0.104	o	|	|	|	|	0.15
222.417	0.00	0.00	0.104	o	|	|	|	|	0.15
222.500	0.00	0.00	0.104	o	|	|	|	|	0.15
222.583	0.00	0.00	0.104	o	|	|	|	|	0.15
222.667	0.00	0.00	0.104	o	|	|	|	|	0.15
222.750	0.00	0.00	0.104	o	|	|	|	|	0.15
222.833	0.00	0.00	0.104	o	|	|	|	|	0.15
222.917	0.00	0.00	0.104	o	|	|	|	|	0.15
223.000	0.00	0.00	0.104	o	|	|	|	|	0.15
223.083	0.00	0.00	0.104	o	|	|	|	|	0.15
223.167	0.00	0.00	0.104	o	|	|	|	|	0.15
223.250	0.00	0.00	0.104	o	|	|	|	|	0.15
223.333	0.00	0.00	0.104	o	|	|	|	|	0.15
223.417	0.00	0.00	0.104	o	|	|	|	|	0.15
223.500	0.00	0.00	0.104	o	|	|	|	|	0.15
223.583	0.00	0.00	0.104	o	|	|	|	|	0.15
223.667	0.00	0.00	0.104	o	|	|	|	|	0.15
223.750	0.00	0.00	0.104	o	|	|	|	|	0.15
223.833	0.00	0.00	0.104	o	|	|	|	|	0.15
223.917	0.00	0.00	0.104	o	|	|	|	|	0.15
224.000	0.00	0.00	0.104	o	|	|	|	|	0.15
224.083	0.00	0.00	0.104	o	|	|	|	|	0.15
224.167	0.00	0.00	0.104	o	|	|	|	|	0.15
224.250	0.00	0.00	0.104	o	|	|	|	|	0.15

```
224.333    0.00    0.00      0.104  o       |       |       |       |     0.15

        Remaining water in basin =    0.10 (Ac.Ft)

        ****************************HYDROGRAPH DATA****************************
                      Number of intervals =  2692
                      Time interval =    5.0 (Min.)
                      Maximum/Peak flow rate =        3.182 (CFS)
                      Total volume =       8.219 (Ac.Ft)
               Status of hydrographs being held in storage
                         Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
               Peak (CFS)      0.000     0.000     0.000     0.000     0.000
               Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
        ***********************************************************************

        ---------------------------------------------------------------------
```

BASIN ROUTING
100-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 02/17/22

EXETER BSS BUILDING 3
100 YR 24 HR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH100YR24100.rte

**********HYDROGRAPH DATA**********

Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 25.340 (CFS)
Total volume = 13.670 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

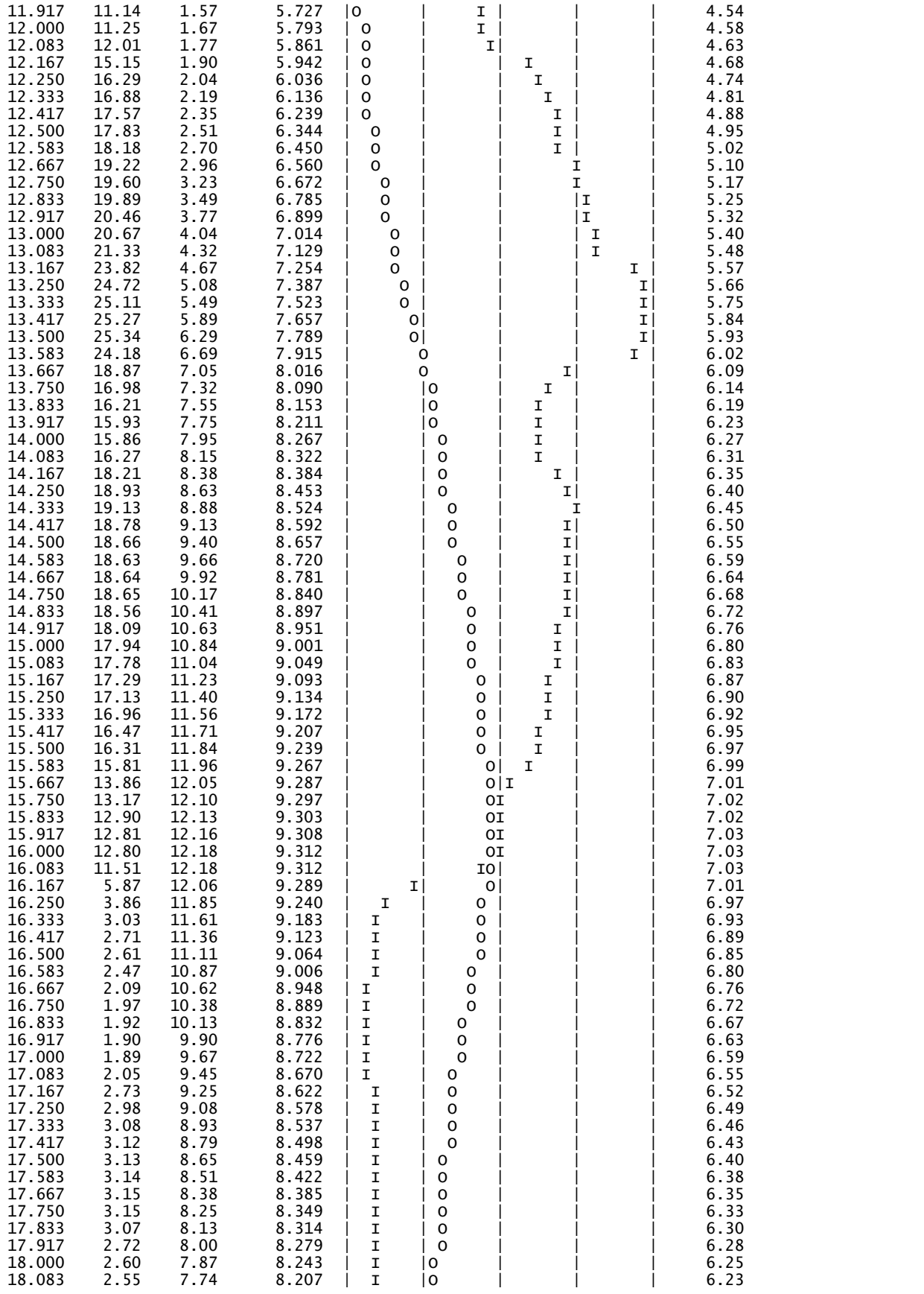
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
2.000	2.065	0.482	2.063	2.067
3.000	3.453	0.598	3.451	3.455
3.490	4.167	0.647	4.165	4.169
3.500	4.182	0.720	4.180	4.184
4.000	4.923	1.210	4.919	4.927
4.460	5.610	1.446	5.605	5.615
4.500	5.670	1.483	5.665	5.675
5.000	6.418	2.619	6.409	6.427
5.500	7.159	4.388	7.144	7.174
6.000	7.887	6.587	7.864	7.910
6.500	8.595	9.138	8.564	8.626
7.000	9.275	11.995	9.234	9.316
7.500	9.916	15.127	9.864	9.968
8.000	10.499	18.511	10.435	10.563
8.500	10.984	22.128	10.908	11.060
9.000	11.340	25.965	11.251	11.429

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 6.3 12.67 19.00 25.34	Depth (Ft.)
0.083	0.16	0.00	0.001	O	0.00
0.167	0.85	0.00	0.004	OI	0.01
0.250	1.09	0.00	0.011	OI	0.01
0.333	1.27	0.00	0.019	OI	0.03
0.417	1.66	0.00	0.029	O I	0.04
0.500	1.79	0.00	0.041	O I	0.06
0.583	1.85	0.00	0.053	O I	0.07
0.667	1.88	0.00	0.066	O I	0.09
0.750	1.88	0.00	0.079	O I	0.11
0.833	1.96	0.00	0.092	O I	0.13
0.917	2.31	0.00	0.107	O I	0.15
1.000	2.43	0.02	0.123	O I	0.17
1.083	2.41	0.03	0.140	O I	0.20
1.167	2.08	0.04	0.155	O I	0.22
1.250	1.96	0.05	0.169	O I	0.24
1.333	1.92	0.07	0.182	O I	0.25
1.417	1.90	0.08	0.194	O I	0.27
1.500	1.89	0.09	0.207	O I	0.29
1.583	1.89	0.10	0.219	O I	0.31
1.667	1.89	0.11	0.231	O I	0.32
1.750	1.89	0.12	0.244	O I	0.34
1.833	1.97	0.13	0.256	O I	0.36
1.917	2.31	0.14	0.270	O I	0.38
2.000	2.43	0.15	0.285	O I	0.40
2.083	2.49	0.17	0.301	O I	0.42
2.167	2.50	0.18	0.317	O I	0.45
2.250	2.51	0.19	0.333	O I	0.47
2.333	2.51	0.21	0.349	O I	0.49
2.417	2.52	0.21	0.365	O I	0.51
2.500	2.52	0.22	0.381	O I	0.53
2.583	2.59	0.22	0.397	O I	0.54
2.667	2.94	0.22	0.414	O I	0.56
2.750	3.06	0.23	0.433	O I	0.58
2.833	3.11	0.23	0.453	O I	0.60
2.917	3.13	0.24	0.473	O I	0.62
3.000	3.14	0.24	0.493	O I	0.64
3.083	3.14	0.25	0.513	O I	0.66
3.167	3.15	0.25	0.533	O I	0.68
3.250	3.15	0.26	0.553	O I	0.70
3.333	3.15	0.26	0.573	O I	0.72
3.417	3.15	0.27	0.592	O I	0.74
3.500	3.15	0.27	0.612	O I	0.76
3.583	3.15	0.28	0.632	O I	0.78
3.667	3.15	0.28	0.652	O I	0.80
3.750	3.15	0.29	0.671	O I	0.83
3.833	3.22	0.29	0.691	O I	0.85
3.917	3.57	0.30	0.713	O I	0.87
4.000	3.69	0.30	0.736	O I	0.89
4.083	3.74	0.31	0.759	O I	0.92
4.167	3.76	0.31	0.783	O I	0.94
4.250	3.77	0.32	0.807	O I	0.96
4.333	3.85	0.32	0.831	O I	0.99
4.417	4.20	0.33	0.856	O I	1.01
4.500	4.32	0.33	0.883	O I	1.03
4.583	4.37	0.34	0.911	O I	1.06
4.667	4.39	0.34	0.939	O I	1.08
4.750	4.40	0.34	0.967	O I	1.10
4.833	4.48	0.35	0.995	O I	1.13
4.917	4.83	0.35	1.025	O I	1.15
5.000	4.95	0.35	1.056	O I	1.18
5.083	4.84	0.36	1.087	O I	1.20
5.167	4.17	0.36	1.116	O I	1.22
5.250	3.93	0.36	1.141	O I	1.25
5.333	3.91	0.37	1.166	O I	1.27
5.417	4.22	0.37	1.191	O I	1.29
5.500	4.33	0.37	1.218	O I	1.31
5.583	4.45	0.38	1.246	O I	1.33

5.667	4.82	0.38	1.275	o	I	|	|	|	1.35
5.750	4.94	0.39	1.306	o	I	|	|	|	1.38
5.833	5.00	0.39	1.337	o	I	|	|	|	1.41
5.917	5.02	0.39	1.369	o	I	|	|	|	1.43
6.000	5.03	0.40	1.401	o	I	|	|	|	1.46
6.083	5.11	0.40	1.433	o	I	|	|	|	1.48
6.167	5.46	0.41	1.467	o	I	|	|	|	1.51
6.250	5.58	0.41	1.502	o	I	|	|	|	1.54
6.333	5.63	0.42	1.538	o	I	|	|	|	1.57
6.417	5.65	0.42	1.574	o	I	|	|	|	1.60
6.500	5.66	0.42	1.610	o	I	|	|	|	1.63
6.583	5.74	0.43	1.646	o	I	|	|	|	1.66
6.667	6.09	0.43	1.684	o	I	|	|	|	1.69
6.750	6.21	0.44	1.723	o	I	|	|	|	1.72
6.833	6.26	0.44	1.763	o	I	|	|	|	1.75
6.917	6.28	0.45	1.803	o	I	|	|	|	1.79
7.000	6.29	0.45	1.843	o	I	|	|	|	1.82
7.083	6.29	0.46	1.883	o	I	|	|	|	1.85
7.167	6.29	0.46	1.924	o	I	|	|	|	1.88
7.250	6.29	0.47	1.964	o	I	|	|	|	1.92
7.333	6.37	0.47	2.004	o	I	|	|	|	1.95
7.417	6.71	0.48	2.046	o	I	|	|	|	1.98
7.500	6.84	0.48	2.089	o	I	|	|	|	2.02
7.583	6.97	0.49	2.133	o	I	|	|	|	2.05
7.667	7.33	0.49	2.179	o	I	|	|	|	2.08
7.750	7.46	0.50	2.227	o	I	|	|	|	2.12
7.833	7.59	0.50	2.275	o	I	|	|	|	2.15
7.917	7.96	0.50	2.325	o	I	|	|	|	2.19
8.000	8.09	0.51	2.377	o	I	|	|	|	2.22
8.083	8.30	0.51	2.430	o	I	|	|	|	2.26
8.167	9.01	0.52	2.486	o	I	|	|	|	2.30
8.250	9.27	0.52	2.545	o	I	|	|	|	2.35
8.333	9.37	0.53	2.606	o	I	|	|	|	2.39
8.417	9.41	0.53	2.667	o	I	|	|	|	2.43
8.500	9.43	0.54	2.728	o	I	|	|	|	2.48
8.583	9.51	0.54	2.790	o	I	|	|	|	2.52
8.667	9.86	0.55	2.853	o	I	|	|	|	2.57
8.750	9.98	0.55	2.917	o	I	|	|	|	2.61
8.833	10.11	0.56	2.983	o	I	|	|	|	2.66
8.917	10.48	0.56	3.050	o	I	|	|	|	2.71
9.000	10.61	0.57	3.118	o	I	|	|	|	2.76
9.083	10.82	0.58	3.188	o	I	|	|	|	2.81
9.167	11.53	0.58	3.261	o	I	|	|	|	2.86
9.250	11.78	0.59	3.337	o	I	|	|	|	2.92
9.333	11.97	0.59	3.415	o	I	|	|	|	2.97
9.417	12.35	0.60	3.495	o	I	|	|	|	3.03
9.500	12.49	0.61	3.576	o	I	|	|	|	3.08
9.583	12.63	0.61	3.658	o	I	|	|	|	3.14
9.667	12.99	0.62	3.742	o	I	|	|	|	3.20
9.750	13.12	0.62	3.828	o	I	|	|	|	3.26
9.833	13.26	0.63	3.915	o	I	|	|	|	3.32
9.917	13.62	0.64	4.003	o	I	|	|	|	3.38
10.000	13.75	0.64	4.093	o	I	|	|	|	3.44
10.083	13.26	0.72	4.181	o	I	|	|	|	3.50
10.167	10.87	0.77	4.259	o	I	|	|	|	3.55
10.250	10.01	0.81	4.325	o	I	|	|	|	3.60
10.333	9.65	0.86	4.387	o	I	|	|	|	3.64
10.417	9.52	0.90	4.447	o	I	|	|	|	3.68
10.500	9.48	0.93	4.506	o	I	|	|	|	3.72
10.583	9.84	0.97	4.566	o	I	|	|	|	3.76
10.667	11.55	1.02	4.633	o	I	|	|	|	3.80
10.750	12.17	1.07	4.708	o	I	|	|	|	3.85
10.833	12.43	1.12	4.785	o	I	|	|	|	3.91
10.917	12.52	1.17	4.863	o	I	|	|	|	3.96
11.000	12.55	1.22	4.941	o	I	|	|	|	4.01
11.083	12.49	1.24	5.019	o	I	|	|	|	4.06
11.167	12.16	1.27	5.095	o	I	|	|	|	4.12
11.250	12.04	1.29	5.170	o	I	|	|	|	4.17
11.333	11.98	1.32	5.243	o	I	|	|	|	4.21
11.417	11.96	1.35	5.317	o	I	|	|	|	4.26
11.500	11.96	1.37	5.390	o	I	|	|	|	4.31
11.583	11.80	1.40	5.462	o	I	|	|	|	4.36
11.667	11.11	1.42	5.531	o	I	|	|	|	4.41
11.750	10.86	1.44	5.597	o	I	|	|	|	4.45
11.833	10.84	1.48	5.661	o	I	|	|	|	4.49



18.167	2.53	7.61	8.171	| I |o	|	|	|	6.20
18.250	2.52	7.49	8.137	| I |o	|	|	|	6.18
18.333	2.52	7.36	8.103	| I |o	|	|	|	6.15
18.417	2.52	7.25	8.070	| I |o	|	|	|	6.13
18.500	2.52	7.13	8.038	| I |o	|	|	|	6.11
18.583	2.44	7.02	8.006	| I o	|	|	|	6.08
18.667	2.09	6.90	7.974	| I o	|	|	|	6.06
18.750	1.97	6.78	7.941	| I o	|	|	|	6.04
18.833	1.84	6.66	7.907	| I o	|	|	|	6.01
18.917	1.48	6.55	7.873	|I o	|	|	|	5.99
19.000	1.35	6.44	7.838	|I o	|	|	|	5.97
19.083	1.37	6.34	7.804	|I o	|	|	|	5.94
19.167	1.69	6.24	7.771	| I o|	|	|	|	5.92
19.250	1.81	6.14	7.740	| I o|	|	|	|	5.90
19.333	1.94	6.06	7.711	| I o|	|	|	|	5.88
19.417	2.30	5.98	7.684	| I o|	|	|	|	5.86
19.500	2.43	5.90	7.660	| I o|	|	|	|	5.84
19.583	2.40	5.83	7.636	| I o|	|	|	|	5.83
19.667	2.08	5.76	7.612	| I o|	|	|	|	5.81
19.750	1.96	5.68	7.586	| I o|	|	|	|	5.79
19.833	1.84	5.60	7.560	| I o|	|	|	|	5.78
19.917	1.48	5.52	7.534	|I o |	|	|	|	5.76
20.000	1.35	5.43	7.506	|I o |	|	|	|	5.74
20.083	1.37	5.35	7.478	|I o |	|	|	|	5.72
20.167	1.69	5.27	7.452	| I o |	|	|	|	5.70
20.250	1.81	5.20	7.428	| I o |	|	|	|	5.68
20.333	1.86	5.13	7.405	| I o |	|	|	|	5.67
20.417	1.88	5.06	7.383	| I o |	|	|	|	5.65
20.500	1.88	5.00	7.361	| I o |	|	|	|	5.64
20.583	1.89	4.93	7.340	| I o |	|	|	|	5.62
20.667	1.89	4.87	7.319	| I o |	|	|	|	5.61
20.750	1.89	4.81	7.299	| I o |	|	|	|	5.60
20.833	1.81	4.75	7.278	| I o |	|	|	|	5.58
20.917	1.46	4.68	7.257	|I o |	|	|	|	5.57
21.000	1.34	4.62	7.235	|I o |	|	|	|	5.55
21.083	1.37	4.55	7.213	|I o |	|	|	|	5.54
21.167	1.69	4.49	7.192	| I o |	|	|	|	5.52
21.250	1.81	4.43	7.173	| I o |	|	|	|	5.51
21.333	1.78	4.38	7.155	| I o |	|	|	|	5.50
21.417	1.45	4.33	7.136	|I o |	|	|	|	5.48
21.500	1.33	4.29	7.116	|I o |	|	|	|	5.47
21.583	1.37	4.24	7.096	|I o |	|	|	|	5.46
21.667	1.69	4.19	7.078	| I o |	|	|	|	5.45
21.750	1.81	4.15	7.061	| I o |	|	|	|	5.43
21.833	1.78	4.12	7.045	| I o |	|	|	|	5.42
21.917	1.45	4.08	7.028	|I o |	|	|	|	5.41
22.000	1.33	4.03	7.010	|I o |	|	|	|	5.40
22.083	1.37	3.99	6.991	|I o |	|	|	|	5.39
22.167	1.69	3.95	6.974	| I o |	|	|	|	5.38
22.250	1.81	3.91	6.959	| I o |	|	|	|	5.37
22.333	1.78	3.88	6.945	| I o |	|	|	|	5.36
22.417	1.45	3.84	6.930	|I o |	|	|	|	5.35
22.500	1.33	3.80	6.913	|I o |	|	|	|	5.33
22.583	1.29	3.76	6.896	|I o |	|	|	|	5.32
22.667	1.27	3.72	6.879	|I o |	|	|	|	5.31
22.750	1.26	3.68	6.862	|I o |	|	|	|	5.30
22.833	1.26	3.64	6.846	|I o |	|	|	|	5.29
22.917	1.26	3.60	6.829	|I o |	|	|	|	5.28
23.000	1.26	3.56	6.813	|I o |	|	|	|	5.27
23.083	1.26	3.53	6.798	|I o |	|	|	|	5.26
23.167	1.26	3.49	6.782	|I o |	|	|	|	5.25
23.250	1.26	3.45	6.767	|I o |	|	|	|	5.24
23.333	1.26	3.42	6.752	|I o |	|	|	|	5.23
23.417	1.26	3.38	6.737	|I o |	|	|	|	5.22
23.500	1.26	3.35	6.723	|I o |	|	|	|	5.21
23.583	1.26	3.31	6.708	|I o |	|	|	|	5.20
23.667	1.26	3.28	6.694	|I o |	|	|	|	5.19
23.750	1.26	3.25	6.681	|I o |	|	|	|	5.18
23.833	1.26	3.21	6.667	|I o |	|	|	|	5.17
23.917	1.26	3.18	6.654	|I o |	|	|	|	5.16
24.000	1.26	3.15	6.641	|I o |	|	|	|	5.15
24.083	1.10	3.12	6.627	|I o |	|	|	|	5.14
24.167	0.41	3.08	6.611	I o |	|	|	|	5.13
24.250	0.16	3.03	6.592	I o |	|	|	|	5.12
24.333	0.06	2.99	6.572	I o |	|	|	|	5.10

24.417	0.02	2.94	6.552	I O	|	|	|	5.09
24.500	0.01	2.89	6.532	I O	|	|	|	5.08
24.583	0.00	2.84	6.512	I O	|	|	|	5.06
24.667	0.00	2.80	6.493	I O	|	|	|	5.05
24.750	0.00	2.75	6.474	I O	|	|	|	5.04
24.833	0.00	2.71	6.455	I O	|	|	|	5.02
24.917	0.00	2.66	6.436	I O	|	|	|	5.01
25.000	0.00	2.62	6.418	I O	|	|	|	5.00
25.083	0.00	2.59	6.400	I O	|	|	|	4.99
25.167	0.00	2.57	6.382	I O	|	|	|	4.98
25.250	0.00	2.54	6.365	I O	|	|	|	4.96
25.333	0.00	2.51	6.347	I O	|	|	|	4.95
25.417	0.00	2.49	6.330	I O	|	|	|	4.94
25.500	0.00	2.46	6.313	I O	|	|	|	4.93
25.583	0.00	2.43	6.296	I O	|	|	|	4.92
25.667	0.00	2.41	6.280	I O	|	|	|	4.91
25.750	0.00	2.38	6.263	I O	|	|	|	4.90
25.833	0.00	2.36	6.247	I O	|	|	|	4.89
25.917	0.00	2.33	6.231	I O	|	|	|	4.87
26.000	0.00	2.31	6.215	I O	|	|	|	4.86
26.083	0.00	2.29	6.199	I O	|	|	|	4.85
26.167	0.00	2.26	6.183	I O	|	|	|	4.84
26.250	0.00	2.24	6.168	I O	|	|	|	4.83
26.333	0.00	2.22	6.152	I O	|	|	|	4.82
26.417	0.00	2.19	6.137	I O	|	|	|	4.81
26.500	0.00	2.17	6.122	I O	|	|	|	4.80
26.583	0.00	2.15	6.107	I O	|	|	|	4.79
26.667	0.00	2.12	6.093	I O	|	|	|	4.78
26.750	0.00	2.10	6.078	I O	|	|	|	4.77
26.833	0.00	2.08	6.064	I O	|	|	|	4.76
26.917	0.00	2.06	6.049	I O	|	|	|	4.75
27.000	0.00	2.04	6.035	I O	|	|	|	4.74
27.083	0.00	2.02	6.021	I O	|	|	|	4.73
27.167	0.00	2.00	6.008	I O	|	|	|	4.73
27.250	0.00	1.97	5.994	I O	|	|	|	4.72
27.333	0.00	1.95	5.980	I O	|	|	|	4.71
27.417	0.00	1.93	5.967	I O	|	|	|	4.70
27.500	0.00	1.91	5.954	I O	|	|	|	4.69
27.583	0.00	1.89	5.941	I O	|	|	|	4.68
27.667	0.00	1.87	5.928	I O	|	|	|	4.67
27.750	0.00	1.85	5.915	I O	|	|	|	4.66
27.833	0.00	1.84	5.902	I O	|	|	|	4.66
27.917	0.00	1.82	5.889	I O	|	|	|	4.65
28.000	0.00	1.80	5.877	I O	|	|	|	4.64
28.083	0.00	1.78	5.865	I O	|	|	|	4.63
28.167	0.00	1.76	5.853	I O	|	|	|	4.62
28.250	0.00	1.74	5.840	I O	|	|	|	4.61
28.333	0.00	1.72	5.829	I O	|	|	|	4.61
28.417	0.00	1.71	5.817	I O	|	|	|	4.60
28.500	0.00	1.69	5.805	I O	|	|	|	4.59
28.583	0.00	1.67	5.793	I O	|	|	|	4.58
28.667	0.00	1.65	5.782	I O	|	|	|	4.57
28.750	0.00	1.64	5.771	I O	|	|	|	4.57
28.833	0.00	1.62	5.759	I O	|	|	|	4.56
28.917	0.00	1.60	5.748	I O	|	|	|	4.55
29.000	0.00	1.59	5.737	I O	|	|	|	4.55
29.083	0.00	1.57	5.727	IO	|	|	|	4.54
29.167	0.00	1.55	5.716	IO	|	|	|	4.53
29.250	0.00	1.54	5.705	IO	|	|	|	4.52
29.333	0.00	1.52	5.695	IO	|	|	|	4.52
29.417	0.00	1.50	5.684	IO	|	|	|	4.51
29.500	0.00	1.49	5.674	IO	|	|	|	4.50
29.583	0.00	1.48	5.664	IO	|	|	|	4.50
29.667	0.00	1.47	5.654	IO	|	|	|	4.49
29.750	0.00	1.47	5.643	IO	|	|	|	4.48
29.833	0.00	1.46	5.633	IO	|	|	|	4.48
29.917	0.00	1.45	5.623	IO	|	|	|	4.47
30.000	0.00	1.45	5.613	IO	|	|	|	4.46
30.083	0.00	1.44	5.603	IO	|	|	|	4.46
30.167	0.00	1.44	5.593	IO	|	|	|	4.45
30.250	0.00	1.44	5.584	IO	|	|	|	4.44
30.333	0.00	1.43	5.574	IO	|	|	|	4.44
30.417	0.00	1.43	5.564	IO	|	|	|	4.43
30.500	0.00	1.43	5.554	IO	|	|	|	4.42
30.583	0.00	1.42	5.544	IO	|	|	|	4.42

30.667	0.00	1.42	5.534	IO					4.41
30.750	0.00	1.42	5.525	IO					4.40
30.833	0.00	1.41	5.515	IO					4.40
30.917	0.00	1.41	5.505	IO					4.39
31.000	0.00	1.41	5.495	IO					4.38
31.083	0.00	1.40	5.486	IO					4.38
31.167	0.00	1.40	5.476	IO					4.37
31.250	0.00	1.40	5.466	IO					4.36
31.333	0.00	1.39	5.457	IO					4.36
31.417	0.00	1.39	5.447	IO					4.35
31.500	0.00	1.39	5.438	IO					4.34
31.583	0.00	1.38	5.428	IO					4.34
31.667	0.00	1.38	5.419	IO					4.33
31.750	0.00	1.38	5.409	IO					4.33
31.833	0.00	1.37	5.400	IO					4.32
31.917	0.00	1.37	5.390	IO					4.31
32.000	0.00	1.37	5.381	IO					4.31
32.083	0.00	1.36	5.371	IO					4.30
32.167	0.00	1.36	5.362	IO					4.29
32.250	0.00	1.36	5.353	IO					4.29
32.333	0.00	1.35	5.343	IO					4.28
32.417	0.00	1.35	5.334	IO					4.28
32.500	0.00	1.35	5.325	IO					4.27
32.583	0.00	1.34	5.315	IO					4.26
32.667	0.00	1.34	5.306	IO					4.26
32.750	0.00	1.34	5.297	IO					4.25
32.833	0.00	1.34	5.288	IO					4.24
32.917	0.00	1.33	5.279	IO					4.24
33.000	0.00	1.33	5.269	IO					4.23
33.083	0.00	1.33	5.260	IO					4.23
33.167	0.00	1.32	5.251	IO					4.22
33.250	0.00	1.32	5.242	IO					4.21
33.333	0.00	1.32	5.233	IO					4.21
33.417	0.00	1.31	5.224	IO					4.20
33.500	0.00	1.31	5.215	IO					4.20
33.583	0.00	1.31	5.206	IO					4.19
33.667	0.00	1.30	5.197	IO					4.18
33.750	0.00	1.30	5.188	IO					4.18
33.833	0.00	1.30	5.179	IO					4.17
33.917	0.00	1.29	5.170	IO					4.17
34.000	0.00	1.29	5.161	IO					4.16
34.083	0.00	1.29	5.152	IO					4.15
34.167	0.00	1.29	5.143	IO					4.15
34.250	0.00	1.28	5.134	IO					4.14
34.333	0.00	1.28	5.126	IO					4.14
34.417	0.00	1.28	5.117	IO					4.13
34.500	0.00	1.27	5.108	IO					4.12
34.583	0.00	1.27	5.099	IO					4.12
34.667	0.00	1.27	5.091	IO					4.11
34.750	0.00	1.26	5.082	IO					4.11
34.833	0.00	1.26	5.073	IO					4.10
34.917	0.00	1.26	5.064	IO					4.09
35.000	0.00	1.26	5.056	IO					4.09
35.083	0.00	1.25	5.047	IO					4.08
35.167	0.00	1.25	5.039	IO					4.08
35.250	0.00	1.25	5.030	IO					4.07
35.333	0.00	1.24	5.021	IO					4.07
35.417	0.00	1.24	5.013	IO					4.06
35.500	0.00	1.24	5.004	IO					4.05
35.583	0.00	1.24	4.996	IO					4.05
35.667	0.00	1.23	4.987	IO					4.04
35.750	0.00	1.23	4.979	IO					4.04
35.833	0.00	1.23	4.970	IO					4.03
35.917	0.00	1.22	4.962	IO					4.03
36.000	0.00	1.22	4.954	IO					4.02
36.083	0.00	1.22	4.945	IO					4.01
36.167	0.00	1.21	4.937	IO					4.01
36.250	0.00	1.21	4.928	IO					4.00
36.333	0.00	1.21	4.920	IO					4.00
36.417	0.00	1.20	4.912	IO					3.99
36.500	0.00	1.20	4.903	IO					3.99
36.583	0.00	1.19	4.895	IO					3.98
36.667	0.00	1.19	4.887	IO					3.98
36.750	0.00	1.18	4.879	IO					3.97
36.833	0.00	1.18	4.871	IO					3.96

36.917	0.00	1.17	4.863	IO					3.96
37.000	0.00	1.16	4.855	IO					3.95
37.083	0.00	1.16	4.847	IO					3.95
37.167	0.00	1.15	4.839	IO					3.94
37.250	0.00	1.15	4.831	IO					3.94
37.333	0.00	1.14	4.823	IO					3.93
37.417	0.00	1.14	4.815	IO					3.93
37.500	0.00	1.13	4.807	IO					3.92
37.583	0.00	1.13	4.799	IO					3.92
37.667	0.00	1.12	4.792	IO					3.91
37.750	0.00	1.12	4.784	IO					3.91
37.833	0.00	1.11	4.776	IO					3.90
37.917	0.00	1.11	4.769	IO					3.90
38.000	0.00	1.10	4.761	IO					3.89
38.083	0.00	1.10	4.753	IO					3.89
38.167	0.00	1.09	4.746	IO					3.88
38.250	0.00	1.09	4.738	IO					3.88
38.333	0.00	1.08	4.731	IO					3.87
38.417	0.00	1.08	4.723	IO					3.87
38.500	0.00	1.07	4.716	IO					3.86
38.583	0.00	1.07	4.709	IO					3.86
38.667	0.00	1.06	4.701	IO					3.85
38.750	0.00	1.06	4.694	IO					3.85
38.833	0.00	1.05	4.687	IO					3.84
38.917	0.00	1.05	4.680	IO					3.84
39.000	0.00	1.04	4.672	IO					3.83
39.083	0.00	1.04	4.665	IO					3.83
39.167	0.00	1.03	4.658	IO					3.82
39.250	0.00	1.03	4.651	IO					3.82
39.333	0.00	1.03	4.644	IO					3.81
39.417	0.00	1.02	4.637	IO					3.81
39.500	0.00	1.02	4.630	IO					3.80
39.583	0.00	1.01	4.623	IO					3.80
39.667	0.00	1.01	4.616	IO					3.79
39.750	0.00	1.00	4.609	IO					3.79
39.833	0.00	1.00	4.602	IO					3.78
39.917	0.00	0.99	4.595	IO					3.78
40.000	0.00	0.99	4.588	IO					3.77
40.083	0.00	0.98	4.582	IO					3.77
40.167	0.00	0.98	4.575	IO					3.77
40.250	0.00	0.98	4.568	IO					3.76
40.333	0.00	0.97	4.561	IO					3.76
40.417	0.00	0.97	4.555	IO					3.75
40.500	0.00	0.96	4.548	IO					3.75
40.583	0.00	0.96	4.541	IO					3.74
40.667	0.00	0.95	4.535	IO					3.74
40.750	0.00	0.95	4.528	IO					3.73
40.833	0.00	0.94	4.522	IO					3.73
40.917	0.00	0.94	4.515	IO					3.72
41.000	0.00	0.94	4.509	IO					3.72
41.083	0.00	0.93	4.502	IO					3.72
41.167	0.00	0.93	4.496	IO					3.71
41.250	0.00	0.92	4.490	IO					3.71
41.333	0.00	0.92	4.483	IO					3.70
41.417	0.00	0.92	4.477	IO					3.70
41.500	0.00	0.91	4.471	IO					3.69
41.583	0.00	0.91	4.464	IO					3.69
41.667	0.00	0.90	4.458	IO					3.69
41.750	0.00	0.90	4.452	IO					3.68
41.833	0.00	0.89	4.446	IO					3.68
41.917	0.00	0.89	4.440	IO					3.67
42.000	0.00	0.89	4.434	IO					3.67
42.083	0.00	0.88	4.427	IO					3.67
42.167	0.00	0.88	4.421	IO					3.66
42.250	0.00	0.87	4.415	IO					3.66
42.333	0.00	0.87	4.409	IO					3.65
42.417	0.00	0.87	4.403	IO					3.65
42.500	0.00	0.86	4.397	IO					3.65
42.583	0.00	0.86	4.391	IO					3.64
42.667	0.00	0.85	4.386	IO					3.64
42.750	0.00	0.85	4.380	IO					3.63
42.833	0.00	0.85	4.374	IO					3.63
42.917	0.00	0.84	4.368	IO					3.63
43.000	0.00	0.84	4.362	IO					3.62
43.083	0.00	0.84	4.356	IO					3.62

43.167	0.00	0.83	4.351	IO					3.61
43.250	0.00	0.83	4.345	IO					3.61
43.333	0.00	0.82	4.339	IO					3.61
43.417	0.00	0.82	4.334	IO					3.60
43.500	0.00	0.82	4.328	IO					3.60
43.583	0.00	0.81	4.322	IO					3.59
43.667	0.00	0.81	4.317	IO					3.59
43.750	0.00	0.81	4.311	IO					3.59
43.833	0.00	0.80	4.306	IO					3.58
43.917	0.00	0.80	4.300	IO					3.58
44.000	0.00	0.79	4.295	IO					3.58
44.083	0.00	0.79	4.289	O					3.57
44.167	0.00	0.79	4.284	O					3.57
44.250	0.00	0.78	4.278	O					3.57
44.333	0.00	0.78	4.273	O					3.56
44.417	0.00	0.78	4.268	O					3.56
44.500	0.00	0.77	4.262	O					3.55
44.583	0.00	0.77	4.257	O					3.55
44.667	0.00	0.77	4.252	O					3.55
44.750	0.00	0.76	4.246	O					3.54
44.833	0.00	0.76	4.241	O					3.54
44.917	0.00	0.76	4.236	O					3.54
45.000	0.00	0.75	4.231	O					3.53
45.083	0.00	0.75	4.226	O					3.53
45.167	0.00	0.75	4.221	O					3.53
45.250	0.00	0.74	4.215	O					3.52
45.333	0.00	0.74	4.210	O					3.52
45.417	0.00	0.74	4.205	O					3.52
45.500	0.00	0.73	4.200	O					3.51
45.583	0.00	0.73	4.195	O					3.51
45.667	0.00	0.73	4.190	O					3.51
45.750	0.00	0.72	4.185	O					3.50
45.833	0.00	0.71	4.180	O					3.50
45.917	0.00	0.69	4.175	O					3.50
46.000	0.00	0.67	4.171	O					3.49
46.083	0.00	0.65	4.166	O					3.49
46.167	0.00	0.65	4.162	O					3.49
46.250	0.00	0.65	4.157	O					3.48
46.333	0.00	0.65	4.153	O					3.48
46.417	0.00	0.65	4.148	O					3.48
46.500	0.00	0.65	4.144	O					3.47
46.583	0.00	0.65	4.140	O					3.47
46.667	0.00	0.64	4.135	O					3.47
46.750	0.00	0.64	4.131	O					3.47
46.833	0.00	0.64	4.126	O					3.46
46.917	0.00	0.64	4.122	O					3.46
47.000	0.00	0.64	4.117	O					3.46
47.083	0.00	0.64	4.113	O					3.45
47.167	0.00	0.64	4.108	O					3.45
47.250	0.00	0.64	4.104	O					3.45
47.333	0.00	0.64	4.100	O					3.44
47.417	0.00	0.64	4.095	O					3.44
47.500	0.00	0.64	4.091	O					3.44
47.583	0.00	0.64	4.086	O					3.43
47.667	0.00	0.64	4.082	O					3.43
47.750	0.00	0.64	4.078	O					3.43
47.833	0.00	0.64	4.073	O					3.43
47.917	0.00	0.64	4.069	O					3.42
48.000	0.00	0.64	4.064	O					3.42
48.083	0.00	0.64	4.060	O					3.42
48.167	0.00	0.64	4.055	O					3.41
48.250	0.00	0.64	4.051	O					3.41
48.333	0.00	0.64	4.047	O					3.41
48.417	0.00	0.64	4.042	O					3.40
48.500	0.00	0.64	4.038	O					3.40
48.583	0.00	0.64	4.033	O					3.40
48.667	0.00	0.64	4.029	O					3.40
48.750	0.00	0.64	4.025	O					3.39
48.833	0.00	0.64	4.020	O					3.39
48.917	0.00	0.64	4.016	O					3.39
49.000	0.00	0.64	4.012	O					3.38
49.083	0.00	0.64	4.007	O					3.38
49.167	0.00	0.64	4.003	O					3.38
49.250	0.00	0.64	3.998	O					3.37
49.333	0.00	0.64	3.994	O					3.37

49.417	0.00	0.63	3.990	o	|	|	|	|	3.37
49.500	0.00	0.63	3.985	o	|	|	|	|	3.37
49.583	0.00	0.63	3.981	o	|	|	|	|	3.36
49.667	0.00	0.63	3.977	o	|	|	|	|	3.36
49.750	0.00	0.63	3.972	o	|	|	|	|	3.36
49.833	0.00	0.63	3.968	o	|	|	|	|	3.35
49.917	0.00	0.63	3.963	o	|	|	|	|	3.35
50.000	0.00	0.63	3.959	o	|	|	|	|	3.35
50.083	0.00	0.63	3.955	o	|	|	|	|	3.34
50.167	0.00	0.63	3.950	o	|	|	|	|	3.34
50.250	0.00	0.63	3.946	o	|	|	|	|	3.34
50.333	0.00	0.63	3.942	o	|	|	|	|	3.34
50.417	0.00	0.63	3.937	o	|	|	|	|	3.33
50.500	0.00	0.63	3.933	o	|	|	|	|	3.33
50.583	0.00	0.63	3.929	o	|	|	|	|	3.33
50.667	0.00	0.63	3.924	o	|	|	|	|	3.32
50.750	0.00	0.63	3.920	o	|	|	|	|	3.32
50.833	0.00	0.63	3.916	o	|	|	|	|	3.32
50.917	0.00	0.63	3.911	o	|	|	|	|	3.31
51.000	0.00	0.63	3.907	o	|	|	|	|	3.31
51.083	0.00	0.63	3.903	o	|	|	|	|	3.31
51.167	0.00	0.63	3.898	o	|	|	|	|	3.31
51.250	0.00	0.63	3.894	o	|	|	|	|	3.30
51.333	0.00	0.63	3.890	o	|	|	|	|	3.30
51.417	0.00	0.63	3.885	o	|	|	|	|	3.30
51.500	0.00	0.63	3.881	o	|	|	|	|	3.29
51.583	0.00	0.63	3.877	o	|	|	|	|	3.29
51.667	0.00	0.63	3.872	o	|	|	|	|	3.29
51.750	0.00	0.63	3.868	o	|	|	|	|	3.28
51.833	0.00	0.63	3.864	o	|	|	|	|	3.28
51.917	0.00	0.63	3.859	o	|	|	|	|	3.28
52.000	0.00	0.63	3.855	o	|	|	|	|	3.28
52.083	0.00	0.63	3.851	o	|	|	|	|	3.27
52.167	0.00	0.63	3.847	o	|	|	|	|	3.27
52.250	0.00	0.62	3.842	o	|	|	|	|	3.27
52.333	0.00	0.62	3.838	o	|	|	|	|	3.26
52.417	0.00	0.62	3.834	o	|	|	|	|	3.26
52.500	0.00	0.62	3.829	o	|	|	|	|	3.26
52.583	0.00	0.62	3.825	o	|	|	|	|	3.26
52.667	0.00	0.62	3.821	o	|	|	|	|	3.25
52.750	0.00	0.62	3.816	o	|	|	|	|	3.25
52.833	0.00	0.62	3.812	o	|	|	|	|	3.25
52.917	0.00	0.62	3.808	o	|	|	|	|	3.24
53.000	0.00	0.62	3.804	o	|	|	|	|	3.24
53.083	0.00	0.62	3.799	o	|	|	|	|	3.24
53.167	0.00	0.62	3.795	o	|	|	|	|	3.23
53.250	0.00	0.62	3.791	o	|	|	|	|	3.23
53.333	0.00	0.62	3.786	o	|	|	|	|	3.23
53.417	0.00	0.62	3.782	o	|	|	|	|	3.23
53.500	0.00	0.62	3.778	o	|	|	|	|	3.22
53.583	0.00	0.62	3.774	o	|	|	|	|	3.22
53.667	0.00	0.62	3.769	o	|	|	|	|	3.22
53.750	0.00	0.62	3.765	o	|	|	|	|	3.21
53.833	0.00	0.62	3.761	o	|	|	|	|	3.21
53.917	0.00	0.62	3.757	o	|	|	|	|	3.21
54.000	0.00	0.62	3.752	o	|	|	|	|	3.21
54.083	0.00	0.62	3.748	o	|	|	|	|	3.20
54.167	0.00	0.62	3.744	o	|	|	|	|	3.20
54.250	0.00	0.62	3.740	o	|	|	|	|	3.20
54.333	0.00	0.62	3.735	o	|	|	|	|	3.19
54.417	0.00	0.62	3.731	o	|	|	|	|	3.19
54.500	0.00	0.62	3.727	o	|	|	|	|	3.19
54.583	0.00	0.62	3.723	o	|	|	|	|	3.18
54.667	0.00	0.62	3.718	o	|	|	|	|	3.18
54.750	0.00	0.62	3.714	o	|	|	|	|	3.18
54.833	0.00	0.62	3.710	o	|	|	|	|	3.18
54.917	0.00	0.62	3.706	o	|	|	|	|	3.17
55.000	0.00	0.62	3.701	o	|	|	|	|	3.17
55.083	0.00	0.61	3.697	o	|	|	|	|	3.17
55.167	0.00	0.61	3.693	o	|	|	|	|	3.16
55.250	0.00	0.61	3.689	o	|	|	|	|	3.16
55.333	0.00	0.61	3.684	o	|	|	|	|	3.16
55.417	0.00	0.61	3.680	o	|	|	|	|	3.16
55.500	0.00	0.61	3.676	o	|	|	|	|	3.15
55.583	0.00	0.61	3.672	o	|	|	|	|	3.15

55.667	0.00	0.61	3.667	o	|	|	|	|	3.15
55.750	0.00	0.61	3.663	o	|	|	|	|	3.14
55.833	0.00	0.61	3.659	o	|	|	|	|	3.14
55.917	0.00	0.61	3.655	o	|	|	|	|	3.14
56.000	0.00	0.61	3.651	o	|	|	|	|	3.14
56.083	0.00	0.61	3.646	o	|	|	|	|	3.13
56.167	0.00	0.61	3.642	o	|	|	|	|	3.13
56.250	0.00	0.61	3.638	o	|	|	|	|	3.13
56.333	0.00	0.61	3.634	o	|	|	|	|	3.12
56.417	0.00	0.61	3.630	o	|	|	|	|	3.12
56.500	0.00	0.61	3.625	o	|	|	|	|	3.12
56.583	0.00	0.61	3.621	o	|	|	|	|	3.12
56.667	0.00	0.61	3.617	o	|	|	|	|	3.11
56.750	0.00	0.61	3.613	o	|	|	|	|	3.11
56.833	0.00	0.61	3.609	o	|	|	|	|	3.11
56.917	0.00	0.61	3.604	o	|	|	|	|	3.10
57.000	0.00	0.61	3.600	o	|	|	|	|	3.10
57.083	0.00	0.61	3.596	o	|	|	|	|	3.10
57.167	0.00	0.61	3.592	o	|	|	|	|	3.10
57.250	0.00	0.61	3.588	o	|	|	|	|	3.09
57.333	0.00	0.61	3.583	o	|	|	|	|	3.09
57.417	0.00	0.61	3.579	o	|	|	|	|	3.09
57.500	0.00	0.61	3.575	o	|	|	|	|	3.08
57.583	0.00	0.61	3.571	o	|	|	|	|	3.08
57.667	0.00	0.61	3.567	o	|	|	|	|	3.08
57.750	0.00	0.61	3.563	o	|	|	|	|	3.08
57.833	0.00	0.61	3.558	o	|	|	|	|	3.07
57.917	0.00	0.60	3.554	o	|	|	|	|	3.07
58.000	0.00	0.60	3.550	o	|	|	|	|	3.07
58.083	0.00	0.60	3.546	o	|	|	|	|	3.06
58.167	0.00	0.60	3.542	o	|	|	|	|	3.06
58.250	0.00	0.60	3.538	o	|	|	|	|	3.06
58.333	0.00	0.60	3.533	o	|	|	|	|	3.06
58.417	0.00	0.60	3.529	o	|	|	|	|	3.05
58.500	0.00	0.60	3.525	o	|	|	|	|	3.05
58.583	0.00	0.60	3.521	o	|	|	|	|	3.05
58.667	0.00	0.60	3.517	o	|	|	|	|	3.04
58.750	0.00	0.60	3.513	o	|	|	|	|	3.04
58.833	0.00	0.60	3.509	o	|	|	|	|	3.04
58.917	0.00	0.60	3.504	o	|	|	|	|	3.04
59.000	0.00	0.60	3.500	o	|	|	|	|	3.03
59.083	0.00	0.60	3.496	o	|	|	|	|	3.03
59.167	0.00	0.60	3.492	o	|	|	|	|	3.03
59.250	0.00	0.60	3.488	o	|	|	|	|	3.02
59.333	0.00	0.60	3.484	o	|	|	|	|	3.02
59.417	0.00	0.60	3.480	o	|	|	|	|	3.02
59.500	0.00	0.60	3.475	o	|	|	|	|	3.02
59.583	0.00	0.60	3.471	o	|	|	|	|	3.01
59.667	0.00	0.60	3.467	o	|	|	|	|	3.01
59.750	0.00	0.60	3.463	o	|	|	|	|	3.01
59.833	0.00	0.60	3.459	o	|	|	|	|	3.00
59.917	0.00	0.60	3.455	o	|	|	|	|	3.00
60.000	0.00	0.60	3.451	o	|	|	|	|	3.00
60.083	0.00	0.60	3.447	o	|	|	|	|	3.00
60.167	0.00	0.60	3.443	o	|	|	|	|	2.99
60.250	0.00	0.60	3.438	o	|	|	|	|	2.99
60.333	0.00	0.60	3.434	o	|	|	|	|	2.99
60.417	0.00	0.60	3.430	o	|	|	|	|	2.98
60.500	0.00	0.60	3.426	o	|	|	|	|	2.98
60.583	0.00	0.60	3.422	o	|	|	|	|	2.98
60.667	0.00	0.60	3.418	o	|	|	|	|	2.97
60.750	0.00	0.59	3.414	o	|	|	|	|	2.97
60.833	0.00	0.59	3.410	o	|	|	|	|	2.97
60.917	0.00	0.59	3.406	o	|	|	|	|	2.97
61.000	0.00	0.59	3.402	o	|	|	|	|	2.96
61.083	0.00	0.59	3.397	o	|	|	|	|	2.96
61.167	0.00	0.59	3.393	o	|	|	|	|	2.96
61.250	0.00	0.59	3.389	o	|	|	|	|	2.95
61.333	0.00	0.59	3.385	o	|	|	|	|	2.95
61.417	0.00	0.59	3.381	o	|	|	|	|	2.95
61.500	0.00	0.59	3.377	o	|	|	|	|	2.95
61.583	0.00	0.59	3.373	o	|	|	|	|	2.94
61.667	0.00	0.59	3.369	o	|	|	|	|	2.94
61.750	0.00	0.59	3.365	o	|	|	|	|	2.94
61.833	0.00	0.59	3.361	o	|	|	|	|	2.93

61.917	0.00	0.59	3.357	o	|	|	|	2.93
62.000	0.00	0.59	3.353	o	|	|	|	2.93
62.083	0.00	0.59	3.349	o	|	|	|	2.92
62.167	0.00	0.59	3.344	o	|	|	|	2.92
62.250	0.00	0.59	3.340	o	|	|	|	2.92
62.333	0.00	0.59	3.336	o	|	|	|	2.92
62.417	0.00	0.59	3.332	o	|	|	|	2.91
62.500	0.00	0.59	3.328	o	|	|	|	2.91
62.583	0.00	0.59	3.324	o	|	|	|	2.91
62.667	0.00	0.59	3.320	o	|	|	|	2.90
62.750	0.00	0.59	3.316	o	|	|	|	2.90
62.833	0.00	0.59	3.312	o	|	|	|	2.90
62.917	0.00	0.59	3.308	o	|	|	|	2.90
63.000	0.00	0.59	3.304	o	|	|	|	2.89
63.083	0.00	0.59	3.300	o	|	|	|	2.89
63.167	0.00	0.58	3.296	o	|	|	|	2.89
63.250	0.00	0.58	3.292	o	|	|	|	2.88
63.333	0.00	0.58	3.288	o	|	|	|	2.88
63.417	0.00	0.58	3.284	o	|	|	|	2.88
63.500	0.00	0.58	3.280	o	|	|	|	2.88
63.583	0.00	0.58	3.276	o	|	|	|	2.87
63.667	0.00	0.58	3.272	o	|	|	|	2.87
63.750	0.00	0.58	3.268	o	|	|	|	2.87
63.833	0.00	0.58	3.264	o	|	|	|	2.86
63.917	0.00	0.58	3.260	o	|	|	|	2.86
64.000	0.00	0.58	3.256	o	|	|	|	2.86
64.083	0.00	0.58	3.252	o	|	|	|	2.86
64.167	0.00	0.58	3.248	o	|	|	|	2.85
64.250	0.00	0.58	3.244	o	|	|	|	2.85
64.333	0.00	0.58	3.240	o	|	|	|	2.85
64.417	0.00	0.58	3.236	o	|	|	|	2.84
64.500	0.00	0.58	3.232	o	|	|	|	2.84
64.583	0.00	0.58	3.228	o	|	|	|	2.84
64.667	0.00	0.58	3.224	o	|	|	|	2.83
64.750	0.00	0.58	3.220	o	|	|	|	2.83
64.833	0.00	0.58	3.216	o	|	|	|	2.83
64.917	0.00	0.58	3.212	o	|	|	|	2.83
65.000	0.00	0.58	3.208	o	|	|	|	2.82
65.083	0.00	0.58	3.204	o	|	|	|	2.82
65.167	0.00	0.58	3.200	o	|	|	|	2.82
65.250	0.00	0.58	3.196	o	|	|	|	2.81
65.333	0.00	0.58	3.192	o	|	|	|	2.81
65.417	0.00	0.58	3.188	o	|	|	|	2.81
65.500	0.00	0.58	3.184	o	|	|	|	2.81
65.583	0.00	0.58	3.180	o	|	|	|	2.80
65.667	0.00	0.57	3.176	o	|	|	|	2.80
65.750	0.00	0.57	3.172	o	|	|	|	2.80
65.833	0.00	0.57	3.168	o	|	|	|	2.79
65.917	0.00	0.57	3.164	o	|	|	|	2.79
66.000	0.00	0.57	3.160	o	|	|	|	2.79
66.083	0.00	0.57	3.156	o	|	|	|	2.79
66.167	0.00	0.57	3.152	o	|	|	|	2.78
66.250	0.00	0.57	3.149	o	|	|	|	2.78
66.333	0.00	0.57	3.145	o	|	|	|	2.78
66.417	0.00	0.57	3.141	o	|	|	|	2.77
66.500	0.00	0.57	3.137	o	|	|	|	2.77
66.583	0.00	0.57	3.133	o	|	|	|	2.77
66.667	0.00	0.57	3.129	o	|	|	|	2.77
66.750	0.00	0.57	3.125	o	|	|	|	2.76
66.833	0.00	0.57	3.121	o	|	|	|	2.76
66.917	0.00	0.57	3.117	o	|	|	|	2.76
67.000	0.00	0.57	3.113	o	|	|	|	2.76
67.083	0.00	0.57	3.109	o	|	|	|	2.75
67.167	0.00	0.57	3.105	o	|	|	|	2.75
67.250	0.00	0.57	3.101	o	|	|	|	2.75
67.333	0.00	0.57	3.097	o	|	|	|	2.74
67.417	0.00	0.57	3.094	o	|	|	|	2.74
67.500	0.00	0.57	3.090	o	|	|	|	2.74
67.583	0.00	0.57	3.086	o	|	|	|	2.74
67.667	0.00	0.57	3.082	o	|	|	|	2.73
67.750	0.00	0.57	3.078	o	|	|	|	2.73
67.833	0.00	0.57	3.074	o	|	|	|	2.73
67.917	0.00	0.57	3.070	o	|	|	|	2.72
68.000	0.00	0.57	3.066	o	|	|	|	2.72
68.083	0.00	0.57	3.062	o	|	|	|	2.72

68.167	0.00	0.57	3.058	o	|	|	|	|	2.72
68.250	0.00	0.56	3.055	o	|	|	|	|	2.71
68.333	0.00	0.56	3.051	o	|	|	|	|	2.71
68.417	0.00	0.56	3.047	o	|	|	|	|	2.71
68.500	0.00	0.56	3.043	o	|	|	|	|	2.70
68.583	0.00	0.56	3.039	o	|	|	|	|	2.70
68.667	0.00	0.56	3.035	o	|	|	|	|	2.70
68.750	0.00	0.56	3.031	o	|	|	|	|	2.70
68.833	0.00	0.56	3.027	o	|	|	|	|	2.69
68.917	0.00	0.56	3.023	o	|	|	|	|	2.69
69.000	0.00	0.56	3.020	o	|	|	|	|	2.69
69.083	0.00	0.56	3.016	o	|	|	|	|	2.68
69.167	0.00	0.56	3.012	o	|	|	|	|	2.68
69.250	0.00	0.56	3.008	o	|	|	|	|	2.68
69.333	0.00	0.56	3.004	o	|	|	|	|	2.68
69.417	0.00	0.56	3.000	o	|	|	|	|	2.67
69.500	0.00	0.56	2.996	o	|	|	|	|	2.67
69.583	0.00	0.56	2.993	o	|	|	|	|	2.67
69.667	0.00	0.56	2.989	o	|	|	|	|	2.67
69.750	0.00	0.56	2.985	o	|	|	|	|	2.66
69.833	0.00	0.56	2.981	o	|	|	|	|	2.66
69.917	0.00	0.56	2.977	o	|	|	|	|	2.66
70.000	0.00	0.56	2.973	o	|	|	|	|	2.65
70.083	0.00	0.56	2.970	o	|	|	|	|	2.65
70.167	0.00	0.56	2.966	o	|	|	|	|	2.65
70.250	0.00	0.56	2.962	o	|	|	|	|	2.65
70.333	0.00	0.56	2.958	o	|	|	|	|	2.64
70.417	0.00	0.56	2.954	o	|	|	|	|	2.64
70.500	0.00	0.56	2.950	o	|	|	|	|	2.64
70.583	0.00	0.56	2.947	o	|	|	|	|	2.64
70.667	0.00	0.56	2.943	o	|	|	|	|	2.63
70.750	0.00	0.56	2.939	o	|	|	|	|	2.63
70.833	0.00	0.55	2.935	o	|	|	|	|	2.63
70.917	0.00	0.55	2.931	o	|	|	|	|	2.62
71.000	0.00	0.55	2.927	o	|	|	|	|	2.62
71.083	0.00	0.55	2.924	o	|	|	|	|	2.62
71.167	0.00	0.55	2.920	o	|	|	|	|	2.62
71.250	0.00	0.55	2.916	o	|	|	|	|	2.61
71.333	0.00	0.55	2.912	o	|	|	|	|	2.61
71.417	0.00	0.55	2.908	o	|	|	|	|	2.61
71.500	0.00	0.55	2.905	o	|	|	|	|	2.60
71.583	0.00	0.55	2.901	o	|	|	|	|	2.60
71.667	0.00	0.55	2.897	o	|	|	|	|	2.60
71.750	0.00	0.55	2.893	o	|	|	|	|	2.60
71.833	0.00	0.55	2.889	o	|	|	|	|	2.59
71.917	0.00	0.55	2.886	o	|	|	|	|	2.59
72.000	0.00	0.55	2.882	o	|	|	|	|	2.59
72.083	0.00	0.55	2.878	o	|	|	|	|	2.59
72.167	0.00	0.55	2.874	o	|	|	|	|	2.58
72.250	0.00	0.55	2.870	o	|	|	|	|	2.58
72.333	0.00	0.55	2.867	o	|	|	|	|	2.58
72.417	0.00	0.55	2.863	o	|	|	|	|	2.57
72.500	0.00	0.55	2.859	o	|	|	|	|	2.57
72.583	0.00	0.55	2.855	o	|	|	|	|	2.57
72.667	0.00	0.55	2.852	o	|	|	|	|	2.57
72.750	0.00	0.55	2.848	o	|	|	|	|	2.56
72.833	0.00	0.55	2.844	o	|	|	|	|	2.56
72.917	0.00	0.55	2.840	o	|	|	|	|	2.56
73.000	0.00	0.55	2.836	o	|	|	|	|	2.56
73.083	0.00	0.55	2.833	o	|	|	|	|	2.55
73.167	0.00	0.55	2.829	o	|	|	|	|	2.55
73.250	0.00	0.55	2.825	o	|	|	|	|	2.55
73.333	0.00	0.55	2.821	o	|	|	|	|	2.54
73.417	0.00	0.54	2.818	o	|	|	|	|	2.54
73.500	0.00	0.54	2.814	o	|	|	|	|	2.54
73.583	0.00	0.54	2.810	o	|	|	|	|	2.54
73.667	0.00	0.54	2.806	o	|	|	|	|	2.53
73.750	0.00	0.54	2.803	o	|	|	|	|	2.53
73.833	0.00	0.54	2.799	o	|	|	|	|	2.53
73.917	0.00	0.54	2.795	o	|	|	|	|	2.53
74.000	0.00	0.54	2.791	o	|	|	|	|	2.52
74.083	0.00	0.54	2.788	o	|	|	|	|	2.52
74.167	0.00	0.54	2.784	o	|	|	|	|	2.52
74.250	0.00	0.54	2.780	o	|	|	|	|	2.52
74.333	0.00	0.54	2.777	o	|	|	|	|	2.51

74.417	0.00	0.54	2.773	o	|	|	|	|	2.51
74.500	0.00	0.54	2.769	o	|	|	|	|	2.51
74.583	0.00	0.54	2.765	o	|	|	|	|	2.50
74.667	0.00	0.54	2.762	o	|	|	|	|	2.50
74.750	0.00	0.54	2.758	o	|	|	|	|	2.50
74.833	0.00	0.54	2.754	o	|	|	|	|	2.50
74.917	0.00	0.54	2.750	o	|	|	|	|	2.49
75.000	0.00	0.54	2.747	o	|	|	|	|	2.49
75.083	0.00	0.54	2.743	o	|	|	|	|	2.49
75.167	0.00	0.54	2.739	o	|	|	|	|	2.49
75.250	0.00	0.54	2.736	o	|	|	|	|	2.48
75.333	0.00	0.54	2.732	o	|	|	|	|	2.48
75.417	0.00	0.54	2.728	o	|	|	|	|	2.48
75.500	0.00	0.54	2.725	o	|	|	|	|	2.48
75.583	0.00	0.54	2.721	o	|	|	|	|	2.47
75.667	0.00	0.54	2.717	o	|	|	|	|	2.47
75.750	0.00	0.54	2.713	o	|	|	|	|	2.47
75.833	0.00	0.54	2.710	o	|	|	|	|	2.46
75.917	0.00	0.54	2.706	o	|	|	|	|	2.46
76.000	0.00	0.54	2.702	o	|	|	|	|	2.46
76.083	0.00	0.53	2.699	o	|	|	|	|	2.46
76.167	0.00	0.53	2.695	o	|	|	|	|	2.45
76.250	0.00	0.53	2.691	o	|	|	|	|	2.45
76.333	0.00	0.53	2.688	o	|	|	|	|	2.45
76.417	0.00	0.53	2.684	o	|	|	|	|	2.45
76.500	0.00	0.53	2.680	o	|	|	|	|	2.44
76.583	0.00	0.53	2.677	o	|	|	|	|	2.44
76.667	0.00	0.53	2.673	o	|	|	|	|	2.44
76.750	0.00	0.53	2.669	o	|	|	|	|	2.44
76.833	0.00	0.53	2.666	o	|	|	|	|	2.43
76.917	0.00	0.53	2.662	o	|	|	|	|	2.43
77.000	0.00	0.53	2.658	o	|	|	|	|	2.43
77.083	0.00	0.53	2.655	o	|	|	|	|	2.42
77.167	0.00	0.53	2.651	o	|	|	|	|	2.42
77.250	0.00	0.53	2.647	o	|	|	|	|	2.42
77.333	0.00	0.53	2.644	o	|	|	|	|	2.42
77.417	0.00	0.53	2.640	o	|	|	|	|	2.41
77.500	0.00	0.53	2.636	o	|	|	|	|	2.41
77.583	0.00	0.53	2.633	o	|	|	|	|	2.41
77.667	0.00	0.53	2.629	o	|	|	|	|	2.41
77.750	0.00	0.53	2.625	o	|	|	|	|	2.40
77.833	0.00	0.53	2.622	o	|	|	|	|	2.40
77.917	0.00	0.53	2.618	o	|	|	|	|	2.40
78.000	0.00	0.53	2.614	o	|	|	|	|	2.40
78.083	0.00	0.53	2.611	o	|	|	|	|	2.39
78.167	0.00	0.53	2.607	o	|	|	|	|	2.39
78.250	0.00	0.53	2.604	o	|	|	|	|	2.39
78.333	0.00	0.53	2.600	o	|	|	|	|	2.39
78.417	0.00	0.53	2.596	o	|	|	|	|	2.38
78.500	0.00	0.53	2.593	o	|	|	|	|	2.38
78.583	0.00	0.53	2.589	o	|	|	|	|	2.38
78.667	0.00	0.53	2.585	o	|	|	|	|	2.37
78.750	0.00	0.53	2.582	o	|	|	|	|	2.37
78.833	0.00	0.52	2.578	o	|	|	|	|	2.37
78.917	0.00	0.52	2.575	o	|	|	|	|	2.37
79.000	0.00	0.52	2.571	o	|	|	|	|	2.36
79.083	0.00	0.52	2.567	o	|	|	|	|	2.36
79.167	0.00	0.52	2.564	o	|	|	|	|	2.36
79.250	0.00	0.52	2.560	o	|	|	|	|	2.36
79.333	0.00	0.52	2.557	o	|	|	|	|	2.35
79.417	0.00	0.52	2.553	o	|	|	|	|	2.35
79.500	0.00	0.52	2.549	o	|	|	|	|	2.35
79.583	0.00	0.52	2.546	o	|	|	|	|	2.35
79.667	0.00	0.52	2.542	o	|	|	|	|	2.34
79.750	0.00	0.52	2.539	o	|	|	|	|	2.34
79.833	0.00	0.52	2.535	o	|	|	|	|	2.34
79.917	0.00	0.52	2.531	o	|	|	|	|	2.34
80.000	0.00	0.52	2.528	o	|	|	|	|	2.33
80.083	0.00	0.52	2.524	o	|	|	|	|	2.33
80.167	0.00	0.52	2.521	o	|	|	|	|	2.33
80.250	0.00	0.52	2.517	o	|	|	|	|	2.33
80.333	0.00	0.52	2.514	o	|	|	|	|	2.32
80.417	0.00	0.52	2.510	o	|	|	|	|	2.32
80.500	0.00	0.52	2.506	o	|	|	|	|	2.32
80.583	0.00	0.52	2.503	o	|	|	|	|	2.32

80.667	0.00	0.52	2.499	o	|	|	|	|	2.31
80.750	0.00	0.52	2.496	o	|	|	|	|	2.31
80.833	0.00	0.52	2.492	o	|	|	|	|	2.31
80.917	0.00	0.52	2.489	o	|	|	|	|	2.31
81.000	0.00	0.52	2.485	o	|	|	|	|	2.30
81.083	0.00	0.52	2.481	o	|	|	|	|	2.30
81.167	0.00	0.52	2.478	o	|	|	|	|	2.30
81.250	0.00	0.52	2.474	o	|	|	|	|	2.29
81.333	0.00	0.52	2.471	o	|	|	|	|	2.29
81.417	0.00	0.52	2.467	o	|	|	|	|	2.29
81.500	0.00	0.52	2.464	o	|	|	|	|	2.29
81.583	0.00	0.52	2.460	o	|	|	|	|	2.28
81.667	0.00	0.51	2.457	o	|	|	|	|	2.28
81.750	0.00	0.51	2.453	o	|	|	|	|	2.28
81.833	0.00	0.51	2.449	o	|	|	|	|	2.28
81.917	0.00	0.51	2.446	o	|	|	|	|	2.27
82.000	0.00	0.51	2.442	o	|	|	|	|	2.27
82.083	0.00	0.51	2.439	o	|	|	|	|	2.27
82.167	0.00	0.51	2.435	o	|	|	|	|	2.27
82.250	0.00	0.51	2.432	o	|	|	|	|	2.26
82.333	0.00	0.51	2.428	o	|	|	|	|	2.26
82.417	0.00	0.51	2.425	o	|	|	|	|	2.26
82.500	0.00	0.51	2.421	o	|	|	|	|	2.26
82.583	0.00	0.51	2.418	o	|	|	|	|	2.25
82.667	0.00	0.51	2.414	o	|	|	|	|	2.25
82.750	0.00	0.51	2.411	o	|	|	|	|	2.25
82.833	0.00	0.51	2.407	o	|	|	|	|	2.25
82.917	0.00	0.51	2.404	o	|	|	|	|	2.24
83.000	0.00	0.51	2.400	o	|	|	|	|	2.24
83.083	0.00	0.51	2.397	o	|	|	|	|	2.24
83.167	0.00	0.51	2.393	o	|	|	|	|	2.24
83.250	0.00	0.51	2.390	o	|	|	|	|	2.23
83.333	0.00	0.51	2.386	o	|	|	|	|	2.23
83.417	0.00	0.51	2.383	o	|	|	|	|	2.23
83.500	0.00	0.51	2.379	o	|	|	|	|	2.23
83.583	0.00	0.51	2.376	o	|	|	|	|	2.22
83.667	0.00	0.51	2.372	o	|	|	|	|	2.22
83.750	0.00	0.51	2.369	o	|	|	|	|	2.22
83.833	0.00	0.51	2.365	o	|	|	|	|	2.22
83.917	0.00	0.51	2.362	o	|	|	|	|	2.21
84.000	0.00	0.51	2.358	o	|	|	|	|	2.21
84.083	0.00	0.51	2.355	o	|	|	|	|	2.21
84.167	0.00	0.51	2.351	o	|	|	|	|	2.21
84.250	0.00	0.51	2.348	o	|	|	|	|	2.20
84.333	0.00	0.51	2.344	o	|	|	|	|	2.20
84.417	0.00	0.51	2.341	o	|	|	|	|	2.20
84.500	0.00	0.50	2.337	o	|	|	|	|	2.20
84.583	0.00	0.50	2.334	o	|	|	|	|	2.19
84.667	0.00	0.50	2.330	o	|	|	|	|	2.19
84.750	0.00	0.50	2.327	o	|	|	|	|	2.19
84.833	0.00	0.50	2.323	o	|	|	|	|	2.19
84.917	0.00	0.50	2.320	o	|	|	|	|	2.18
85.000	0.00	0.50	2.316	o	|	|	|	|	2.18
85.083	0.00	0.50	2.313	o	|	|	|	|	2.18
85.167	0.00	0.50	2.309	o	|	|	|	|	2.18
85.250	0.00	0.50	2.306	o	|	|	|	|	2.17
85.333	0.00	0.50	2.303	o	|	|	|	|	2.17
85.417	0.00	0.50	2.299	o	|	|	|	|	2.17
85.500	0.00	0.50	2.296	o	|	|	|	|	2.17
85.583	0.00	0.50	2.292	o	|	|	|	|	2.16
85.667	0.00	0.50	2.289	o	|	|	|	|	2.16
85.750	0.00	0.50	2.285	o	|	|	|	|	2.16
85.833	0.00	0.50	2.282	o	|	|	|	|	2.16
85.917	0.00	0.50	2.278	o	|	|	|	|	2.15
86.000	0.00	0.50	2.275	o	|	|	|	|	2.15
86.083	0.00	0.50	2.271	o	|	|	|	|	2.15
86.167	0.00	0.50	2.268	o	|	|	|	|	2.15
86.250	0.00	0.50	2.265	o	|	|	|	|	2.14
86.333	0.00	0.50	2.261	o	|	|	|	|	2.14
86.417	0.00	0.50	2.258	o	|	|	|	|	2.14
86.500	0.00	0.50	2.254	o	|	|	|	|	2.14
86.583	0.00	0.50	2.251	o	|	|	|	|	2.13
86.667	0.00	0.50	2.247	o	|	|	|	|	2.13
86.750	0.00	0.50	2.244	o	|	|	|	|	2.13
86.833	0.00	0.50	2.241	o	|	|	|	|	2.13

86.917	0.00	0.50	2.237	o	|	|	|	|	2.12
87.000	0.00	0.50	2.234	o	|	|	|	|	2.12
87.083	0.00	0.50	2.230	o	|	|	|	|	2.12
87.167	0.00	0.50	2.227	o	|	|	|	|	2.12
87.250	0.00	0.50	2.224	o	|	|	|	|	2.11
87.333	0.00	0.49	2.220	o	|	|	|	|	2.11
87.417	0.00	0.49	2.217	o	|	|	|	|	2.11
87.500	0.00	0.49	2.213	o	|	|	|	|	2.11
87.583	0.00	0.49	2.210	o	|	|	|	|	2.10
87.667	0.00	0.49	2.207	o	|	|	|	|	2.10
87.750	0.00	0.49	2.203	o	|	|	|	|	2.10
87.833	0.00	0.49	2.200	o	|	|	|	|	2.10
87.917	0.00	0.49	2.196	o	|	|	|	|	2.09
88.000	0.00	0.49	2.193	o	|	|	|	|	2.09
88.083	0.00	0.49	2.190	o	|	|	|	|	2.09
88.167	0.00	0.49	2.186	o	|	|	|	|	2.09
88.250	0.00	0.49	2.183	o	|	|	|	|	2.08
88.333	0.00	0.49	2.179	o	|	|	|	|	2.08
88.417	0.00	0.49	2.176	o	|	|	|	|	2.08
88.500	0.00	0.49	2.173	o	|	|	|	|	2.08
88.583	0.00	0.49	2.169	o	|	|	|	|	2.08
88.667	0.00	0.49	2.166	o	|	|	|	|	2.07
88.750	0.00	0.49	2.162	o	|	|	|	|	2.07
88.833	0.00	0.49	2.159	o	|	|	|	|	2.07
88.917	0.00	0.49	2.156	o	|	|	|	|	2.07
89.000	0.00	0.49	2.152	o	|	|	|	|	2.06
89.083	0.00	0.49	2.149	o	|	|	|	|	2.06
89.167	0.00	0.49	2.146	o	|	|	|	|	2.06
89.250	0.00	0.49	2.142	o	|	|	|	|	2.06
89.333	0.00	0.49	2.139	o	|	|	|	|	2.05
89.417	0.00	0.49	2.136	o	|	|	|	|	2.05
89.500	0.00	0.49	2.132	o	|	|	|	|	2.05
89.583	0.00	0.49	2.129	o	|	|	|	|	2.05
89.667	0.00	0.49	2.125	o	|	|	|	|	2.04
89.750	0.00	0.49	2.122	o	|	|	|	|	2.04
89.833	0.00	0.49	2.119	o	|	|	|	|	2.04
89.917	0.00	0.49	2.115	o	|	|	|	|	2.04
90.000	0.00	0.49	2.112	o	|	|	|	|	2.03
90.083	0.00	0.49	2.109	o	|	|	|	|	2.03
90.167	0.00	0.49	2.105	o	|	|	|	|	2.03
90.250	0.00	0.49	2.102	o	|	|	|	|	2.03
90.333	0.00	0.48	2.099	o	|	|	|	|	2.02
90.417	0.00	0.48	2.095	o	|	|	|	|	2.02
90.500	0.00	0.48	2.092	o	|	|	|	|	2.02
90.583	0.00	0.48	2.089	o	|	|	|	|	2.02
90.667	0.00	0.48	2.085	o	|	|	|	|	2.01
90.750	0.00	0.48	2.082	o	|	|	|	|	2.01
90.833	0.00	0.48	2.079	o	|	|	|	|	2.01
90.917	0.00	0.48	2.075	o	|	|	|	|	2.01
91.000	0.00	0.48	2.072	o	|	|	|	|	2.01
91.083	0.00	0.48	2.069	o	|	|	|	|	2.00
91.167	0.00	0.48	2.065	o	|	|	|	|	2.00
91.250	0.00	0.48	2.062	o	|	|	|	|	2.00
91.333	0.00	0.48	2.059	o	|	|	|	|	1.99
91.417	0.00	0.48	2.055	o	|	|	|	|	1.99
91.500	0.00	0.48	2.052	o	|	|	|	|	1.99
91.583	0.00	0.48	2.049	o	|	|	|	|	1.99
91.667	0.00	0.48	2.046	o	|	|	|	|	1.98
91.750	0.00	0.48	2.042	o	|	|	|	|	1.98
91.833	0.00	0.48	2.039	o	|	|	|	|	1.98
91.917	0.00	0.48	2.036	o	|	|	|	|	1.98
92.000	0.00	0.48	2.032	o	|	|	|	|	1.97
92.083	0.00	0.48	2.029	o	|	|	|	|	1.97
92.167	0.00	0.48	2.026	o	|	|	|	|	1.97
92.250	0.00	0.48	2.022	o	|	|	|	|	1.97
92.333	0.00	0.48	2.019	o	|	|	|	|	1.96
92.417	0.00	0.48	2.016	o	|	|	|	|	1.96
92.500	0.00	0.48	2.013	o	|	|	|	|	1.96
92.583	0.00	0.47	2.009	o	|	|	|	|	1.95
92.667	0.00	0.47	2.006	o	|	|	|	|	1.95
92.750	0.00	0.47	2.003	o	|	|	|	|	1.95
92.833	0.00	0.47	2.000	o	|	|	|	|	1.95
92.917	0.00	0.47	1.996	o	|	|	|	|	1.94
93.000	0.00	0.47	1.993	o	|	|	|	|	1.94
93.083	0.00	0.47	1.990	o	|	|	|	|	1.94

93.167	0.00	0.47	1.987	o	|	|	|	|	1.94
93.250	0.00	0.47	1.983	o	|	|	|	|	1.93
93.333	0.00	0.47	1.980	o	|	|	|	|	1.93
93.417	0.00	0.47	1.977	o	|	|	|	|	1.93
93.500	0.00	0.47	1.974	o	|	|	|	|	1.93
93.583	0.00	0.47	1.970	o	|	|	|	|	1.92
93.667	0.00	0.47	1.967	o	|	|	|	|	1.92
93.750	0.00	0.47	1.964	o	|	|	|	|	1.92
93.833	0.00	0.47	1.961	o	|	|	|	|	1.91
93.917	0.00	0.47	1.957	o	|	|	|	|	1.91
94.000	0.00	0.47	1.954	o	|	|	|	|	1.91
94.083	0.00	0.47	1.951	o	|	|	|	|	1.91
94.167	0.00	0.47	1.948	o	|	|	|	|	1.90
94.250	0.00	0.47	1.945	o	|	|	|	|	1.90
94.333	0.00	0.47	1.941	o	|	|	|	|	1.90
94.417	0.00	0.47	1.938	o	|	|	|	|	1.90
94.500	0.00	0.47	1.935	o	|	|	|	|	1.89
94.583	0.00	0.47	1.932	o	|	|	|	|	1.89
94.667	0.00	0.46	1.928	o	|	|	|	|	1.89
94.750	0.00	0.46	1.925	o	|	|	|	|	1.89
94.833	0.00	0.46	1.922	o	|	|	|	|	1.88
94.917	0.00	0.46	1.919	o	|	|	|	|	1.88
95.000	0.00	0.46	1.916	o	|	|	|	|	1.88
95.083	0.00	0.46	1.913	o	|	|	|	|	1.88
95.167	0.00	0.46	1.909	o	|	|	|	|	1.87
95.250	0.00	0.46	1.906	o	|	|	|	|	1.87
95.333	0.00	0.46	1.903	o	|	|	|	|	1.87
95.417	0.00	0.46	1.900	o	|	|	|	|	1.87
95.500	0.00	0.46	1.897	o	|	|	|	|	1.86
95.583	0.00	0.46	1.893	o	|	|	|	|	1.86
95.667	0.00	0.46	1.890	o	|	|	|	|	1.86
95.750	0.00	0.46	1.887	o	|	|	|	|	1.85
95.833	0.00	0.46	1.884	o	|	|	|	|	1.85
95.917	0.00	0.46	1.881	o	|	|	|	|	1.85
96.000	0.00	0.46	1.878	o	|	|	|	|	1.85
96.083	0.00	0.46	1.874	o	|	|	|	|	1.84
96.167	0.00	0.46	1.871	o	|	|	|	|	1.84
96.250	0.00	0.46	1.868	o	|	|	|	|	1.84
96.333	0.00	0.46	1.865	o	|	|	|	|	1.84
96.417	0.00	0.46	1.862	o	|	|	|	|	1.83
96.500	0.00	0.46	1.859	o	|	|	|	|	1.83
96.583	0.00	0.46	1.856	o	|	|	|	|	1.83
96.667	0.00	0.46	1.852	o	|	|	|	|	1.83
96.750	0.00	0.45	1.849	o	|	|	|	|	1.82
96.833	0.00	0.45	1.846	o	|	|	|	|	1.82
96.917	0.00	0.45	1.843	o	|	|	|	|	1.82
97.000	0.00	0.45	1.840	o	|	|	|	|	1.82
97.083	0.00	0.45	1.837	o	|	|	|	|	1.81
97.167	0.00	0.45	1.834	o	|	|	|	|	1.81
97.250	0.00	0.45	1.831	o	|	|	|	|	1.81
97.333	0.00	0.45	1.827	o	|	|	|	|	1.81
97.417	0.00	0.45	1.824	o	|	|	|	|	1.80
97.500	0.00	0.45	1.821	o	|	|	|	|	1.80
97.583	0.00	0.45	1.818	o	|	|	|	|	1.80
97.667	0.00	0.45	1.815	o	|	|	|	|	1.80
97.750	0.00	0.45	1.812	o	|	|	|	|	1.79
97.833	0.00	0.45	1.809	o	|	|	|	|	1.79
97.917	0.00	0.45	1.806	o	|	|	|	|	1.79
98.000	0.00	0.45	1.803	o	|	|	|	|	1.79
98.083	0.00	0.45	1.800	o	|	|	|	|	1.78
98.167	0.00	0.45	1.796	o	|	|	|	|	1.78
98.250	0.00	0.45	1.793	o	|	|	|	|	1.78
98.333	0.00	0.45	1.790	o	|	|	|	|	1.78
98.417	0.00	0.45	1.787	o	|	|	|	|	1.77
98.500	0.00	0.45	1.784	o	|	|	|	|	1.77
98.583	0.00	0.45	1.781	o	|	|	|	|	1.77
98.667	0.00	0.45	1.778	o	|	|	|	|	1.77
98.750	0.00	0.45	1.775	o	|	|	|	|	1.76
98.833	0.00	0.44	1.772	o	|	|	|	|	1.76
98.917	0.00	0.44	1.769	o	|	|	|	|	1.76
99.000	0.00	0.44	1.766	o	|	|	|	|	1.76
99.083	0.00	0.44	1.763	o	|	|	|	|	1.75
99.167	0.00	0.44	1.760	o	|	|	|	|	1.75
99.250	0.00	0.44	1.757	o	|	|	|	|	1.75
99.333	0.00	0.44	1.754	o	|	|	|	|	1.75

99.417	0.00	0.44	1.751	o	|	|	|	|	1.74
99.500	0.00	0.44	1.747	o	|	|	|	|	1.74
99.583	0.00	0.44	1.744	o	|	|	|	|	1.74
99.667	0.00	0.44	1.741	o	|	|	|	|	1.74
99.750	0.00	0.44	1.738	o	|	|	|	|	1.73
99.833	0.00	0.44	1.735	o	|	|	|	|	1.73
99.917	0.00	0.44	1.732	o	|	|	|	|	1.73
100.000	0.00	0.44	1.729	o	|	|	|	|	1.73
100.083	0.00	0.44	1.726	o	|	|	|	|	1.72
100.167	0.00	0.44	1.723	o	|	|	|	|	1.72
100.250	0.00	0.44	1.720	o	|	|	|	|	1.72
100.333	0.00	0.44	1.717	o	|	|	|	|	1.72
100.417	0.00	0.44	1.714	o	|	|	|	|	1.71
100.500	0.00	0.44	1.711	o	|	|	|	|	1.71
100.583	0.00	0.44	1.708	o	|	|	|	|	1.71
100.667	0.00	0.44	1.705	o	|	|	|	|	1.71
100.750	0.00	0.44	1.702	o	|	|	|	|	1.70
100.833	0.00	0.44	1.699	o	|	|	|	|	1.70
100.917	0.00	0.44	1.696	o	|	|	|	|	1.70
101.000	0.00	0.43	1.693	o	|	|	|	|	1.70
101.083	0.00	0.43	1.690	o	|	|	|	|	1.69
101.167	0.00	0.43	1.687	o	|	|	|	|	1.69
101.250	0.00	0.43	1.684	o	|	|	|	|	1.69
101.333	0.00	0.43	1.681	o	|	|	|	|	1.69
101.417	0.00	0.43	1.678	o	|	|	|	|	1.68
101.500	0.00	0.43	1.675	o	|	|	|	|	1.68
101.583	0.00	0.43	1.672	o	|	|	|	|	1.68
101.667	0.00	0.43	1.669	o	|	|	|	|	1.68
101.750	0.00	0.43	1.666	o	|	|	|	|	1.67
101.833	0.00	0.43	1.663	o	|	|	|	|	1.67
101.917	0.00	0.43	1.660	o	|	|	|	|	1.67
102.000	0.00	0.43	1.657	o	|	|	|	|	1.67
102.083	0.00	0.43	1.654	o	|	|	|	|	1.66
102.167	0.00	0.43	1.651	o	|	|	|	|	1.66
102.250	0.00	0.43	1.648	o	|	|	|	|	1.66
102.333	0.00	0.43	1.646	o	|	|	|	|	1.66
102.417	0.00	0.43	1.643	o	|	|	|	|	1.65
102.500	0.00	0.43	1.640	o	|	|	|	|	1.65
102.583	0.00	0.43	1.637	o	|	|	|	|	1.65
102.667	0.00	0.43	1.634	o	|	|	|	|	1.65
102.750	0.00	0.43	1.631	o	|	|	|	|	1.65
102.833	0.00	0.43	1.628	o	|	|	|	|	1.64
102.917	0.00	0.43	1.625	o	|	|	|	|	1.64
103.000	0.00	0.43	1.622	o	|	|	|	|	1.64
103.083	0.00	0.43	1.619	o	|	|	|	|	1.64
103.167	0.00	0.43	1.616	o	|	|	|	|	1.63
103.250	0.00	0.42	1.613	o	|	|	|	|	1.63
103.333	0.00	0.42	1.610	o	|	|	|	|	1.63
103.417	0.00	0.42	1.607	o	|	|	|	|	1.63
103.500	0.00	0.42	1.604	o	|	|	|	|	1.62
103.583	0.00	0.42	1.602	o	|	|	|	|	1.62
103.667	0.00	0.42	1.599	o	|	|	|	|	1.62
103.750	0.00	0.42	1.596	o	|	|	|	|	1.62
103.833	0.00	0.42	1.593	o	|	|	|	|	1.61
103.917	0.00	0.42	1.590	o	|	|	|	|	1.61
104.000	0.00	0.42	1.587	o	|	|	|	|	1.61
104.083	0.00	0.42	1.584	o	|	|	|	|	1.61
104.167	0.00	0.42	1.581	o	|	|	|	|	1.60
104.250	0.00	0.42	1.578	o	|	|	|	|	1.60
104.333	0.00	0.42	1.575	o	|	|	|	|	1.60
104.417	0.00	0.42	1.572	o	|	|	|	|	1.60
104.500	0.00	0.42	1.570	o	|	|	|	|	1.60
104.583	0.00	0.42	1.567	o	|	|	|	|	1.59
104.667	0.00	0.42	1.564	o	|	|	|	|	1.59
104.750	0.00	0.42	1.561	o	|	|	|	|	1.59
104.833	0.00	0.42	1.558	o	|	|	|	|	1.59
104.917	0.00	0.42	1.555	o	|	|	|	|	1.58
105.000	0.00	0.42	1.552	o	|	|	|	|	1.58
105.083	0.00	0.42	1.549	o	|	|	|	|	1.58
105.167	0.00	0.42	1.547	o	|	|	|	|	1.58
105.250	0.00	0.42	1.544	o	|	|	|	|	1.57
105.333	0.00	0.42	1.541	o	|	|	|	|	1.57
105.417	0.00	0.42	1.538	o	|	|	|	|	1.57
105.500	0.00	0.41	1.535	o	|	|	|	|	1.57
105.583	0.00	0.41	1.532	o	|	|	|	|	1.56

105.667	0.00	0.41	1.529	o	|	|	|	|	1.56
105.750	0.00	0.41	1.527	o	|	|	|	|	1.56
105.833	0.00	0.41	1.524	o	|	|	|	|	1.56
105.917	0.00	0.41	1.521	o	|	|	|	|	1.56
106.000	0.00	0.41	1.518	o	|	|	|	|	1.55
106.083	0.00	0.41	1.515	o	|	|	|	|	1.55
106.167	0.00	0.41	1.512	o	|	|	|	|	1.55
106.250	0.00	0.41	1.510	o	|	|	|	|	1.55
106.333	0.00	0.41	1.507	o	|	|	|	|	1.54
106.417	0.00	0.41	1.504	o	|	|	|	|	1.54
106.500	0.00	0.41	1.501	o	|	|	|	|	1.54
106.583	0.00	0.41	1.498	o	|	|	|	|	1.54
106.667	0.00	0.41	1.495	o	|	|	|	|	1.53
106.750	0.00	0.41	1.493	o	|	|	|	|	1.53
106.833	0.00	0.41	1.490	o	|	|	|	|	1.53
106.917	0.00	0.41	1.487	o	|	|	|	|	1.53
107.000	0.00	0.41	1.484	o	|	|	|	|	1.53
107.083	0.00	0.41	1.481	o	|	|	|	|	1.52
107.167	0.00	0.41	1.478	o	|	|	|	|	1.52
107.250	0.00	0.41	1.476	o	|	|	|	|	1.52
107.333	0.00	0.41	1.473	o	|	|	|	|	1.52
107.417	0.00	0.41	1.470	o	|	|	|	|	1.51
107.500	0.00	0.41	1.467	o	|	|	|	|	1.51
107.583	0.00	0.41	1.464	o	|	|	|	|	1.51
107.667	0.00	0.41	1.462	o	|	|	|	|	1.51
107.750	0.00	0.41	1.459	o	|	|	|	|	1.50
107.833	0.00	0.40	1.456	o	|	|	|	|	1.50
107.917	0.00	0.40	1.453	o	|	|	|	|	1.50
108.000	0.00	0.40	1.451	o	|	|	|	|	1.50
108.083	0.00	0.40	1.448	o	|	|	|	|	1.50
108.167	0.00	0.40	1.445	o	|	|	|	|	1.49
108.250	0.00	0.40	1.442	o	|	|	|	|	1.49
108.333	0.00	0.40	1.439	o	|	|	|	|	1.49
108.417	0.00	0.40	1.437	o	|	|	|	|	1.49
108.500	0.00	0.40	1.434	o	|	|	|	|	1.48
108.583	0.00	0.40	1.431	o	|	|	|	|	1.48
108.667	0.00	0.40	1.428	o	|	|	|	|	1.48
108.750	0.00	0.40	1.426	o	|	|	|	|	1.48
108.833	0.00	0.40	1.423	o	|	|	|	|	1.48
108.917	0.00	0.40	1.420	o	|	|	|	|	1.47
109.000	0.00	0.40	1.417	o	|	|	|	|	1.47
109.083	0.00	0.40	1.415	o	|	|	|	|	1.47
109.167	0.00	0.40	1.412	o	|	|	|	|	1.47
109.250	0.00	0.40	1.409	o	|	|	|	|	1.46
109.333	0.00	0.40	1.406	o	|	|	|	|	1.46
109.417	0.00	0.40	1.404	o	|	|	|	|	1.46
109.500	0.00	0.40	1.401	o	|	|	|	|	1.46
109.583	0.00	0.40	1.398	o	|	|	|	|	1.46
109.667	0.00	0.40	1.395	o	|	|	|	|	1.45
109.750	0.00	0.40	1.393	o	|	|	|	|	1.45
109.833	0.00	0.40	1.390	o	|	|	|	|	1.45
109.917	0.00	0.40	1.387	o	|	|	|	|	1.45
110.000	0.00	0.40	1.384	o	|	|	|	|	1.44
110.083	0.00	0.40	1.382	o	|	|	|	|	1.44
110.167	0.00	0.40	1.379	o	|	|	|	|	1.44
110.250	0.00	0.39	1.376	o	|	|	|	|	1.44
110.333	0.00	0.39	1.374	o	|	|	|	|	1.44
110.417	0.00	0.39	1.371	o	|	|	|	|	1.43
110.500	0.00	0.39	1.368	o	|	|	|	|	1.43
110.583	0.00	0.39	1.365	o	|	|	|	|	1.43
110.667	0.00	0.39	1.363	o	|	|	|	|	1.43
110.750	0.00	0.39	1.360	o	|	|	|	|	1.42
110.833	0.00	0.39	1.357	o	|	|	|	|	1.42
110.917	0.00	0.39	1.355	o	|	|	|	|	1.42
111.000	0.00	0.39	1.352	o	|	|	|	|	1.42
111.083	0.00	0.39	1.349	o	|	|	|	|	1.42
111.167	0.00	0.39	1.346	o	|	|	|	|	1.41
111.250	0.00	0.39	1.344	o	|	|	|	|	1.41
111.333	0.00	0.39	1.341	o	|	|	|	|	1.41
111.417	0.00	0.39	1.338	o	|	|	|	|	1.41
111.500	0.00	0.39	1.336	o	|	|	|	|	1.40
111.583	0.00	0.39	1.333	o	|	|	|	|	1.40
111.667	0.00	0.39	1.330	o	|	|	|	|	1.40
111.750	0.00	0.39	1.328	o	|	|	|	|	1.40
111.833	0.00	0.39	1.325	o	|	|	|	|	1.40

111.917	0.00	0.39	1.322	o	|	|	|	|	1.39
112.000	0.00	0.39	1.320	o	|	|	|	|	1.39
112.083	0.00	0.39	1.317	o	|	|	|	|	1.39
112.167	0.00	0.39	1.314	o	|	|	|	|	1.39
112.250	0.00	0.39	1.312	o	|	|	|	|	1.38
112.333	0.00	0.39	1.309	o	|	|	|	|	1.38
112.417	0.00	0.39	1.306	o	|	|	|	|	1.38
112.500	0.00	0.39	1.304	o	|	|	|	|	1.38
112.583	0.00	0.39	1.301	o	|	|	|	|	1.38
112.667	0.00	0.38	1.298	o	|	|	|	|	1.37
112.750	0.00	0.38	1.296	o	|	|	|	|	1.37
112.833	0.00	0.38	1.293	o	|	|	|	|	1.37
112.917	0.00	0.38	1.290	o	|	|	|	|	1.37
113.000	0.00	0.38	1.288	o	|	|	|	|	1.37
113.083	0.00	0.38	1.285	o	|	|	|	|	1.36
113.167	0.00	0.38	1.283	o	|	|	|	|	1.36
113.250	0.00	0.38	1.280	o	|	|	|	|	1.36
113.333	0.00	0.38	1.277	o	|	|	|	|	1.36
113.417	0.00	0.38	1.275	o	|	|	|	|	1.35
113.500	0.00	0.38	1.272	o	|	|	|	|	1.35
113.583	0.00	0.38	1.269	o	|	|	|	|	1.35
113.667	0.00	0.38	1.267	o	|	|	|	|	1.35
113.750	0.00	0.38	1.264	o	|	|	|	|	1.35
113.833	0.00	0.38	1.261	o	|	|	|	|	1.34
113.917	0.00	0.38	1.259	o	|	|	|	|	1.34
114.000	0.00	0.38	1.256	o	|	|	|	|	1.34
114.083	0.00	0.38	1.254	o	|	|	|	|	1.34
114.167	0.00	0.38	1.251	o	|	|	|	|	1.33
114.250	0.00	0.38	1.248	o	|	|	|	|	1.33
114.333	0.00	0.38	1.246	o	|	|	|	|	1.33
114.417	0.00	0.38	1.243	o	|	|	|	|	1.33
114.500	0.00	0.38	1.241	o	|	|	|	|	1.33
114.583	0.00	0.38	1.238	o	|	|	|	|	1.32
114.667	0.00	0.38	1.235	o	|	|	|	|	1.32
114.750	0.00	0.38	1.233	o	|	|	|	|	1.32
114.833	0.00	0.38	1.230	o	|	|	|	|	1.32
114.917	0.00	0.38	1.228	o	|	|	|	|	1.32
115.000	0.00	0.38	1.225	o	|	|	|	|	1.31
115.083	0.00	0.38	1.222	o	|	|	|	|	1.31
115.167	0.00	0.37	1.220	o	|	|	|	|	1.31
115.250	0.00	0.37	1.217	o	|	|	|	|	1.31
115.333	0.00	0.37	1.215	o	|	|	|	|	1.31
115.417	0.00	0.37	1.212	o	|	|	|	|	1.30
115.500	0.00	0.37	1.210	o	|	|	|	|	1.30
115.583	0.00	0.37	1.207	o	|	|	|	|	1.30
115.667	0.00	0.37	1.204	o	|	|	|	|	1.30
115.750	0.00	0.37	1.202	o	|	|	|	|	1.29
115.833	0.00	0.37	1.199	o	|	|	|	|	1.29
115.917	0.00	0.37	1.197	o	|	|	|	|	1.29
116.000	0.00	0.37	1.194	o	|	|	|	|	1.29
116.083	0.00	0.37	1.192	o	|	|	|	|	1.29
116.167	0.00	0.37	1.189	o	|	|	|	|	1.28
116.250	0.00	0.37	1.186	o	|	|	|	|	1.28
116.333	0.00	0.37	1.184	o	|	|	|	|	1.28
116.417	0.00	0.37	1.181	o	|	|	|	|	1.28
116.500	0.00	0.37	1.179	o	|	|	|	|	1.28
116.583	0.00	0.37	1.176	o	|	|	|	|	1.27
116.667	0.00	0.37	1.174	o	|	|	|	|	1.27
116.750	0.00	0.37	1.171	o	|	|	|	|	1.27
116.833	0.00	0.37	1.169	o	|	|	|	|	1.27
116.917	0.00	0.37	1.166	o	|	|	|	|	1.27
117.000	0.00	0.37	1.164	o	|	|	|	|	1.26
117.083	0.00	0.37	1.161	o	|	|	|	|	1.26
117.167	0.00	0.37	1.159	o	|	|	|	|	1.26
117.250	0.00	0.37	1.156	o	|	|	|	|	1.26
117.333	0.00	0.37	1.153	o	|	|	|	|	1.26
117.417	0.00	0.37	1.151	o	|	|	|	|	1.25
117.500	0.00	0.37	1.148	o	|	|	|	|	1.25
117.583	0.00	0.37	1.146	o	|	|	|	|	1.25
117.667	0.00	0.37	1.143	o	|	|	|	|	1.25
117.750	0.00	0.36	1.141	o	|	|	|	|	1.25
117.833	0.00	0.36	1.138	o	|	|	|	|	1.24
117.917	0.00	0.36	1.136	o	|	|	|	|	1.24
118.000	0.00	0.36	1.133	o	|	|	|	|	1.24
118.083	0.00	0.36	1.131	o	|	|	|	|	1.24

118.167	0.00	0.36	1.128	o	|	|	|	|	1.23
118.250	0.00	0.36	1.126	o	|	|	|	|	1.23
118.333	0.00	0.36	1.123	o	|	|	|	|	1.23
118.417	0.00	0.36	1.121	o	|	|	|	|	1.23
118.500	0.00	0.36	1.118	o	|	|	|	|	1.23
118.583	0.00	0.36	1.116	o	|	|	|	|	1.22
118.667	0.00	0.36	1.113	o	|	|	|	|	1.22
118.750	0.00	0.36	1.111	o	|	|	|	|	1.22
118.833	0.00	0.36	1.108	o	|	|	|	|	1.22
118.917	0.00	0.36	1.106	o	|	|	|	|	1.22
119.000	0.00	0.36	1.103	o	|	|	|	|	1.21
119.083	0.00	0.36	1.101	o	|	|	|	|	1.21
119.167	0.00	0.36	1.098	o	|	|	|	|	1.21
119.250	0.00	0.36	1.096	o	|	|	|	|	1.21
119.333	0.00	0.36	1.094	o	|	|	|	|	1.21
119.417	0.00	0.36	1.091	o	|	|	|	|	1.20
119.500	0.00	0.36	1.089	o	|	|	|	|	1.20
119.583	0.00	0.36	1.086	o	|	|	|	|	1.20
119.667	0.00	0.36	1.084	o	|	|	|	|	1.20
119.750	0.00	0.36	1.081	o	|	|	|	|	1.20
119.833	0.00	0.36	1.079	o	|	|	|	|	1.19
119.917	0.00	0.36	1.076	o	|	|	|	|	1.19
120.000	0.00	0.36	1.074	o	|	|	|	|	1.19
120.083	0.00	0.36	1.071	o	|	|	|	|	1.19
120.167	0.00	0.36	1.069	o	|	|	|	|	1.19
120.250	0.00	0.36	1.066	o	|	|	|	|	1.18
120.333	0.00	0.36	1.064	o	|	|	|	|	1.18
120.417	0.00	0.35	1.062	o	|	|	|	|	1.18
120.500	0.00	0.35	1.059	o	|	|	|	|	1.18
120.583	0.00	0.35	1.057	o	|	|	|	|	1.18
120.667	0.00	0.35	1.054	o	|	|	|	|	1.17
120.750	0.00	0.35	1.052	o	|	|	|	|	1.17
120.833	0.00	0.35	1.049	o	|	|	|	|	1.17
120.917	0.00	0.35	1.047	o	|	|	|	|	1.17
121.000	0.00	0.35	1.045	o	|	|	|	|	1.17
121.083	0.00	0.35	1.042	o	|	|	|	|	1.16
121.167	0.00	0.35	1.040	o	|	|	|	|	1.16
121.250	0.00	0.35	1.037	o	|	|	|	|	1.16
121.333	0.00	0.35	1.035	o	|	|	|	|	1.16
121.417	0.00	0.35	1.032	o	|	|	|	|	1.16
121.500	0.00	0.35	1.030	o	|	|	|	|	1.15
121.583	0.00	0.35	1.028	o	|	|	|	|	1.15
121.667	0.00	0.35	1.025	o	|	|	|	|	1.15
121.750	0.00	0.35	1.023	o	|	|	|	|	1.15
121.833	0.00	0.35	1.020	o	|	|	|	|	1.15
121.917	0.00	0.35	1.018	o	|	|	|	|	1.14
122.000	0.00	0.35	1.016	o	|	|	|	|	1.14
122.083	0.00	0.35	1.013	o	|	|	|	|	1.14
122.167	0.00	0.35	1.011	o	|	|	|	|	1.14
122.250	0.00	0.35	1.008	o	|	|	|	|	1.14
122.333	0.00	0.35	1.006	o	|	|	|	|	1.13
122.417	0.00	0.35	1.004	o	|	|	|	|	1.13
122.500	0.00	0.35	1.001	o	|	|	|	|	1.13
122.583	0.00	0.35	0.999	o	|	|	|	|	1.13
122.667	0.00	0.35	0.996	o	|	|	|	|	1.13
122.750	0.00	0.35	0.994	o	|	|	|	|	1.12
122.833	0.00	0.35	0.992	o	|	|	|	|	1.12
122.917	0.00	0.35	0.989	o	|	|	|	|	1.12
123.000	0.00	0.35	0.987	o	|	|	|	|	1.12
123.083	0.00	0.35	0.984	o	|	|	|	|	1.12
123.167	0.00	0.34	0.982	o	|	|	|	|	1.12
123.250	0.00	0.34	0.980	o	|	|	|	|	1.11
123.333	0.00	0.34	0.977	o	|	|	|	|	1.11
123.417	0.00	0.34	0.975	o	|	|	|	|	1.11
123.500	0.00	0.34	0.973	o	|	|	|	|	1.11
123.583	0.00	0.34	0.970	o	|	|	|	|	1.11
123.667	0.00	0.34	0.968	o	|	|	|	|	1.10
123.750	0.00	0.34	0.965	o	|	|	|	|	1.10
123.833	0.00	0.34	0.963	o	|	|	|	|	1.10
123.917	0.00	0.34	0.961	o	|	|	|	|	1.10
124.000	0.00	0.34	0.958	o	|	|	|	|	1.10
124.083	0.00	0.34	0.956	o	|	|	|	|	1.09
124.167	0.00	0.34	0.954	o	|	|	|	|	1.09
124.250	0.00	0.34	0.951	o	|	|	|	|	1.09
124.333	0.00	0.34	0.949	o	|	|	|	|	1.09

124.417	0.00	0.34	0.947	o	|	|	|	|	1.09
124.500	0.00	0.34	0.944	o	|	|	|	|	1.08
124.583	0.00	0.34	0.942	o	|	|	|	|	1.08
124.667	0.00	0.34	0.940	o	|	|	|	|	1.08
124.750	0.00	0.34	0.937	o	|	|	|	|	1.08
124.833	0.00	0.34	0.935	o	|	|	|	|	1.08
124.917	0.00	0.34	0.933	o	|	|	|	|	1.07
125.000	0.00	0.34	0.930	o	|	|	|	|	1.07
125.083	0.00	0.34	0.928	o	|	|	|	|	1.07
125.167	0.00	0.34	0.926	o	|	|	|	|	1.07
125.250	0.00	0.34	0.923	o	|	|	|	|	1.07
125.333	0.00	0.34	0.921	o	|	|	|	|	1.07
125.417	0.00	0.34	0.919	o	|	|	|	|	1.06
125.500	0.00	0.34	0.916	o	|	|	|	|	1.06
125.583	0.00	0.34	0.914	o	|	|	|	|	1.06
125.667	0.00	0.34	0.912	o	|	|	|	|	1.06
125.750	0.00	0.34	0.909	o	|	|	|	|	1.06
125.833	0.00	0.34	0.907	o	|	|	|	|	1.05
125.917	0.00	0.34	0.905	o	|	|	|	|	1.05
126.000	0.00	0.33	0.902	o	|	|	|	|	1.05
126.083	0.00	0.33	0.900	o	|	|	|	|	1.05
126.167	0.00	0.33	0.898	o	|	|	|	|	1.05
126.250	0.00	0.33	0.896	o	|	|	|	|	1.04
126.333	0.00	0.33	0.893	o	|	|	|	|	1.04
126.417	0.00	0.33	0.891	o	|	|	|	|	1.04
126.500	0.00	0.33	0.889	o	|	|	|	|	1.04
126.583	0.00	0.33	0.886	o	|	|	|	|	1.04
126.667	0.00	0.33	0.884	o	|	|	|	|	1.04
126.750	0.00	0.33	0.882	o	|	|	|	|	1.03
126.833	0.00	0.33	0.880	o	|	|	|	|	1.03
126.917	0.00	0.33	0.877	o	|	|	|	|	1.03
127.000	0.00	0.33	0.875	o	|	|	|	|	1.03
127.083	0.00	0.33	0.873	o	|	|	|	|	1.03
127.167	0.00	0.33	0.870	o	|	|	|	|	1.02
127.250	0.00	0.33	0.868	o	|	|	|	|	1.02
127.333	0.00	0.33	0.866	o	|	|	|	|	1.02
127.417	0.00	0.33	0.864	o	|	|	|	|	1.02
127.500	0.00	0.33	0.861	o	|	|	|	|	1.02
127.583	0.00	0.33	0.859	o	|	|	|	|	1.01
127.667	0.00	0.33	0.857	o	|	|	|	|	1.01
127.750	0.00	0.33	0.855	o	|	|	|	|	1.01
127.833	0.00	0.33	0.852	o	|	|	|	|	1.01
127.917	0.00	0.33	0.850	o	|	|	|	|	1.01
128.000	0.00	0.33	0.848	o	|	|	|	|	1.01
128.083	0.00	0.33	0.845	o	|	|	|	|	1.00
128.167	0.00	0.33	0.843	o	|	|	|	|	1.00
128.250	0.00	0.33	0.841	o	|	|	|	|	1.00
128.333	0.00	0.33	0.839	o	|	|	|	|	1.00
128.417	0.00	0.33	0.836	o	|	|	|	|	1.00
128.500	0.00	0.33	0.834	o	|	|	|	|	0.99
128.583	0.00	0.32	0.832	o	|	|	|	|	0.99
128.667	0.00	0.32	0.830	o	|	|	|	|	0.99
128.750	0.00	0.32	0.828	o	|	|	|	|	0.99
128.833	0.00	0.32	0.825	o	|	|	|	|	0.98
128.917	0.00	0.32	0.823	o	|	|	|	|	0.98
129.000	0.00	0.32	0.821	o	|	|	|	|	0.98
129.083	0.00	0.32	0.819	o	|	|	|	|	0.98
129.167	0.00	0.32	0.816	o	|	|	|	|	0.97
129.250	0.00	0.32	0.814	o	|	|	|	|	0.97
129.333	0.00	0.32	0.812	o	|	|	|	|	0.97
129.417	0.00	0.32	0.810	o	|	|	|	|	0.97
129.500	0.00	0.32	0.808	o	|	|	|	|	0.97
129.583	0.00	0.32	0.805	o	|	|	|	|	0.96
129.667	0.00	0.32	0.803	o	|	|	|	|	0.96
129.750	0.00	0.32	0.801	o	|	|	|	|	0.96
129.833	0.00	0.32	0.799	o	|	|	|	|	0.96
129.917	0.00	0.32	0.797	o	|	|	|	|	0.95
130.000	0.00	0.32	0.794	o	|	|	|	|	0.95
130.083	0.00	0.32	0.792	o	|	|	|	|	0.95
130.167	0.00	0.31	0.790	o	|	|	|	|	0.95
130.250	0.00	0.31	0.788	o	|	|	|	|	0.95
130.333	0.00	0.31	0.786	o	|	|	|	|	0.94
130.417	0.00	0.31	0.784	o	|	|	|	|	0.94
130.500	0.00	0.31	0.781	o	|	|	|	|	0.94
130.583	0.00	0.31	0.779	o	|	|	|	|	0.94

130.667	0.00	0.31	0.777	o	|	|	|	|	0.93
130.750	0.00	0.31	0.775	o	|	|	|	|	0.93
130.833	0.00	0.31	0.773	o	|	|	|	|	0.93
130.917	0.00	0.31	0.771	o	|	|	|	|	0.93
131.000	0.00	0.31	0.769	o	|	|	|	|	0.93
131.083	0.00	0.31	0.766	o	|	|	|	|	0.92
131.167	0.00	0.31	0.764	o	|	|	|	|	0.92
131.250	0.00	0.31	0.762	o	|	|	|	|	0.92
131.333	0.00	0.31	0.760	o	|	|	|	|	0.92
131.417	0.00	0.31	0.758	o	|	|	|	|	0.91
131.500	0.00	0.31	0.756	o	|	|	|	|	0.91
131.583	0.00	0.31	0.754	o	|	|	|	|	0.91
131.667	0.00	0.31	0.752	o	|	|	|	|	0.91
131.750	0.00	0.31	0.750	o	|	|	|	|	0.91
131.833	0.00	0.30	0.747	o	|	|	|	|	0.90
131.917	0.00	0.30	0.745	o	|	|	|	|	0.90
132.000	0.00	0.30	0.743	o	|	|	|	|	0.90
132.083	0.00	0.30	0.741	o	|	|	|	|	0.90
132.167	0.00	0.30	0.739	o	|	|	|	|	0.89
132.250	0.00	0.30	0.737	o	|	|	|	|	0.89
132.333	0.00	0.30	0.735	o	|	|	|	|	0.89
132.417	0.00	0.30	0.733	o	|	|	|	|	0.89
132.500	0.00	0.30	0.731	o	|	|	|	|	0.89
132.583	0.00	0.30	0.729	o	|	|	|	|	0.88
132.667	0.00	0.30	0.727	o	|	|	|	|	0.88
132.750	0.00	0.30	0.725	o	|	|	|	|	0.88
132.833	0.00	0.30	0.723	o	|	|	|	|	0.88
132.917	0.00	0.30	0.720	o	|	|	|	|	0.88
133.000	0.00	0.30	0.718	o	|	|	|	|	0.87
133.083	0.00	0.30	0.716	o	|	|	|	|	0.87
133.167	0.00	0.30	0.714	o	|	|	|	|	0.87
133.250	0.00	0.30	0.712	o	|	|	|	|	0.87
133.333	0.00	0.30	0.710	o	|	|	|	|	0.87
133.417	0.00	0.30	0.708	o	|	|	|	|	0.86
133.500	0.00	0.29	0.706	o	|	|	|	|	0.86
133.583	0.00	0.29	0.704	o	|	|	|	|	0.86
133.667	0.00	0.29	0.702	o	|	|	|	|	0.86
133.750	0.00	0.29	0.700	o	|	|	|	|	0.85
133.833	0.00	0.29	0.698	o	|	|	|	|	0.85
133.917	0.00	0.29	0.696	o	|	|	|	|	0.85
134.000	0.00	0.29	0.694	o	|	|	|	|	0.85
134.083	0.00	0.29	0.692	o	|	|	|	|	0.85
134.167	0.00	0.29	0.690	o	|	|	|	|	0.84
134.250	0.00	0.29	0.688	o	|	|	|	|	0.84
134.333	0.00	0.29	0.686	o	|	|	|	|	0.84
134.417	0.00	0.29	0.684	o	|	|	|	|	0.84
134.500	0.00	0.29	0.682	o	|	|	|	|	0.84
134.583	0.00	0.29	0.680	o	|	|	|	|	0.83
134.667	0.00	0.29	0.678	o	|	|	|	|	0.83
134.750	0.00	0.29	0.676	o	|	|	|	|	0.83
134.833	0.00	0.29	0.674	o	|	|	|	|	0.83
134.917	0.00	0.29	0.672	o	|	|	|	|	0.83
135.000	0.00	0.29	0.670	o	|	|	|	|	0.82
135.083	0.00	0.29	0.668	o	|	|	|	|	0.82
135.167	0.00	0.29	0.666	o	|	|	|	|	0.82
135.250	0.00	0.28	0.664	o	|	|	|	|	0.82
135.333	0.00	0.28	0.662	o	|	|	|	|	0.82
135.417	0.00	0.28	0.660	o	|	|	|	|	0.81
135.500	0.00	0.28	0.658	o	|	|	|	|	0.81
135.583	0.00	0.28	0.656	o	|	|	|	|	0.81
135.667	0.00	0.28	0.655	o	|	|	|	|	0.81
135.750	0.00	0.28	0.653	o	|	|	|	|	0.81
135.833	0.00	0.28	0.651	o	|	|	|	|	0.80
135.917	0.00	0.28	0.649	o	|	|	|	|	0.80
136.000	0.00	0.28	0.647	o	|	|	|	|	0.80
136.083	0.00	0.28	0.645	o	|	|	|	|	0.80
136.167	0.00	0.28	0.643	o	|	|	|	|	0.80
136.250	0.00	0.28	0.641	o	|	|	|	|	0.79
136.333	0.00	0.28	0.639	o	|	|	|	|	0.79
136.417	0.00	0.28	0.637	o	|	|	|	|	0.79
136.500	0.00	0.28	0.635	o	|	|	|	|	0.79
136.583	0.00	0.28	0.633	o	|	|	|	|	0.79
136.667	0.00	0.28	0.631	o	|	|	|	|	0.78
136.750	0.00	0.28	0.630	o	|	|	|	|	0.78
136.833	0.00	0.28	0.628	o	|	|	|	|	0.78

136.917	0.00	0.28	0.626	o	|	|	|	|	0.78
137.000	0.00	0.28	0.624	o	|	|	|	|	0.78
137.083	0.00	0.27	0.622	o	|	|	|	|	0.77
137.167	0.00	0.27	0.620	o	|	|	|	|	0.77
137.250	0.00	0.27	0.618	o	|	|	|	|	0.77
137.333	0.00	0.27	0.616	o	|	|	|	|	0.77
137.417	0.00	0.27	0.614	o	|	|	|	|	0.77
137.500	0.00	0.27	0.613	o	|	|	|	|	0.76
137.583	0.00	0.27	0.611	o	|	|	|	|	0.76
137.667	0.00	0.27	0.609	o	|	|	|	|	0.76
137.750	0.00	0.27	0.607	o	|	|	|	|	0.76
137.833	0.00	0.27	0.605	o	|	|	|	|	0.76
137.917	0.00	0.27	0.603	o	|	|	|	|	0.75
138.000	0.00	0.27	0.601	o	|	|	|	|	0.75
138.083	0.00	0.27	0.599	o	|	|	|	|	0.75
138.167	0.00	0.27	0.598	o	|	|	|	|	0.75
138.250	0.00	0.27	0.596	o	|	|	|	|	0.75
138.333	0.00	0.27	0.594	o	|	|	|	|	0.75
138.417	0.00	0.27	0.592	o	|	|	|	|	0.74
138.500	0.00	0.27	0.590	o	|	|	|	|	0.74
138.583	0.00	0.27	0.588	o	|	|	|	|	0.74
138.667	0.00	0.27	0.587	o	|	|	|	|	0.74
138.750	0.00	0.27	0.585	o	|	|	|	|	0.74
138.833	0.00	0.27	0.583	o	|	|	|	|	0.73
138.917	0.00	0.26	0.581	o	|	|	|	|	0.73
139.000	0.00	0.26	0.579	o	|	|	|	|	0.73
139.083	0.00	0.26	0.577	o	|	|	|	|	0.73
139.167	0.00	0.26	0.576	o	|	|	|	|	0.73
139.250	0.00	0.26	0.574	o	|	|	|	|	0.72
139.333	0.00	0.26	0.572	o	|	|	|	|	0.72
139.417	0.00	0.26	0.570	o	|	|	|	|	0.72
139.500	0.00	0.26	0.568	o	|	|	|	|	0.72
139.583	0.00	0.26	0.567	o	|	|	|	|	0.72
139.667	0.00	0.26	0.565	o	|	|	|	|	0.72
139.750	0.00	0.26	0.563	o	|	|	|	|	0.71
139.833	0.00	0.26	0.561	o	|	|	|	|	0.71
139.917	0.00	0.26	0.559	o	|	|	|	|	0.71
140.000	0.00	0.26	0.558	o	|	|	|	|	0.71
140.083	0.00	0.26	0.556	o	|	|	|	|	0.71
140.167	0.00	0.26	0.554	o	|	|	|	|	0.70
140.250	0.00	0.26	0.552	o	|	|	|	|	0.70
140.333	0.00	0.26	0.550	o	|	|	|	|	0.70
140.417	0.00	0.26	0.549	o	|	|	|	|	0.70
140.500	0.00	0.26	0.547	o	|	|	|	|	0.70
140.583	0.00	0.26	0.545	o	|	|	|	|	0.70
140.667	0.00	0.26	0.543	o	|	|	|	|	0.69
140.750	0.00	0.26	0.542	o	|	|	|	|	0.69
140.833	0.00	0.25	0.540	o	|	|	|	|	0.69
140.917	0.00	0.25	0.538	o	|	|	|	|	0.69
141.000	0.00	0.25	0.536	o	|	|	|	|	0.69
141.083	0.00	0.25	0.535	o	|	|	|	|	0.68
141.167	0.00	0.25	0.533	o	|	|	|	|	0.68
141.250	0.00	0.25	0.531	o	|	|	|	|	0.68
141.333	0.00	0.25	0.529	o	|	|	|	|	0.68
141.417	0.00	0.25	0.528	o	|	|	|	|	0.68
141.500	0.00	0.25	0.526	o	|	|	|	|	0.68
141.583	0.00	0.25	0.524	o	|	|	|	|	0.67
141.667	0.00	0.25	0.522	o	|	|	|	|	0.67
141.750	0.00	0.25	0.521	o	|	|	|	|	0.67
141.833	0.00	0.25	0.519	o	|	|	|	|	0.67
141.917	0.00	0.25	0.517	o	|	|	|	|	0.67
142.000	0.00	0.25	0.516	o	|	|	|	|	0.66
142.083	0.00	0.25	0.514	o	|	|	|	|	0.66
142.167	0.00	0.25	0.512	o	|	|	|	|	0.66
142.250	0.00	0.25	0.510	o	|	|	|	|	0.66
142.333	0.00	0.25	0.509	o	|	|	|	|	0.66
142.417	0.00	0.25	0.507	o	|	|	|	|	0.66
142.500	0.00	0.25	0.505	o	|	|	|	|	0.65
142.583	0.00	0.25	0.504	o	|	|	|	|	0.65
142.667	0.00	0.25	0.502	o	|	|	|	|	0.65
142.750	0.00	0.25	0.500	o	|	|	|	|	0.65
142.833	0.00	0.25	0.499	o	|	|	|	|	0.65
142.917	0.00	0.24	0.497	o	|	|	|	|	0.65
143.000	0.00	0.24	0.495	o	|	|	|	|	0.64
143.083	0.00	0.24	0.494	o	|	|	|	|	0.64

143.167	0.00	0.24	0.492	o	|	|	|	|	0.64
143.250	0.00	0.24	0.490	o	|	|	|	|	0.64
143.333	0.00	0.24	0.488	o	|	|	|	|	0.64
143.417	0.00	0.24	0.487	o	|	|	|	|	0.63
143.500	0.00	0.24	0.485	o	|	|	|	|	0.63
143.583	0.00	0.24	0.483	o	|	|	|	|	0.63
143.667	0.00	0.24	0.482	o	|	|	|	|	0.63
143.750	0.00	0.24	0.480	o	|	|	|	|	0.63
143.833	0.00	0.24	0.479	o	|	|	|	|	0.63
143.917	0.00	0.24	0.477	o	|	|	|	|	0.62
144.000	0.00	0.24	0.475	o	|	|	|	|	0.62
144.083	0.00	0.24	0.474	o	|	|	|	|	0.62
144.167	0.00	0.24	0.472	o	|	|	|	|	0.62
144.250	0.00	0.24	0.470	o	|	|	|	|	0.62
144.333	0.00	0.24	0.469	o	|	|	|	|	0.62
144.417	0.00	0.24	0.467	o	|	|	|	|	0.61
144.500	0.00	0.24	0.465	o	|	|	|	|	0.61
144.583	0.00	0.24	0.464	o	|	|	|	|	0.61
144.667	0.00	0.24	0.462	o	|	|	|	|	0.61
144.750	0.00	0.24	0.460	o	|	|	|	|	0.61
144.833	0.00	0.24	0.459	o	|	|	|	|	0.61
144.917	0.00	0.24	0.457	o	|	|	|	|	0.60
145.000	0.00	0.23	0.456	o	|	|	|	|	0.60
145.083	0.00	0.23	0.454	o	|	|	|	|	0.60
145.167	0.00	0.23	0.452	o	|	|	|	|	0.60
145.250	0.00	0.23	0.451	o	|	|	|	|	0.60
145.333	0.00	0.23	0.449	o	|	|	|	|	0.60
145.417	0.00	0.23	0.448	o	|	|	|	|	0.59
145.500	0.00	0.23	0.446	o	|	|	|	|	0.59
145.583	0.00	0.23	0.444	o	|	|	|	|	0.59
145.667	0.00	0.23	0.443	o	|	|	|	|	0.59
145.750	0.00	0.23	0.441	o	|	|	|	|	0.59
145.833	0.00	0.23	0.440	o	|	|	|	|	0.59
145.917	0.00	0.23	0.438	o	|	|	|	|	0.58
146.000	0.00	0.23	0.436	o	|	|	|	|	0.58
146.083	0.00	0.23	0.435	o	|	|	|	|	0.58
146.167	0.00	0.23	0.433	o	|	|	|	|	0.58
146.250	0.00	0.23	0.432	o	|	|	|	|	0.58
146.333	0.00	0.23	0.430	o	|	|	|	|	0.58
146.417	0.00	0.23	0.429	o	|	|	|	|	0.57
146.500	0.00	0.23	0.427	o	|	|	|	|	0.57
146.583	0.00	0.23	0.425	o	|	|	|	|	0.57
146.667	0.00	0.23	0.424	o	|	|	|	|	0.57
146.750	0.00	0.23	0.422	o	|	|	|	|	0.57
146.833	0.00	0.23	0.421	o	|	|	|	|	0.57
146.917	0.00	0.23	0.419	o	|	|	|	|	0.57
147.000	0.00	0.23	0.418	o	|	|	|	|	0.56
147.083	0.00	0.23	0.416	o	|	|	|	|	0.56
147.167	0.00	0.22	0.414	o	|	|	|	|	0.56
147.250	0.00	0.22	0.413	o	|	|	|	|	0.56
147.333	0.00	0.22	0.411	o	|	|	|	|	0.56
147.417	0.00	0.22	0.410	o	|	|	|	|	0.56
147.500	0.00	0.22	0.408	o	|	|	|	|	0.55
147.583	0.00	0.22	0.407	o	|	|	|	|	0.55
147.667	0.00	0.22	0.405	o	|	|	|	|	0.55
147.750	0.00	0.22	0.404	o	|	|	|	|	0.55
147.833	0.00	0.22	0.402	o	|	|	|	|	0.55
147.917	0.00	0.22	0.401	o	|	|	|	|	0.55
148.000	0.00	0.22	0.399	o	|	|	|	|	0.54
148.083	0.00	0.22	0.398	o	|	|	|	|	0.54
148.167	0.00	0.22	0.396	o	|	|	|	|	0.54
148.250	0.00	0.22	0.395	o	|	|	|	|	0.54
148.333	0.00	0.22	0.393	o	|	|	|	|	0.54
148.417	0.00	0.22	0.391	o	|	|	|	|	0.54
148.500	0.00	0.22	0.390	o	|	|	|	|	0.54
148.583	0.00	0.22	0.388	o	|	|	|	|	0.53
148.667	0.00	0.22	0.387	o	|	|	|	|	0.53
148.750	0.00	0.22	0.385	o	|	|	|	|	0.53
148.833	0.00	0.22	0.384	o	|	|	|	|	0.53
148.917	0.00	0.22	0.382	o	|	|	|	|	0.53
149.000	0.00	0.22	0.381	o	|	|	|	|	0.53
149.083	0.00	0.22	0.379	o	|	|	|	|	0.52
149.167	0.00	0.22	0.378	o	|	|	|	|	0.52
149.250	0.00	0.22	0.377	o	|	|	|	|	0.52
149.333	0.00	0.22	0.375	o	|	|	|	|	0.52

149.417	0.00	0.22	0.374	o					0.52
149.500	0.00	0.21	0.372	o					0.52
149.583	0.00	0.21	0.371	o					0.52
149.667	0.00	0.21	0.369	o					0.51
149.750	0.00	0.21	0.368	o					0.51
149.833	0.00	0.21	0.366	o					0.51
149.917	0.00	0.21	0.365	o					0.51
150.000	0.00	0.21	0.363	o					0.51
150.083	0.00	0.21	0.362	o					0.51
150.167	0.00	0.21	0.360	o					0.50
150.250	0.00	0.21	0.359	o					0.50
150.333	0.00	0.21	0.357	o					0.50
150.417	0.00	0.21	0.356	o					0.50
150.500	0.00	0.21	0.354	o					0.50
150.583	0.00	0.21	0.353	o					0.50
150.667	0.00	0.21	0.352	o					0.49
150.750	0.00	0.21	0.350	o					0.49
150.833	0.00	0.20	0.349	o					0.49
150.917	0.00	0.20	0.347	o					0.49
151.000	0.00	0.20	0.346	o					0.49
151.083	0.00	0.20	0.345	o					0.48
151.167	0.00	0.20	0.343	o					0.48
151.250	0.00	0.20	0.342	o					0.48
151.333	0.00	0.20	0.340	o					0.48
151.417	0.00	0.20	0.339	o					0.48
151.500	0.00	0.20	0.338	o					0.47
151.583	0.00	0.19	0.336	o					0.47
151.667	0.00	0.19	0.335	o					0.47
151.750	0.00	0.19	0.334	o					0.47
151.833	0.00	0.19	0.332	o					0.47
151.917	0.00	0.19	0.331	o					0.46
152.000	0.00	0.19	0.330	o					0.46
152.083	0.00	0.19	0.328	o					0.46
152.167	0.00	0.19	0.327	o					0.46
152.250	0.00	0.19	0.326	o					0.46
152.333	0.00	0.18	0.325	o					0.46
152.417	0.00	0.18	0.323	o					0.45
152.500	0.00	0.18	0.322	o					0.45
152.583	0.00	0.18	0.321	o					0.45
152.667	0.00	0.18	0.320	o					0.45
152.750	0.00	0.18	0.318	o					0.45
152.833	0.00	0.18	0.317	o					0.45
152.917	0.00	0.18	0.316	o					0.44
153.000	0.00	0.18	0.315	o					0.44
153.083	0.00	0.18	0.313	o					0.44
153.167	0.00	0.17	0.312	o					0.44
153.250	0.00	0.17	0.311	o					0.44
153.333	0.00	0.17	0.310	o					0.44
153.417	0.00	0.17	0.309	o					0.43
153.500	0.00	0.17	0.307	o					0.43
153.583	0.00	0.17	0.306	o					0.43
153.667	0.00	0.17	0.305	o					0.43
153.750	0.00	0.17	0.304	o					0.43
153.833	0.00	0.17	0.303	o					0.43
153.917	0.00	0.17	0.302	o					0.42
154.000	0.00	0.16	0.301	o					0.42
154.083	0.00	0.16	0.299	o					0.42
154.167	0.00	0.16	0.298	o					0.42
154.250	0.00	0.16	0.297	o					0.42
154.333	0.00	0.16	0.296	o					0.42
154.417	0.00	0.16	0.295	o					0.41
154.500	0.00	0.16	0.294	o					0.41
154.583	0.00	0.16	0.293	o					0.41
154.667	0.00	0.16	0.292	o					0.41
154.750	0.00	0.16	0.291	o					0.41
154.833	0.00	0.16	0.290	o					0.41
154.917	0.00	0.15	0.288	o					0.41
155.000	0.00	0.15	0.287	o					0.40
155.083	0.00	0.15	0.286	o					0.40
155.167	0.00	0.15	0.285	o					0.40
155.250	0.00	0.15	0.284	o					0.40
155.333	0.00	0.15	0.283	o					0.40
155.417	0.00	0.15	0.282	o					0.40
155.500	0.00	0.15	0.281	o					0.39
155.583	0.00	0.15	0.280	o					0.39

155.667	0.00	0.15	0.279	o	|	|	|	|	0.39
155.750	0.00	0.15	0.278	o	|	|	|	|	0.39
155.833	0.00	0.15	0.277	o	|	|	|	|	0.39
155.917	0.00	0.14	0.276	o	|	|	|	|	0.39
156.000	0.00	0.14	0.275	o	|	|	|	|	0.39
156.083	0.00	0.14	0.274	o	|	|	|	|	0.38
156.167	0.00	0.14	0.273	o	|	|	|	|	0.38
156.250	0.00	0.14	0.272	o	|	|	|	|	0.38
156.333	0.00	0.14	0.271	o	|	|	|	|	0.38
156.417	0.00	0.14	0.270	o	|	|	|	|	0.38
156.500	0.00	0.14	0.269	o	|	|	|	|	0.38
156.583	0.00	0.14	0.268	o	|	|	|	|	0.38
156.667	0.00	0.14	0.267	o	|	|	|	|	0.38
156.750	0.00	0.14	0.266	o	|	|	|	|	0.37
156.833	0.00	0.14	0.266	o	|	|	|	|	0.37
156.917	0.00	0.13	0.265	o	|	|	|	|	0.37
157.000	0.00	0.13	0.264	o	|	|	|	|	0.37
157.083	0.00	0.13	0.263	o	|	|	|	|	0.37
157.167	0.00	0.13	0.262	o	|	|	|	|	0.37
157.250	0.00	0.13	0.261	o	|	|	|	|	0.37
157.333	0.00	0.13	0.260	o	|	|	|	|	0.37
157.417	0.00	0.13	0.259	o	|	|	|	|	0.36
157.500	0.00	0.13	0.258	o	|	|	|	|	0.36
157.583	0.00	0.13	0.257	o	|	|	|	|	0.36
157.667	0.00	0.13	0.256	o	|	|	|	|	0.36
157.750	0.00	0.13	0.256	o	|	|	|	|	0.36
157.833	0.00	0.13	0.255	o	|	|	|	|	0.36
157.917	0.00	0.13	0.254	o	|	|	|	|	0.36
158.000	0.00	0.13	0.253	o	|	|	|	|	0.36
158.083	0.00	0.12	0.252	o	|	|	|	|	0.35
158.167	0.00	0.12	0.251	o	|	|	|	|	0.35
158.250	0.00	0.12	0.250	o	|	|	|	|	0.35
158.333	0.00	0.12	0.250	o	|	|	|	|	0.35
158.417	0.00	0.12	0.249	o	|	|	|	|	0.35
158.500	0.00	0.12	0.248	o	|	|	|	|	0.35
158.583	0.00	0.12	0.247	o	|	|	|	|	0.35
158.667	0.00	0.12	0.246	o	|	|	|	|	0.35
158.750	0.00	0.12	0.245	o	|	|	|	|	0.34
158.833	0.00	0.12	0.245	o	|	|	|	|	0.34
158.917	0.00	0.12	0.244	o	|	|	|	|	0.34
159.000	0.00	0.12	0.243	o	|	|	|	|	0.34
159.083	0.00	0.12	0.242	o	|	|	|	|	0.34
159.167	0.00	0.12	0.241	o	|	|	|	|	0.34
159.250	0.00	0.11	0.241	o	|	|	|	|	0.34
159.333	0.00	0.11	0.240	o	|	|	|	|	0.34
159.417	0.00	0.11	0.239	o	|	|	|	|	0.34
159.500	0.00	0.11	0.238	o	|	|	|	|	0.33
159.583	0.00	0.11	0.237	o	|	|	|	|	0.33
159.667	0.00	0.11	0.237	o	|	|	|	|	0.33
159.750	0.00	0.11	0.236	o	|	|	|	|	0.33
159.833	0.00	0.11	0.235	o	|	|	|	|	0.33
159.917	0.00	0.11	0.234	o	|	|	|	|	0.33
160.000	0.00	0.11	0.234	o	|	|	|	|	0.33
160.083	0.00	0.11	0.233	o	|	|	|	|	0.33
160.167	0.00	0.11	0.232	o	|	|	|	|	0.33
160.250	0.00	0.11	0.231	o	|	|	|	|	0.32
160.333	0.00	0.11	0.231	o	|	|	|	|	0.32
160.417	0.00	0.11	0.230	o	|	|	|	|	0.32
160.500	0.00	0.11	0.229	o	|	|	|	|	0.32
160.583	0.00	0.10	0.228	o	|	|	|	|	0.32
160.667	0.00	0.10	0.228	o	|	|	|	|	0.32
160.750	0.00	0.10	0.227	o	|	|	|	|	0.32
160.833	0.00	0.10	0.226	o	|	|	|	|	0.32
160.917	0.00	0.10	0.226	o	|	|	|	|	0.32
161.000	0.00	0.10	0.225	o	|	|	|	|	0.32
161.083	0.00	0.10	0.224	o	|	|	|	|	0.31
161.167	0.00	0.10	0.224	o	|	|	|	|	0.31
161.250	0.00	0.10	0.223	o	|	|	|	|	0.31
161.333	0.00	0.10	0.222	o	|	|	|	|	0.31
161.417	0.00	0.10	0.221	o	|	|	|	|	0.31
161.500	0.00	0.10	0.221	o	|	|	|	|	0.31
161.583	0.00	0.10	0.220	o	|	|	|	|	0.31
161.667	0.00	0.10	0.219	o	|	|	|	|	0.31
161.750	0.00	0.10	0.219	o	|	|	|	|	0.31
161.833	0.00	0.10	0.218	o	|	|	|	|	0.31

161.917	0.00	0.10	0.217	o	|	|	|	|	0.31
162.000	0.00	0.09	0.217	o	|	|	|	|	0.30
162.083	0.00	0.09	0.216	o	|	|	|	|	0.30
162.167	0.00	0.09	0.215	o	|	|	|	|	0.30
162.250	0.00	0.09	0.215	o	|	|	|	|	0.30
162.333	0.00	0.09	0.214	o	|	|	|	|	0.30
162.417	0.00	0.09	0.214	o	|	|	|	|	0.30
162.500	0.00	0.09	0.213	o	|	|	|	|	0.30
162.583	0.00	0.09	0.212	o	|	|	|	|	0.30
162.667	0.00	0.09	0.212	o	|	|	|	|	0.30
162.750	0.00	0.09	0.211	o	|	|	|	|	0.30
162.833	0.00	0.09	0.210	o	|	|	|	|	0.30
162.917	0.00	0.09	0.210	o	|	|	|	|	0.29
163.000	0.00	0.09	0.209	o	|	|	|	|	0.29
163.083	0.00	0.09	0.209	o	|	|	|	|	0.29
163.167	0.00	0.09	0.208	o	|	|	|	|	0.29
163.250	0.00	0.09	0.207	o	|	|	|	|	0.29
163.333	0.00	0.09	0.207	o	|	|	|	|	0.29
163.417	0.00	0.09	0.206	o	|	|	|	|	0.29
163.500	0.00	0.09	0.206	o	|	|	|	|	0.29
163.583	0.00	0.09	0.205	o	|	|	|	|	0.29
163.667	0.00	0.08	0.204	o	|	|	|	|	0.29
163.750	0.00	0.08	0.204	o	|	|	|	|	0.29
163.833	0.00	0.08	0.203	o	|	|	|	|	0.29
163.917	0.00	0.08	0.203	o	|	|	|	|	0.28
164.000	0.00	0.08	0.202	o	|	|	|	|	0.28
164.083	0.00	0.08	0.202	o	|	|	|	|	0.28
164.167	0.00	0.08	0.201	o	|	|	|	|	0.28
164.250	0.00	0.08	0.200	o	|	|	|	|	0.28
164.333	0.00	0.08	0.200	o	|	|	|	|	0.28
164.417	0.00	0.08	0.199	o	|	|	|	|	0.28
164.500	0.00	0.08	0.199	o	|	|	|	|	0.28
164.583	0.00	0.08	0.198	o	|	|	|	|	0.28
164.667	0.00	0.08	0.198	o	|	|	|	|	0.28
164.750	0.00	0.08	0.197	o	|	|	|	|	0.28
164.833	0.00	0.08	0.197	o	|	|	|	|	0.28
164.917	0.00	0.08	0.196	o	|	|	|	|	0.28
165.000	0.00	0.08	0.196	o	|	|	|	|	0.27
165.083	0.00	0.08	0.195	o	|	|	|	|	0.27
165.167	0.00	0.08	0.194	o	|	|	|	|	0.27
165.250	0.00	0.08	0.194	o	|	|	|	|	0.27
165.333	0.00	0.08	0.193	o	|	|	|	|	0.27
165.417	0.00	0.08	0.193	o	|	|	|	|	0.27
165.500	0.00	0.07	0.192	o	|	|	|	|	0.27
165.583	0.00	0.07	0.192	o	|	|	|	|	0.27
165.667	0.00	0.07	0.191	o	|	|	|	|	0.27
165.750	0.00	0.07	0.191	o	|	|	|	|	0.27
165.833	0.00	0.07	0.190	o	|	|	|	|	0.27
165.917	0.00	0.07	0.190	o	|	|	|	|	0.27
166.000	0.00	0.07	0.189	o	|	|	|	|	0.27
166.083	0.00	0.07	0.189	o	|	|	|	|	0.27
166.167	0.00	0.07	0.188	o	|	|	|	|	0.26
166.250	0.00	0.07	0.188	o	|	|	|	|	0.26
166.333	0.00	0.07	0.187	o	|	|	|	|	0.26
166.417	0.00	0.07	0.187	o	|	|	|	|	0.26
166.500	0.00	0.07	0.186	o	|	|	|	|	0.26
166.583	0.00	0.07	0.186	o	|	|	|	|	0.26
166.667	0.00	0.07	0.185	o	|	|	|	|	0.26
166.750	0.00	0.07	0.185	o	|	|	|	|	0.26
166.833	0.00	0.07	0.185	o	|	|	|	|	0.26
166.917	0.00	0.07	0.184	o	|	|	|	|	0.26
167.000	0.00	0.07	0.184	o	|	|	|	|	0.26
167.083	0.00	0.07	0.183	o	|	|	|	|	0.26
167.167	0.00	0.07	0.183	o	|	|	|	|	0.26
167.250	0.00	0.07	0.182	o	|	|	|	|	0.26
167.333	0.00	0.07	0.182	o	|	|	|	|	0.26
167.417	0.00	0.07	0.181	o	|	|	|	|	0.25
167.500	0.00	0.07	0.181	o	|	|	|	|	0.25
167.583	0.00	0.06	0.180	o	|	|	|	|	0.25
167.667	0.00	0.06	0.180	o	|	|	|	|	0.25
167.750	0.00	0.06	0.180	o	|	|	|	|	0.25
167.833	0.00	0.06	0.179	o	|	|	|	|	0.25
167.917	0.00	0.06	0.179	o	|	|	|	|	0.25
168.000	0.00	0.06	0.178	o	|	|	|	|	0.25
168.083	0.00	0.06	0.178	o	|	|	|	|	0.25

168.167	0.00	0.06	0.177	o	|	|	|	|	0.25
168.250	0.00	0.06	0.177	o	|	|	|	|	0.25
168.333	0.00	0.06	0.176	o	|	|	|	|	0.25
168.417	0.00	0.06	0.176	o	|	|	|	|	0.25
168.500	0.00	0.06	0.176	o	|	|	|	|	0.25
168.583	0.00	0.06	0.175	o	|	|	|	|	0.25
168.667	0.00	0.06	0.175	o	|	|	|	|	0.25
168.750	0.00	0.06	0.174	o	|	|	|	|	0.24
168.833	0.00	0.06	0.174	o	|	|	|	|	0.24
168.917	0.00	0.06	0.174	o	|	|	|	|	0.24
169.000	0.00	0.06	0.173	o	|	|	|	|	0.24
169.083	0.00	0.06	0.173	o	|	|	|	|	0.24
169.167	0.00	0.06	0.172	o	|	|	|	|	0.24
169.250	0.00	0.06	0.172	o	|	|	|	|	0.24
169.333	0.00	0.06	0.172	o	|	|	|	|	0.24
169.417	0.00	0.06	0.171	o	|	|	|	|	0.24
169.500	0.00	0.06	0.171	o	|	|	|	|	0.24
169.583	0.00	0.06	0.170	o	|	|	|	|	0.24
169.667	0.00	0.06	0.170	o	|	|	|	|	0.24
169.750	0.00	0.06	0.170	o	|	|	|	|	0.24
169.833	0.00	0.06	0.169	o	|	|	|	|	0.24
169.917	0.00	0.06	0.169	o	|	|	|	|	0.24
170.000	0.00	0.05	0.169	o	|	|	|	|	0.24
170.083	0.00	0.05	0.168	o	|	|	|	|	0.24
170.167	0.00	0.05	0.168	o	|	|	|	|	0.24
170.250	0.00	0.05	0.167	o	|	|	|	|	0.24
170.333	0.00	0.05	0.167	o	|	|	|	|	0.23
170.417	0.00	0.05	0.167	o	|	|	|	|	0.23
170.500	0.00	0.05	0.166	o	|	|	|	|	0.23
170.583	0.00	0.05	0.166	o	|	|	|	|	0.23
170.667	0.00	0.05	0.166	o	|	|	|	|	0.23
170.750	0.00	0.05	0.165	o	|	|	|	|	0.23
170.833	0.00	0.05	0.165	o	|	|	|	|	0.23
170.917	0.00	0.05	0.164	o	|	|	|	|	0.23
171.000	0.00	0.05	0.164	o	|	|	|	|	0.23
171.083	0.00	0.05	0.164	o	|	|	|	|	0.23
171.167	0.00	0.05	0.163	o	|	|	|	|	0.23
171.250	0.00	0.05	0.163	o	|	|	|	|	0.23
171.333	0.00	0.05	0.163	o	|	|	|	|	0.23
171.417	0.00	0.05	0.162	o	|	|	|	|	0.23
171.500	0.00	0.05	0.162	o	|	|	|	|	0.23
171.583	0.00	0.05	0.162	o	|	|	|	|	0.23
171.667	0.00	0.05	0.161	o	|	|	|	|	0.23
171.750	0.00	0.05	0.161	o	|	|	|	|	0.23
171.833	0.00	0.05	0.161	o	|	|	|	|	0.23
171.917	0.00	0.05	0.160	o	|	|	|	|	0.23
172.000	0.00	0.05	0.160	o	|	|	|	|	0.22
172.083	0.00	0.05	0.160	o	|	|	|	|	0.22
172.167	0.00	0.05	0.159	o	|	|	|	|	0.22
172.250	0.00	0.05	0.159	o	|	|	|	|	0.22
172.333	0.00	0.05	0.159	o	|	|	|	|	0.22
172.417	0.00	0.05	0.158	o	|	|	|	|	0.22
172.500	0.00	0.05	0.158	o	|	|	|	|	0.22
172.583	0.00	0.05	0.158	o	|	|	|	|	0.22
172.667	0.00	0.05	0.157	o	|	|	|	|	0.22
172.750	0.00	0.05	0.157	o	|	|	|	|	0.22
172.833	0.00	0.05	0.157	o	|	|	|	|	0.22
172.917	0.00	0.04	0.157	o	|	|	|	|	0.22
173.000	0.00	0.04	0.156	o	|	|	|	|	0.22
173.083	0.00	0.04	0.156	o	|	|	|	|	0.22
173.167	0.00	0.04	0.156	o	|	|	|	|	0.22
173.250	0.00	0.04	0.155	o	|	|	|	|	0.22
173.333	0.00	0.04	0.155	o	|	|	|	|	0.22
173.417	0.00	0.04	0.155	o	|	|	|	|	0.22
173.500	0.00	0.04	0.154	o	|	|	|	|	0.22
173.583	0.00	0.04	0.154	o	|	|	|	|	0.22
173.667	0.00	0.04	0.154	o	|	|	|	|	0.22
173.750	0.00	0.04	0.154	o	|	|	|	|	0.22
173.833	0.00	0.04	0.153	o	|	|	|	|	0.22
173.917	0.00	0.04	0.153	o	|	|	|	|	0.21
174.000	0.00	0.04	0.153	o	|	|	|	|	0.21
174.083	0.00	0.04	0.152	o	|	|	|	|	0.21
174.167	0.00	0.04	0.152	o	|	|	|	|	0.21
174.250	0.00	0.04	0.152	o	|	|	|	|	0.21
174.333	0.00	0.04	0.152	o	|	|	|	|	0.21

174.417	0.00	0.04	0.151	o					0.21
174.500	0.00	0.04	0.151	o					0.21
174.583	0.00	0.04	0.151	o					0.21
174.667	0.00	0.04	0.150	o					0.21
174.750	0.00	0.04	0.150	o					0.21
174.833	0.00	0.04	0.150	o					0.21
174.917	0.00	0.04	0.150	o					0.21
175.000	0.00	0.04	0.149	o					0.21
175.083	0.00	0.04	0.149	o					0.21
175.167	0.00	0.04	0.149	o					0.21
175.250	0.00	0.04	0.149	o					0.21
175.333	0.00	0.04	0.148	o					0.21
175.417	0.00	0.04	0.148	o					0.21
175.500	0.00	0.04	0.148	o					0.21
175.583	0.00	0.04	0.148	o					0.21
175.667	0.00	0.04	0.147	o					0.21
175.750	0.00	0.04	0.147	o					0.21
175.833	0.00	0.04	0.147	o					0.21
175.917	0.00	0.04	0.147	o					0.21
176.000	0.00	0.04	0.146	o					0.21
176.083	0.00	0.04	0.146	o					0.21
176.167	0.00	0.04	0.146	o					0.20
176.250	0.00	0.04	0.146	o					0.20
176.333	0.00	0.04	0.145	o					0.20
176.417	0.00	0.04	0.145	o					0.20
176.500	0.00	0.03	0.145	o					0.20
176.583	0.00	0.03	0.145	o					0.20
176.667	0.00	0.03	0.144	o					0.20
176.750	0.00	0.03	0.144	o					0.20
176.833	0.00	0.03	0.144	o					0.20
176.917	0.00	0.03	0.144	o					0.20
177.000	0.00	0.03	0.143	o					0.20
177.083	0.00	0.03	0.143	o					0.20
177.167	0.00	0.03	0.143	o					0.20
177.250	0.00	0.03	0.143	o					0.20
177.333	0.00	0.03	0.142	o					0.20
177.417	0.00	0.03	0.142	o					0.20
177.500	0.00	0.03	0.142	o					0.20
177.583	0.00	0.03	0.142	o					0.20
177.667	0.00	0.03	0.142	o					0.20
177.750	0.00	0.03	0.141	o					0.20
177.833	0.00	0.03	0.141	o					0.20
177.917	0.00	0.03	0.141	o					0.20
178.000	0.00	0.03	0.141	o					0.20
178.083	0.00	0.03	0.140	o					0.20
178.167	0.00	0.03	0.140	o					0.20
178.250	0.00	0.03	0.140	o					0.20
178.333	0.00	0.03	0.140	o					0.20
178.417	0.00	0.03	0.140	o					0.20
178.500	0.00	0.03	0.139	o					0.20
178.583	0.00	0.03	0.139	o					0.20
178.667	0.00	0.03	0.139	o					0.20
178.750	0.00	0.03	0.139	o					0.19
178.833	0.00	0.03	0.139	o					0.19
178.917	0.00	0.03	0.138	o					0.19
179.000	0.00	0.03	0.138	o					0.19
179.083	0.00	0.03	0.138	o					0.19
179.167	0.00	0.03	0.138	o					0.19
179.250	0.00	0.03	0.138	o					0.19
179.333	0.00	0.03	0.137	o					0.19
179.417	0.00	0.03	0.137	o					0.19
179.500	0.00	0.03	0.137	o					0.19
179.583	0.00	0.03	0.137	o					0.19
179.667	0.00	0.03	0.137	o					0.19
179.750	0.00	0.03	0.136	o					0.19
179.833	0.00	0.03	0.136	o					0.19
179.917	0.00	0.03	0.136	o					0.19
180.000	0.00	0.03	0.136	o					0.19
180.083	0.00	0.03	0.136	o					0.19
180.167	0.00	0.03	0.135	o					0.19
180.250	0.00	0.03	0.135	o					0.19
180.333	0.00	0.03	0.135	o					0.19
180.417	0.00	0.03	0.135	o					0.19
180.500	0.00	0.03	0.135	o					0.19
180.583	0.00	0.03	0.134	o					0.19

180.667	0.00	0.03	0.134	o	|	|	|	|	0.19
180.750	0.00	0.03	0.134	o	|	|	|	|	0.19
180.833	0.00	0.03	0.134	o	|	|	|	|	0.19
180.917	0.00	0.03	0.134	o	|	|	|	|	0.19
181.000	0.00	0.03	0.134	o	|	|	|	|	0.19
181.083	0.00	0.03	0.133	o	|	|	|	|	0.19
181.167	0.00	0.03	0.133	o	|	|	|	|	0.19
181.250	0.00	0.03	0.133	o	|	|	|	|	0.19
181.333	0.00	0.03	0.133	o	|	|	|	|	0.19
181.417	0.00	0.02	0.133	o	|	|	|	|	0.19
181.500	0.00	0.02	0.133	o	|	|	|	|	0.19
181.583	0.00	0.02	0.132	o	|	|	|	|	0.19
181.667	0.00	0.02	0.132	o	|	|	|	|	0.19
181.750	0.00	0.02	0.132	o	|	|	|	|	0.19
181.833	0.00	0.02	0.132	o	|	|	|	|	0.19
181.917	0.00	0.02	0.132	o	|	|	|	|	0.18
182.000	0.00	0.02	0.132	o	|	|	|	|	0.18
182.083	0.00	0.02	0.131	o	|	|	|	|	0.18
182.167	0.00	0.02	0.131	o	|	|	|	|	0.18
182.250	0.00	0.02	0.131	o	|	|	|	|	0.18
182.333	0.00	0.02	0.131	o	|	|	|	|	0.18
182.417	0.00	0.02	0.131	o	|	|	|	|	0.18
182.500	0.00	0.02	0.131	o	|	|	|	|	0.18
182.583	0.00	0.02	0.130	o	|	|	|	|	0.18
182.667	0.00	0.02	0.130	o	|	|	|	|	0.18
182.750	0.00	0.02	0.130	o	|	|	|	|	0.18
182.833	0.00	0.02	0.130	o	|	|	|	|	0.18
182.917	0.00	0.02	0.130	o	|	|	|	|	0.18
183.000	0.00	0.02	0.130	o	|	|	|	|	0.18
183.083	0.00	0.02	0.129	o	|	|	|	|	0.18
183.167	0.00	0.02	0.129	o	|	|	|	|	0.18
183.250	0.00	0.02	0.129	o	|	|	|	|	0.18
183.333	0.00	0.02	0.129	o	|	|	|	|	0.18
183.417	0.00	0.02	0.129	o	|	|	|	|	0.18
183.500	0.00	0.02	0.129	o	|	|	|	|	0.18
183.583	0.00	0.02	0.129	o	|	|	|	|	0.18
183.667	0.00	0.02	0.128	o	|	|	|	|	0.18
183.750	0.00	0.02	0.128	o	|	|	|	|	0.18
183.833	0.00	0.02	0.128	o	|	|	|	|	0.18
183.917	0.00	0.02	0.128	o	|	|	|	|	0.18
184.000	0.00	0.02	0.128	o	|	|	|	|	0.18
184.083	0.00	0.02	0.128	o	|	|	|	|	0.18
184.167	0.00	0.02	0.128	o	|	|	|	|	0.18
184.250	0.00	0.02	0.127	o	|	|	|	|	0.18
184.333	0.00	0.02	0.127	o	|	|	|	|	0.18
184.417	0.00	0.02	0.127	o	|	|	|	|	0.18
184.500	0.00	0.02	0.127	o	|	|	|	|	0.18
184.583	0.00	0.02	0.127	o	|	|	|	|	0.18
184.667	0.00	0.02	0.127	o	|	|	|	|	0.18
184.750	0.00	0.02	0.127	o	|	|	|	|	0.18
184.833	0.00	0.02	0.126	o	|	|	|	|	0.18
184.917	0.00	0.02	0.126	o	|	|	|	|	0.18
185.000	0.00	0.02	0.126	o	|	|	|	|	0.18
185.083	0.00	0.02	0.126	o	|	|	|	|	0.18
185.167	0.00	0.02	0.126	o	|	|	|	|	0.18
185.250	0.00	0.02	0.126	o	|	|	|	|	0.18
185.333	0.00	0.02	0.126	o	|	|	|	|	0.18
185.417	0.00	0.02	0.126	o	|	|	|	|	0.18
185.500	0.00	0.02	0.125	o	|	|	|	|	0.18
185.583	0.00	0.02	0.125	o	|	|	|	|	0.18
185.667	0.00	0.02	0.125	o	|	|	|	|	0.18
185.750	0.00	0.02	0.125	o	|	|	|	|	0.18
185.833	0.00	0.02	0.125	o	|	|	|	|	0.18
185.917	0.00	0.02	0.125	o	|	|	|	|	0.18
186.000	0.00	0.02	0.125	o	|	|	|	|	0.17
186.083	0.00	0.02	0.125	o	|	|	|	|	0.17
186.167	0.00	0.02	0.124	o	|	|	|	|	0.17
186.250	0.00	0.02	0.124	o	|	|	|	|	0.17
186.333	0.00	0.02	0.124	o	|	|	|	|	0.17
186.417	0.00	0.02	0.124	o	|	|	|	|	0.17
186.500	0.00	0.02	0.124	o	|	|	|	|	0.17
186.583	0.00	0.02	0.124	o	|	|	|	|	0.17
186.667	0.00	0.02	0.124	o	|	|	|	|	0.17
186.750	0.00	0.02	0.124	o	|	|	|	|	0.17
186.833	0.00	0.02	0.123	o	|	|	|	|	0.17

186.917	0.00	0.02	0.123	o	|	|	|	|	0.17
187.000	0.00	0.02	0.123	o	|	|	|	|	0.17
187.083	0.00	0.02	0.123	o	|	|	|	|	0.17
187.167	0.00	0.02	0.123	o	|	|	|	|	0.17
187.250	0.00	0.02	0.123	o	|	|	|	|	0.17
187.333	0.00	0.02	0.123	o	|	|	|	|	0.17
187.417	0.00	0.02	0.123	o	|	|	|	|	0.17
187.500	0.00	0.02	0.122	o	|	|	|	|	0.17
187.583	0.00	0.02	0.122	o	|	|	|	|	0.17
187.667	0.00	0.02	0.122	o	|	|	|	|	0.17
187.750	0.00	0.02	0.122	o	|	|	|	|	0.17
187.833	0.00	0.02	0.122	o	|	|	|	|	0.17
187.917	0.00	0.02	0.122	o	|	|	|	|	0.17
188.000	0.00	0.02	0.122	o	|	|	|	|	0.17
188.083	0.00	0.02	0.122	o	|	|	|	|	0.17
188.167	0.00	0.02	0.122	o	|	|	|	|	0.17
188.250	0.00	0.02	0.121	o	|	|	|	|	0.17
188.333	0.00	0.02	0.121	o	|	|	|	|	0.17
188.417	0.00	0.02	0.121	o	|	|	|	|	0.17
188.500	0.00	0.02	0.121	o	|	|	|	|	0.17
188.583	0.00	0.02	0.121	o	|	|	|	|	0.17
188.667	0.00	0.02	0.121	o	|	|	|	|	0.17
188.750	0.00	0.02	0.121	o	|	|	|	|	0.17
188.833	0.00	0.01	0.121	o	|	|	|	|	0.17
188.917	0.00	0.01	0.121	o	|	|	|	|	0.17
189.000	0.00	0.01	0.121	o	|	|	|	|	0.17
189.083	0.00	0.01	0.120	o	|	|	|	|	0.17
189.167	0.00	0.01	0.120	o	|	|	|	|	0.17
189.250	0.00	0.01	0.120	o	|	|	|	|	0.17
189.333	0.00	0.01	0.120	o	|	|	|	|	0.17
189.417	0.00	0.01	0.120	o	|	|	|	|	0.17
189.500	0.00	0.01	0.120	o	|	|	|	|	0.17
189.583	0.00	0.01	0.120	o	|	|	|	|	0.17
189.667	0.00	0.01	0.120	o	|	|	|	|	0.17
189.750	0.00	0.01	0.120	o	|	|	|	|	0.17
189.833	0.00	0.01	0.120	o	|	|	|	|	0.17
189.917	0.00	0.01	0.119	o	|	|	|	|	0.17
190.000	0.00	0.01	0.119	o	|	|	|	|	0.17
190.083	0.00	0.01	0.119	o	|	|	|	|	0.17
190.167	0.00	0.01	0.119	o	|	|	|	|	0.17
190.250	0.00	0.01	0.119	o	|	|	|	|	0.17
190.333	0.00	0.01	0.119	o	|	|	|	|	0.17
190.417	0.00	0.01	0.119	o	|	|	|	|	0.17
190.500	0.00	0.01	0.119	o	|	|	|	|	0.17
190.583	0.00	0.01	0.119	o	|	|	|	|	0.17
190.667	0.00	0.01	0.119	o	|	|	|	|	0.17
190.750	0.00	0.01	0.119	o	|	|	|	|	0.17
190.833	0.00	0.01	0.118	o	|	|	|	|	0.17
190.917	0.00	0.01	0.118	o	|	|	|	|	0.17
191.000	0.00	0.01	0.118	o	|	|	|	|	0.17
191.083	0.00	0.01	0.118	o	|	|	|	|	0.17
191.167	0.00	0.01	0.118	o	|	|	|	|	0.17
191.250	0.00	0.01	0.118	o	|	|	|	|	0.17
191.333	0.00	0.01	0.118	o	|	|	|	|	0.17
191.417	0.00	0.01	0.118	o	|	|	|	|	0.17
191.500	0.00	0.01	0.118	o	|	|	|	|	0.17
191.583	0.00	0.01	0.118	o	|	|	|	|	0.17
191.667	0.00	0.01	0.118	o	|	|	|	|	0.17
191.750	0.00	0.01	0.117	o	|	|	|	|	0.16
191.833	0.00	0.01	0.117	o	|	|	|	|	0.16
191.917	0.00	0.01	0.117	o	|	|	|	|	0.16
192.000	0.00	0.01	0.117	o	|	|	|	|	0.16
192.083	0.00	0.01	0.117	o	|	|	|	|	0.16
192.167	0.00	0.01	0.117	o	|	|	|	|	0.16
192.250	0.00	0.01	0.117	o	|	|	|	|	0.16
192.333	0.00	0.01	0.117	o	|	|	|	|	0.16
192.417	0.00	0.01	0.117	o	|	|	|	|	0.16
192.500	0.00	0.01	0.117	o	|	|	|	|	0.16
192.583	0.00	0.01	0.117	o	|	|	|	|	0.16
192.667	0.00	0.01	0.117	o	|	|	|	|	0.16
192.750	0.00	0.01	0.117	o	|	|	|	|	0.16
192.833	0.00	0.01	0.116	o	|	|	|	|	0.16
192.917	0.00	0.01	0.116	o	|	|	|	|	0.16
193.000	0.00	0.01	0.116	o	|	|	|	|	0.16
193.083	0.00	0.01	0.116	o	|	|	|	|	0.16

193.167	0.00	0.01	0.116	o	|	|	|	|	0.16
193.250	0.00	0.01	0.116	o	|	|	|	|	0.16
193.333	0.00	0.01	0.116	o	|	|	|	|	0.16
193.417	0.00	0.01	0.116	o	|	|	|	|	0.16
193.500	0.00	0.01	0.116	o	|	|	|	|	0.16
193.583	0.00	0.01	0.116	o	|	|	|	|	0.16
193.667	0.00	0.01	0.116	o	|	|	|	|	0.16
193.750	0.00	0.01	0.116	o	|	|	|	|	0.16
193.833	0.00	0.01	0.116	o	|	|	|	|	0.16
193.917	0.00	0.01	0.115	o	|	|	|	|	0.16
194.000	0.00	0.01	0.115	o	|	|	|	|	0.16
194.083	0.00	0.01	0.115	o	|	|	|	|	0.16
194.167	0.00	0.01	0.115	o	|	|	|	|	0.16
194.250	0.00	0.01	0.115	o	|	|	|	|	0.16
194.333	0.00	0.01	0.115	o	|	|	|	|	0.16
194.417	0.00	0.01	0.115	o	|	|	|	|	0.16
194.500	0.00	0.01	0.115	o	|	|	|	|	0.16
194.583	0.00	0.01	0.115	o	|	|	|	|	0.16
194.667	0.00	0.01	0.115	o	|	|	|	|	0.16
194.750	0.00	0.01	0.115	o	|	|	|	|	0.16
194.833	0.00	0.01	0.115	o	|	|	|	|	0.16
194.917	0.00	0.01	0.115	o	|	|	|	|	0.16
195.000	0.00	0.01	0.115	o	|	|	|	|	0.16
195.083	0.00	0.01	0.114	o	|	|	|	|	0.16
195.167	0.00	0.01	0.114	o	|	|	|	|	0.16
195.250	0.00	0.01	0.114	o	|	|	|	|	0.16
195.333	0.00	0.01	0.114	o	|	|	|	|	0.16
195.417	0.00	0.01	0.114	o	|	|	|	|	0.16
195.500	0.00	0.01	0.114	o	|	|	|	|	0.16
195.583	0.00	0.01	0.114	o	|	|	|	|	0.16
195.667	0.00	0.01	0.114	o	|	|	|	|	0.16
195.750	0.00	0.01	0.114	o	|	|	|	|	0.16
195.833	0.00	0.01	0.114	o	|	|	|	|	0.16
195.917	0.00	0.01	0.114	o	|	|	|	|	0.16
196.000	0.00	0.01	0.114	o	|	|	|	|	0.16
196.083	0.00	0.01	0.114	o	|	|	|	|	0.16
196.167	0.00	0.01	0.114	o	|	|	|	|	0.16
196.250	0.00	0.01	0.114	o	|	|	|	|	0.16
196.333	0.00	0.01	0.114	o	|	|	|	|	0.16
196.417	0.00	0.01	0.113	o	|	|	|	|	0.16
196.500	0.00	0.01	0.113	o	|	|	|	|	0.16
196.583	0.00	0.01	0.113	o	|	|	|	|	0.16
196.667	0.00	0.01	0.113	o	|	|	|	|	0.16
196.750	0.00	0.01	0.113	o	|	|	|	|	0.16
196.833	0.00	0.01	0.113	o	|	|	|	|	0.16
196.917	0.00	0.01	0.113	o	|	|	|	|	0.16
197.000	0.00	0.01	0.113	o	|	|	|	|	0.16
197.083	0.00	0.01	0.113	o	|	|	|	|	0.16
197.167	0.00	0.01	0.113	o	|	|	|	|	0.16
197.250	0.00	0.01	0.113	o	|	|	|	|	0.16
197.333	0.00	0.01	0.113	o	|	|	|	|	0.16
197.417	0.00	0.01	0.113	o	|	|	|	|	0.16
197.500	0.00	0.01	0.113	o	|	|	|	|	0.16
197.583	0.00	0.01	0.113	o	|	|	|	|	0.16
197.667	0.00	0.01	0.113	o	|	|	|	|	0.16
197.750	0.00	0.01	0.113	o	|	|	|	|	0.16
197.833	0.00	0.01	0.112	o	|	|	|	|	0.16
197.917	0.00	0.01	0.112	o	|	|	|	|	0.16
198.000	0.00	0.01	0.112	o	|	|	|	|	0.16
198.083	0.00	0.01	0.112	o	|	|	|	|	0.16
198.167	0.00	0.01	0.112	o	|	|	|	|	0.16
198.250	0.00	0.01	0.112	o	|	|	|	|	0.16
198.333	0.00	0.01	0.112	o	|	|	|	|	0.16
198.417	0.00	0.01	0.112	o	|	|	|	|	0.16
198.500	0.00	0.01	0.112	o	|	|	|	|	0.16
198.583	0.00	0.01	0.112	o	|	|	|	|	0.16
198.667	0.00	0.01	0.112	o	|	|	|	|	0.16
198.750	0.00	0.01	0.112	o	|	|	|	|	0.16
198.833	0.00	0.01	0.112	o	|	|	|	|	0.16
198.917	0.00	0.01	0.112	o	|	|	|	|	0.16
199.000	0.00	0.01	0.112	o	|	|	|	|	0.16
199.083	0.00	0.01	0.112	o	|	|	|	|	0.16
199.167	0.00	0.01	0.112	o	|	|	|	|	0.16
199.250	0.00	0.01	0.112	o	|	|	|	|	0.16
199.333	0.00	0.01	0.112	o	|	|	|	|	0.16

199.417	0.00	0.01	0.111	o	|	|	|	|	0.16
199.500	0.00	0.01	0.111	o	|	|	|	|	0.16
199.583	0.00	0.01	0.111	o	|	|	|	|	0.16
199.667	0.00	0.01	0.111	o	|	|	|	|	0.16
199.750	0.00	0.01	0.111	o	|	|	|	|	0.16
199.833	0.00	0.01	0.111	o	|	|	|	|	0.16
199.917	0.00	0.01	0.111	o	|	|	|	|	0.16
200.000	0.00	0.01	0.111	o	|	|	|	|	0.16
200.083	0.00	0.01	0.111	o	|	|	|	|	0.16
200.167	0.00	0.01	0.111	o	|	|	|	|	0.16
200.250	0.00	0.01	0.111	o	|	|	|	|	0.16
200.333	0.00	0.01	0.111	o	|	|	|	|	0.16
200.417	0.00	0.01	0.111	o	|	|	|	|	0.16
200.500	0.00	0.01	0.111	o	|	|	|	|	0.16
200.583	0.00	0.01	0.111	o	|	|	|	|	0.16
200.667	0.00	0.01	0.111	o	|	|	|	|	0.16
200.750	0.00	0.01	0.111	o	|	|	|	|	0.16
200.833	0.00	0.01	0.111	o	|	|	|	|	0.16
200.917	0.00	0.01	0.111	o	|	|	|	|	0.16
201.000	0.00	0.01	0.111	o	|	|	|	|	0.16
201.083	0.00	0.01	0.111	o	|	|	|	|	0.16
201.167	0.00	0.01	0.110	o	|	|	|	|	0.16
201.250	0.00	0.01	0.110	o	|	|	|	|	0.16
201.333	0.00	0.01	0.110	o	|	|	|	|	0.15
201.417	0.00	0.01	0.110	o	|	|	|	|	0.15
201.500	0.00	0.01	0.110	o	|	|	|	|	0.15
201.583	0.00	0.01	0.110	o	|	|	|	|	0.15
201.667	0.00	0.01	0.110	o	|	|	|	|	0.15
201.750	0.00	0.01	0.110	o	|	|	|	|	0.15
201.833	0.00	0.01	0.110	o	|	|	|	|	0.15
201.917	0.00	0.01	0.110	o	|	|	|	|	0.15
202.000	0.00	0.01	0.110	o	|	|	|	|	0.15
202.083	0.00	0.01	0.110	o	|	|	|	|	0.15
202.167	0.00	0.01	0.110	o	|	|	|	|	0.15
202.250	0.00	0.01	0.110	o	|	|	|	|	0.15
202.333	0.00	0.01	0.110	o	|	|	|	|	0.15
202.417	0.00	0.01	0.110	o	|	|	|	|	0.15
202.500	0.00	0.01	0.110	o	|	|	|	|	0.15
202.583	0.00	0.01	0.110	o	|	|	|	|	0.15
202.667	0.00	0.01	0.110	o	|	|	|	|	0.15
202.750	0.00	0.01	0.110	o	|	|	|	|	0.15
202.833	0.00	0.01	0.110	o	|	|	|	|	0.15
202.917	0.00	0.01	0.110	o	|	|	|	|	0.15
203.000	0.00	0.01	0.110	o	|	|	|	|	0.15
203.083	0.00	0.01	0.110	o	|	|	|	|	0.15
203.167	0.00	0.01	0.109	o	|	|	|	|	0.15
203.250	0.00	0.01	0.109	o	|	|	|	|	0.15
203.333	0.00	0.01	0.109	o	|	|	|	|	0.15
203.417	0.00	0.01	0.109	o	|	|	|	|	0.15
203.500	0.00	0.01	0.109	o	|	|	|	|	0.15
203.583	0.00	0.01	0.109	o	|	|	|	|	0.15
203.667	0.00	0.01	0.109	o	|	|	|	|	0.15
203.750	0.00	0.01	0.109	o	|	|	|	|	0.15
203.833	0.00	0.01	0.109	o	|	|	|	|	0.15
203.917	0.00	0.01	0.109	o	|	|	|	|	0.15
204.000	0.00	0.01	0.109	o	|	|	|	|	0.15
204.083	0.00	0.01	0.109	o	|	|	|	|	0.15
204.167	0.00	0.01	0.109	o	|	|	|	|	0.15
204.250	0.00	0.01	0.109	o	|	|	|	|	0.15
204.333	0.00	0.01	0.109	o	|	|	|	|	0.15
204.417	0.00	0.01	0.109	o	|	|	|	|	0.15
204.500	0.00	0.01	0.109	o	|	|	|	|	0.15
204.583	0.00	0.01	0.109	o	|	|	|	|	0.15
204.667	0.00	0.01	0.109	o	|	|	|	|	0.15
204.750	0.00	0.01	0.109	o	|	|	|	|	0.15
204.833	0.00	0.00	0.109	o	|	|	|	|	0.15
204.917	0.00	0.00	0.109	o	|	|	|	|	0.15
205.000	0.00	0.00	0.109	o	|	|	|	|	0.15
205.083	0.00	0.00	0.109	o	|	|	|	|	0.15
205.167	0.00	0.00	0.109	o	|	|	|	|	0.15
205.250	0.00	0.00	0.109	o	|	|	|	|	0.15
205.333	0.00	0.00	0.109	o	|	|	|	|	0.15
205.417	0.00	0.00	0.109	o	|	|	|	|	0.15
205.500	0.00	0.00	0.108	o	|	|	|	|	0.15
205.583	0.00	0.00	0.108	o	|	|	|	|	0.15

205.667	0.00	0.00	0.108	o	|	|	|	|	0.15
205.750	0.00	0.00	0.108	o	|	|	|	|	0.15
205.833	0.00	0.00	0.108	o	|	|	|	|	0.15
205.917	0.00	0.00	0.108	o	|	|	|	|	0.15
206.000	0.00	0.00	0.108	o	|	|	|	|	0.15
206.083	0.00	0.00	0.108	o	|	|	|	|	0.15
206.167	0.00	0.00	0.108	o	|	|	|	|	0.15
206.250	0.00	0.00	0.108	o	|	|	|	|	0.15
206.333	0.00	0.00	0.108	o	|	|	|	|	0.15
206.417	0.00	0.00	0.108	o	|	|	|	|	0.15
206.500	0.00	0.00	0.108	o	|	|	|	|	0.15
206.583	0.00	0.00	0.108	o	|	|	|	|	0.15
206.667	0.00	0.00	0.108	o	|	|	|	|	0.15
206.750	0.00	0.00	0.108	o	|	|	|	|	0.15
206.833	0.00	0.00	0.108	o	|	|	|	|	0.15
206.917	0.00	0.00	0.108	o	|	|	|	|	0.15
207.000	0.00	0.00	0.108	o	|	|	|	|	0.15
207.083	0.00	0.00	0.108	o	|	|	|	|	0.15
207.167	0.00	0.00	0.108	o	|	|	|	|	0.15
207.250	0.00	0.00	0.108	o	|	|	|	|	0.15
207.333	0.00	0.00	0.108	o	|	|	|	|	0.15
207.417	0.00	0.00	0.108	o	|	|	|	|	0.15
207.500	0.00	0.00	0.108	o	|	|	|	|	0.15
207.583	0.00	0.00	0.108	o	|	|	|	|	0.15
207.667	0.00	0.00	0.108	o	|	|	|	|	0.15
207.750	0.00	0.00	0.108	o	|	|	|	|	0.15
207.833	0.00	0.00	0.108	o	|	|	|	|	0.15
207.917	0.00	0.00	0.108	o	|	|	|	|	0.15
208.000	0.00	0.00	0.108	o	|	|	|	|	0.15
208.083	0.00	0.00	0.108	o	|	|	|	|	0.15
208.167	0.00	0.00	0.108	o	|	|	|	|	0.15
208.250	0.00	0.00	0.108	o	|	|	|	|	0.15
208.333	0.00	0.00	0.107	o	|	|	|	|	0.15
208.417	0.00	0.00	0.107	o	|	|	|	|	0.15
208.500	0.00	0.00	0.107	o	|	|	|	|	0.15
208.583	0.00	0.00	0.107	o	|	|	|	|	0.15
208.667	0.00	0.00	0.107	o	|	|	|	|	0.15
208.750	0.00	0.00	0.107	o	|	|	|	|	0.15
208.833	0.00	0.00	0.107	o	|	|	|	|	0.15
208.917	0.00	0.00	0.107	o	|	|	|	|	0.15
209.000	0.00	0.00	0.107	o	|	|	|	|	0.15
209.083	0.00	0.00	0.107	o	|	|	|	|	0.15
209.167	0.00	0.00	0.107	o	|	|	|	|	0.15
209.250	0.00	0.00	0.107	o	|	|	|	|	0.15
209.333	0.00	0.00	0.107	o	|	|	|	|	0.15
209.417	0.00	0.00	0.107	o	|	|	|	|	0.15
209.500	0.00	0.00	0.107	o	|	|	|	|	0.15
209.583	0.00	0.00	0.107	o	|	|	|	|	0.15
209.667	0.00	0.00	0.107	o	|	|	|	|	0.15
209.750	0.00	0.00	0.107	o	|	|	|	|	0.15
209.833	0.00	0.00	0.107	o	|	|	|	|	0.15
209.917	0.00	0.00	0.107	o	|	|	|	|	0.15
210.000	0.00	0.00	0.107	o	|	|	|	|	0.15
210.083	0.00	0.00	0.107	o	|	|	|	|	0.15
210.167	0.00	0.00	0.107	o	|	|	|	|	0.15
210.250	0.00	0.00	0.107	o	|	|	|	|	0.15
210.333	0.00	0.00	0.107	o	|	|	|	|	0.15
210.417	0.00	0.00	0.107	o	|	|	|	|	0.15
210.500	0.00	0.00	0.107	o	|	|	|	|	0.15
210.583	0.00	0.00	0.107	o	|	|	|	|	0.15
210.667	0.00	0.00	0.107	o	|	|	|	|	0.15
210.750	0.00	0.00	0.107	o	|	|	|	|	0.15
210.833	0.00	0.00	0.107	o	|	|	|	|	0.15
210.917	0.00	0.00	0.107	o	|	|	|	|	0.15
211.000	0.00	0.00	0.107	o	|	|	|	|	0.15
211.083	0.00	0.00	0.107	o	|	|	|	|	0.15
211.167	0.00	0.00	0.107	o	|	|	|	|	0.15
211.250	0.00	0.00	0.107	o	|	|	|	|	0.15
211.333	0.00	0.00	0.107	o	|	|	|	|	0.15
211.417	0.00	0.00	0.107	o	|	|	|	|	0.15
211.500	0.00	0.00	0.107	o	|	|	|	|	0.15
211.583	0.00	0.00	0.107	o	|	|	|	|	0.15
211.667	0.00	0.00	0.107	o	|	|	|	|	0.15
211.750	0.00	0.00	0.107	o	|	|	|	|	0.15
211.833	0.00	0.00	0.106	o	|	|	|	|	0.15

211.917	0.00	0.00	0.106	o	|	|	|	|	0.15
212.000	0.00	0.00	0.106	o	|	|	|	|	0.15
212.083	0.00	0.00	0.106	o	|	|	|	|	0.15
212.167	0.00	0.00	0.106	o	|	|	|	|	0.15
212.250	0.00	0.00	0.106	o	|	|	|	|	0.15
212.333	0.00	0.00	0.106	o	|	|	|	|	0.15
212.417	0.00	0.00	0.106	o	|	|	|	|	0.15
212.500	0.00	0.00	0.106	o	|	|	|	|	0.15
212.583	0.00	0.00	0.106	o	|	|	|	|	0.15
212.667	0.00	0.00	0.106	o	|	|	|	|	0.15
212.750	0.00	0.00	0.106	o	|	|	|	|	0.15
212.833	0.00	0.00	0.106	o	|	|	|	|	0.15
212.917	0.00	0.00	0.106	o	|	|	|	|	0.15
213.000	0.00	0.00	0.106	o	|	|	|	|	0.15
213.083	0.00	0.00	0.106	o	|	|	|	|	0.15
213.167	0.00	0.00	0.106	o	|	|	|	|	0.15
213.250	0.00	0.00	0.106	o	|	|	|	|	0.15
213.333	0.00	0.00	0.106	o	|	|	|	|	0.15
213.417	0.00	0.00	0.106	o	|	|	|	|	0.15
213.500	0.00	0.00	0.106	o	|	|	|	|	0.15
213.583	0.00	0.00	0.106	o	|	|	|	|	0.15
213.667	0.00	0.00	0.106	o	|	|	|	|	0.15
213.750	0.00	0.00	0.106	o	|	|	|	|	0.15
213.833	0.00	0.00	0.106	o	|	|	|	|	0.15
213.917	0.00	0.00	0.106	o	|	|	|	|	0.15
214.000	0.00	0.00	0.106	o	|	|	|	|	0.15
214.083	0.00	0.00	0.106	o	|	|	|	|	0.15
214.167	0.00	0.00	0.106	o	|	|	|	|	0.15
214.250	0.00	0.00	0.106	o	|	|	|	|	0.15
214.333	0.00	0.00	0.106	o	|	|	|	|	0.15
214.417	0.00	0.00	0.106	o	|	|	|	|	0.15
214.500	0.00	0.00	0.106	o	|	|	|	|	0.15
214.583	0.00	0.00	0.106	o	|	|	|	|	0.15
214.667	0.00	0.00	0.106	o	|	|	|	|	0.15
214.750	0.00	0.00	0.106	o	|	|	|	|	0.15
214.833	0.00	0.00	0.106	o	|	|	|	|	0.15
214.917	0.00	0.00	0.106	o	|	|	|	|	0.15
215.000	0.00	0.00	0.106	o	|	|	|	|	0.15
215.083	0.00	0.00	0.106	o	|	|	|	|	0.15
215.167	0.00	0.00	0.106	o	|	|	|	|	0.15
215.250	0.00	0.00	0.106	o	|	|	|	|	0.15
215.333	0.00	0.00	0.106	o	|	|	|	|	0.15
215.417	0.00	0.00	0.106	o	|	|	|	|	0.15
215.500	0.00	0.00	0.106	o	|	|	|	|	0.15
215.583	0.00	0.00	0.106	o	|	|	|	|	0.15
215.667	0.00	0.00	0.106	o	|	|	|	|	0.15
215.750	0.00	0.00	0.106	o	|	|	|	|	0.15
215.833	0.00	0.00	0.106	o	|	|	|	|	0.15
215.917	0.00	0.00	0.106	o	|	|	|	|	0.15
216.000	0.00	0.00	0.106	o	|	|	|	|	0.15
216.083	0.00	0.00	0.106	o	|	|	|	|	0.15
216.167	0.00	0.00	0.106	o	|	|	|	|	0.15
216.250	0.00	0.00	0.106	o	|	|	|	|	0.15
216.333	0.00	0.00	0.106	o	|	|	|	|	0.15
216.417	0.00	0.00	0.105	o	|	|	|	|	0.15
216.500	0.00	0.00	0.105	o	|	|	|	|	0.15
216.583	0.00	0.00	0.105	o	|	|	|	|	0.15
216.667	0.00	0.00	0.105	o	|	|	|	|	0.15
216.750	0.00	0.00	0.105	o	|	|	|	|	0.15
216.833	0.00	0.00	0.105	o	|	|	|	|	0.15
216.917	0.00	0.00	0.105	o	|	|	|	|	0.15
217.000	0.00	0.00	0.105	o	|	|	|	|	0.15
217.083	0.00	0.00	0.105	o	|	|	|	|	0.15
217.167	0.00	0.00	0.105	o	|	|	|	|	0.15
217.250	0.00	0.00	0.105	o	|	|	|	|	0.15
217.333	0.00	0.00	0.105	o	|	|	|	|	0.15
217.417	0.00	0.00	0.105	o	|	|	|	|	0.15
217.500	0.00	0.00	0.105	o	|	|	|	|	0.15
217.583	0.00	0.00	0.105	o	|	|	|	|	0.15
217.667	0.00	0.00	0.105	o	|	|	|	|	0.15
217.750	0.00	0.00	0.105	o	|	|	|	|	0.15
217.833	0.00	0.00	0.105	o	|	|	|	|	0.15
217.917	0.00	0.00	0.105	o	|	|	|	|	0.15
218.000	0.00	0.00	0.105	o	|	|	|	|	0.15
218.083	0.00	0.00	0.105	o	|	|	|	|	0.15

218.167	0.00	0.00	0.105	o	|	|	|	|	0.15
218.250	0.00	0.00	0.105	o	|	|	|	|	0.15
218.333	0.00	0.00	0.105	o	|	|	|	|	0.15
218.417	0.00	0.00	0.105	o	|	|	|	|	0.15
218.500	0.00	0.00	0.105	o	|	|	|	|	0.15
218.583	0.00	0.00	0.105	o	|	|	|	|	0.15
218.667	0.00	0.00	0.105	o	|	|	|	|	0.15
218.750	0.00	0.00	0.105	o	|	|	|	|	0.15
218.833	0.00	0.00	0.105	o	|	|	|	|	0.15
218.917	0.00	0.00	0.105	o	|	|	|	|	0.15
219.000	0.00	0.00	0.105	o	|	|	|	|	0.15
219.083	0.00	0.00	0.105	o	|	|	|	|	0.15
219.167	0.00	0.00	0.105	o	|	|	|	|	0.15
219.250	0.00	0.00	0.105	o	|	|	|	|	0.15
219.333	0.00	0.00	0.105	o	|	|	|	|	0.15
219.417	0.00	0.00	0.105	o	|	|	|	|	0.15
219.500	0.00	0.00	0.105	o	|	|	|	|	0.15
219.583	0.00	0.00	0.105	o	|	|	|	|	0.15
219.667	0.00	0.00	0.105	o	|	|	|	|	0.15
219.750	0.00	0.00	0.105	o	|	|	|	|	0.15
219.833	0.00	0.00	0.105	o	|	|	|	|	0.15
219.917	0.00	0.00	0.105	o	|	|	|	|	0.15
220.000	0.00	0.00	0.105	o	|	|	|	|	0.15
220.083	0.00	0.00	0.105	o	|	|	|	|	0.15
220.167	0.00	0.00	0.105	o	|	|	|	|	0.15
220.250	0.00	0.00	0.105	o	|	|	|	|	0.15
220.333	0.00	0.00	0.105	o	|	|	|	|	0.15
220.417	0.00	0.00	0.105	o	|	|	|	|	0.15
220.500	0.00	0.00	0.105	o	|	|	|	|	0.15
220.583	0.00	0.00	0.105	o	|	|	|	|	0.15
220.667	0.00	0.00	0.105	o	|	|	|	|	0.15
220.750	0.00	0.00	0.105	o	|	|	|	|	0.15
220.833	0.00	0.00	0.105	o	|	|	|	|	0.15
220.917	0.00	0.00	0.105	o	|	|	|	|	0.15
221.000	0.00	0.00	0.105	o	|	|	|	|	0.15
221.083	0.00	0.00	0.105	o	|	|	|	|	0.15
221.167	0.00	0.00	0.105	o	|	|	|	|	0.15
221.250	0.00	0.00	0.105	o	|	|	|	|	0.15
221.333	0.00	0.00	0.105	o	|	|	|	|	0.15
221.417	0.00	0.00	0.105	o	|	|	|	|	0.15
221.500	0.00	0.00	0.105	o	|	|	|	|	0.15
221.583	0.00	0.00	0.105	o	|	|	|	|	0.15
221.667	0.00	0.00	0.105	o	|	|	|	|	0.15
221.750	0.00	0.00	0.105	o	|	|	|	|	0.15
221.833	0.00	0.00	0.105	o	|	|	|	|	0.15
221.917	0.00	0.00	0.105	o	|	|	|	|	0.15
222.000	0.00	0.00	0.105	o	|	|	|	|	0.15
222.083	0.00	0.00	0.105	o	|	|	|	|	0.15
222.167	0.00	0.00	0.105	o	|	|	|	|	0.15
222.250	0.00	0.00	0.105	o	|	|	|	|	0.15
222.333	0.00	0.00	0.105	o	|	|	|	|	0.15
222.417	0.00	0.00	0.105	o	|	|	|	|	0.15
222.500	0.00	0.00	0.105	o	|	|	|	|	0.15
222.583	0.00	0.00	0.105	o	|	|	|	|	0.15
222.667	0.00	0.00	0.105	o	|	|	|	|	0.15
222.750	0.00	0.00	0.105	o	|	|	|	|	0.15
222.833	0.00	0.00	0.105	o	|	|	|	|	0.15
222.917	0.00	0.00	0.105	o	|	|	|	|	0.15
223.000	0.00	0.00	0.105	o	|	|	|	|	0.15
223.083	0.00	0.00	0.104	o	|	|	|	|	0.15
223.167	0.00	0.00	0.104	o	|	|	|	|	0.15
223.250	0.00	0.00	0.104	o	|	|	|	|	0.15
223.333	0.00	0.00	0.104	o	|	|	|	|	0.15
223.417	0.00	0.00	0.104	o	|	|	|	|	0.15
223.500	0.00	0.00	0.104	o	|	|	|	|	0.15
223.583	0.00	0.00	0.104	o	|	|	|	|	0.15
223.667	0.00	0.00	0.104	o	|	|	|	|	0.15
223.750	0.00	0.00	0.104	o	|	|	|	|	0.15
223.833	0.00	0.00	0.104	o	|	|	|	|	0.15
223.917	0.00	0.00	0.104	o	|	|	|	|	0.15
224.000	0.00	0.00	0.104	o	|	|	|	|	0.15
224.083	0.00	0.00	0.104	o	|	|	|	|	0.15
224.167	0.00	0.00	0.104	o	|	|	|	|	0.15
224.250	0.00	0.00	0.104	o	|	|	|	|	0.15
224.333	0.00	0.00	0.104	o	|	|	|	|	0.15

224.417	0.00	0.00	0.104	o	|	|	|	|	0.15
224.500	0.00	0.00	0.104	o	|	|	|	|	0.15
224.583	0.00	0.00	0.104	o	|	|	|	|	0.15
224.667	0.00	0.00	0.104	o	|	|	|	|	0.15
224.750	0.00	0.00	0.104	o	|	|	|	|	0.15
224.833	0.00	0.00	0.104	o	|	|	|	|	0.15
224.917	0.00	0.00	0.104	o	|	|	|	|	0.15
225.000	0.00	0.00	0.104	o	|	|	|	|	0.15
225.083	0.00	0.00	0.104	o	|	|	|	|	0.15
225.167	0.00	0.00	0.104	o	|	|	|	|	0.15
225.250	0.00	0.00	0.104	o	|	|	|	|	0.15
225.333	0.00	0.00	0.104	o	|	|	|	|	0.15
225.417	0.00	0.00	0.104	o	|	|	|	|	0.15
225.500	0.00	0.00	0.104	o	|	|	|	|	0.15
225.583	0.00	0.00	0.104	o	|	|	|	|	0.15
225.667	0.00	0.00	0.104	o	|	|	|	|	0.15
225.750	0.00	0.00	0.104	o	|	|	|	|	0.15
225.833	0.00	0.00	0.104	o	|	|	|	|	0.15
225.917	0.00	0.00	0.104	o	|	|	|	|	0.15
226.000	0.00	0.00	0.104	o	|	|	|	|	0.15
226.083	0.00	0.00	0.104	o	|	|	|	|	0.15
226.167	0.00	0.00	0.104	o	|	|	|	|	0.15
226.250	0.00	0.00	0.104	o	|	|	|	|	0.15
226.333	0.00	0.00	0.104	o	|	|	|	|	0.15
226.417	0.00	0.00	0.104	o	|	|	|	|	0.15
226.500	0.00	0.00	0.104	o	|	|	|	|	0.15
226.583	0.00	0.00	0.104	o	|	|	|	|	0.15
226.667	0.00	0.00	0.104	o	|	|	|	|	0.15
226.750	0.00	0.00	0.104	o	|	|	|	|	0.15
226.833	0.00	0.00	0.104	o	|	|	|	|	0.15
226.917	0.00	0.00	0.104	o	|	|	|	|	0.15
227.000	0.00	0.00	0.104	o	|	|	|	|	0.15
227.083	0.00	0.00	0.104	o	|	|	|	|	0.15
227.167	0.00	0.00	0.104	o	|	|	|	|	0.15
227.250	0.00	0.00	0.104	o	|	|	|	|	0.15
227.333	0.00	0.00	0.104	o	|	|	|	|	0.15
227.417	0.00	0.00	0.104	o	|	|	|	|	0.15
227.500	0.00	0.00	0.104	o	|	|	|	|	0.15
227.583	0.00	0.00	0.104	o	|	|	|	|	0.15
227.667	0.00	0.00	0.104	o	|	|	|	|	0.15
227.750	0.00	0.00	0.104	o	|	|	|	|	0.15
227.833	0.00	0.00	0.104	o	|	|	|	|	0.15
227.917	0.00	0.00	0.104	o	|	|	|	|	0.15
228.000	0.00	0.00	0.104	o	|	|	|	|	0.15
228.083	0.00	0.00	0.104	o	|	|	|	|	0.15
228.167	0.00	0.00	0.104	o	|	|	|	|	0.15

Remaining water in basin = 0.10 (Ac.Ft)

**********HYDROGRAPH DATA**********

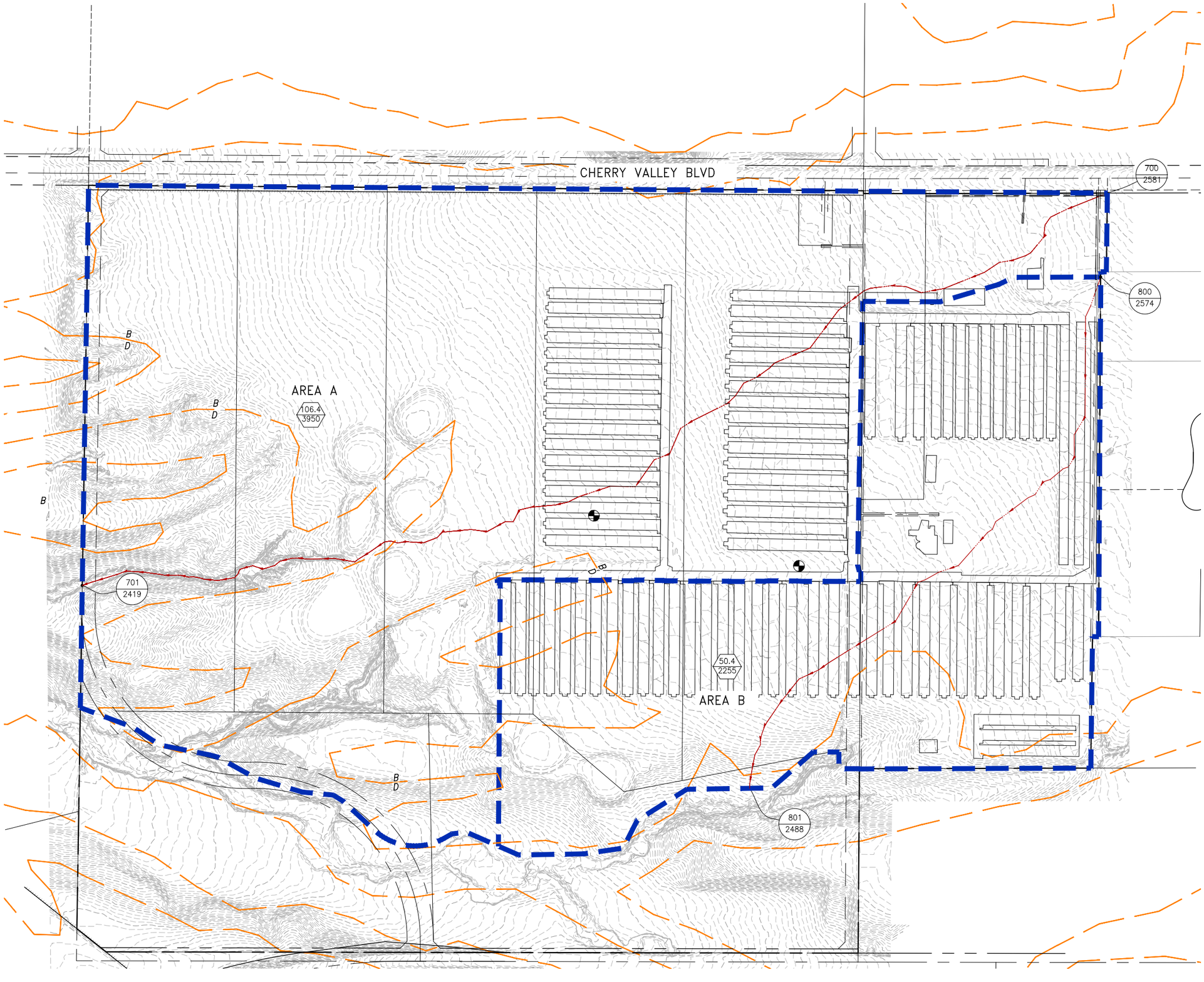
Number of intervals = 2738
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 12.177 (CFS)
Total volume = 13.566 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

UNIT HYDROGRAPH HYDROLOGY MAP



EXISTING AREA A	
TOTAL AREA	106.4 AC
L_T	3950 Ft
L_{CA}	1805 Ft
ΔH	162.0 Ft

EXISTING AREA B	
TOTAL AREA	50.4 AC
L_T	2255 Ft
L_{CA}	615 Ft
ΔH	86.0 Ft

LEGEND

- NODE / ELEV – NODE NUMBER / ELEVATION (FT)
- AC / FT – AREA (AC) / LENGTH (FT)
- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY

N W E S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 6
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE:	1"=X'
DATE:	8/10/2021
DESIGNED:	EP
CHECKED:	
PLN CK REF:	
F.B.	

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE, CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O.	21-0044
SHEET	1
OF	3 SHEETS
DWG. NO.	

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CHERRY VALLEY BLVD

AREA A

88.8 ACRES

17.7 ACRES

AREA B

B
D

LEGEND

- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY
- PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED WEST AREA (83.4% AREA A)
- PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED NORTH AREA (16.6% AREA A)

N
W WEBB E
S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 7
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION AREA A PORTIONS
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/10/2021			SHEET 2
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

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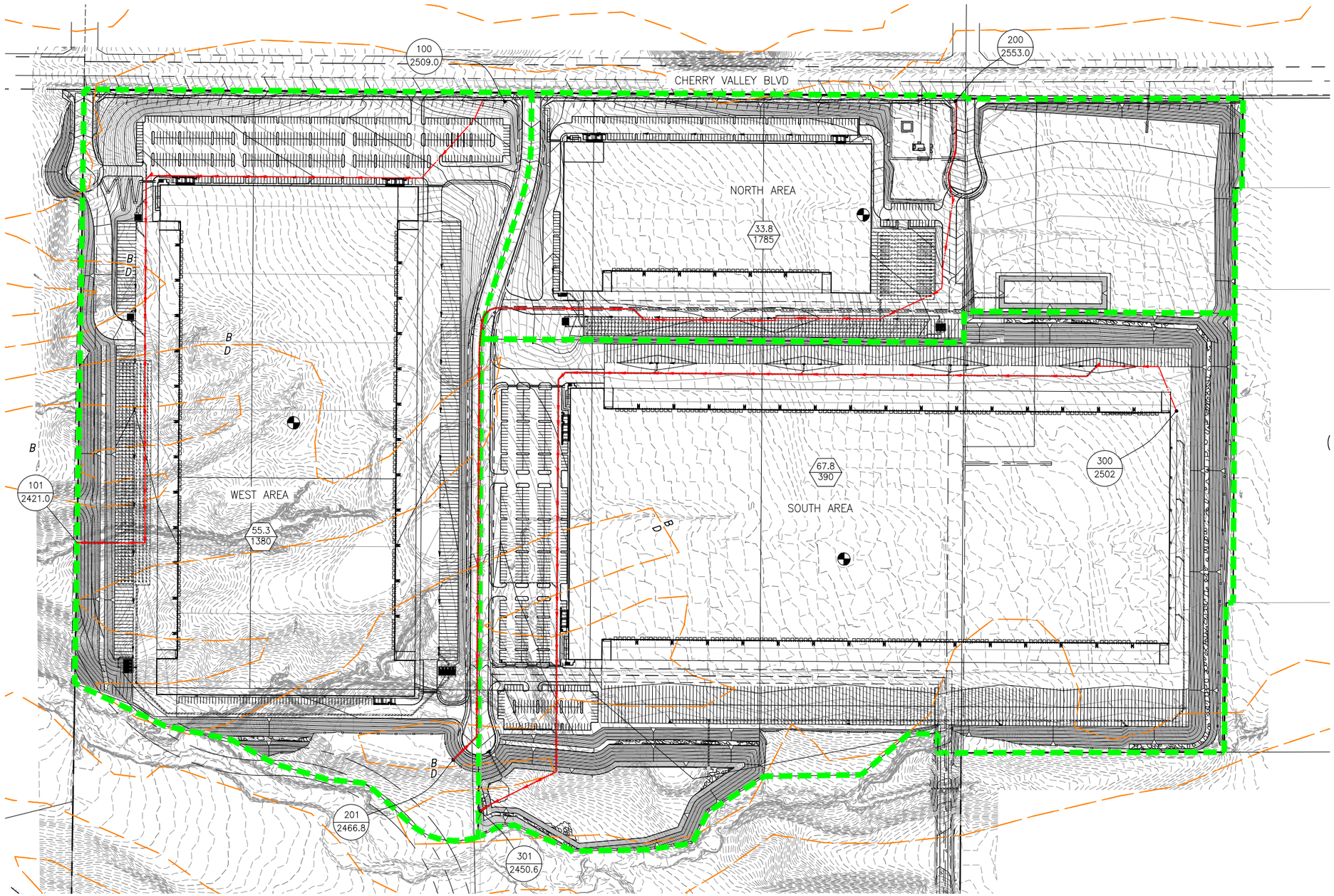

PROPOSED WEST AREA	
TOTAL AREA	55.3 AC
L_T	1380 Ft
L_{CA}	695 Ft
ΔH	12.0 Ft

PROPOSED NORTH AREA	
TOTAL AREA	33.8 AC
L_T	1785 Ft
L_{CA}	1340 Ft
ΔH	27.0 Ft

PROPOSED SOUTH AREA	
TOTAL AREA	67.8 AC
L_T	390 Ft
L_{CA}	360 Ft
ΔH	9.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER / ELEVATION (FT)

AC / FT – AREA (AC) / LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W E S WEBB

1" = 150'

150 0 150 300 450

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 8
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 7/20/2021			SHEET 3
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

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APPENDIX D – REFERENCES

RELEVANT EXCERPTS FROM "BEAUMONT SUMMIT STATION PRELIMINARY DRAINAGE STUDY"

SECTION 4 - BASIN ANALYSIS

ON-SITE UNIT HYDROGRAPH METHOD HYDROLOGY

The unit hydrograph method was used to determine the peak flow rates and volumes in order to adequately size the proposed basin and chamber detention systems to address increased runoff mitigation. Unit hydrographs were performed for both the 24-hour existing condition and developed condition only in the preliminary condition since it was assumed that the 24-hour condition will require the greatest mitigation volume. The existing condition is used to establish a baseline for comparative purposes. The developed condition is used for design purposes, it was utilized in the basin routing analysis in order to size and analyze the proposed basin and chamber detention systems. The unit hydrograph analysis for both the existing and developed condition was conducted for a total of 156.8 acres. This comprises the entirety of the proposed development with the BSS project site.

In the existing condition analysis, the overall project site was broken up into two areas. Approximately 106.4 acres are labelled as Area A and is tributary to the existing streambed area to the west of the project site. The remaining 50.4 acres are labelled as Area B and are tributary to a region of the streambed to the south of the project site. In the proposed condition, Area A is divided into a West Area and North Area (corresponding to Building 1 and Building 3, respectively). The West Area consists of approximately 55.3 acres while the North area is approximately 33.8 acres. Area B is referred to as the South Area in the developed condition and corresponds to the Building 2 project site, consisting of approximately 67.8 acres. In the developed condition, approximately 17.4 acres of area which was tributary to Area A in the existing condition have been included in the development of the South Area (part of the existing condition Area B). Therefore, the developed South Area will be over mitigating for flows as a greater area, and therefore greater discharge, is included in the developed condition analysis. While the existing condition Area A will be under mitigated once developed, the overall BSS site will be mass graded together as grading will require cut from the Building 2 area, in Area B, to be used in fill for mass grading of the Building 1 project site. Therefore, overall the BSS project will be fully mitigated once developed.

The following table summarizes the results of the unit hydrograph analysis:

Table 4 – Unit Hydrograph Results

EXISTING CONDITION - AREA A (WEST & NORTH)					EXISTING CONDITION - AREA B (SOUTH)				
AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)
EX100YRA	100	1	8.9	*235.28*	*EX100YRB*	100	1	4.2	*147.87*
		3	11.7	*150.79*			3	5.7	*80.72*
		6	14.5	*146.20*			6	7.5	*74.35*
		24	27.3	*70.90*			24	14.7	*34.45*
EX10YRA	10	1	5.2	*149.05*	*EX10YRB*	10	1	2.5	*95.19*
		3	6.4	*94.83*			3	3.3	*51.45*
		6	8.2	*92.02*			6	4.5	*47.26*
		24	12.4	*36.93*			24	7.6	*18.23*
EX5YRA	5	1	3.1	*105.39*	*EX5YRB*	5	1	1.7	*72.26*
		3	3.5	*59.58*			3	2.3	*35.60*
		6	4.5	*57.43*			6	3.1	*32.86*
		24	6.1	*10.83*			24	5.3	*8.78*
EX2YRA	2	1	2.1	*72.68*	*EX2YRB*	2	1	1.2	*51.91*
		3	2.4	*38.48*			3	1.7	*24.06*
		6	3.1	*36.56*			6	2.3	*22.47*
		24	2.7	*4.33*			24	3.9	*6.39*

DEVELOPED CONDITION - WEST					DEVELOPED CONDITION - NORTH					DEVELOPED CONDITION - SOUTH				
AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)	AREA	RETURN PERIOD (yr)	EVENT (hrs)	VOL (ac-ft)	PEAK (cfs)
WEST100YR	100	1	5	164.42	NORTH100YR	100	1	3.1	101.13	SOUTH100YR	100	1	6.2	198.82
		3	7.5	92.35			3	4.6	56.59			3	9.2	112.81
		6	10.6	87.55			6	6.6	52.80			6	13.1	106.26
		24	21.8	41.63			24	13.7	25.34			24	27	50.90
WEST10YR	10	1	3.2	107.30	NORTH10YR	10	1	1.9	65.99	SOUTH10YR	10	1	3.9	129.69
		3	4.8	60.37			3	3	36.98			3	6	73.73
		6	6.9	57.27			6	4.3	34.61			6	8.5	69.58
		24	13	23.78			24	8.3	14.44			24	16.3	29.05
WEST5YR	5	1	2.5	86.26	NORTH5YR	5	1	1.6	53.56	SOUTH5YR	5	1	3.1	104.72
		3	3.9	46.71			3	2.5	29.08			3	4.9	57.66
		6	5.6	44.08			6	3.6	27.35			6	7.1	54.62
		24	10.6	17.46			24	6.9	11.30			24	13.4	22.01
WEST2YR	2	1	1.9	64.36	NORTH2YR	2	1	1.2	39.96	SOUTH2YR	2	1	2.3	78.02
		3	3	34.16			3	1.9	21.45			3	3.8	42.40
		6	4.4	32.10			6	2.8	20.29			6	5.5	40.35
		24	7.7	12.70			24	5	8.22			24	9.7	16.01

The unit hydrograph output files and hydrology map have been included in Appendix C.

BASIN ROUTING ANALYSIS

A routing analysis was completed to demonstrate that the basin and CMP chamber systems contain substantial volume needed to mitigate flows down to existing condition peak flow rates.

Basin routing calculations were conducted for each building area (west, north and south). A stage-storage-discharge table was determined for each area. The stage-storage-discharge tables provide input data at select elevations in the basin and/or chambers which will determine the storage and discharge at each point based on the mitigation configuration of the outlet structures.

In the proposed condition unit hydrograph analysis, the North Area outlets to the south of the Building 1 project site. Runoff from this region will connect with the outlet of the existing condition Area A, as the streambed into which Area A outlets runs from the southern portion of the Building 1 project area to the northwest along the western boundary. In the existing condition, the entire Area A generally drains to the southwest. Approximately 16.6% of Area A drains more towards the southern boundary before being conveyed to the west along the streambed. This area corresponds to the developed North Area (Building 3). The remaining portion, approximately 83.4%, correlates to the developed West Area (Building 1) and drains directly to the western boundary of Area A. For the developed condition West Area and North Area, a ratio of the areas was used to determine the existing peak flow rates which serve as the limits for the routing analysis of each area. An exhibit showing the portion of the existing condition Area A which flows south can be found in Appendix C.

For the BSS – Building 1 area, the proposed outlet structure consists of four 4-inch orifices with an invert set at the water quality ponding elevation of 2.4 ft above the chamber bottom. This orifice mitigates the 2-year storm event. A 1.5-ft weir is proposed at the maximum ponding depth for the 2-year, 24-hour storm (a depth of approximately 5.82 ft). This orifice mitigates for the 5-year storm event and creates a maximum ponding depth of 6.96 ft above the chamber bottom. At the 5-year ponding depth, a 7-ft weir is proposed to mitigate the 10-year and 100-year storm event. The 100-year storm produces a maximum ponding of 7.99 ft, which is below the 8 ft depth of the top of the chambers. The routing analysis produced a maximum drawdown time of 88.6 hours within the chambers. While this exceeds the 72-hour limit for above ground basins to prevent vector issues, the CMP detention system consists of underground chambers and therefore vector issues are not anticipated even with a high drawdown time.

For the BSS – Building 2 area, a constant flow rate of 9.4 cfs was assumed for the basin in order to account for the expected infiltration within the basin extents. This value was determined based on a recommended infiltration rate of 11.5 in/hr within the basin (see Appendix D for the infiltration report), the bottom basin area, and a factor of safety of 3. The water quality volume produces a maximum ponding of 1.4 ft above the basin bottom. Routing of the 2-year, 24-hour storm event shows that the infiltration within the basin is sufficient to meet the existing condition flow rates while producing 2.15 ft of ponding above the basin bottom. The proposed outlet structure consists of a rectangular weir with a length of 6 ft set at the 2-year storm ponding depth. This weir mitigates the 5-year storm event and produces a ponding depth of 2.67 ft. A 6-ft weir mitigates for the 10-year storm event and creates a maximum ponding depth of 2.98 ft within the basin. At the 10-year ponding elevation, a 6-ft weir mitigates for the 100-year storm. The 100-year storm creates a total ponding of 3.36 ft from the basin bottom, allowing at least 1 ft of freeboard below the top of the basin.

For the BSS- Building 3 area, the proposed outlet structure consists of a 3.5-inch orifice plate with an invert set at the bottom of the chambers. The water quality flows will be pumped out to be treated by the proposed bioretention basin therefore the chambers do not hold the water quality volume. This orifice mitigates the 2-year storm event. A 5-inch orifice is proposed at the maximum ponding depth for the 2-year, 24-hour storm (a depth of approximately 3.49 ft). This orifice mitigates for the 5-year storm event and creates a maximum ponding depth of 4.46 ft within the chambers. At this depth, a 0.8 ft weir is proposed to mitigate for the 10-year and 100-year storm events. The 10-year, 24-hour storm event creates

a maximum ponding of 5.16 ft while the 100-year storm creates a maximum ponding of 7.03 ft, which is below 9 ft depth of the top of the gravel which provides storage above the chambers as well. The routing analysis for the BSS – Building 3 detention chambers resulted in a maximum drawdown time of approximately 228 hours. While this exceeds the 72-hour limit for above ground basins to prevent vector issues the CMP detention system consists of underground chambers and therefore vector issues are not anticipated even with a high drawdown time. This is due to this area over mitigating as the developed Building 3 project area is larger than the portion of the existing condition Area A which is used as the limit for the routing analysis of this region. While the mitigation for both Building 3 and Parcel 4 are included in the BSS – Building 3 Area, Parcel 4 will be required to treat for water quality separately from Building 3.

The following tables present the result of routing analysis for the 2-, 5-, 10- and 100-year 24-hour storm events to demonstrate that the basin and CMP chamber systems provide the necessary storage volume needed to restrict the outflow to existing condition flow rates.

Table 5 – Basin Routing Results

		Existing Condition							
		Area A (106.4 ac)		83.4% A	16.6% A	Area B (50.4 ac)		Total (156.8 ac)	
Storm Event		Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)
2-Year	1-Hour	2.1	72.7	**60.6**	12.1	1.2	**51.9**	3.3	124.6
	3-Hour	2.4	38.5	**32.1**	6.4	1.7	**24.1**	4.1	62.5
	6-Hour	3.1	36.6	**30.5**	6.1	2.3	**22.5**	5.4	59.0
	24-Hour	2.7	4.3	**3.6**	0.7	3.9	**6.4**	6.6	10.7
5-Year	1-Hour	3.1	105.4	**87.9**	17.5	1.7	**72.3**	4.8	177.7
	3-Hour	3.5	59.6	49.7	9.9	2.3	**35.6**	5.8	95.2
	6-Hour	4.5	57.4	47.9	9.5	3.1	**32.9**	7.6	90.3
	24-Hour	6.1	10.8	9.0	1.8	5.3	**8.8**	11.4	19.6
10-Year	1-Hour	5.2	149.1	**124.3**	24.7	2.5	**95.2**	7.7	244.2
	3-Hour	6.4	94.8	79.1	15.7	3.3	**51.5**	9.7	146.3
	6-Hour	8.2	92.0	76.7	15.3	4.5	**47.3**	12.7	139.3
	24-Hour	12.4	36.9	30.8	6.1	7.6	**18.2**	20.0	55.2
100-Year	1-Hour	8.9	235.28	196.0	39.1	4.2	**147.9**	13.1	383.2
	3-Hour	11.7	150.79	125.6	25.0	5.7	**80.7**	17.4	231.5
	6-Hour	14.5	146.20	121.8	24.3	7.5	**74.4**	22.0	220.6
	24-Hour	27.3	70.90	59.1	11.8	14.7	**34.5**	42.0	105.4

Storm Event		Developed Condition										Basin Routing Results				
		West Area (55.3 ac)		North Area (33.8 ac)		Combined (89.1 ac)		South Area (67.8 ac)		Total (156.8 ac)		West Area	North Area	Combined	South Area	Total
		Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Volume (Ac-ft)	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)	*Peak Flow (cfs)	**Peak Flow (cfs)	Peak Flow (cfs)
2-Year	1-Hour	1.9	64.4	1.2	40.0	3.1	104.3	2.30	78.02	5.40	*182.34*	*To be analyzed during Final Engineering*				
	3-Hour	3.0	34.2	1.9	21.5	4.9	55.6	3.80	42.40	8.70	*98.01*					
	6-Hour	4.4	32.1	2.8	20.3	7.2	52.4	5.50	40.35	12.70	*92.74*					
	24-Hour	7.7	12.7	5.0	8.2	12.7	20.9	9.70	16.01	22.40	*36.93*	*3.31*	*0.65*	*3.96*	*0*	*3.96*
5-Year	1-Hour	2.5	86.3	1.6	53.6	4.1	139.8	3.10	104.72	7.20	*244.54*	*To be analyzed during Final Engineering*				
	3-Hour	3.9	46.7	2.5	29.1	6.4	75.8	4.90	57.66	11.30	*133.45*					
	6-Hour	5.6	44.1	3.6	27.4	9.2	71.4	7.10	54.62	16.30	*126.05*					
	24-Hour	10.6	17.5	6.9	11.3	17.5	28.8	13.40	22.01	30.90	*50.77*	*9.37*	*1.44*	*10.81*	*8.10*	*18.91*
10-Year	1-Hour	3.2	107.3	1.9	66.0	5.1	173.3	3.90	129.69	9.00	*302.98*	*To be analyzed during Final Engineering*				
	3-Hour	4.8	60.4	3.0	37.0	7.8	97.4	6.00	73.73	13.80	*171.08*					
	6-Hour	6.9	57.3	4.3	34.6	11.2	91.9	8.50	69.58	19.70	*161.46*					
	24-Hour	13.0	23.8	8.3	14.4	21.3	38.2	16.30	29.05	37.60	*67.27*	*16.43*	*3.18*	*19.61*	*16.86*	*36.47*
100-Year	1-Hour	5.0	164.4	3.1	101.1	8.1	265.5	6.2	198.82	14.3	*464.32*	*To be analyzed during Final Engineering*				
	3-Hour	7.5	92.4	4.6	56.6	12.1	149.0	9.2	112.81	21.3	*261.81*					
	6-Hour	10.6	87.6	6.6	52.8	17.2	140.4	13.1	106.26	30.3	*246.66*					
	24-Hour	21.8	41.6	13.7	25.3	35.5	66.9	27.0	50.90	62.5	*117.80*	*40.75*	*12.18*	*52.93*	*39.9*	*92.83*

Note:

**The Combined Peak Flow describes the flows exiting the site along the western and southwestern boundary of the site. This value is the sum of the peak flow rates generated by the West and North Areas in the proposed condition which have been routed to be less than the existing condition peak flow for Area A or within 10% of this value.*

***For the routing analysis of the South Area (Building 2), a constant flow rate of 9.4 cfs is assumed to be infiltrating within the basin extents (based on 11.5 in/hr infiltration rate, the basin bottom area, and a factor of safety of 3) and has been subtracted from the peak flow results from the routing analysis.*

The basin routing calculations and other hydraulic calculations have been provided in Appendix C. Based on the table above, the proposed infiltration basin and detention chambers for each building area have the capacity to mitigate for all the required HCOC storm events. All discharge flow rates in the developed condition are lower than or within ten percent of the flow rate exiting the site in the existing condition.

RELEVANT EXCERPTS FROM "BEAUMONT SUMMIT STATION – BUILDING 1 PRELIMINARY DRAINAGE STUDY"

PROPOSED CONDITION UNIT HYDROGRAPHS

BUILDING 1 (ONSITE) - DEVELOPED CONDITION									
Cover Type	**Condition (Poor,Fair,Good)**	**Soil Type (A,B,C,D)**	**COVER TYPE**	**RI**	**Land Use**	**% Impervious**	**Area (SF)**	**Area (AC)**	**Impervious Area (SF)**
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Streets/Conc	0.9	623119	14.30	560807
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Landscape	0	304335	6.99	0
Urban	Good	B	RESIDENTIAL OR COMMERCIAL	56	Roof	0.9	644289	14.79	579860
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Streets/Conc	0.9	287703	6.60	258933
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Landscape	0	212158	4.87	0
Urban	Good	D	RESIDENTIAL OR COMMERCIAL	75	Roof	0.9	335211	7.70	301690
			AVERAGE WEIGHTED RI VALUE	**62.6**		**TOTAL**	2406815	55.3	
						TOTAL % IMPERVIOUS		**70.7%**	
						LOW LOSS RATE		**0.335**	

PROPOSED CONDITION
2-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST2YR12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.55	30.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.25	69.13

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.550(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.550(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

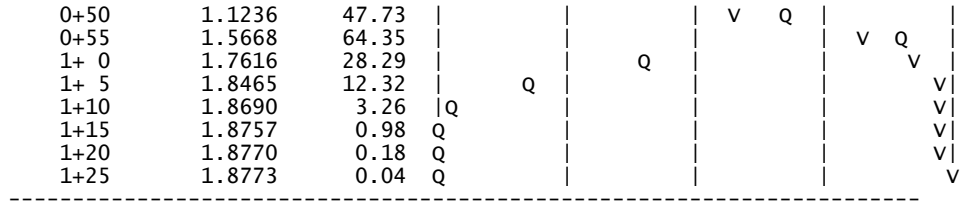
```
      62.6  42.6      0.645     0.710        0.233       1.000      0.233
                                                        Sum (F) =   0.233
      Area averaged mean soil loss (F) (In/Hr) =  0.233
      Minimum soil loss rate ((In/Hr)) =  0.116
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.330
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083        131.015         24.971             13.917
          2   0.167        262.030         55.588             30.980
          3   0.250        393.045         14.152              7.887
          4   0.333        524.061          3.839              2.140
          5   0.417        655.076          1.026              0.572
          6   0.500        786.091          0.425              0.237
                                   Sum = 100.000    Sum=      55.732
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.224       (  0.233)       0.074        0.150
   2   0.17     4.70      0.310       (  0.233)       0.102        0.208
   3   0.25     4.70      0.310       (  0.233)       0.102        0.208
   4   0.33     5.10      0.336       (  0.233)       0.111        0.225
   5   0.42     5.80      0.383       (  0.233)       0.126        0.256
   6   0.50     5.90      0.389       (  0.233)       0.128        0.261
   7   0.58     7.10      0.468       (  0.233)       0.155        0.314
   8   0.67     8.70      0.574       (  0.233)       0.189        0.385
   9   0.75    13.20      0.871          0.233    (  0.287)        0.638
  10   0.83    29.70      1.959          0.233    (  0.647)        1.727
  11   0.92     7.70      0.508       (  0.233)       0.168        0.340
  12   1.00     4.00      0.264       (  0.233)       0.087        0.177
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     4.9
       Flood volume = Effective rainfall      0.41(In)
        times area      55.3(Ac.)/[(In)/(Ft.)] =       1.9(Ac.Ft)
       Total soil loss =      0.14(In)
       Total soil loss =     0.656(Ac.Ft)
       Total rainfall =      0.55(In)
       Flood volume =       81773.3 Cubic Feet
       Total soil loss =       28577.8 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =     64.355(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
       ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       17.5      35.0      52.5      70.0
  ------------------------------------------------------------------------
    0+ 5       0.0144      2.09  VQ        |         |         |         |
    0+10       0.0664      7.55  |V  Q     |         |         |         |
    0+15       0.1388     10.52  | V   Q   |         |         |         |
    0+20       0.2183     11.54  |   V Q   |         |         |         |
    0+25       0.3060     12.73  |     VQ  |         |         |         |
    0+30       0.4021     13.95  |      QV |         |         |         |
    0+35       0.5062     15.13  |       Q V         |         |         |
    0+40       0.6293     17.87  |         Q  V      |         |         |
    0+45       0.7948     24.04  |         |  Q  V   |         |         |
```


0+50 1.1236 47.73
0+55 1.5668 64.35
1+ 0 1.7616 28.29
1+ 5 1.8465 12.32
1+10 1.8690 3.26
1+15 1.8757 0.98
1+20 1.8770 0.18
1+25 1.8773 0.04
Q
V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST2YR32.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 0.950(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 0.950(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.148	(0.233)	0.049	0.099
2	0.17	1.30	0.148	(0.233)	0.049	0.099
3	0.25	1.10	0.125	(0.233)	0.041	0.084
4	0.33	1.50	0.171	(0.233)	0.056	0.115
5	0.42	1.50	0.171	(0.233)	0.056	0.115
6	0.50	1.80	0.205	(0.233)	0.068	0.137
7	0.58	1.50	0.171	(0.233)	0.056	0.115
8	0.67	1.80	0.205	(0.233)	0.068	0.137
9	0.75	1.80	0.205	(0.233)	0.068	0.137
10	0.83	1.50	0.171	(0.233)	0.056	0.115
11	0.92	1.60	0.182	(0.233)	0.060	0.122
12	1.00	1.80	0.205	(0.233)	0.068	0.137
13	1.08	2.20	0.251	(0.233)	0.083	0.168
14	1.17	2.20	0.251	(0.233)	0.083	0.168
15	1.25	2.20	0.251	(0.233)	0.083	0.168
16	1.33	2.00	0.228	(0.233)	0.075	0.153
17	1.42	2.60	0.296	(0.233)	0.098	0.199
18	1.50	2.70	0.308	(0.233)	0.102	0.206
19	1.58	2.40	0.274	(0.233)	0.090	0.183
20	1.67	2.70	0.308	(0.233)	0.102	0.206
21	1.75	3.30	0.376	(0.233)	0.124	0.252
22	1.83	3.10	0.353	(0.233)	0.117	0.237
23	1.92	2.90	0.331	(0.233)	0.109	0.221
24	2.00	3.00	0.342	(0.233)	0.113	0.229
25	2.08	3.10	0.353	(0.233)	0.117	0.237
26	2.17	4.20	0.479	(0.233)	0.158	0.321
27	2.25	5.00	0.570	(0.233)	0.188	0.382
28	2.33	3.50	0.399	(0.233)	0.132	0.267
29	2.42	6.80	0.775	0.233	(0.256)	0.542
30	2.50	7.30	0.832	0.233	(0.275)	0.599
31	2.58	8.20	0.935	0.233	(0.308)	0.702
32	2.67	5.90	0.672	(0.233)	0.222	0.451
33	2.75	2.00	0.228	(0.233)	0.075	0.153
34	2.83	1.80	0.205	(0.233)	0.068	0.137
35	2.92	1.80	0.205	(0.233)	0.068	0.137
36	3.00	0.60	0.068	(0.233)	0.023	0.046
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	7.8

Flood volume = Effective rainfall 0.65(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)
Total soil loss = 0.30(In)
Total soil loss = 1.390(Ac.Ft)
Total rainfall = 0.95(In)
Flood volume = 130093.3 Cubic Feet

Total soil loss = 60562.7 Cubic Feet

Peak flow rate of this hydrograph = 34.163(CFS)

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3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 10.0 20.0 30.0 40.0
0+ 5	0.0095	1.38	VQ | | | |
0+10	0.0402	4.46	V Q | | | |
0+15	0.0749	5.03	|V Q | | | |
0+20	0.1106	5.19	|V Q | | | |
0+25	0.1525	6.08	| V Q | | | |
0+30	0.1981	6.63	| V Q | | | |
0+35	0.2469	7.08	| V Q | | | |
0+40	0.2943	6.88	| V Q | | | |
0+45	0.3457	7.47	| V Q | | | |
0+50	0.3959	7.29	| V Q | | | |
0+55	0.4422	6.73	| VQ | | | |
1+ 0	0.4905	7.00	| VQ | | | |
1+ 5	0.5450	7.92	| Q | | | |
1+10	0.6069	8.99	| Q | | | |
1+15	0.6707	9.26	| VQ| | | |
1+20	0.7336	9.13	| Q| | | |
1+25	0.7977	9.31	| QV | | |
1+30	0.8716	10.73	| QV | | |
1+35	0.9472	10.97	| Q V | | |
1+40	1.0211	10.73	| Q V | | |
1+45	1.1033	11.94	| |Q V | | |
1+50	1.1948	13.29	| Q V | | |
1+55	1.2844	13.00	| Q V | | |
2+ 0	1.3713	12.62	| Q V | | |
2+ 5	1.4597	12.84	| Q V| | |
2+10	1.5581	14.28	| Q V | |
2+15	1.6807	17.80	| Q | V | |
2+20	1.8100	18.78	| Q | V | |
2+25	1.9458	19.72	| Q| V | |
2+30	2.1409	28.32	| | Q | |
2+35	2.3716	33.50	| | |V Q |
2+40	2.6069	34.16	| | Q |
2+45	2.7672	23.29	| Q | V |
2+50	2.8511	12.18	| Q | | V |
2+55	2.9123	8.89	| Q | | V|
3+ 0	2.9587	6.73	| Q | | V|
3+ 5	2.9793	2.99	| Q | | V|
3+10	2.9846	0.77	Q | | V|
3+15	2.9861	0.21	Q | | V|
3+20	2.9865	0.06	Q | | V|
3+25	2.9865	0.01	Q | | V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST2YR32.out

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Riverside County Synthetic Unit Hydrology Method
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Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 0.950(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 0.950(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.148	(0.233)	0.049	0.099
2	0.17	1.30	0.148	(0.233)	0.049	0.099
3	0.25	1.10	0.125	(0.233)	0.041	0.084
4	0.33	1.50	0.171	(0.233)	0.056	0.115
5	0.42	1.50	0.171	(0.233)	0.056	0.115
6	0.50	1.80	0.205	(0.233)	0.068	0.137
7	0.58	1.50	0.171	(0.233)	0.056	0.115
8	0.67	1.80	0.205	(0.233)	0.068	0.137
9	0.75	1.80	0.205	(0.233)	0.068	0.137
10	0.83	1.50	0.171	(0.233)	0.056	0.115
11	0.92	1.60	0.182	(0.233)	0.060	0.122
12	1.00	1.80	0.205	(0.233)	0.068	0.137
13	1.08	2.20	0.251	(0.233)	0.083	0.168
14	1.17	2.20	0.251	(0.233)	0.083	0.168
15	1.25	2.20	0.251	(0.233)	0.083	0.168
16	1.33	2.00	0.228	(0.233)	0.075	0.153
17	1.42	2.60	0.296	(0.233)	0.098	0.199
18	1.50	2.70	0.308	(0.233)	0.102	0.206
19	1.58	2.40	0.274	(0.233)	0.090	0.183
20	1.67	2.70	0.308	(0.233)	0.102	0.206
21	1.75	3.30	0.376	(0.233)	0.124	0.252
22	1.83	3.10	0.353	(0.233)	0.117	0.237
23	1.92	2.90	0.331	(0.233)	0.109	0.221
24	2.00	3.00	0.342	(0.233)	0.113	0.229
25	2.08	3.10	0.353	(0.233)	0.117	0.237
26	2.17	4.20	0.479	(0.233)	0.158	0.321
27	2.25	5.00	0.570	(0.233)	0.188	0.382
28	2.33	3.50	0.399	(0.233)	0.132	0.267
29	2.42	6.80	0.775	0.233	(0.256)	0.542
30	2.50	7.30	0.832	0.233	(0.275)	0.599
31	2.58	8.20	0.935	0.233	(0.308)	0.702
32	2.67	5.90	0.672	(0.233)	0.222	0.451
33	2.75	2.00	0.228	(0.233)	0.075	0.153
34	2.83	1.80	0.205	(0.233)	0.068	0.137
35	2.92	1.80	0.205	(0.233)	0.068	0.137
36	3.00	0.60	0.068	(0.233)	0.023	0.046
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	7.8

Flood volume = Effective rainfall 0.65(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)
Total soil loss = 0.30(In)
Total soil loss = 1.390(Ac.Ft)
Total rainfall = 0.95(In)
Flood volume = 130093.3 Cubic Feet

```
Total soil loss =       60562.7 Cubic Feet
------------------------------------------------------------------
 Peak flow rate of this hydrograph =     34.163(CFS)
------------------------------------------------------------------
++++++++++++++++++++++++
       U n i t   H y d r o g r a p h    A n a l y s i s

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              Study date  07/20/21 File: WEST2YR62.out


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------------------------------------------------------------------------------

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 4010

------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



------------------------------------------------------------------
EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP
------------------------------------------------------------------
Drainage Area =      55.30(Ac.)  =      0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      55.30(Ac.)  =      0.086 Sq. Mi.
Length along longest watercourse =    2375.00(Ft.)
Length along longest watercourse measured to centroid =    1715.00(Ft.)
Length along longest watercourse =      0.450 Mi.
Length along longest watercourse measured to centroid =      0.325 Mi.
Difference in elevation =      88.00(Ft.)
Slope along watercourse =    195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.064 Hr.
Lag time =     3.82 Min.
25% of lag time =     0.95 Min.
40% of lag time =     1.53 Min.
Unit time =     5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       55.30           1.40                 77.42

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       55.30           3.00                165.90

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.400(In)
Area Averaged 100-Year Rainfall =    3.000(In)

Point rain (area averaged) =    1.400(In)
Areal adjustment factor =   99.98 %
Adjusted average point rain =    1.400(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    55.300           62.60         0.710
 Total Area Entered =     55.30(Ac.)
```

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
62.6	42.6	0.645	0.710	0.233	1.000	0.233
					Sum (F) =	0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.084	(0.233)	0.028	0.056
2	0.17	0.60	0.101	(0.233)	0.033	0.068
3	0.25	0.60	0.101	(0.233)	0.033	0.068
4	0.33	0.60	0.101	(0.233)	0.033	0.068
5	0.42	0.60	0.101	(0.233)	0.033	0.068
6	0.50	0.70	0.118	(0.233)	0.039	0.079
7	0.58	0.70	0.118	(0.233)	0.039	0.079
8	0.67	0.70	0.118	(0.233)	0.039	0.079
9	0.75	0.70	0.118	(0.233)	0.039	0.079
10	0.83	0.70	0.118	(0.233)	0.039	0.079
11	0.92	0.70	0.118	(0.233)	0.039	0.079
12	1.00	0.80	0.134	(0.233)	0.044	0.090
13	1.08	0.80	0.134	(0.233)	0.044	0.090
14	1.17	0.80	0.134	(0.233)	0.044	0.090
15	1.25	0.80	0.134	(0.233)	0.044	0.090
16	1.33	0.80	0.134	(0.233)	0.044	0.090
17	1.42	0.80	0.134	(0.233)	0.044	0.090
18	1.50	0.80	0.134	(0.233)	0.044	0.090
19	1.58	0.80	0.134	(0.233)	0.044	0.090
20	1.67	0.80	0.134	(0.233)	0.044	0.090
21	1.75	0.80	0.134	(0.233)	0.044	0.090
22	1.83	0.80	0.134	(0.233)	0.044	0.090
23	1.92	0.80	0.134	(0.233)	0.044	0.090
24	2.00	0.90	0.151	(0.233)	0.050	0.101
25	2.08	0.80	0.134	(0.233)	0.044	0.090
26	2.17	0.90	0.151	(0.233)	0.050	0.101
27	2.25	0.90	0.151	(0.233)	0.050	0.101
28	2.33	0.90	0.151	(0.233)	0.050	0.101
29	2.42	0.90	0.151	(0.233)	0.050	0.101
30	2.50	0.90	0.151	(0.233)	0.050	0.101
31	2.58	0.90	0.151	(0.233)	0.050	0.101
32	2.67	0.90	0.151	(0.233)	0.050	0.101
33	2.75	1.00	0.168	(0.233)	0.055	0.113
34	2.83	1.00	0.168	(0.233)	0.055	0.113
35	2.92	1.00	0.168	(0.233)	0.055	0.113
36	3.00	1.00	0.168	(0.233)	0.055	0.113
37	3.08	1.00	0.168	(0.233)	0.055	0.113
38	3.17	1.10	0.185	(0.233)	0.061	0.124
39	3.25	1.10	0.185	(0.233)	0.061	0.124
40	3.33	1.10	0.185	(0.233)	0.061	0.124

```
41   3.42     1.20     0.202       (  0.233)       0.067        0.135
42   3.50     1.30     0.218       (  0.233)       0.072        0.146
43   3.58     1.40     0.235       (  0.233)       0.078        0.158
44   3.67     1.40     0.235       (  0.233)       0.078        0.158
45   3.75     1.50     0.252       (  0.233)       0.083        0.169
46   3.83     1.50     0.252       (  0.233)       0.083        0.169
47   3.92     1.60     0.269       (  0.233)       0.089        0.180
48   4.00     1.60     0.269       (  0.233)       0.089        0.180
49   4.08     1.70     0.286       (  0.233)       0.094        0.191
50   4.17     1.80     0.302       (  0.233)       0.100        0.203
51   4.25     1.90     0.319       (  0.233)       0.105        0.214
52   4.33     2.00     0.336       (  0.233)       0.111        0.225
53   4.42     2.10     0.353       (  0.233)       0.116        0.236
54   4.50     2.10     0.353       (  0.233)       0.116        0.236
55   4.58     2.20     0.370       (  0.233)       0.122        0.248
56   4.67     2.30     0.386       (  0.233)       0.127        0.259
57   4.75     2.40     0.403       (  0.233)       0.133        0.270
58   4.83     2.40     0.403       (  0.233)       0.133        0.270
59   4.92     2.50     0.420       (  0.233)       0.139        0.281
60   5.00     2.60     0.437       (  0.233)       0.144        0.293
61   5.08     3.10     0.521       (  0.233)       0.172        0.349
62   5.17     3.60     0.605       (  0.233)       0.200        0.405
63   5.25     3.90     0.655       (  0.233)       0.216        0.439
64   5.33     4.20     0.705          0.233    (  0.233)       0.473
65   5.42     4.70     0.789          0.233    (  0.261)       0.557
66   5.50     5.60     0.941          0.233    (  0.310)       0.708
67   5.58     1.90     0.319       (  0.233)       0.105        0.214
68   5.67     0.90     0.151       (  0.233)       0.050        0.101
69   5.75     0.60     0.101       (  0.233)       0.033        0.068
70   5.83     0.50     0.084       (  0.233)       0.028        0.056
71   5.92     0.30     0.050       (  0.233)       0.017        0.034
72   6.00     0.20     0.034       (  0.233)       0.011        0.023
              (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    11.4
     Flood volume = Effective rainfall      0.95(In)
      times area      55.3(Ac.)/[(In)/(Ft.)] =       4.4(Ac.Ft)
     Total soil loss =      0.45(In)
     Total soil loss =     2.088(Ac.Ft)
     Total rainfall =      1.40(In)
     Flood volume =      190025.8 Cubic Feet
     Total soil loss =       90955.4 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     32.100(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        6 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
     ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
-------------------------------------------------------------------------
  0+ 5       0.0054      0.78  Q         |         |         |         |
  0+10       0.0239      2.68  V Q       |         |         |         |
  0+15       0.0478      3.48  V  Q      |         |         |         |
  0+20       0.0732      3.69  V  Q      |         |         |         |
  0+25       0.0990      3.74  V  Q      |         |         |         |
  0+30       0.1260      3.92  |V Q      |         |         |         |
  0+35       0.1554      4.27  |V  Q     |         |         |         |
  0+40       0.1854      4.36  |V  Q     |         |         |         |
  0+45       0.2156      4.38  |V  Q     |         |         |         |
  0+50       0.2458      4.39  | V Q     |         |         |         |
  0+55       0.2761      4.39  | V Q     |         |         |         |
  1+ 0       0.3074      4.55  | V Q     |         |         |         |
  1+ 5       0.3412      4.90  |  VQ     |         |         |         |
  1+10       0.3755      4.99  |  VQ     |         |         |         |
  1+15       0.4100      5.01  |  V Q    |         |         |         |
  1+20       0.4446      5.02  |   VQ    |         |         |         |
  1+25       0.4792      5.02  |   VQ    |         |         |         |
  1+30       0.5137      5.02  |   VQ    |         |         |         |
  1+35       0.5483      5.02  |    Q    |         |         |         |
  1+40       0.5829      5.02  |    Q    |         |         |         |
  1+45       0.6175      5.02  |    Q    |         |         |         |
  1+50       0.6520      5.02  |    Q    |         |         |         |
```

```
   1+55       0.6866      5.02  |    QV   |         |         |         |
   2+ 0       0.7223      5.18  |    QV   |         |         |         |
   2+ 5       0.7592      5.37  |    QV   |         |         |         |
   2+10       0.7955      5.27  |    Q V  |         |         |         |
   2+15       0.8337      5.55  |    Q V  |         |         |         |
   2+20       0.8724      5.62  |    Q V  |         |         |         |
   2+25       0.9113      5.64  |    Q  V |         |         |         |
   2+30       0.9502      5.65  |    Q  V |         |         |         |
   2+35       0.9891      5.65  |    Q   V|         |         |         |
   2+40       1.0280      5.65  |    Q   V|         |         |         |
   2+45       1.0679      5.80  |    Q   V|         |         |         |
   2+50       1.1103      6.15  |     Q   V         |         |         |
   2+55       1.1533      6.24  |     Q   V         |         |         |
   3+ 0       1.1964      6.27  |     Q   V         |         |         |
   3+ 5       1.2396      6.27  |     Q   |V        |         |         |
   3+10       1.2839      6.43  |     Q   |V        |         |         |
   3+15       1.3306      6.78  |     Q   | V       |         |         |
   3+20       1.3780      6.87  |     Q   | V       |         |         |
   3+25       1.4265      7.05  |      Q  |  V      |         |         |
   3+30       1.4786      7.56  |      Q  |  V      |         |         |
   3+35       1.5348      8.16  |       Q |   V     |         |         |
   3+40       1.5942      8.62  |       Q |   V     |         |         |
   3+45       1.6554      8.90  |       Q |    V    |         |         |
   3+50       1.7193      9.28  |        Q|    V    |         |         |
   3+55       1.7850      9.53  |        Q|     V   |         |         |
   4+ 0       1.8532      9.91  |        Q|     V   |         |         |
   4+ 5       1.9232     10.16  |         Q      V  |         |         |
   4+10       1.9969     10.69  |         Q       V |         |         |
   4+15       2.0747     11.29  |          |Q       V|         |         |
   4+20       2.1567     11.92  |          |Q       V|         |         |
   4+25       2.2431     12.54  |          | Q       V         |         |
   4+30       2.3327     13.01  |          |  Q      |V        |         |
   4+35       2.4242     13.29  |          |  Q      | V       |         |
   4+40       2.5195     13.83  |          |  Q      |  V      |         |
   4+45       2.6189     14.43  |          |   Q     |   V     |         |
   4+50       2.7214     14.90  |          |   Q     |   V     |         |
   4+55       2.8259     15.17  |          |    Q    |    V    |         |
   5+ 0       2.9341     15.71  |          |    Q    |     V   |         |
   5+ 5       3.0508     16.94  |          |     Q   |      V  |         |
   5+10       3.1857     19.58  |          |        Q|       V |         |
   5+15       3.3391     22.27  |          |         | Q       V         |
   5+20       3.5069     24.37  |          |         |   Q     | V       |
   5+25       3.6929     27.01  |          |         |     Q   |  V      |
   5+30       3.9140     32.10  |          |         |         | Q  V    |
   5+35       4.1252     30.67  |          |         |         Q      V  |
   5+40       4.2298     15.19  |          |    Q    |         |       V |
   5+45       4.2830      7.71  |       Q  |         |         |        V|
   5+50       4.3151      4.67  |    Q     |         |         |        V|
   5+55       4.3375      3.25  |   Q      |         |         |        V|
   6+ 0       4.3517      2.06  |  Q       |         |         |        V|
   6+ 5       4.3596      1.15  | Q        |         |         |        V|
   6+10       4.3617      0.30  |Q         |         |         |        V|
   6+15       4.3622      0.08  Q          |         |         |        V|
   6+20       4.3624      0.02  Q          |         |         |        V|
   6+25       4.3624      0.01  Q          |         |         |        V|
-------------------------------------------------------------------------
```

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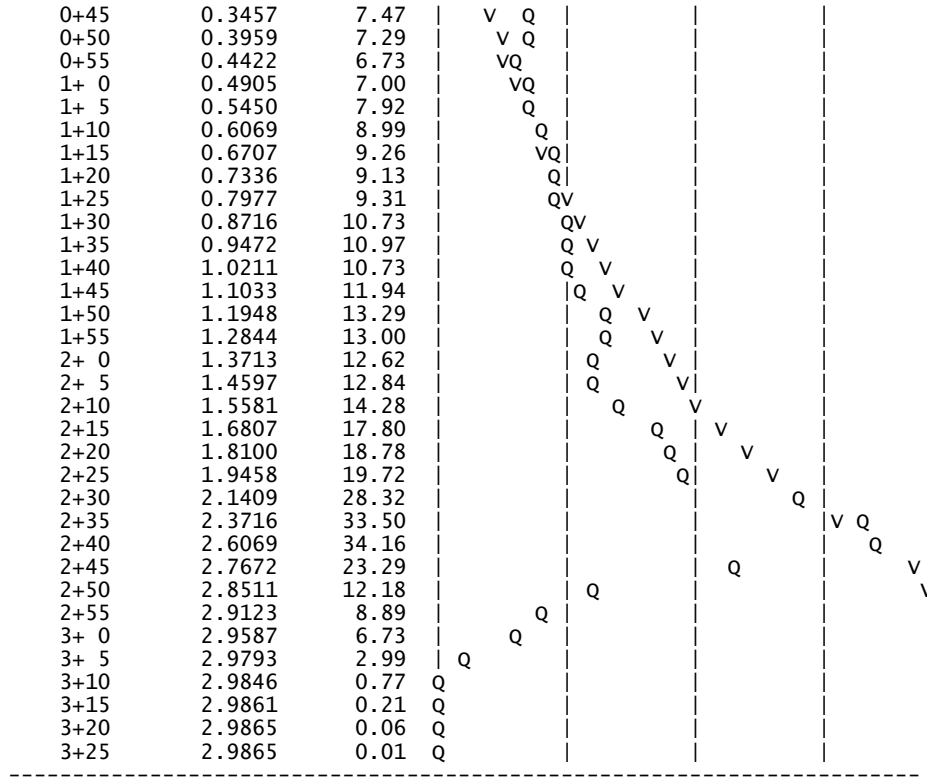
++++++++++++++++++++++++++++++++++++++++++++
                3 - H O U R    S T O R M
            R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
  ------------------------------------------------------------------------
    0+ 5       0.0095      1.38  VQ        |         |         |         |
    0+10       0.0402      4.46  V   Q     |         |         |         |
    0+15       0.0749      5.03  |V   Q    |         |         |         |
    0+20       0.1106      5.19  |V   Q    |         |         |         |
    0+25       0.1525      6.08  | V   Q   |         |         |         |
    0+30       0.1981      6.63  | V   Q   |         |         |         |
    0+35       0.2469      7.08  |  V   Q  |         |         |         |
    0+40       0.2943      6.88  |  V  Q   |         |         |         |
```


0+45 0.3457 7.47
0+50 0.3959 7.29
0+55 0.4422 6.73
1+ 0 0.4905 7.00
1+ 5 0.5450 7.92
1+10 0.6069 8.99
1+15 0.6707 9.26
1+20 0.7336 9.13
1+25 0.7977 9.31
1+30 0.8716 10.73
1+35 0.9472 10.97
1+40 1.0211 10.73
1+45 1.1033 11.94
1+50 1.1948 13.29
1+55 1.2844 13.00
2+ 0 1.3713 12.62
2+ 5 1.4597 12.84
2+10 1.5581 14.28
2+15 1.6807 17.80
2+20 1.8100 18.78
2+25 1.9458 19.72
2+30 2.1409 28.32
2+35 2.3716 33.50
2+40 2.6069 34.16
2+45 2.7672 23.29
2+50 2.8511 12.18
2+55 2.9123 8.89
3+ 0 2.9587 6.73
3+ 5 2.9793 2.99
3+10 2.9846 0.77
3+15 2.9861 0.21
3+20 2.9865 0.06
3+25 2.9865 0.01

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.412)	0.007	0.013
2	0.17	0.07	0.020	(0.411)	0.007	0.013
3	0.25	0.07	0.020	(0.409)	0.007	0.013
4	0.33	0.10	0.030	(0.408)	0.010	0.020
5	0.42	0.10	0.030	(0.406)	0.010	0.020
6	0.50	0.10	0.030	(0.405)	0.010	0.020
7	0.58	0.10	0.030	(0.403)	0.010	0.020
8	0.67	0.10	0.030	(0.401)	0.010	0.020
9	0.75	0.10	0.030	(0.400)	0.010	0.020
10	0.83	0.13	0.040	(0.398)	0.013	0.027
11	0.92	0.13	0.040	(0.397)	0.013	0.027
12	1.00	0.13	0.040	(0.395)	0.013	0.027
13	1.08	0.10	0.030	(0.394)	0.010	0.020
14	1.17	0.10	0.030	(0.392)	0.010	0.020
15	1.25	0.10	0.030	(0.390)	0.010	0.020
16	1.33	0.10	0.030	(0.389)	0.010	0.020
17	1.42	0.10	0.030	(0.387)	0.010	0.020
18	1.50	0.10	0.030	(0.386)	0.010	0.020
19	1.58	0.10	0.030	(0.384)	0.010	0.020
20	1.67	0.10	0.030	(0.383)	0.010	0.020
21	1.75	0.10	0.030	(0.381)	0.010	0.020
22	1.83	0.13	0.040	(0.380)	0.013	0.027
23	1.92	0.13	0.040	(0.378)	0.013	0.027
24	2.00	0.13	0.040	(0.377)	0.013	0.027
25	2.08	0.13	0.040	(0.375)	0.013	0.027
26	2.17	0.13	0.040	(0.374)	0.013	0.027
27	2.25	0.13	0.040	(0.372)	0.013	0.027
28	2.33	0.13	0.040	(0.370)	0.013	0.027
29	2.42	0.13	0.040	(0.369)	0.013	0.027
30	2.50	0.13	0.040	(0.367)	0.013	0.027
31	2.58	0.17	0.050	(0.366)	0.016	0.033
32	2.67	0.17	0.050	(0.364)	0.016	0.033
33	2.75	0.17	0.050	(0.363)	0.016	0.033
34	2.83	0.17	0.050	(0.361)	0.016	0.033
35	2.92	0.17	0.050	(0.360)	0.016	0.033
36	3.00	0.17	0.050	(0.358)	0.016	0.033
37	3.08	0.17	0.050	(0.357)	0.016	0.033
38	3.17	0.17	0.050	(0.356)	0.016	0.033
39	3.25	0.17	0.050	(0.354)	0.016	0.033
40	3.33	0.17	0.050	(0.353)	0.016	0.033
41	3.42	0.17	0.050	(0.351)	0.016	0.033
42	3.50	0.17	0.050	(0.350)	0.016	0.033
43	3.58	0.17	0.050	(0.348)	0.016	0.033
44	3.67	0.17	0.050	(0.347)	0.016	0.033

45	3.75	0.17	0.050	(0.345)	0.016	0.033
46	3.83	0.20	0.060	(0.344)	0.020	0.040
47	3.92	0.20	0.060	(0.342)	0.020	0.040
48	4.00	0.20	0.060	(0.341)	0.020	0.040
49	4.08	0.20	0.060	(0.339)	0.020	0.040
50	4.17	0.20	0.060	(0.338)	0.020	0.040
51	4.25	0.20	0.060	(0.337)	0.020	0.040
52	4.33	0.23	0.070	(0.335)	0.023	0.047
53	4.42	0.23	0.070	(0.334)	0.023	0.047
54	4.50	0.23	0.070	(0.332)	0.023	0.047
55	4.58	0.23	0.070	(0.331)	0.023	0.047
56	4.67	0.23	0.070	(0.329)	0.023	0.047
57	4.75	0.23	0.070	(0.328)	0.023	0.047
58	4.83	0.27	0.080	(0.327)	0.026	0.054
59	4.92	0.27	0.080	(0.325)	0.026	0.054
60	5.00	0.27	0.080	(0.324)	0.026	0.054
61	5.08	0.20	0.060	(0.322)	0.020	0.040
62	5.17	0.20	0.060	(0.321)	0.020	0.040
63	5.25	0.20	0.060	(0.320)	0.020	0.040
64	5.33	0.23	0.070	(0.318)	0.023	0.047
65	5.42	0.23	0.070	(0.317)	0.023	0.047
66	5.50	0.23	0.070	(0.315)	0.023	0.047
67	5.58	0.27	0.080	(0.314)	0.026	0.054
68	5.67	0.27	0.080	(0.313)	0.026	0.054
69	5.75	0.27	0.080	(0.311)	0.026	0.054
70	5.83	0.27	0.080	(0.310)	0.026	0.054
71	5.92	0.27	0.080	(0.308)	0.026	0.054
72	6.00	0.27	0.080	(0.307)	0.026	0.054
73	6.08	0.30	0.090	(0.306)	0.030	0.060
74	6.17	0.30	0.090	(0.304)	0.030	0.060
75	6.25	0.30	0.090	(0.303)	0.030	0.060
76	6.33	0.30	0.090	(0.302)	0.030	0.060
77	6.42	0.30	0.090	(0.300)	0.030	0.060
78	6.50	0.30	0.090	(0.299)	0.030	0.060
79	6.58	0.33	0.100	(0.298)	0.033	0.067
80	6.67	0.33	0.100	(0.296)	0.033	0.067
81	6.75	0.33	0.100	(0.295)	0.033	0.067
82	6.83	0.33	0.100	(0.294)	0.033	0.067
83	6.92	0.33	0.100	(0.292)	0.033	0.067
84	7.00	0.33	0.100	(0.291)	0.033	0.067
85	7.08	0.33	0.100	(0.290)	0.033	0.067
86	7.17	0.33	0.100	(0.288)	0.033	0.067
87	7.25	0.33	0.100	(0.287)	0.033	0.067
88	7.33	0.37	0.110	(0.286)	0.036	0.074
89	7.42	0.37	0.110	(0.284)	0.036	0.074
90	7.50	0.37	0.110	(0.283)	0.036	0.074
91	7.58	0.40	0.120	(0.282)	0.040	0.080
92	7.67	0.40	0.120	(0.281)	0.040	0.080
93	7.75	0.40	0.120	(0.279)	0.040	0.080
94	7.83	0.43	0.130	(0.278)	0.043	0.087
95	7.92	0.43	0.130	(0.277)	0.043	0.087
96	8.00	0.43	0.130	(0.275)	0.043	0.087
97	8.08	0.50	0.150	(0.274)	0.049	0.100
98	8.17	0.50	0.150	(0.273)	0.049	0.100
99	8.25	0.50	0.150	(0.272)	0.049	0.100
100	8.33	0.50	0.150	(0.270)	0.049	0.100
101	8.42	0.50	0.150	(0.269)	0.049	0.100
102	8.50	0.50	0.150	(0.268)	0.049	0.100
103	8.58	0.53	0.160	(0.266)	0.053	0.107
104	8.67	0.53	0.160	(0.265)	0.053	0.107
105	8.75	0.53	0.160	(0.264)	0.053	0.107
106	8.83	0.57	0.170	(0.263)	0.056	0.114
107	8.92	0.57	0.170	(0.261)	0.056	0.114
108	9.00	0.57	0.170	(0.260)	0.056	0.114
109	9.08	0.63	0.190	(0.259)	0.063	0.127
110	9.17	0.63	0.190	(0.258)	0.063	0.127
111	9.25	0.63	0.190	(0.257)	0.063	0.127
112	9.33	0.67	0.200	(0.255)	0.066	0.134
113	9.42	0.67	0.200	(0.254)	0.066	0.134
114	9.50	0.67	0.200	(0.253)	0.066	0.134
115	9.58	0.70	0.210	(0.252)	0.069	0.141
116	9.67	0.70	0.210	(0.250)	0.069	0.141
117	9.75	0.70	0.210	(0.249)	0.069	0.141
118	9.83	0.73	0.220	(0.248)	0.073	0.147
119	9.92	0.73	0.220	(0.247)	0.073	0.147

120	10.00	0.73	0.220	(0.246)	0.073	0.147
121	10.08	0.50	0.150	(0.245)	0.049	0.100
122	10.17	0.50	0.150	(0.243)	0.049	0.100
123	10.25	0.50	0.150	(0.242)	0.049	0.100
124	10.33	0.50	0.150	(0.241)	0.049	0.100
125	10.42	0.50	0.150	(0.240)	0.049	0.100
126	10.50	0.50	0.150	(0.239)	0.049	0.100
127	10.58	0.67	0.200	(0.237)	0.066	0.134
128	10.67	0.67	0.200	(0.236)	0.066	0.134
129	10.75	0.67	0.200	(0.235)	0.066	0.134
130	10.83	0.67	0.200	(0.234)	0.066	0.134
131	10.92	0.67	0.200	(0.233)	0.066	0.134
132	11.00	0.67	0.200	(0.232)	0.066	0.134
133	11.08	0.63	0.190	(0.231)	0.063	0.127
134	11.17	0.63	0.190	(0.229)	0.063	0.127
135	11.25	0.63	0.190	(0.228)	0.063	0.127
136	11.33	0.63	0.190	(0.227)	0.063	0.127
137	11.42	0.63	0.190	(0.226)	0.063	0.127
138	11.50	0.63	0.190	(0.225)	0.063	0.127
139	11.58	0.57	0.170	(0.224)	0.056	0.114
140	11.67	0.57	0.170	(0.223)	0.056	0.114
141	11.75	0.57	0.170	(0.222)	0.056	0.114
142	11.83	0.60	0.180	(0.220)	0.059	0.121
143	11.92	0.60	0.180	(0.219)	0.059	0.121
144	12.00	0.60	0.180	(0.218)	0.059	0.121
145	12.08	0.83	0.250	(0.217)	0.082	0.167
146	12.17	0.83	0.250	(0.216)	0.082	0.167
147	12.25	0.83	0.250	(0.215)	0.082	0.167
148	12.33	0.87	0.260	(0.214)	0.086	0.174
149	12.42	0.87	0.260	(0.213)	0.086	0.174
150	12.50	0.87	0.260	(0.212)	0.086	0.174
151	12.58	0.93	0.280	(0.211)	0.092	0.188
152	12.67	0.93	0.280	(0.210)	0.092	0.188
153	12.75	0.93	0.280	(0.209)	0.092	0.188
154	12.83	0.97	0.290	(0.208)	0.096	0.194
155	12.92	0.97	0.290	(0.207)	0.096	0.194
156	13.00	0.97	0.290	(0.205)	0.096	0.194
157	13.08	1.13	0.340	(0.204)	0.112	0.228
158	13.17	1.13	0.340	(0.203)	0.112	0.228
159	13.25	1.13	0.340	(0.202)	0.112	0.228
160	13.33	1.13	0.340	(0.201)	0.112	0.228
161	13.42	1.13	0.340	(0.200)	0.112	0.228
162	13.50	1.13	0.340	(0.199)	0.112	0.228
163	13.58	0.77	0.230	(0.198)	0.076	0.154
164	13.67	0.77	0.230	(0.197)	0.076	0.154
165	13.75	0.77	0.230	(0.196)	0.076	0.154
166	13.83	0.77	0.230	(0.195)	0.076	0.154
167	13.92	0.77	0.230	(0.194)	0.076	0.154
168	14.00	0.77	0.230	(0.193)	0.076	0.154
169	14.08	0.90	0.270	(0.192)	0.089	0.181
170	14.17	0.90	0.270	(0.191)	0.089	0.181
171	14.25	0.90	0.270	(0.190)	0.089	0.181
172	14.33	0.87	0.260	(0.189)	0.086	0.174
173	14.42	0.87	0.260	(0.188)	0.086	0.174
174	14.50	0.87	0.260	(0.187)	0.086	0.174
175	14.58	0.87	0.260	(0.186)	0.086	0.174
176	14.67	0.87	0.260	(0.185)	0.086	0.174
177	14.75	0.87	0.260	(0.185)	0.086	0.174
178	14.83	0.83	0.250	(0.184)	0.082	0.167
179	14.92	0.83	0.250	(0.183)	0.082	0.167
180	15.00	0.83	0.250	(0.182)	0.082	0.167
181	15.08	0.80	0.240	(0.181)	0.079	0.161
182	15.17	0.80	0.240	(0.180)	0.079	0.161
183	15.25	0.80	0.240	(0.179)	0.079	0.161
184	15.33	0.77	0.230	(0.178)	0.076	0.154
185	15.42	0.77	0.230	(0.177)	0.076	0.154
186	15.50	0.77	0.230	(0.176)	0.076	0.154
187	15.58	0.63	0.190	(0.175)	0.063	0.127
188	15.67	0.63	0.190	(0.174)	0.063	0.127
189	15.75	0.63	0.190	(0.174)	0.063	0.127
190	15.83	0.63	0.190	(0.173)	0.063	0.127
191	15.92	0.63	0.190	(0.172)	0.063	0.127
192	16.00	0.63	0.190	(0.171)	0.063	0.127
193	16.08	0.13	0.040	(0.170)	0.013	0.027
194	16.17	0.13	0.040	(0.169)	0.013	0.027

195	16.25	0.13	0.040	(0.168)	0.013	0.027
196	16.33	0.13	0.040	(0.167)	0.013	0.027
197	16.42	0.13	0.040	(0.167)	0.013	0.027
198	16.50	0.13	0.040	(0.166)	0.013	0.027
199	16.58	0.10	0.030	(0.165)	0.010	0.020
200	16.67	0.10	0.030	(0.164)	0.010	0.020
201	16.75	0.10	0.030	(0.163)	0.010	0.020
202	16.83	0.10	0.030	(0.162)	0.010	0.020
203	16.92	0.10	0.030	(0.162)	0.010	0.020
204	17.00	0.10	0.030	(0.161)	0.010	0.020
205	17.08	0.17	0.050	(0.160)	0.016	0.033
206	17.17	0.17	0.050	(0.159)	0.016	0.033
207	17.25	0.17	0.050	(0.158)	0.016	0.033
208	17.33	0.17	0.050	(0.158)	0.016	0.033
209	17.42	0.17	0.050	(0.157)	0.016	0.033
210	17.50	0.17	0.050	(0.156)	0.016	0.033
211	17.58	0.17	0.050	(0.155)	0.016	0.033
212	17.67	0.17	0.050	(0.154)	0.016	0.033
213	17.75	0.17	0.050	(0.154)	0.016	0.033
214	17.83	0.13	0.040	(0.153)	0.013	0.027
215	17.92	0.13	0.040	(0.152)	0.013	0.027
216	18.00	0.13	0.040	(0.151)	0.013	0.027
217	18.08	0.13	0.040	(0.151)	0.013	0.027
218	18.17	0.13	0.040	(0.150)	0.013	0.027
219	18.25	0.13	0.040	(0.149)	0.013	0.027
220	18.33	0.13	0.040	(0.148)	0.013	0.027
221	18.42	0.13	0.040	(0.148)	0.013	0.027
222	18.50	0.13	0.040	(0.147)	0.013	0.027
223	18.58	0.10	0.030	(0.146)	0.010	0.020
224	18.67	0.10	0.030	(0.146)	0.010	0.020
225	18.75	0.10	0.030	(0.145)	0.010	0.020
226	18.83	0.07	0.020	(0.144)	0.007	0.013
227	18.92	0.07	0.020	(0.143)	0.007	0.013
228	19.00	0.07	0.020	(0.143)	0.007	0.013
229	19.08	0.10	0.030	(0.142)	0.010	0.020
230	19.17	0.10	0.030	(0.141)	0.010	0.020
231	19.25	0.10	0.030	(0.141)	0.010	0.020
232	19.33	0.13	0.040	(0.140)	0.013	0.027
233	19.42	0.13	0.040	(0.139)	0.013	0.027
234	19.50	0.13	0.040	(0.139)	0.013	0.027
235	19.58	0.10	0.030	(0.138)	0.010	0.020
236	19.67	0.10	0.030	(0.138)	0.010	0.020
237	19.75	0.10	0.030	(0.137)	0.010	0.020
238	19.83	0.07	0.020	(0.136)	0.007	0.013
239	19.92	0.07	0.020	(0.136)	0.007	0.013
240	20.00	0.07	0.020	(0.135)	0.007	0.013
241	20.08	0.10	0.030	(0.135)	0.010	0.020
242	20.17	0.10	0.030	(0.134)	0.010	0.020
243	20.25	0.10	0.030	(0.133)	0.010	0.020
244	20.33	0.10	0.030	(0.133)	0.010	0.020
245	20.42	0.10	0.030	(0.132)	0.010	0.020
246	20.50	0.10	0.030	(0.132)	0.010	0.020
247	20.58	0.10	0.030	(0.131)	0.010	0.020
248	20.67	0.10	0.030	(0.131)	0.010	0.020
249	20.75	0.10	0.030	(0.130)	0.010	0.020
250	20.83	0.07	0.020	(0.129)	0.007	0.013
251	20.92	0.07	0.020	(0.129)	0.007	0.013
252	21.00	0.07	0.020	(0.128)	0.007	0.013
253	21.08	0.10	0.030	(0.128)	0.010	0.020
254	21.17	0.10	0.030	(0.127)	0.010	0.020
255	21.25	0.10	0.030	(0.127)	0.010	0.020
256	21.33	0.07	0.020	(0.126)	0.007	0.013
257	21.42	0.07	0.020	(0.126)	0.007	0.013
258	21.50	0.07	0.020	(0.125)	0.007	0.013
259	21.58	0.10	0.030	(0.125)	0.010	0.020
260	21.67	0.10	0.030	(0.125)	0.010	0.020
261	21.75	0.10	0.030	(0.124)	0.010	0.020
262	21.83	0.07	0.020	(0.124)	0.007	0.013
263	21.92	0.07	0.020	(0.123)	0.007	0.013
264	22.00	0.07	0.020	(0.123)	0.007	0.013
265	22.08	0.10	0.030	(0.122)	0.010	0.020
266	22.17	0.10	0.030	(0.122)	0.010	0.020
267	22.25	0.10	0.030	(0.122)	0.010	0.020
268	22.33	0.07	0.020	(0.121)	0.007	0.013
269	22.42	0.07	0.020	(0.121)	0.007	0.013

```
270  22.50     0.07      0.020       (  0.121)       0.007        0.013
271  22.58     0.07      0.020       (  0.120)       0.007        0.013
272  22.67     0.07      0.020       (  0.120)       0.007        0.013
273  22.75     0.07      0.020       (  0.120)       0.007        0.013
274  22.83     0.07      0.020       (  0.119)       0.007        0.013
275  22.92     0.07      0.020       (  0.119)       0.007        0.013
276  23.00     0.07      0.020       (  0.119)       0.007        0.013
277  23.08     0.07      0.020       (  0.118)       0.007        0.013
278  23.17     0.07      0.020       (  0.118)       0.007        0.013
279  23.25     0.07      0.020       (  0.118)       0.007        0.013
280  23.33     0.07      0.020       (  0.118)       0.007        0.013
281  23.42     0.07      0.020       (  0.117)       0.007        0.013
282  23.50     0.07      0.020       (  0.117)       0.007        0.013
283  23.58     0.07      0.020       (  0.117)       0.007        0.013
284  23.67     0.07      0.020       (  0.117)       0.007        0.013
285  23.75     0.07      0.020       (  0.117)       0.007        0.013
286  23.83     0.07      0.020       (  0.117)       0.007        0.013
287  23.92     0.07      0.020       (  0.116)       0.007        0.013
288  24.00     0.07      0.020       (  0.116)       0.007        0.013
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    20.1
      Flood volume = Effective rainfall      1.67(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =       7.7(Ac.Ft)
      Total soil loss =      0.82(In)
      Total soil loss =     3.801(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =      336201.5 Cubic Feet
      Total soil loss =      165591.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     12.701(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0013      0.19  Q          |          |          |          |
   0+10       0.0054      0.60  VQ         |          |          |          |
   0+15       0.0103      0.71  VQ         |          |          |          |
   0+20       0.0160      0.83  VQ         |          |          |          |
   0+25       0.0232      1.04  V Q        |          |          |          |
   0+30       0.0308      1.10  V Q        |          |          |          |
   0+35       0.0385      1.12  V Q        |          |          |          |
   0+40       0.0462      1.12  V Q        |          |          |          |
   0+45       0.0539      1.12  V Q        |          |          |          |
   0+50       0.0623      1.21  V Q        |          |          |          |
   0+55       0.0721      1.42  V Q        |          |          |          |
   1+ 0       0.0822      1.47  V Q        |          |          |          |
   1+ 5       0.0918      1.40  V Q        |          |          |          |
   1+10       0.1000      1.19  V Q        |          |          |          |
   1+15       0.1079      1.14  V Q        |          |          |          |
   1+20       0.1156      1.13  V Q        |          |          |          |
   1+25       0.1234      1.12  V Q        |          |          |          |
   1+30       0.1311      1.12  V Q        |          |          |          |
   1+35       0.1388      1.12  V Q        |          |          |          |
   1+40       0.1465      1.12  V Q        |          |          |          |
   1+45       0.1542      1.12  V Q        |          |          |          |
   1+50       0.1626      1.21  V Q        |          |          |          |
   1+55       0.1724      1.42  V Q        |          |          |          |
   2+ 0       0.1825      1.47  V Q        |          |          |          |
   2+ 5       0.1928      1.49  V Q        |          |          |          |
   2+10       0.2031      1.49  |VQ        |          |          |          |
   2+15       0.2134      1.49  |VQ        |          |          |          |
   2+20       0.2237      1.49  |VQ        |          |          |          |
   2+25       0.2339      1.49  |VQ        |          |          |          |
   2+30       0.2442      1.49  |VQ        |          |          |          |
   2+35       0.2552      1.59  |V Q       |          |          |          |
   2+40       0.2675      1.80  |V Q       |          |          |          |
   2+45       0.2803      1.85  |V Q       |          |          |          |
   2+50       0.2931      1.86  |V Q       |          |          |          |
   2+55       0.3059      1.87  |V Q       |          |          |          |
```

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3+ 0       0.3188      1.87  |V Q       |          |          |          |
3+ 5       0.3317      1.87  |V Q       |          |          |          |
3+10       0.3445      1.87  |V Q       |          |          |          |
3+15       0.3574      1.87  |V Q       |          |          |          |
3+20       0.3703      1.87  |V Q       |          |          |          |
3+25       0.3831      1.87  |V Q       |          |          |          |
3+30       0.3960      1.87  | VQ       |          |          |          |
3+35       0.4089      1.87  | VQ       |          |          |          |
3+40       0.4217      1.87  | VQ       |          |          |          |
3+45       0.4346      1.87  | VQ       |          |          |          |
3+50       0.4481      1.96  | VQ       |          |          |          |
3+55       0.4630      2.17  | V Q      |          |          |          |
4+ 0       0.4783      2.22  | V Q      |          |          |          |
4+ 5       0.4937      2.24  | V Q      |          |          |          |
4+10       0.5091      2.24  | V Q      |          |          |          |
4+15       0.5246      2.24  | V Q      |          |          |          |
4+20       0.5407      2.33  | V Q      |          |          |          |
4+25       0.5582      2.54  | V  Q     |          |          |          |
4+30       0.5760      2.60  | V  Q     |          |          |          |
4+35       0.5940      2.61  |  V Q     |          |          |          |
4+40       0.6120      2.61  |  V Q     |          |          |          |
4+45       0.6300      2.61  |  V Q     |          |          |          |
4+50       0.6487      2.71  |  V Q     |          |          |          |
4+55       0.6688      2.92  |  V Q     |          |          |          |
5+ 0       0.6892      2.97  |  V Q     |          |          |          |
5+ 5       0.7085      2.80  |  V Q     |          |          |          |
5+10       0.7249      2.39  |  VQ      |          |          |          |
5+15       0.7406      2.28  |  VQ      |          |          |          |
5+20       0.7567      2.35  |  VQ      |          |          |          |
5+25       0.7743      2.55  |   VQ     |          |          |          |
5+30       0.7921      2.60  |   VQ     |          |          |          |
5+35       0.8108      2.70  |   VQ     |          |          |          |
5+40       0.8308      2.91  |   VQ     |          |          |          |
5+45       0.8513      2.97  |   VQ     |          |          |          |
5+50       0.8718      2.98  |   VQ     |          |          |          |
5+55       0.8924      2.99  |   VQ     |          |          |          |
6+ 0       0.9130      2.99  |   VQ     |          |          |          |
6+ 5       0.9342      3.08  |   V Q    |          |          |          |
6+10       0.9569      3.29  |   V Q    |          |          |          |
6+15       0.9799      3.34  |    VQ    |          |          |          |
6+20       1.0030      3.36  |    VQ    |          |          |          |
6+25       1.0261      3.36  |    VQ    |          |          |          |
6+30       1.0493      3.36  |    VQ    |          |          |          |
6+35       1.0731      3.46  |    VQ    |          |          |          |
6+40       1.0983      3.66  |    V Q   |          |          |          |
6+45       1.1239      3.72  |    V Q   |          |          |          |
6+50       1.1496      3.73  |    V Q   |          |          |          |
6+55       1.1753      3.73  |     VQ   |          |          |          |
7+ 0       1.2010      3.74  |     VQ   |          |          |          |
7+ 5       1.2268      3.74  |     VQ   |          |          |          |
7+10       1.2525      3.74  |     VQ   |          |          |          |
7+15       1.2782      3.74  |     VQ   |          |          |          |
7+20       1.3046      3.83  |     VQ   |          |          |          |
7+25       1.3324      4.04  |     V Q  |          |          |          |
7+30       1.3605      4.09  |      VQ  |          |          |          |
7+35       1.3895      4.20  |      VQ  |          |          |          |
7+40       1.4198      4.41  |      VQ  |          |          |          |
7+45       1.4506      4.46  |      VQ  |          |          |          |
7+50       1.4820      4.57  |      V Q |          |          |          |
7+55       1.5150      4.78  |      V Q |          |          |          |
8+ 0       1.5483      4.84  |       VQ |          |          |          |
8+ 5       1.5830      5.04  |       V Q|          |          |          |
8+10       1.6205      5.46  |       V Q|          |          |          |
8+15       1.6589      5.56  |       V  |Q         |          |          |
8+20       1.6974      5.59  |       V  |Q         |          |          |
8+25       1.7359      5.60  |       V  |Q         |          |          |
8+30       1.7745      5.60  |        V |Q         |          |          |
8+35       1.8138      5.70  |        V |Q         |          |          |
8+40       1.8544      5.90  |        V |Q         |          |          |
8+45       1.8955      5.96  |        V |Q         |          |          |
8+50       1.9372      6.06  |         V Q         |          |          |
8+55       1.9805      6.28  |         V Q         |          |          |
9+ 0       2.0241      6.33  |         V Q         |          |          |
9+ 5       2.0690      6.53  |         V  Q        |          |          |
9+10       2.1169      6.95  |         V  Q        |          |          |
```
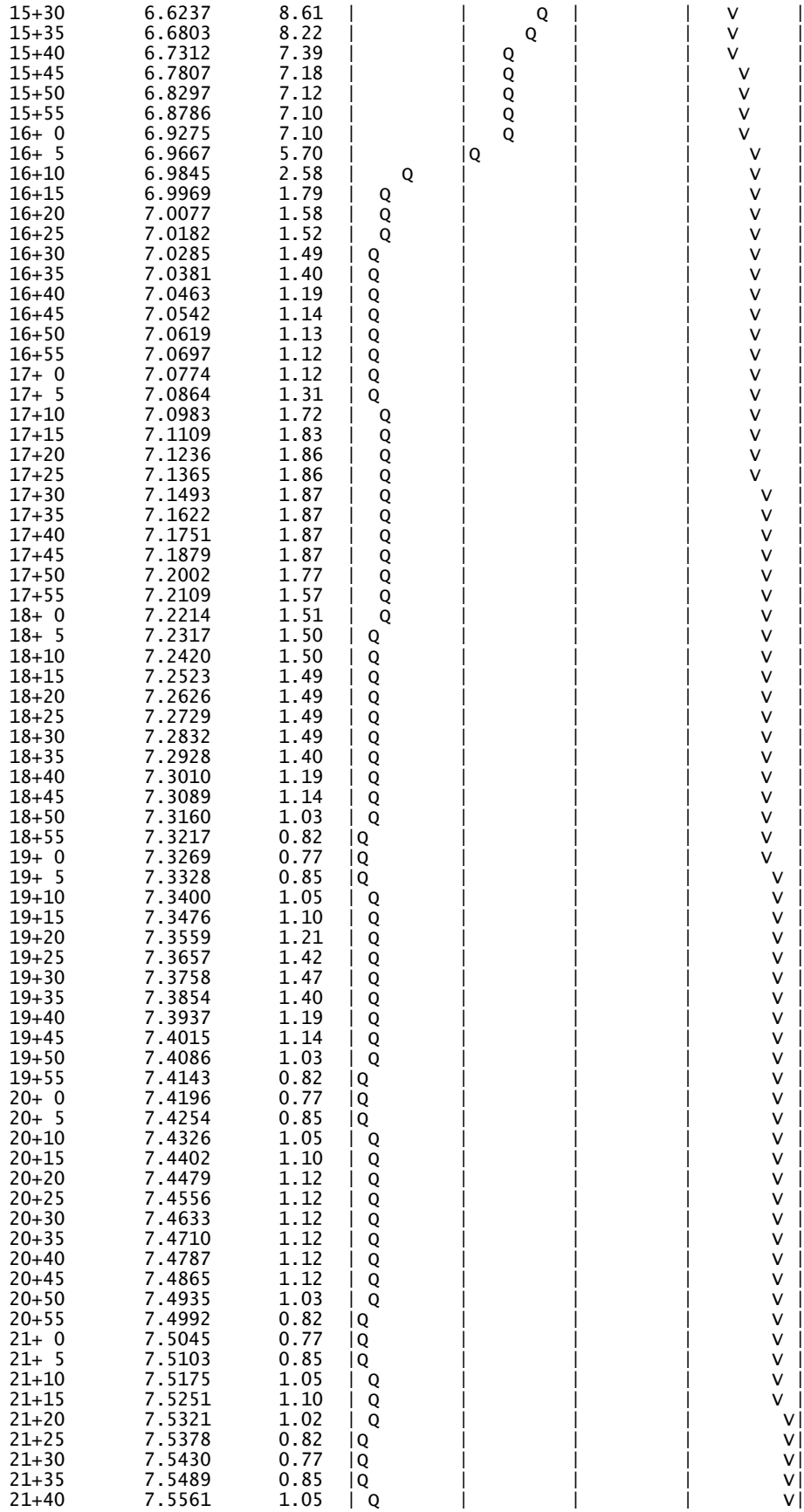

9+15	2.1655	7.06	|	|V Q |	|	|
9+20	2.2150	7.18	|	|V Q |	|	|
9+25	2.2659	7.40	|	|V Q |	|	|
9+30	2.3172	7.45	|	| V Q |	|	|
9+35	2.3693	7.56	|	| V Q |	|	|
9+40	2.4228	7.77	|	| V Q |	|	|
9+45	2.4767	7.82	|	| V Q |	|	|
9+50	2.5313	7.93	|	| V Q |	|	|
9+55	2.5874	8.14	|	| V Q |	|	|
10+ 0	2.6439	8.20	|	| V Q |	|	|
10+ 5	2.6959	7.56	|	| V Q |	|	|
10+10	2.7380	6.11	|	| Q V |	|	|
10+15	2.7776	5.74	|	|Q V |	|	|
10+20	2.8164	5.64	|	|Q V |	|	|
10+25	2.8551	5.61	|	|Q V |	|	|
10+30	2.8937	5.60	|	|Q V |	|	|
10+35	2.9355	6.07	|	| Q V |	|	|
10+40	2.9844	7.11	|	| QV |	|	|
10+45	3.0352	7.37	|	| QV |	|	|
10+50	3.0865	7.44	|	| QV |	|	|
10+55	3.1379	7.46	|	| Q V |	|	|
11+ 0	3.1893	7.47	|	| Q V |	|	|
11+ 5	3.2401	7.38	|	| Q V |	|	|
11+10	3.2895	7.17	|	| Q V |	|	|
11+15	3.3385	7.12	|	| Q V |	|	|
11+20	3.3874	7.10	|	| Q V |	|	|
11+25	3.4363	7.10	|	| Q V |	|	|
11+30	3.4852	7.10	|	| Q V |	|	|
11+35	3.5328	6.91	|	| Q V |	|	|
11+40	3.5776	6.50	|	| Q V |	|	|
11+45	3.6216	6.39	|	| Q V |	|	|
11+50	3.6660	6.45	|	| Q V |	|	|
11+55	3.7118	6.65	|	| Q V|	|	|
12+ 0	3.7580	6.70	|	| Q V|	|	|
12+ 5	3.8088	7.37	|	| Q V|	|	|
12+10	3.8696	8.83	|	| Q V |	|	|
12+15	3.9330	9.20	|	| Q V |	|	|
12+20	3.9977	9.39	|	| Q V |	|	|
12+25	4.0640	9.63	|	| Q|V |	|	|
12+30	4.1307	9.69	|	| Q|V |	|	|
12+35	4.1989	9.89	|	| Q|V |	|	|
12+40	4.2699	10.31	|	| Q V |	|	|
12+45	4.3416	10.42	|	| Q V |	|	|
12+50	4.4143	10.54	|	| |QV |	|	|
12+55	4.4883	10.76	|	| |Q V |	|	|
13+ 0	4.5628	10.81	|	| |Q V |	|	|
13+ 5	4.6406	11.29	|	| | Q V |	|	|
13+10	4.7256	12.34	|	| | Q |	|	|
13+15	4.8123	12.60	|	| | VQ |	|	|
13+20	4.8996	12.67	|	| | Q |	|	|
13+25	4.9870	12.69	|	| | Q |	|	|
13+30	5.0745	12.70	|	| | QV |	|	|
13+35	5.1549	11.67	|	| | Q V |	|	|
13+40	5.2196	9.39	|	| Q | V |	|	|
13+45	5.2803	8.81	|	| Q | V |	|	|
13+50	5.3399	8.65	|	| Q | V |	|	|
13+55	5.3991	8.61	|	| Q | V |	|	|
14+ 0	5.4583	8.59	|	| Q | V |	|	|
14+ 5	5.5201	8.96	|	| Q | V |	|	|
14+10	5.5875	9.80	|	| Q| V |	|	|
14+15	5.6564	10.01	|	| Q V|	|	|
14+20	5.7251	9.97	|	| Q| V|	|	|
14+25	5.7925	9.78	|	| Q| V |	|	|
14+30	5.8595	9.73	|	| Q| V |	|	|
14+35	5.9264	9.72	|	| Q| V |	|	|
14+40	5.9933	9.71	|	| Q| |V |	|	|
14+45	6.0602	9.71	|	| Q| |V |	|	|
14+50	6.1265	9.62	|	| Q| |V |	|	|
14+55	6.1913	9.41	|	| Q | | V |	|	|
15+ 0	6.2557	9.36	|	| Q | | V |	|	|
15+ 5	6.3194	9.25	|	| Q | | V |	|	|
15+10	6.3817	9.04	|	| Q | | V |	|	|
15+15	6.4436	8.99	|	| Q | | V |	|	|
15+20	6.5047	8.88	|	| Q | | V |	|	|
15+25	6.5644	8.67	|	| Q | | V |	|	|



```
   21+45       7.5637      1.10  | Q       |         |         |        v|
   21+50       7.5707      1.02  | Q       |         |         |        v|
   21+55       7.5764      0.82  |Q        |         |         |        v|
   22+ 0       7.5816      0.77  |Q        |         |         |        v|
   22+ 5       7.5875      0.85  |Q        |         |         |        v|
   22+10       7.5947      1.05  | Q       |         |         |        v|
   22+15       7.6023      1.10  | Q       |         |         |        v|
   22+20       7.6093      1.02  | Q       |         |         |        v|
   22+25       7.6149      0.82  |Q        |         |         |        v|
   22+30       7.6202      0.77  |Q        |         |         |        v|
   22+35       7.6254      0.75  |Q        |         |         |        v|
   22+40       7.6306      0.75  |Q        |         |         |        v|
   22+45       7.6357      0.75  |Q        |         |         |        v|
   22+50       7.6409      0.75  |Q        |         |         |        v|
   22+55       7.6460      0.75  |Q        |         |         |        v|
   23+ 0       7.6511      0.75  |Q        |         |         |        v|
   23+ 5       7.6563      0.75  |Q        |         |         |        v|
   23+10       7.6614      0.75  |Q        |         |         |        v|
   23+15       7.6666      0.75  |Q        |         |         |        v|
   23+20       7.6717      0.75  |Q        |         |         |        v|
   23+25       7.6769      0.75  |Q        |         |         |        v|
   23+30       7.6820      0.75  |Q        |         |         |        v|
   23+35       7.6872      0.75  |Q        |         |         |        v|
   23+40       7.6923      0.75  |Q        |         |         |        v|
   23+45       7.6975      0.75  |Q        |         |         |        v|
   23+50       7.7026      0.75  |Q        |         |         |        v|
   23+55       7.7077      0.75  |Q        |         |         |        v|
   24+ 0       7.7129      0.75  |Q        |         |         |        v|
   24+ 5       7.7168      0.56  |Q        |         |         |        v|
   24+10       7.7178      0.15  Q         |         |         |        v|
   24+15       7.7180      0.04  Q         |         |         |        v|
   24+20       7.7181      0.01  Q         |         |         |        v|
   24+25       7.7181      0.00  Q         |         |         |         v
---------------------------------------------------------------------------
```

PROPOSED CONDITION
5-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: WEST5YR15.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.55	30.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.25	69.13

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.714(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.714(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

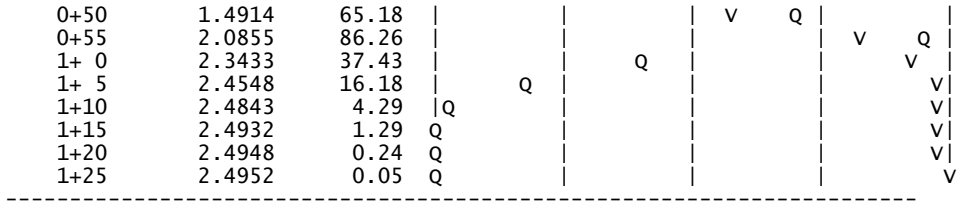
```
      62.6  42.6      0.645     0.710        0.233       1.000      0.233
                                                        Sum (F) =   0.233
      Area averaged mean soil loss (F) (In/Hr) =  0.233
      Minimum soil loss rate ((In/Hr)) =  0.116
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.330
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083        131.015         24.971             13.917
          2   0.167        262.030         55.588             30.980
          3   0.250        393.045         14.152              7.887
          4   0.333        524.061          3.839              2.140
          5   0.417        655.076          1.026              0.572
          6   0.500        786.091          0.425              0.237
                                   Sum = 100.000    Sum=      55.732
-------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.291       (  0.233)       0.096        0.195
   2   0.17     4.70      0.402       (  0.233)       0.133        0.270
   3   0.25     4.70      0.402       (  0.233)       0.133        0.270
   4   0.33     5.10      0.437       (  0.233)       0.144        0.293
   5   0.42     5.80      0.497       (  0.233)       0.164        0.333
   6   0.50     5.90      0.505       (  0.233)       0.167        0.339
   7   0.58     7.10      0.608       (  0.233)       0.201        0.407
   8   0.67     8.70      0.745          0.233    (  0.246)        0.512
   9   0.75    13.20      1.130          0.233    (  0.373)        0.898
  10   0.83    29.70      2.543          0.233    (  0.839)        2.311
  11   0.92     7.70      0.659       (  0.233)       0.218        0.442
  12   1.00     4.00      0.343       (  0.233)       0.113        0.229
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     6.5
       Flood volume = Effective rainfall      0.54(In)
        times area      55.3(Ac.)/[(In)/(Ft.)] =       2.5(Ac.Ft)
       Total soil loss =      0.17(In)
       Total soil loss =     0.793(Ac.Ft)
       Total rainfall =      0.71(In)
       Flood volume =      108691.2 Cubic Feet
       Total soil loss =       34556.0 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =     86.264(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
       ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       22.5      45.0      67.5      90.0
  ------------------------------------------------------------------------
    0+ 5       0.0187      2.72  VQ        |         |         |         |
    0+10       0.0862      9.80  |V  Q     |         |         |         |
    0+15       0.1802     13.65  | V   Q   |         |         |         |
    0+20       0.2834     14.98  |   V Q   |         |         |         |
    0+25       0.3972     16.52  |     VQ  |         |         |         |
    0+30       0.5219     18.11  |       Q |         |         |         |
    0+35       0.6571     19.63  |       Q V         |         |         |
    0+40       0.8181     23.37  |         Q  V      |         |         |
    0+45       1.0425     32.58  |         |   Q V   |         |         |
```


0+50 1.4914 65.18
0+55 2.0855 86.26
1+ 0 2.3433 37.43
1+ 5 2.4548 16.18
1+10 2.4843 4.29
1+15 2.4932 1.29
1+20 2.4948 0.24
1+25 2.4952 0.05

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST5YR35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.208(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.207(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.188	(0.233)	0.062	0.126
2	0.17	1.30	0.188	(0.233)	0.062	0.126
3	0.25	1.10	0.159	(0.233)	0.053	0.107
4	0.33	1.50	0.217	(0.233)	0.072	0.146
5	0.42	1.50	0.217	(0.233)	0.072	0.146
6	0.50	1.80	0.261	(0.233)	0.086	0.175
7	0.58	1.50	0.217	(0.233)	0.072	0.146
8	0.67	1.80	0.261	(0.233)	0.086	0.175
9	0.75	1.80	0.261	(0.233)	0.086	0.175
10	0.83	1.50	0.217	(0.233)	0.072	0.146
11	0.92	1.60	0.232	(0.233)	0.076	0.155
12	1.00	1.80	0.261	(0.233)	0.086	0.175
13	1.08	2.20	0.319	(0.233)	0.105	0.214
14	1.17	2.20	0.319	(0.233)	0.105	0.214
15	1.25	2.20	0.319	(0.233)	0.105	0.214
16	1.33	2.00	0.290	(0.233)	0.096	0.194
17	1.42	2.60	0.377	(0.233)	0.124	0.252
18	1.50	2.70	0.391	(0.233)	0.129	0.262
19	1.58	2.40	0.348	(0.233)	0.115	0.233
20	1.67	2.70	0.391	(0.233)	0.129	0.262
21	1.75	3.30	0.478	(0.233)	0.158	0.320
22	1.83	3.10	0.449	(0.233)	0.148	0.301
23	1.92	2.90	0.420	(0.233)	0.139	0.282
24	2.00	3.00	0.435	(0.233)	0.143	0.291
25	2.08	3.10	0.449	(0.233)	0.148	0.301
26	2.17	4.20	0.609	(0.233)	0.201	0.408
27	2.25	5.00	0.724	0.233	(0.239)	0.492
28	2.33	3.50	0.507	(0.233)	0.167	0.340
29	2.42	6.80	0.985	0.233	(0.325)	0.753
30	2.50	7.30	1.058	0.233	(0.349)	0.825
31	2.58	8.20	1.188	0.233	(0.392)	0.955
32	2.67	5.90	0.855	0.233	(0.282)	0.622
33	2.75	2.00	0.290	(0.233)	0.096	0.194
34	2.83	1.80	0.261	(0.233)	0.086	0.175
35	2.92	1.80	0.261	(0.233)	0.086	0.175
36	3.00	0.60	0.087	(0.233)	0.029	0.058
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	10.1

Flood volume = Effective rainfall 0.84(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 3.9(Ac.Ft)
Total soil loss = 0.36(In)
Total soil loss = 1.673(Ac.Ft)
Total rainfall = 1.21(In)
Flood volume = 169475.7 Cubic Feet

Total soil loss = 72887.5 Cubic Feet

Peak flow rate of this hydrograph = 46.707(CFS)

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3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	12.5	25.0	37.5	50.0
0+ 5	0.0121	1.76	VQ				
0+10	0.0511	5.67	V Q				
0+15	0.0952	6.39	V Q				
0+20	0.1407	6.60	V Q				
0+25	0.1939	7.73	V Q				
0+30	0.2519	8.43	V Q				
0+35	0.3138	8.99	V Q				
0+40	0.3741	8.75	V Q				
0+45	0.4394	9.49	V Q				
0+50	0.5033	9.27	V Q				
0+55	0.5622	8.55	VQ				
1+ 0	0.6235	8.90	VQ				
1+ 5	0.6928	10.07	VQ				
1+10	0.7715	11.43	V Q				
1+15	0.8526	11.78	VQ				
1+20	0.9325	11.60	Q				
1+25	1.0141	11.84	QV				
1+30	1.1080	13.63	QV				
1+35	1.2040	13.95	QV				
1+40	1.2980	13.64	Q V				
1+45	1.4025	15.17	Q V				
1+50	1.5188	16.90	Q V				
1+55	1.6327	16.53	Q V				
2+ 0	1.7432	16.05	Q V				
2+ 5	1.8556	16.33	Q V				
2+10	1.9807	18.15	Q V				
2+15	2.1371	22.71	Q V				
2+20	2.3029	24.07	Q V				
2+25	2.4819	26.00	Q V				
2+30	2.7495	38.85	V Q				
2+35	3.0657	45.92	V Q				
2+40	3.3874	46.71	V Q				
2+45	3.6064	31.80	Q V				
2+50	3.7170	16.06	Q V				
2+55	3.7959	11.45	Q V				
3+ 0	3.8552	8.60	Q V				
3+ 5	3.8814	3.82	Q V				
3+10	3.8882	0.98	Q V				
3+15	3.8900	0.27	Q V				
3+20	3.8905	0.07	Q V				
3+25	3.8906	0.01	Q V				

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST5YR65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.40	77.42

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	3.00	165.90

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 1.775(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.774(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6	42.6	0.645	0.710	0.233	1.000	0.233
					Sum (F) =	0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

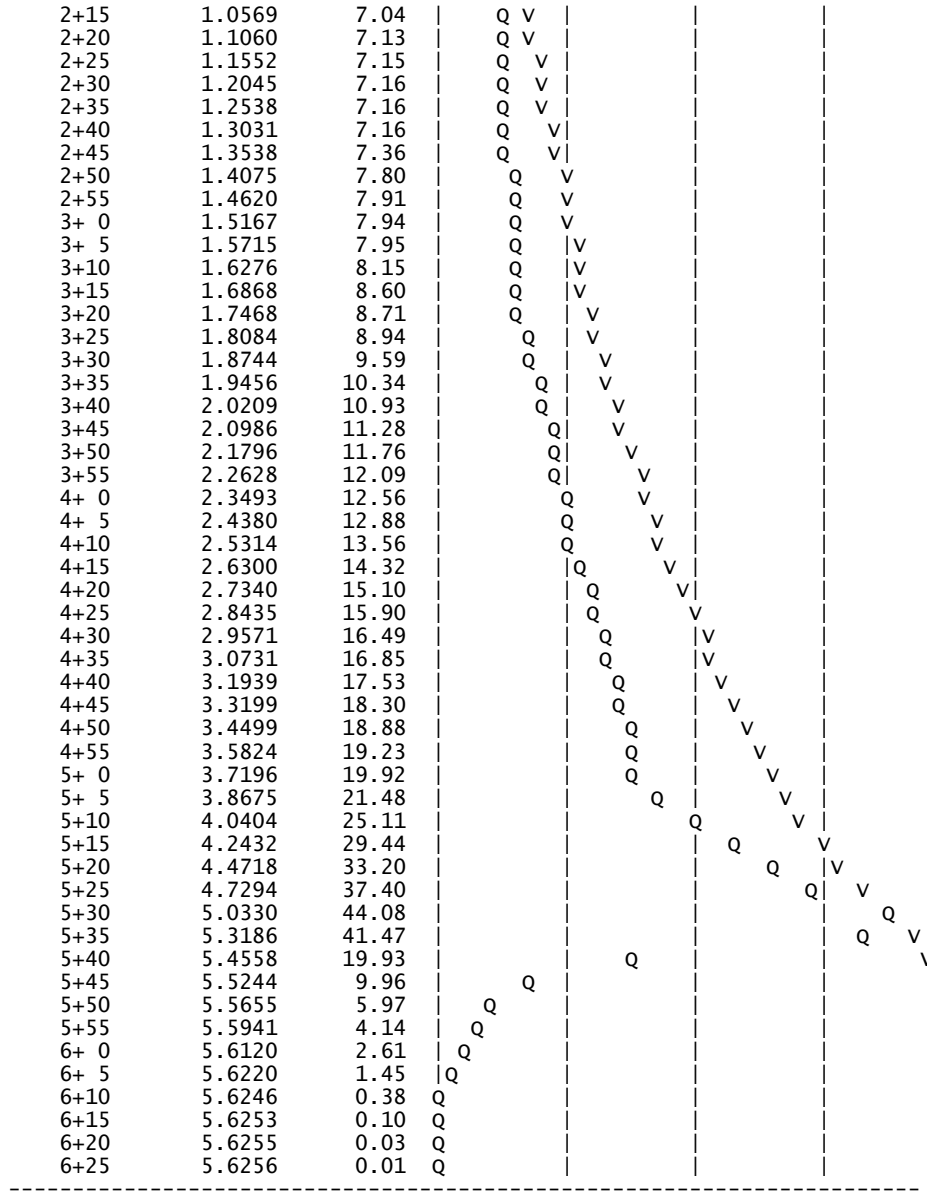
Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.106	(0.233)	0.035	0.071
2	0.17	0.60	0.128	(0.233)	0.042	0.086
3	0.25	0.60	0.128	(0.233)	0.042	0.086
4	0.33	0.60	0.128	(0.233)	0.042	0.086
5	0.42	0.60	0.128	(0.233)	0.042	0.086
6	0.50	0.70	0.149	(0.233)	0.049	0.100
7	0.58	0.70	0.149	(0.233)	0.049	0.100
8	0.67	0.70	0.149	(0.233)	0.049	0.100
9	0.75	0.70	0.149	(0.233)	0.049	0.100
10	0.83	0.70	0.149	(0.233)	0.049	0.100
11	0.92	0.70	0.149	(0.233)	0.049	0.100
12	1.00	0.80	0.170	(0.233)	0.056	0.114
13	1.08	0.80	0.170	(0.233)	0.056	0.114
14	1.17	0.80	0.170	(0.233)	0.056	0.114
15	1.25	0.80	0.170	(0.233)	0.056	0.114
16	1.33	0.80	0.170	(0.233)	0.056	0.114
17	1.42	0.80	0.170	(0.233)	0.056	0.114
18	1.50	0.80	0.170	(0.233)	0.056	0.114
19	1.58	0.80	0.170	(0.233)	0.056	0.114
20	1.67	0.80	0.170	(0.233)	0.056	0.114
21	1.75	0.80	0.170	(0.233)	0.056	0.114
22	1.83	0.80	0.170	(0.233)	0.056	0.114
23	1.92	0.80	0.170	(0.233)	0.056	0.114
24	2.00	0.90	0.192	(0.233)	0.063	0.128
25	2.08	0.80	0.170	(0.233)	0.056	0.114
26	2.17	0.90	0.192	(0.233)	0.063	0.128
27	2.25	0.90	0.192	(0.233)	0.063	0.128
28	2.33	0.90	0.192	(0.233)	0.063	0.128
29	2.42	0.90	0.192	(0.233)	0.063	0.128
30	2.50	0.90	0.192	(0.233)	0.063	0.128
31	2.58	0.90	0.192	(0.233)	0.063	0.128
32	2.67	0.90	0.192	(0.233)	0.063	0.128
33	2.75	1.00	0.213	(0.233)	0.070	0.143
34	2.83	1.00	0.213	(0.233)	0.070	0.143
35	2.92	1.00	0.213	(0.233)	0.070	0.143
36	3.00	1.00	0.213	(0.233)	0.070	0.143
37	3.08	1.00	0.213	(0.233)	0.070	0.143
38	3.17	1.10	0.234	(0.233)	0.077	0.157
39	3.25	1.10	0.234	(0.233)	0.077	0.157
40	3.33	1.10	0.234	(0.233)	0.077	0.157
41	3.42	1.20	0.256	(0.233)	0.084	0.171
42	3.50	1.30	0.277	(0.233)	0.091	0.185
43	3.58	1.40	0.298	(0.233)	0.098	0.200
44	3.67	1.40	0.298	(0.233)	0.098	0.200

```
45   3.75     1.50      0.319       (  0.233)       0.105        0.214
46   3.83     1.50      0.319       (  0.233)       0.105        0.214
47   3.92     1.60      0.341       (  0.233)       0.112        0.228
48   4.00     1.60      0.341       (  0.233)       0.112        0.228
49   4.08     1.70      0.362       (  0.233)       0.119        0.243
50   4.17     1.80      0.383       (  0.233)       0.126        0.257
51   4.25     1.90      0.405       (  0.233)       0.134        0.271
52   4.33     2.00      0.426       (  0.233)       0.141        0.285
53   4.42     2.10      0.447       (  0.233)       0.148        0.300
54   4.50     2.10      0.447       (  0.233)       0.148        0.300
55   4.58     2.20      0.468       (  0.233)       0.155        0.314
56   4.67     2.30      0.490       (  0.233)       0.162        0.328
57   4.75     2.40      0.511       (  0.233)       0.169        0.342
58   4.83     2.40      0.511       (  0.233)       0.169        0.342
59   4.92     2.50      0.532       (  0.233)       0.176        0.357
60   5.00     2.60      0.554       (  0.233)       0.183        0.371
61   5.08     3.10      0.660       (  0.233)       0.218        0.442
62   5.17     3.60      0.767          0.233    (  0.253)       0.534
63   5.25     3.90      0.830          0.233    (  0.274)       0.598
64   5.33     4.20      0.894          0.233    (  0.295)       0.662
65   5.42     4.70      1.001          0.233    (  0.330)       0.768
66   5.50     5.60      1.192          0.233    (  0.393)       0.960
67   5.58     1.90      0.405       (  0.233)       0.134        0.271
68   5.67     0.90      0.192       (  0.233)       0.063        0.128
69   5.75     0.60      0.128       (  0.233)       0.042        0.086
70   5.83     0.50      0.106       (  0.233)       0.035        0.071
71   5.92     0.30      0.064       (  0.233)       0.021        0.043
72   6.00     0.20      0.043       (  0.233)       0.014        0.029
               (Loss Rate Not Used)
   Sum =     100.0                                  Sum =    14.6
     Flood volume = Effective rainfall      1.22(In)
      times area      55.3(Ac.)/[(In)/(Ft.)] =       5.6(Ac.Ft)
     Total soil loss =      0.55(In)
     Total soil loss =     2.552(Ac.Ft)
     Total rainfall =      1.77(In)
     Flood volume =      245049.9 Cubic Feet
     Total soil loss =      111145.7 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     44.082(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          6 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
     ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
-------------------------------------------------------------------------
  0+ 5       0.0068      0.99  Q         |         |         |         |
  0+10       0.0303      3.40  V Q       |         |         |         |
  0+15       0.0606      4.41  V  Q      |         |         |         |
  0+20       0.0928      4.67  V  Q      |         |         |         |
  0+25       0.1255      4.74  V  Q      |         |         |         |
  0+30       0.1597      4.97  |V Q      |         |         |         |
  0+35       0.1970      5.41  |V  Q     |         |         |         |
  0+40       0.2351      5.53  |V  Q     |         |         |         |
  0+45       0.2733      5.56  |V  Q     |         |         |         |
  0+50       0.3117      5.57  | V Q     |         |         |         |
  0+55       0.3500      5.57  | V Q     |         |         |         |
  1+ 0       0.3897      5.77  | V Q     |         |         |         |
  1+ 5       0.4325      6.21  |  VQ     |         |         |         |
  1+10       0.4760      6.32  |  V Q    |         |         |         |
  1+15       0.5198      6.35  |  V Q    |         |         |         |
  1+20       0.5636      6.36  |   VQ    |         |         |         |
  1+25       0.6074      6.36  |   VQ    |         |         |         |
  1+30       0.6512      6.36  |   VQ    |         |         |         |
  1+35       0.6951      6.36  |   VQ    |         |         |         |
  1+40       0.7389      6.36  |    Q    |         |         |         |
  1+45       0.7827      6.36  |    Q    |         |         |         |
  1+50       0.8266      6.36  |    Q    |         |         |         |
  1+55       0.8704      6.36  |    QV   |         |         |         |
  2+ 0       0.9156      6.56  |    QV   |         |         |         |
  2+ 5       0.9625      6.81  |    QV   |         |         |         |
  2+10       1.0084      6.68  |    Q V  |         |         |         |
```



U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST5YR245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
5-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 3.437(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 3.437(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	(0.412)	0.009	0.018
2	0.17	0.07	0.027	(0.411)	0.009	0.018
3	0.25	0.07	0.027	(0.409)	0.009	0.018
4	0.33	0.10	0.041	(0.408)	0.014	0.028
5	0.42	0.10	0.041	(0.406)	0.014	0.028
6	0.50	0.10	0.041	(0.405)	0.014	0.028
7	0.58	0.10	0.041	(0.403)	0.014	0.028
8	0.67	0.10	0.041	(0.401)	0.014	0.028
9	0.75	0.10	0.041	(0.400)	0.014	0.028
10	0.83	0.13	0.055	(0.398)	0.018	0.037
11	0.92	0.13	0.055	(0.397)	0.018	0.037
12	1.00	0.13	0.055	(0.395)	0.018	0.037
13	1.08	0.10	0.041	(0.394)	0.014	0.028
14	1.17	0.10	0.041	(0.392)	0.014	0.028
15	1.25	0.10	0.041	(0.390)	0.014	0.028
16	1.33	0.10	0.041	(0.389)	0.014	0.028
17	1.42	0.10	0.041	(0.387)	0.014	0.028
18	1.50	0.10	0.041	(0.386)	0.014	0.028
19	1.58	0.10	0.041	(0.384)	0.014	0.028
20	1.67	0.10	0.041	(0.383)	0.014	0.028
21	1.75	0.10	0.041	(0.381)	0.014	0.028
22	1.83	0.13	0.055	(0.380)	0.018	0.037
23	1.92	0.13	0.055	(0.378)	0.018	0.037
24	2.00	0.13	0.055	(0.377)	0.018	0.037
25	2.08	0.13	0.055	(0.375)	0.018	0.037
26	2.17	0.13	0.055	(0.374)	0.018	0.037
27	2.25	0.13	0.055	(0.372)	0.018	0.037
28	2.33	0.13	0.055	(0.370)	0.018	0.037
29	2.42	0.13	0.055	(0.369)	0.018	0.037
30	2.50	0.13	0.055	(0.367)	0.018	0.037
31	2.58	0.17	0.069	(0.366)	0.023	0.046
32	2.67	0.17	0.069	(0.364)	0.023	0.046
33	2.75	0.17	0.069	(0.363)	0.023	0.046
34	2.83	0.17	0.069	(0.361)	0.023	0.046
35	2.92	0.17	0.069	(0.360)	0.023	0.046
36	3.00	0.17	0.069	(0.358)	0.023	0.046
37	3.08	0.17	0.069	(0.357)	0.023	0.046
38	3.17	0.17	0.069	(0.356)	0.023	0.046
39	3.25	0.17	0.069	(0.354)	0.023	0.046
40	3.33	0.17	0.069	(0.353)	0.023	0.046
41	3.42	0.17	0.069	(0.351)	0.023	0.046
42	3.50	0.17	0.069	(0.350)	0.023	0.046
43	3.58	0.17	0.069	(0.348)	0.023	0.046
44	3.67	0.17	0.069	(0.347)	0.023	0.046

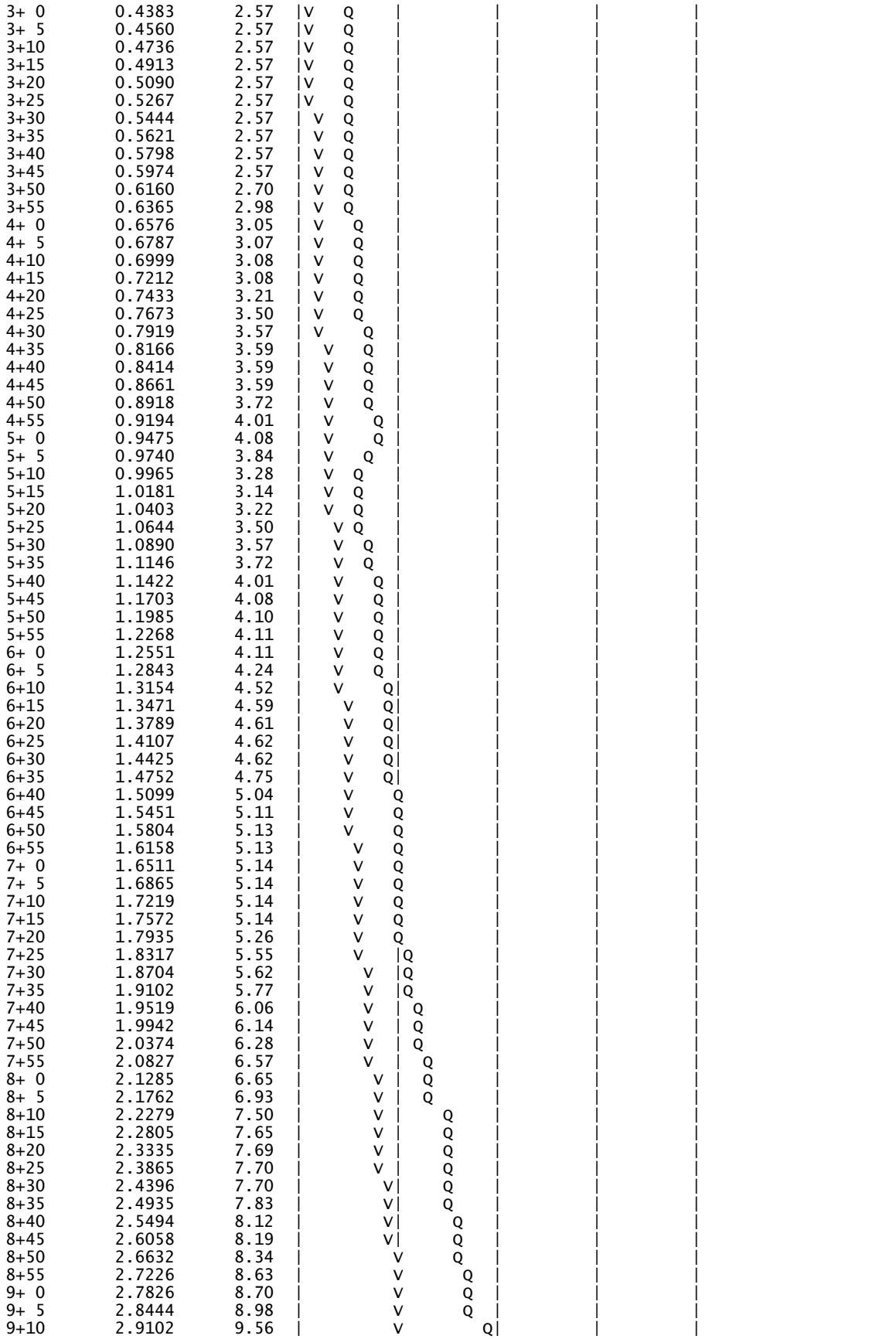
45	3.75	0.17	0.069	(0.345)	0.023	0.046
46	3.83	0.20	0.082	(0.344)	0.027	0.055
47	3.92	0.20	0.082	(0.342)	0.027	0.055
48	4.00	0.20	0.082	(0.341)	0.027	0.055
49	4.08	0.20	0.082	(0.339)	0.027	0.055
50	4.17	0.20	0.082	(0.338)	0.027	0.055
51	4.25	0.20	0.082	(0.337)	0.027	0.055
52	4.33	0.23	0.096	(0.335)	0.032	0.064
53	4.42	0.23	0.096	(0.334)	0.032	0.064
54	4.50	0.23	0.096	(0.332)	0.032	0.064
55	4.58	0.23	0.096	(0.331)	0.032	0.064
56	4.67	0.23	0.096	(0.329)	0.032	0.064
57	4.75	0.23	0.096	(0.328)	0.032	0.064
58	4.83	0.27	0.110	(0.327)	0.036	0.074
59	4.92	0.27	0.110	(0.325)	0.036	0.074
60	5.00	0.27	0.110	(0.324)	0.036	0.074
61	5.08	0.20	0.082	(0.322)	0.027	0.055
62	5.17	0.20	0.082	(0.321)	0.027	0.055
63	5.25	0.20	0.082	(0.320)	0.027	0.055
64	5.33	0.23	0.096	(0.318)	0.032	0.064
65	5.42	0.23	0.096	(0.317)	0.032	0.064
66	5.50	0.23	0.096	(0.315)	0.032	0.064
67	5.58	0.27	0.110	(0.314)	0.036	0.074
68	5.67	0.27	0.110	(0.313)	0.036	0.074
69	5.75	0.27	0.110	(0.311)	0.036	0.074
70	5.83	0.27	0.110	(0.310)	0.036	0.074
71	5.92	0.27	0.110	(0.308)	0.036	0.074
72	6.00	0.27	0.110	(0.307)	0.036	0.074
73	6.08	0.30	0.124	(0.306)	0.041	0.083
74	6.17	0.30	0.124	(0.304)	0.041	0.083
75	6.25	0.30	0.124	(0.303)	0.041	0.083
76	6.33	0.30	0.124	(0.302)	0.041	0.083
77	6.42	0.30	0.124	(0.300)	0.041	0.083
78	6.50	0.30	0.124	(0.299)	0.041	0.083
79	6.58	0.33	0.137	(0.298)	0.045	0.092
80	6.67	0.33	0.137	(0.296)	0.045	0.092
81	6.75	0.33	0.137	(0.295)	0.045	0.092
82	6.83	0.33	0.137	(0.294)	0.045	0.092
83	6.92	0.33	0.137	(0.292)	0.045	0.092
84	7.00	0.33	0.137	(0.291)	0.045	0.092
85	7.08	0.33	0.137	(0.290)	0.045	0.092
86	7.17	0.33	0.137	(0.288)	0.045	0.092
87	7.25	0.33	0.137	(0.287)	0.045	0.092
88	7.33	0.37	0.151	(0.286)	0.050	0.101
89	7.42	0.37	0.151	(0.284)	0.050	0.101
90	7.50	0.37	0.151	(0.283)	0.050	0.101
91	7.58	0.40	0.165	(0.282)	0.054	0.111
92	7.67	0.40	0.165	(0.281)	0.054	0.111
93	7.75	0.40	0.165	(0.279)	0.054	0.111
94	7.83	0.43	0.179	(0.278)	0.059	0.120
95	7.92	0.43	0.179	(0.277)	0.059	0.120
96	8.00	0.43	0.179	(0.275)	0.059	0.120
97	8.08	0.50	0.206	(0.274)	0.068	0.138
98	8.17	0.50	0.206	(0.273)	0.068	0.138
99	8.25	0.50	0.206	(0.272)	0.068	0.138
100	8.33	0.50	0.206	(0.270)	0.068	0.138
101	8.42	0.50	0.206	(0.269)	0.068	0.138
102	8.50	0.50	0.206	(0.268)	0.068	0.138
103	8.58	0.53	0.220	(0.266)	0.073	0.147
104	8.67	0.53	0.220	(0.265)	0.073	0.147
105	8.75	0.53	0.220	(0.264)	0.073	0.147
106	8.83	0.57	0.234	(0.263)	0.077	0.157
107	8.92	0.57	0.234	(0.261)	0.077	0.157
108	9.00	0.57	0.234	(0.260)	0.077	0.157
109	9.08	0.63	0.261	(0.259)	0.086	0.175
110	9.17	0.63	0.261	(0.258)	0.086	0.175
111	9.25	0.63	0.261	(0.257)	0.086	0.175
112	9.33	0.67	0.275	(0.255)	0.091	0.184
113	9.42	0.67	0.275	(0.254)	0.091	0.184
114	9.50	0.67	0.275	(0.253)	0.091	0.184
115	9.58	0.70	0.289	(0.252)	0.095	0.193
116	9.67	0.70	0.289	(0.250)	0.095	0.193
117	9.75	0.70	0.289	(0.249)	0.095	0.193
118	9.83	0.73	0.302	(0.248)	0.100	0.203
119	9.92	0.73	0.302	(0.247)	0.100	0.203

120	10.00	0.73	0.302	(0.246)	0.100	0.203
121	10.08	0.50	0.206	(0.245)	0.068	0.138
122	10.17	0.50	0.206	(0.243)	0.068	0.138
123	10.25	0.50	0.206	(0.242)	0.068	0.138
124	10.33	0.50	0.206	(0.241)	0.068	0.138
125	10.42	0.50	0.206	(0.240)	0.068	0.138
126	10.50	0.50	0.206	(0.239)	0.068	0.138
127	10.58	0.67	0.275	(0.237)	0.091	0.184
128	10.67	0.67	0.275	(0.236)	0.091	0.184
129	10.75	0.67	0.275	(0.235)	0.091	0.184
130	10.83	0.67	0.275	(0.234)	0.091	0.184
131	10.92	0.67	0.275	(0.233)	0.091	0.184
132	11.00	0.67	0.275	(0.232)	0.091	0.184
133	11.08	0.63	0.261	(0.231)	0.086	0.175
134	11.17	0.63	0.261	(0.229)	0.086	0.175
135	11.25	0.63	0.261	(0.228)	0.086	0.175
136	11.33	0.63	0.261	(0.227)	0.086	0.175
137	11.42	0.63	0.261	(0.226)	0.086	0.175
138	11.50	0.63	0.261	(0.225)	0.086	0.175
139	11.58	0.57	0.234	(0.224)	0.077	0.157
140	11.67	0.57	0.234	(0.223)	0.077	0.157
141	11.75	0.57	0.234	(0.222)	0.077	0.157
142	11.83	0.60	0.247	(0.220)	0.082	0.166
143	11.92	0.60	0.247	(0.219)	0.082	0.166
144	12.00	0.60	0.247	(0.218)	0.082	0.166
145	12.08	0.83	0.344	(0.217)	0.113	0.230
146	12.17	0.83	0.344	(0.216)	0.113	0.230
147	12.25	0.83	0.344	(0.215)	0.113	0.230
148	12.33	0.87	0.357	(0.214)	0.118	0.239
149	12.42	0.87	0.357	(0.213)	0.118	0.239
150	12.50	0.87	0.357	(0.212)	0.118	0.239
151	12.58	0.93	0.385	(0.211)	0.127	0.258
152	12.67	0.93	0.385	(0.210)	0.127	0.258
153	12.75	0.93	0.385	(0.209)	0.127	0.258
154	12.83	0.97	0.399	(0.208)	0.132	0.267
155	12.92	0.97	0.399	(0.207)	0.132	0.267
156	13.00	0.97	0.399	(0.205)	0.132	0.267
157	13.08	1.13	0.467	(0.204)	0.154	0.313
158	13.17	1.13	0.467	(0.203)	0.154	0.313
159	13.25	1.13	0.467	(0.202)	0.154	0.313
160	13.33	1.13	0.467	(0.201)	0.154	0.313
161	13.42	1.13	0.467	(0.200)	0.154	0.313
162	13.50	1.13	0.467	(0.199)	0.154	0.313
163	13.58	0.77	0.316	(0.198)	0.104	0.212
164	13.67	0.77	0.316	(0.197)	0.104	0.212
165	13.75	0.77	0.316	(0.196)	0.104	0.212
166	13.83	0.77	0.316	(0.195)	0.104	0.212
167	13.92	0.77	0.316	(0.194)	0.104	0.212
168	14.00	0.77	0.316	(0.193)	0.104	0.212
169	14.08	0.90	0.371	(0.192)	0.122	0.249
170	14.17	0.90	0.371	(0.191)	0.122	0.249
171	14.25	0.90	0.371	(0.190)	0.122	0.249
172	14.33	0.87	0.357	(0.189)	0.118	0.239
173	14.42	0.87	0.357	(0.188)	0.118	0.239
174	14.50	0.87	0.357	(0.187)	0.118	0.239
175	14.58	0.87	0.357	(0.186)	0.118	0.239
176	14.67	0.87	0.357	(0.185)	0.118	0.239
177	14.75	0.87	0.357	(0.185)	0.118	0.239
178	14.83	0.83	0.344	(0.184)	0.113	0.230
179	14.92	0.83	0.344	(0.183)	0.113	0.230
180	15.00	0.83	0.344	(0.182)	0.113	0.230
181	15.08	0.80	0.330	(0.181)	0.109	0.221
182	15.17	0.80	0.330	(0.180)	0.109	0.221
183	15.25	0.80	0.330	(0.179)	0.109	0.221
184	15.33	0.77	0.316	(0.178)	0.104	0.212
185	15.42	0.77	0.316	(0.177)	0.104	0.212
186	15.50	0.77	0.316	(0.176)	0.104	0.212
187	15.58	0.63	0.261	(0.175)	0.086	0.175
188	15.67	0.63	0.261	(0.174)	0.086	0.175
189	15.75	0.63	0.261	(0.174)	0.086	0.175
190	15.83	0.63	0.261	(0.173)	0.086	0.175
191	15.92	0.63	0.261	(0.172)	0.086	0.175
192	16.00	0.63	0.261	(0.171)	0.086	0.175
193	16.08	0.13	0.055	(0.170)	0.018	0.037
194	16.17	0.13	0.055	(0.169)	0.018	0.037

195	16.25	0.13	0.055	(0.168)	0.018	0.037
196	16.33	0.13	0.055	(0.167)	0.018	0.037
197	16.42	0.13	0.055	(0.167)	0.018	0.037
198	16.50	0.13	0.055	(0.166)	0.018	0.037
199	16.58	0.10	0.041	(0.165)	0.014	0.028
200	16.67	0.10	0.041	(0.164)	0.014	0.028
201	16.75	0.10	0.041	(0.163)	0.014	0.028
202	16.83	0.10	0.041	(0.162)	0.014	0.028
203	16.92	0.10	0.041	(0.162)	0.014	0.028
204	17.00	0.10	0.041	(0.161)	0.014	0.028
205	17.08	0.17	0.069	(0.160)	0.023	0.046
206	17.17	0.17	0.069	(0.159)	0.023	0.046
207	17.25	0.17	0.069	(0.158)	0.023	0.046
208	17.33	0.17	0.069	(0.158)	0.023	0.046
209	17.42	0.17	0.069	(0.157)	0.023	0.046
210	17.50	0.17	0.069	(0.156)	0.023	0.046
211	17.58	0.17	0.069	(0.155)	0.023	0.046
212	17.67	0.17	0.069	(0.154)	0.023	0.046
213	17.75	0.17	0.069	(0.154)	0.023	0.046
214	17.83	0.13	0.055	(0.153)	0.018	0.037
215	17.92	0.13	0.055	(0.152)	0.018	0.037
216	18.00	0.13	0.055	(0.151)	0.018	0.037
217	18.08	0.13	0.055	(0.151)	0.018	0.037
218	18.17	0.13	0.055	(0.150)	0.018	0.037
219	18.25	0.13	0.055	(0.149)	0.018	0.037
220	18.33	0.13	0.055	(0.148)	0.018	0.037
221	18.42	0.13	0.055	(0.148)	0.018	0.037
222	18.50	0.13	0.055	(0.147)	0.018	0.037
223	18.58	0.10	0.041	(0.146)	0.014	0.028
224	18.67	0.10	0.041	(0.146)	0.014	0.028
225	18.75	0.10	0.041	(0.145)	0.014	0.028
226	18.83	0.07	0.027	(0.144)	0.009	0.018
227	18.92	0.07	0.027	(0.143)	0.009	0.018
228	19.00	0.07	0.027	(0.143)	0.009	0.018
229	19.08	0.10	0.041	(0.142)	0.014	0.028
230	19.17	0.10	0.041	(0.141)	0.014	0.028
231	19.25	0.10	0.041	(0.141)	0.014	0.028
232	19.33	0.13	0.055	(0.140)	0.018	0.037
233	19.42	0.13	0.055	(0.139)	0.018	0.037
234	19.50	0.13	0.055	(0.139)	0.018	0.037
235	19.58	0.10	0.041	(0.138)	0.014	0.028
236	19.67	0.10	0.041	(0.138)	0.014	0.028
237	19.75	0.10	0.041	(0.137)	0.014	0.028
238	19.83	0.07	0.027	(0.136)	0.009	0.018
239	19.92	0.07	0.027	(0.136)	0.009	0.018
240	20.00	0.07	0.027	(0.135)	0.009	0.018
241	20.08	0.10	0.041	(0.135)	0.014	0.028
242	20.17	0.10	0.041	(0.134)	0.014	0.028
243	20.25	0.10	0.041	(0.133)	0.014	0.028
244	20.33	0.10	0.041	(0.133)	0.014	0.028
245	20.42	0.10	0.041	(0.132)	0.014	0.028
246	20.50	0.10	0.041	(0.132)	0.014	0.028
247	20.58	0.10	0.041	(0.131)	0.014	0.028
248	20.67	0.10	0.041	(0.131)	0.014	0.028
249	20.75	0.10	0.041	(0.130)	0.014	0.028
250	20.83	0.07	0.027	(0.129)	0.009	0.018
251	20.92	0.07	0.027	(0.129)	0.009	0.018
252	21.00	0.07	0.027	(0.128)	0.009	0.018
253	21.08	0.10	0.041	(0.128)	0.014	0.028
254	21.17	0.10	0.041	(0.127)	0.014	0.028
255	21.25	0.10	0.041	(0.127)	0.014	0.028
256	21.33	0.07	0.027	(0.126)	0.009	0.018
257	21.42	0.07	0.027	(0.126)	0.009	0.018
258	21.50	0.07	0.027	(0.125)	0.009	0.018
259	21.58	0.10	0.041	(0.125)	0.014	0.028
260	21.67	0.10	0.041	(0.125)	0.014	0.028
261	21.75	0.10	0.041	(0.124)	0.014	0.028
262	21.83	0.07	0.027	(0.124)	0.009	0.018
263	21.92	0.07	0.027	(0.123)	0.009	0.018
264	22.00	0.07	0.027	(0.123)	0.009	0.018
265	22.08	0.10	0.041	(0.122)	0.014	0.028
266	22.17	0.10	0.041	(0.122)	0.014	0.028
267	22.25	0.10	0.041	(0.122)	0.014	0.028
268	22.33	0.07	0.027	(0.121)	0.009	0.018
269	22.42	0.07	0.027	(0.121)	0.009	0.018

```
270  22.50     0.07      0.027       (  0.121)       0.009        0.018
271  22.58     0.07      0.027       (  0.120)       0.009        0.018
272  22.67     0.07      0.027       (  0.120)       0.009        0.018
273  22.75     0.07      0.027       (  0.120)       0.009        0.018
274  22.83     0.07      0.027       (  0.119)       0.009        0.018
275  22.92     0.07      0.027       (  0.119)       0.009        0.018
276  23.00     0.07      0.027       (  0.119)       0.009        0.018
277  23.08     0.07      0.027       (  0.118)       0.009        0.018
278  23.17     0.07      0.027       (  0.118)       0.009        0.018
279  23.25     0.07      0.027       (  0.118)       0.009        0.018
280  23.33     0.07      0.027       (  0.118)       0.009        0.018
281  23.42     0.07      0.027       (  0.117)       0.009        0.018
282  23.50     0.07      0.027       (  0.117)       0.009        0.018
283  23.58     0.07      0.027       (  0.117)       0.009        0.018
284  23.67     0.07      0.027       (  0.117)       0.009        0.018
285  23.75     0.07      0.027       (  0.117)       0.009        0.018
286  23.83     0.07      0.027       (  0.117)       0.009        0.018
287  23.92     0.07      0.027       (  0.116)       0.009        0.018
288  24.00     0.07      0.027       (  0.116)       0.009        0.018
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    27.6
      Flood volume = Effective rainfall      2.30(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =      10.6(Ac.Ft)
      Total soil loss =      1.13(In)
      Total soil loss =     5.226(Ac.Ft)
      Total rainfall =      3.44(In)
      Flood volume =      462196.0 Cubic Feet
      Total soil loss =      227648.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     17.461(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ------------------------------------------------------------------------
   0+ 5       0.0018      0.26  Q         |         |         |         |
   0+10       0.0075      0.83  VQ        |         |         |         |
   0+15       0.0142      0.97  VQ        |         |         |         |
   0+20       0.0220      1.14  V Q       |         |         |         |
   0+25       0.0319      1.44  V Q       |         |         |         |
   0+30       0.0423      1.51  V  Q      |         |         |         |
   0+35       0.0529      1.53  V  Q      |         |         |         |
   0+40       0.0635      1.54  V  Q      |         |         |         |
   0+45       0.0741      1.54  V  Q      |         |         |         |
   0+50       0.0856      1.67  V  Q      |         |         |         |
   0+55       0.0991      1.95  V  Q      |         |         |         |
   1+ 0       0.1130      2.03  V   Q     |         |         |         |
   1+ 5       0.1262      1.92  V  Q      |         |         |         |
   1+10       0.1375      1.64  V  Q      |         |         |         |
   1+15       0.1483      1.57  V  Q      |         |         |         |
   1+20       0.1590      1.55  V  Q      |         |         |         |
   1+25       0.1696      1.54  V  Q      |         |         |         |
   1+30       0.1802      1.54  V  Q      |         |         |         |
   1+35       0.1908      1.54  V  Q      |         |         |         |
   1+40       0.2014      1.54  V  Q      |         |         |         |
   1+45       0.2120      1.54  V  Q      |         |         |         |
   1+50       0.2235      1.67  V  Q      |         |         |         |
   1+55       0.2370      1.95  V  Q      |         |         |         |
   2+ 0       0.2510      2.03  V   Q     |         |         |         |
   2+ 5       0.2650      2.05  V   Q     |         |         |         |
   2+10       0.2792      2.05  |V  Q     |         |         |         |
   2+15       0.2933      2.05  |V  Q     |         |         |         |
   2+20       0.3075      2.05  |V  Q     |         |         |         |
   2+25       0.3216      2.05  |V  Q     |         |         |         |
   2+30       0.3358      2.05  |V  Q     |         |         |         |
   2+35       0.3508      2.18  |V  Q     |         |         |         |
   2+40       0.3678      2.47  |V  Q     |         |         |         |
   2+45       0.3853      2.54  |V   Q    |         |         |         |
   2+50       0.4029      2.56  |V   Q    |         |         |         |
   2+55       0.4206      2.57  |V   Q    |         |         |         |
```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3+ 5 0.4560 2.57
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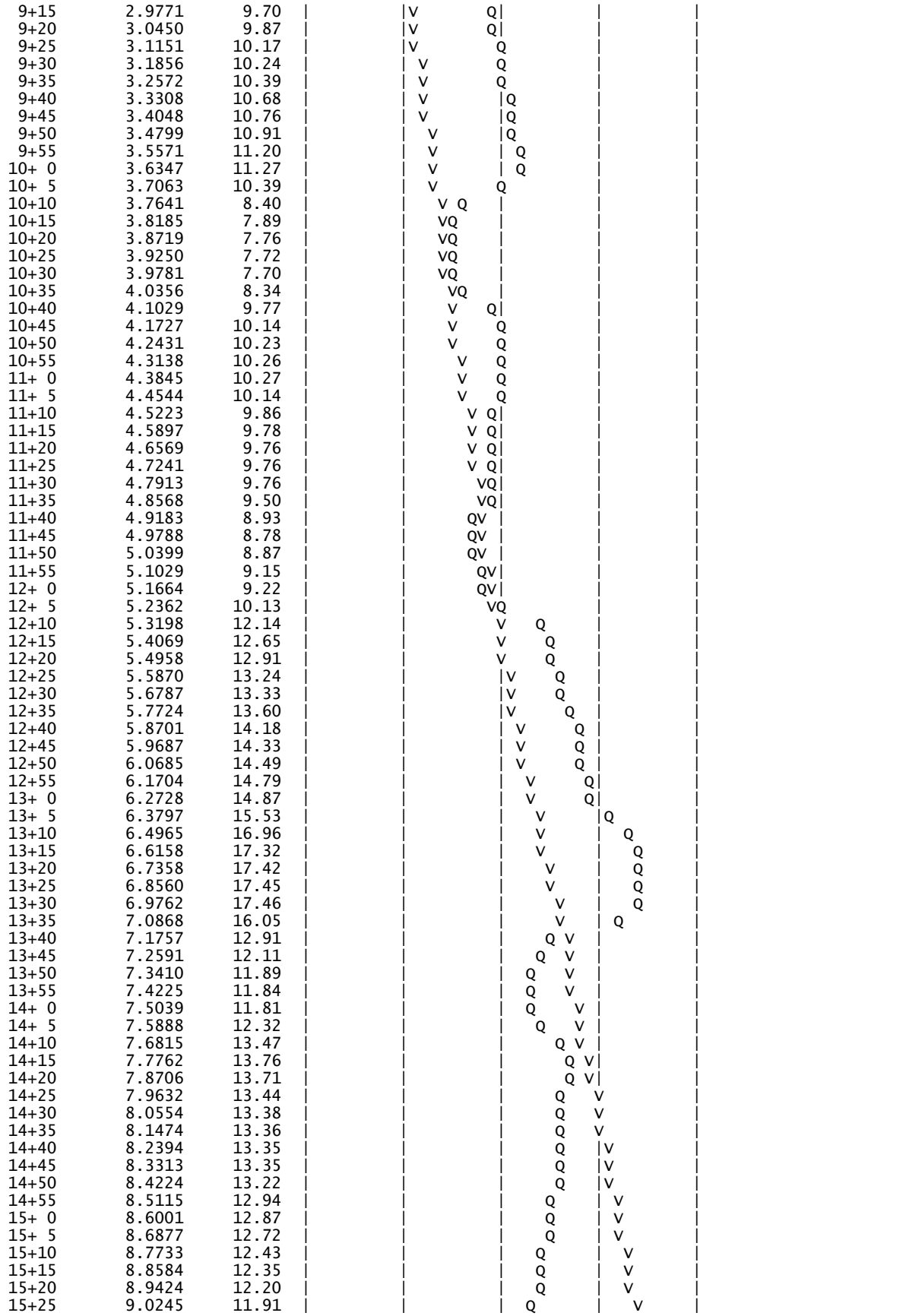
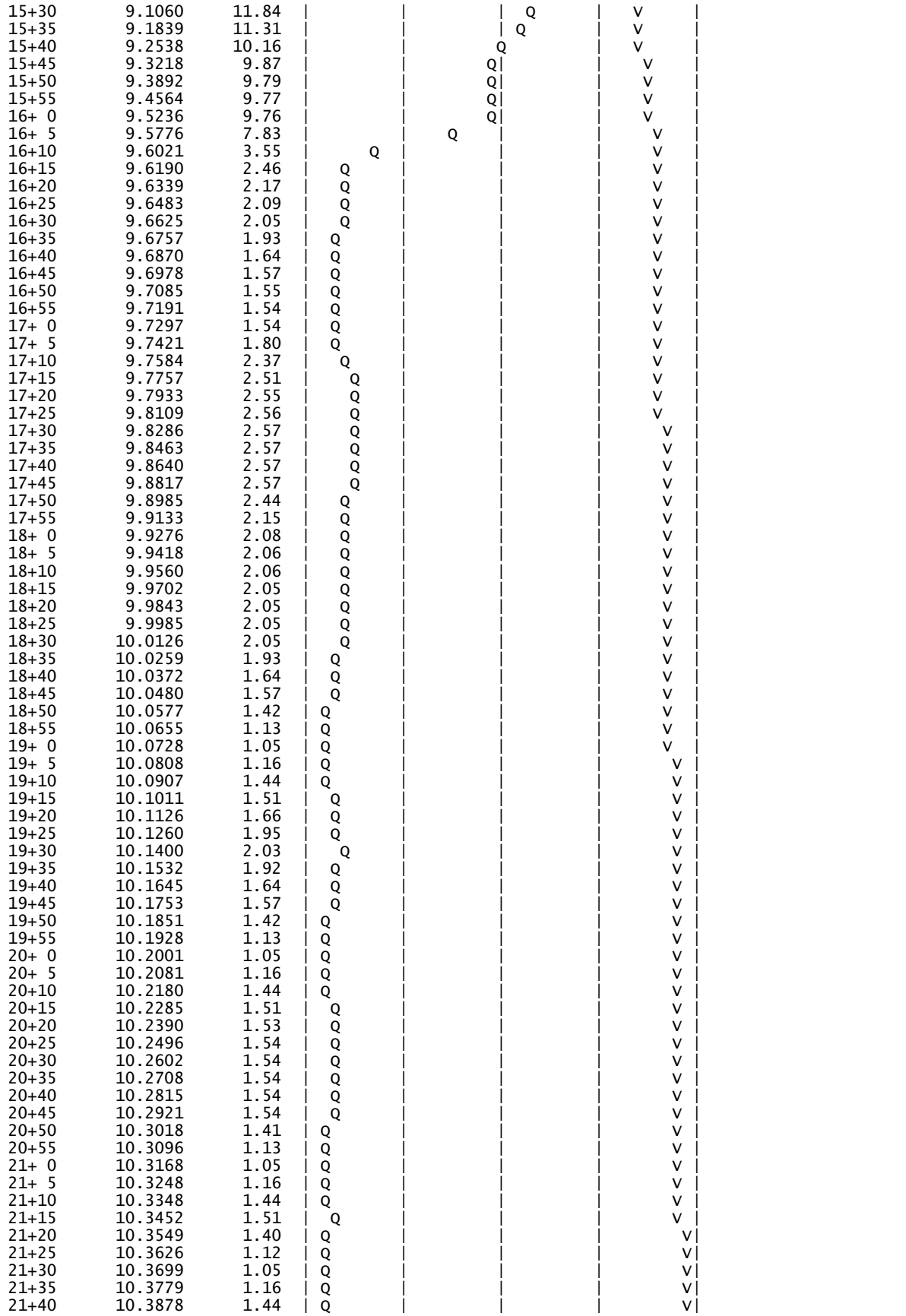
3+20 0.5090 2.57
3+25 0.5267 2.57
3+30 0.5444 2.57
3+35 0.5621 2.57
3+40 0.5798 2.57
3+45 0.5974 2.57
3+50 0.6160 2.70
3+55 0.6365 2.98
4+ 0 0.6576 3.05
4+ 5 0.6787 3.07
4+10 0.6999 3.08
4+15 0.7212 3.08
4+20 0.7433 3.21
4+25 0.7673 3.50
4+30 0.7919 3.57
4+35 0.8166 3.59
4+40 0.8414 3.59
4+45 0.8661 3.59
4+50 0.8918 3.72
4+55 0.9194 4.01
5+ 0 0.9475 4.08
5+ 5 0.9740 3.84
5+10 0.9965 3.28
5+15 1.0181 3.14
5+20 1.0403 3.22
5+25 1.0644 3.50
5+30 1.0890 3.57
5+35 1.1146 3.72
5+40 1.1422 4.01
5+45 1.1703 4.08
5+50 1.1985 4.10
5+55 1.2268 4.11
6+ 0 1.2551 4.11
6+ 5 1.2843 4.24
6+10 1.3154 4.52
6+15 1.3471 4.59
6+20 1.3789 4.61
6+25 1.4107 4.62
6+30 1.4425 4.62
6+35 1.4752 4.75
6+40 1.5099 5.04
6+45 1.5451 5.11
6+50 1.5804 5.13
6+55 1.6158 5.13
7+ 0 1.6511 5.14
7+ 5 1.6865 5.14
7+10 1.7219 5.14
7+15 1.7572 5.14
7+20 1.7935 5.26
7+25 1.8317 5.55
7+30 1.8704 5.62
7+35 1.9102 5.77
7+40 1.9519 6.06
7+45 1.9942 6.14
7+50 2.0374 6.28
7+55 2.0827 6.57
8+ 0 2.1285 6.65
8+ 5 2.1762 6.93
8+10 2.2279 7.50
8+15 2.2805 7.65
8+20 2.3335 7.69
8+25 2.3865 7.70
8+30 2.4396 7.70
8+35 2.4935 7.83
8+40 2.5494 8.12
8+45 2.6058 8.19
8+50 2.6632 8.34
8+55 2.7226 8.63
9+ 0 2.7826 8.70
9+ 5 2.8444 8.98
9+10 2.9102 9.56





```
   21+45      10.3982      1.51  |  Q      |         |         |        v|
   21+50      10.4079      1.40  | Q       |         |         |        v|
   21+55      10.4157      1.12  | Q       |         |         |        v|
   22+ 0      10.4229      1.05  | Q       |         |         |        v|
   22+ 5      10.4309      1.16  | Q       |         |         |        v|
   22+10      10.4409      1.44  | Q       |         |         |        v|
   22+15      10.4513      1.51  |  Q      |         |         |        v|
   22+20      10.4610      1.40  | Q       |         |         |        v|
   22+25      10.4687      1.12  | Q       |         |         |        v|
   22+30      10.4760      1.05  | Q       |         |         |        v|
   22+35      10.4831      1.03  | Q       |         |         |        v|
   22+40      10.4902      1.03  | Q       |         |         |        v|
   22+45      10.4973      1.03  | Q       |         |         |        v|
   22+50      10.5043      1.03  | Q       |         |         |        v|
   22+55      10.5114      1.03  | Q       |         |         |        v|
   23+ 0      10.5185      1.03  | Q       |         |         |        v|
   23+ 5      10.5256      1.03  | Q       |         |         |        v|
   23+10      10.5326      1.03  | Q       |         |         |        v|
   23+15      10.5397      1.03  | Q       |         |         |        v|
   23+20      10.5468      1.03  | Q       |         |         |        v|
   23+25      10.5539      1.03  | Q       |         |         |        v|
   23+30      10.5609      1.03  | Q       |         |         |        v|
   23+35      10.5680      1.03  | Q       |         |         |        v|
   23+40      10.5751      1.03  | Q       |         |         |        v|
   23+45      10.5821      1.03  | Q       |         |         |        v|
   23+50      10.5892      1.03  | Q       |         |         |        v|
   23+55      10.5963      1.03  | Q       |         |         |        v|
   24+ 0      10.6034      1.03  | Q       |         |         |        v|
   24+ 5      10.6087      0.77  |Q        |         |         |        v|
   24+10      10.6101      0.20  Q         |         |         |        v|
   24+15      10.6104      0.05  Q         |         |         |        v|
   24+20      10.6105      0.01  Q         |         |         |        v|
   24+25      10.6106      0.00  Q         |         |         |        v|
---------------------------------------------------------------------------
```

PROPOSED CONDITION
10-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST10YR110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.55	30.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.25	69.13

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 0.838(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 0.838(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

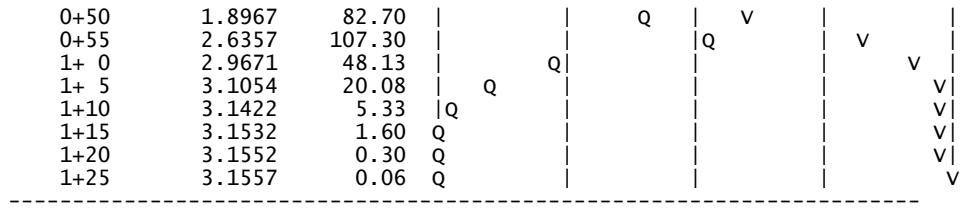
```
      62.6  62.6      0.442     0.710        0.160       1.000      0.160
                                                        Sum (F) =   0.160
      Area averaged mean soil loss (F) (In/Hr) =  0.160
      Minimum soil loss rate ((In/Hr)) =  0.080
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.330
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083        131.015         24.971             13.917
          2   0.167        262.030         55.588             30.980
          3   0.250        393.045         14.152              7.887
          4   0.333        524.061          3.839              2.140
          5   0.417        655.076          1.026              0.572
          6   0.500        786.091          0.425              0.237
                                   Sum = 100.000    Sum=      55.732
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.342       (  0.160)       0.113        0.229
   2   0.17     4.70      0.472       (  0.160)       0.156        0.316
   3   0.25     4.70      0.472       (  0.160)       0.156        0.316
   4   0.33     5.10      0.513          0.160    (  0.169)        0.353
   5   0.42     5.80      0.583          0.160    (  0.192)        0.423
   6   0.50     5.90      0.593          0.160    (  0.196)        0.433
   7   0.58     7.10      0.714          0.160    (  0.235)        0.554
   8   0.67     8.70      0.874          0.160    (  0.289)        0.715
   9   0.75    13.20      1.327          0.160    (  0.438)        1.167
  10   0.83    29.70      2.985          0.160    (  0.985)        2.826
  11   0.92     7.70      0.774          0.160    (  0.255)        0.614
  12   1.00     4.00      0.402       (  0.160)       0.133        0.269
               (Loss Rate Not Used)
     Sum =     100.0                                  Sum =     8.2
       Flood volume = Effective rainfall      0.68(In)
        times area      55.3(Ac.)/[(In)/(Ft.)] =       3.2(Ac.Ft)
       Total soil loss =      0.15(In)
       Total soil loss =     0.704(Ac.Ft)
       Total rainfall =      0.84(In)
       Flood volume =      137461.2 Cubic Feet
       Total soil loss =       30670.9 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =    107.296(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
       ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ----------------------------------------------------------------------------
    0+ 5       0.0220      3.19  Q         |         |         |         |
    0+10       0.1012     11.50  |VQ       |         |         |         |
    0+15       0.2115     16.02  | VQ      |         |         |         |
    0+20       0.3335     17.71  |  QV     |         |         |         |
    0+25       0.4723     20.14  |   QV    |         |         |         |
    0+30       0.6297     22.86  |   Q  V  |         |         |         |
    0+35       0.8053     25.50  |    Q    V         |         |         |
    0+40       1.0239     31.73  |     Q   | V       |         |         |
    0+45       1.3272     44.04  |       Q |     V   |         |         |
```


0+50 1.8967 82.70
0+55 2.6357 107.30
1+ 0 2.9671 48.13
1+ 5 3.1054 20.08
1+10 3.1422 5.33
1+15 3.1532 1.60
1+20 3.1552 0.30
1+25 3.1557 0.06

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST10YR310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
10-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 1.403(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 62.6 0.442 0.710 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.219	(0.160)	0.072	0.147
2	0.17	1.30	0.219	(0.160)	0.072	0.147
3	0.25	1.10	0.185	(0.160)	0.061	0.124
4	0.33	1.50	0.252	(0.160)	0.083	0.169
5	0.42	1.50	0.252	(0.160)	0.083	0.169
6	0.50	1.80	0.303	(0.160)	0.100	0.203
7	0.58	1.50	0.252	(0.160)	0.083	0.169
8	0.67	1.80	0.303	(0.160)	0.100	0.203
9	0.75	1.80	0.303	(0.160)	0.100	0.203
10	0.83	1.50	0.252	(0.160)	0.083	0.169
11	0.92	1.60	0.269	(0.160)	0.089	0.180
12	1.00	1.80	0.303	(0.160)	0.100	0.203
13	1.08	2.20	0.370	(0.160)	0.122	0.248
14	1.17	2.20	0.370	(0.160)	0.122	0.248
15	1.25	2.20	0.370	(0.160)	0.122	0.248
16	1.33	2.00	0.337	(0.160)	0.111	0.225
17	1.42	2.60	0.437	(0.160)	0.144	0.293
18	1.50	2.70	0.454	(0.160)	0.150	0.304
19	1.58	2.40	0.404	(0.160)	0.133	0.271
20	1.67	2.70	0.454	(0.160)	0.150	0.304
21	1.75	3.30	0.555	0.160	(0.183)	0.396
22	1.83	3.10	0.522	0.160	(0.172)	0.362
23	1.92	2.90	0.488	0.160	(0.161)	0.328
24	2.00	3.00	0.505	0.160	(0.167)	0.345
25	2.08	3.10	0.522	0.160	(0.172)	0.362
26	2.17	4.20	0.707	0.160	(0.233)	0.547
27	2.25	5.00	0.841	0.160	(0.278)	0.682
28	2.33	3.50	0.589	0.160	(0.194)	0.429
29	2.42	6.80	1.144	0.160	(0.378)	0.985
30	2.50	7.30	1.228	0.160	(0.405)	1.069
31	2.58	8.20	1.380	0.160	(0.455)	1.220
32	2.67	5.90	0.993	0.160	(0.328)	0.833
33	2.75	2.00	0.337	(0.160)	0.111	0.225
34	2.83	1.80	0.303	(0.160)	0.100	0.203
35	2.92	1.80	0.303	(0.160)	0.100	0.203
36	3.00	0.60	0.101	(0.160)	0.033	0.068
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	12.5

Flood volume = Effective rainfall 1.04(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 4.8(Ac.Ft)
Total soil loss = 0.36(In)
Total soil loss = 1.667(Ac.Ft)
Total rainfall = 1.40(In)
Flood volume = 208861.7 Cubic Feet

Total soil loss = 72616.5 Cubic Feet

Peak flow rate of this hydrograph = 60.374(CFS)

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3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	17.5	35.0	52.5	70.0
0+ 5	0.0141	2.04	VQ				
0+10	0.0594	6.58	V Q				
0+15	0.1105	7.43	V Q				
0+20	0.1634	7.67	V Q				
0+25	0.2251	8.97	V Q				
0+30	0.2925	9.79	V Q				
0+35	0.3645	10.45	V Q				
0+40	0.4344	10.16	V Q				
0+45	0.5103	11.02	V Q				
0+50	0.5845	10.76	V Q				
0+55	0.6529	9.93	Q				
1+ 0	0.7241	10.34	QV				
1+ 5	0.8046	11.69	Q				
1+10	0.8961	13.27	Q				
1+15	0.9902	13.68	QV				
1+20	1.0830	13.47	Q V				
1+25	1.1777	13.75	Q V				
1+30	1.2868	15.83	QV				
1+35	1.3983	16.20	Q V				
1+40	1.5074	15.84	Q V				
1+45	1.6311	17.95	Q V				
1+50	1.7725	20.53	Q V				
1+55	1.9089	19.80	Q V				
2+ 0	2.0392	18.93	Q V				
2+ 5	2.1729	19.41	Q V				
2+10	2.3283	22.57	Q V				
2+15	2.5372	30.32	Q V				
2+20	2.7609	32.48	Q V				
2+25	2.9941	33.86	Q V				
2+30	3.3429	50.65	VQ				
2+35	3.7515	59.33	V Q				
2+40	4.1673	60.37	Q				
2+45	4.4534	41.55	Q				
2+50	4.5901	19.85	Q				
2+55	4.6840	13.63	Q				
3+ 0	4.7534	10.08	Q				
3+ 5	4.7841	4.46	Q				
3+10	4.7920	1.14	Q				
3+15	4.7941	0.31	Q				
3+20	4.7947	0.09	Q				
3+25	4.7948	0.02	Q				

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST10YR610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

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Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.40	77.42

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	3.00	165.90

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 2.058(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.058(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 62.6 0.442 0.710 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
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2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.123	(0.160)	0.041	0.083
2	0.17	0.60	0.148	(0.160)	0.049	0.099
3	0.25	0.60	0.148	(0.160)	0.049	0.099
4	0.33	0.60	0.148	(0.160)	0.049	0.099
5	0.42	0.60	0.148	(0.160)	0.049	0.099
6	0.50	0.70	0.173	(0.160)	0.057	0.116
7	0.58	0.70	0.173	(0.160)	0.057	0.116
8	0.67	0.70	0.173	(0.160)	0.057	0.116
9	0.75	0.70	0.173	(0.160)	0.057	0.116
10	0.83	0.70	0.173	(0.160)	0.057	0.116
11	0.92	0.70	0.173	(0.160)	0.057	0.116
12	1.00	0.80	0.198	(0.160)	0.065	0.132
13	1.08	0.80	0.198	(0.160)	0.065	0.132
14	1.17	0.80	0.198	(0.160)	0.065	0.132
15	1.25	0.80	0.198	(0.160)	0.065	0.132
16	1.33	0.80	0.198	(0.160)	0.065	0.132
17	1.42	0.80	0.198	(0.160)	0.065	0.132
18	1.50	0.80	0.198	(0.160)	0.065	0.132
19	1.58	0.80	0.198	(0.160)	0.065	0.132
20	1.67	0.80	0.198	(0.160)	0.065	0.132
21	1.75	0.80	0.198	(0.160)	0.065	0.132
22	1.83	0.80	0.198	(0.160)	0.065	0.132
23	1.92	0.80	0.198	(0.160)	0.065	0.132
24	2.00	0.90	0.222	(0.160)	0.073	0.149
25	2.08	0.80	0.198	(0.160)	0.065	0.132
26	2.17	0.90	0.222	(0.160)	0.073	0.149
27	2.25	0.90	0.222	(0.160)	0.073	0.149
28	2.33	0.90	0.222	(0.160)	0.073	0.149
29	2.42	0.90	0.222	(0.160)	0.073	0.149
30	2.50	0.90	0.222	(0.160)	0.073	0.149
31	2.58	0.90	0.222	(0.160)	0.073	0.149
32	2.67	0.90	0.222	(0.160)	0.073	0.149
33	2.75	1.00	0.247	(0.160)	0.081	0.165
34	2.83	1.00	0.247	(0.160)	0.081	0.165
35	2.92	1.00	0.247	(0.160)	0.081	0.165
36	3.00	1.00	0.247	(0.160)	0.081	0.165
37	3.08	1.00	0.247	(0.160)	0.081	0.165
38	3.17	1.10	0.272	(0.160)	0.090	0.182
39	3.25	1.10	0.272	(0.160)	0.090	0.182
40	3.33	1.10	0.272	(0.160)	0.090	0.182
41	3.42	1.20	0.296	(0.160)	0.098	0.199
42	3.50	1.30	0.321	(0.160)	0.106	0.215
43	3.58	1.40	0.346	(0.160)	0.114	0.232
44	3.67	1.40	0.346	(0.160)	0.114	0.232

45	3.75	1.50	0.370	(0.160)	0.122		0.248
46	3.83	1.50	0.370	(0.160)	0.122		0.248
47	3.92	1.60	0.395	(0.160)	0.130		0.265
48	4.00	1.60	0.395	(0.160)	0.130		0.265
49	4.08	1.70	0.420	(0.160)	0.139		0.281
50	4.17	1.80	0.444	(0.160)	0.147		0.298
51	4.25	1.90	0.469	(0.160)	0.155		0.314
52	4.33	2.00	0.494	0.160	(0.163)		0.334
53	4.42	2.10	0.519	0.160	(0.171)		0.359
54	4.50	2.10	0.519	0.160	(0.171)		0.359
55	4.58	2.20	0.543	0.160	(0.179)		0.384
56	4.67	2.30	0.568	0.160	(0.187)		0.408
57	4.75	2.40	0.593	0.160	(0.196)		0.433
58	4.83	2.40	0.593	0.160	(0.196)		0.433
59	4.92	2.50	0.617	0.160	(0.204)		0.458
60	5.00	2.60	0.642	0.160	(0.212)		0.483
61	5.08	3.10	0.766	0.160	(0.253)		0.606
62	5.17	3.60	0.889	0.160	(0.293)		0.729
63	5.25	3.90	0.963	0.160	(0.318)		0.804
64	5.33	4.20	1.037	0.160	(0.342)		0.878
65	5.42	4.70	1.161	0.160	(0.383)		1.001
66	5.50	5.60	1.383	0.160	(0.456)		1.223
67	5.58	1.90	0.469	(0.160)	0.155		0.314
68	5.67	0.90	0.222	(0.160)	0.073		0.149
69	5.75	0.60	0.148	(0.160)	0.049		0.099
70	5.83	0.50	0.123	(0.160)	0.041		0.083
71	5.92	0.30	0.074	(0.160)	0.024		0.050
72	6.00	0.20	0.049	(0.160)	0.016		0.033

(Loss Rate Not Used)

Sum = 100.0 Sum = 17.9

Flood volume = Effective rainfall 1.49(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 6.9(Ac.Ft)
Total soil loss = 0.57(In)
Total soil loss = 2.618(Ac.Ft)
Total rainfall = 2.06(In)
Flood volume = 299040.3 Cubic Feet
Total soil loss = 114052.8 Cubic Feet

Peak flow rate of this hydrograph = 57.271(CFS)

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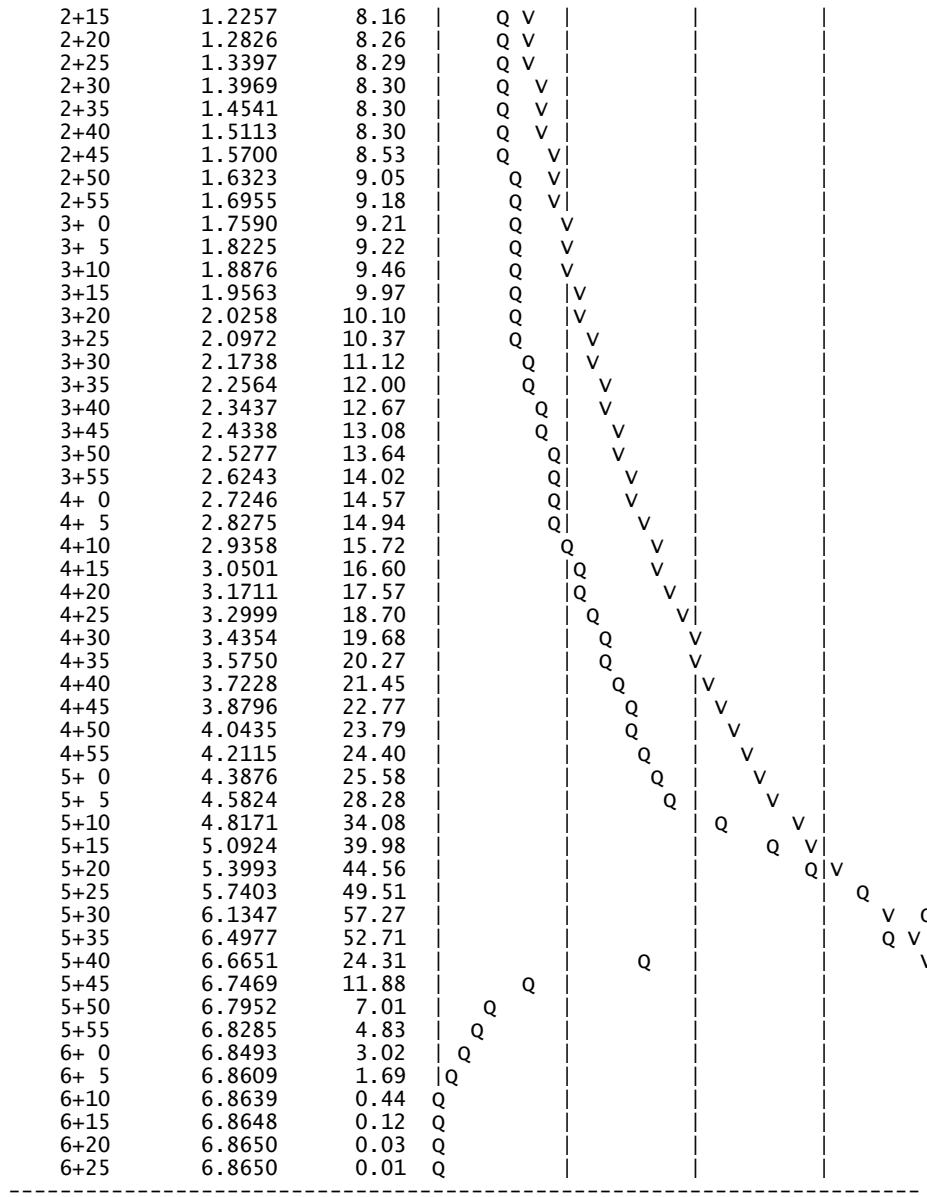
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	15.0	30.0	45.0	60.0
0+ 5	0.0079	1.15	Q				
0+10	0.0351	3.95	V Q				
0+15	0.0703	5.11	V Q				
0+20	0.1076	5.42	V Q				
0+25	0.1455	5.50	V Q				
0+30	0.1852	5.76	V Q				
0+35	0.2285	6.28	V Q				
0+40	0.2726	6.41	V Q				
0+45	0.3170	6.44	V Q				
0+50	0.3614	6.45	V Q				
0+55	0.4059	6.46	V Q				
1+ 0	0.4520	6.69	V Q				
1+ 5	0.5016	7.20	V Q				
1+10	0.5521	7.33	VQ				
1+15	0.6028	7.37	VQ				
1+20	0.6536	7.38	VQ				
1+25	0.7044	7.38	Q				
1+30	0.7553	7.38	Q				
1+35	0.8061	7.38	Q				
1+40	0.8569	7.38	Q				
1+45	0.9078	7.38	QV				
1+50	0.9586	7.38	QV				
1+55	1.0094	7.38	QV				
2+ 0	1.0618	7.61	QV				
2+ 5	1.1162	7.89	QV				
2+10	1.1695	7.74	QV				


2+15 1.2257 8.16
2+20 1.2826 8.26
2+25 1.3397 8.29
2+30 1.3969 8.30
2+35 1.4541 8.30
2+40 1.5113 8.30
2+45 1.5700 8.53
2+50 1.6323 9.05
2+55 1.6955 9.18
3+ 0 1.7590 9.21
3+ 5 1.8225 9.22
3+10 1.8876 9.46
3+15 1.9563 9.97
3+20 2.0258 10.10
3+25 2.0972 10.37
3+30 2.1738 11.12
3+35 2.2564 12.00
3+40 2.3437 12.67
3+45 2.4338 13.08
3+50 2.5277 13.64
3+55 2.6243 14.02
4+ 0 2.7246 14.57
4+ 5 2.8275 14.94
4+10 2.9358 15.72
4+15 3.0501 16.60
4+20 3.1711 17.57
4+25 3.2999 18.70
4+30 3.4354 19.68
4+35 3.5750 20.27
4+40 3.7228 21.45
4+45 3.8796 22.77
4+50 4.0435 23.79
4+55 4.2115 24.40
5+ 0 4.3876 25.58
5+ 5 4.5824 28.28
5+10 4.8171 34.08
5+15 5.0924 39.98
5+20 5.3993 44.56
5+25 5.7403 49.51
5+30 6.1347 57.27
5+35 6.4977 52.71
5+40 6.6651 24.31
5+45 6.7469 11.88
5+50 6.7952 7.01
5+55 6.8285 4.83
6+ 0 6.8493 3.02
6+ 5 6.8609 1.69
6+10 6.8639 0.44
6+15 6.8648 0.12
6+20 6.8650 0.03
6+25 6.8650 0.01

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST10YR2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

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25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 4.146(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 4.145(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 62.6 0.442 0.710 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	(0.283)	0.011	0.022
2	0.17	0.07	0.033	(0.282)	0.011	0.022
3	0.25	0.07	0.033	(0.281)	0.011	0.022
4	0.33	0.10	0.050	(0.280)	0.016	0.033
5	0.42	0.10	0.050	(0.278)	0.016	0.033
6	0.50	0.10	0.050	(0.277)	0.016	0.033
7	0.58	0.10	0.050	(0.276)	0.016	0.033
8	0.67	0.10	0.050	(0.275)	0.016	0.033
9	0.75	0.10	0.050	(0.274)	0.016	0.033
10	0.83	0.13	0.066	(0.273)	0.022	0.044
11	0.92	0.13	0.066	(0.272)	0.022	0.044
12	1.00	0.13	0.066	(0.271)	0.022	0.044
13	1.08	0.10	0.050	(0.270)	0.016	0.033
14	1.17	0.10	0.050	(0.269)	0.016	0.033
15	1.25	0.10	0.050	(0.268)	0.016	0.033
16	1.33	0.10	0.050	(0.267)	0.016	0.033
17	1.42	0.10	0.050	(0.266)	0.016	0.033
18	1.50	0.10	0.050	(0.265)	0.016	0.033
19	1.58	0.10	0.050	(0.263)	0.016	0.033
20	1.67	0.10	0.050	(0.262)	0.016	0.033
21	1.75	0.10	0.050	(0.261)	0.016	0.033
22	1.83	0.13	0.066	(0.260)	0.022	0.044
23	1.92	0.13	0.066	(0.259)	0.022	0.044
24	2.00	0.13	0.066	(0.258)	0.022	0.044
25	2.08	0.13	0.066	(0.257)	0.022	0.044
26	2.17	0.13	0.066	(0.256)	0.022	0.044
27	2.25	0.13	0.066	(0.255)	0.022	0.044
28	2.33	0.13	0.066	(0.254)	0.022	0.044
29	2.42	0.13	0.066	(0.253)	0.022	0.044
30	2.50	0.13	0.066	(0.252)	0.022	0.044
31	2.58	0.17	0.083	(0.251)	0.027	0.056
32	2.67	0.17	0.083	(0.250)	0.027	0.056
33	2.75	0.17	0.083	(0.249)	0.027	0.056
34	2.83	0.17	0.083	(0.248)	0.027	0.056
35	2.92	0.17	0.083	(0.247)	0.027	0.056
36	3.00	0.17	0.083	(0.246)	0.027	0.056
37	3.08	0.17	0.083	(0.245)	0.027	0.056
38	3.17	0.17	0.083	(0.244)	0.027	0.056
39	3.25	0.17	0.083	(0.243)	0.027	0.056
40	3.33	0.17	0.083	(0.242)	0.027	0.056
41	3.42	0.17	0.083	(0.241)	0.027	0.056
42	3.50	0.17	0.083	(0.240)	0.027	0.056
43	3.58	0.17	0.083	(0.239)	0.027	0.056
44	3.67	0.17	0.083	(0.238)	0.027	0.056

45	3.75	0.17	0.083	(0.237)	0.027	0.056
46	3.83	0.20	0.099	(0.236)	0.033	0.067
47	3.92	0.20	0.099	(0.235)	0.033	0.067
48	4.00	0.20	0.099	(0.234)	0.033	0.067
49	4.08	0.20	0.099	(0.233)	0.033	0.067
50	4.17	0.20	0.099	(0.232)	0.033	0.067
51	4.25	0.20	0.099	(0.231)	0.033	0.067
52	4.33	0.23	0.116	(0.230)	0.038	0.078
53	4.42	0.23	0.116	(0.229)	0.038	0.078
54	4.50	0.23	0.116	(0.228)	0.038	0.078
55	4.58	0.23	0.116	(0.227)	0.038	0.078
56	4.67	0.23	0.116	(0.226)	0.038	0.078
57	4.75	0.23	0.116	(0.225)	0.038	0.078
58	4.83	0.27	0.133	(0.224)	0.044	0.089
59	4.92	0.27	0.133	(0.223)	0.044	0.089
60	5.00	0.27	0.133	(0.222)	0.044	0.089
61	5.08	0.20	0.099	(0.221)	0.033	0.067
62	5.17	0.20	0.099	(0.220)	0.033	0.067
63	5.25	0.20	0.099	(0.219)	0.033	0.067
64	5.33	0.23	0.116	(0.218)	0.038	0.078
65	5.42	0.23	0.116	(0.217)	0.038	0.078
66	5.50	0.23	0.116	(0.216)	0.038	0.078
67	5.58	0.27	0.133	(0.215)	0.044	0.089
68	5.67	0.27	0.133	(0.214)	0.044	0.089
69	5.75	0.27	0.133	(0.213)	0.044	0.089
70	5.83	0.27	0.133	(0.212)	0.044	0.089
71	5.92	0.27	0.133	(0.212)	0.044	0.089
72	6.00	0.27	0.133	(0.211)	0.044	0.089
73	6.08	0.30	0.149	(0.210)	0.049	0.100
74	6.17	0.30	0.149	(0.209)	0.049	0.100
75	6.25	0.30	0.149	(0.208)	0.049	0.100
76	6.33	0.30	0.149	(0.207)	0.049	0.100
77	6.42	0.30	0.149	(0.206)	0.049	0.100
78	6.50	0.30	0.149	(0.205)	0.049	0.100
79	6.58	0.33	0.166	(0.204)	0.055	0.111
80	6.67	0.33	0.166	(0.203)	0.055	0.111
81	6.75	0.33	0.166	(0.202)	0.055	0.111
82	6.83	0.33	0.166	(0.201)	0.055	0.111
83	6.92	0.33	0.166	(0.200)	0.055	0.111
84	7.00	0.33	0.166	(0.200)	0.055	0.111
85	7.08	0.33	0.166	(0.199)	0.055	0.111
86	7.17	0.33	0.166	(0.198)	0.055	0.111
87	7.25	0.33	0.166	(0.197)	0.055	0.111
88	7.33	0.37	0.182	(0.196)	0.060	0.122
89	7.42	0.37	0.182	(0.195)	0.060	0.122
90	7.50	0.37	0.182	(0.194)	0.060	0.122
91	7.58	0.40	0.199	(0.193)	0.066	0.133
92	7.67	0.40	0.199	(0.192)	0.066	0.133
93	7.75	0.40	0.199	(0.191)	0.066	0.133
94	7.83	0.43	0.216	(0.191)	0.071	0.144
95	7.92	0.43	0.216	(0.190)	0.071	0.144
96	8.00	0.43	0.216	(0.189)	0.071	0.144
97	8.08	0.50	0.249	(0.188)	0.082	0.167
98	8.17	0.50	0.249	(0.187)	0.082	0.167
99	8.25	0.50	0.249	(0.186)	0.082	0.167
100	8.33	0.50	0.249	(0.185)	0.082	0.167
101	8.42	0.50	0.249	(0.184)	0.082	0.167
102	8.50	0.50	0.249	(0.184)	0.082	0.167
103	8.58	0.53	0.265	(0.183)	0.088	0.178
104	8.67	0.53	0.265	(0.182)	0.088	0.178
105	8.75	0.53	0.265	(0.181)	0.088	0.178
106	8.83	0.57	0.282	(0.180)	0.093	0.189
107	8.92	0.57	0.282	(0.179)	0.093	0.189
108	9.00	0.57	0.282	(0.178)	0.093	0.189
109	9.08	0.63	0.315	(0.178)	0.104	0.211
110	9.17	0.63	0.315	(0.177)	0.104	0.211
111	9.25	0.63	0.315	(0.176)	0.104	0.211
112	9.33	0.67	0.332	(0.175)	0.109	0.222
113	9.42	0.67	0.332	(0.174)	0.109	0.222
114	9.50	0.67	0.332	(0.173)	0.109	0.222
115	9.58	0.70	0.348	(0.173)	0.115	0.233
116	9.67	0.70	0.348	(0.172)	0.115	0.233
117	9.75	0.70	0.348	(0.171)	0.115	0.233
118	9.83	0.73	0.365	(0.170)	0.120	0.244
119	9.92	0.73	0.365	(0.169)	0.120	0.244

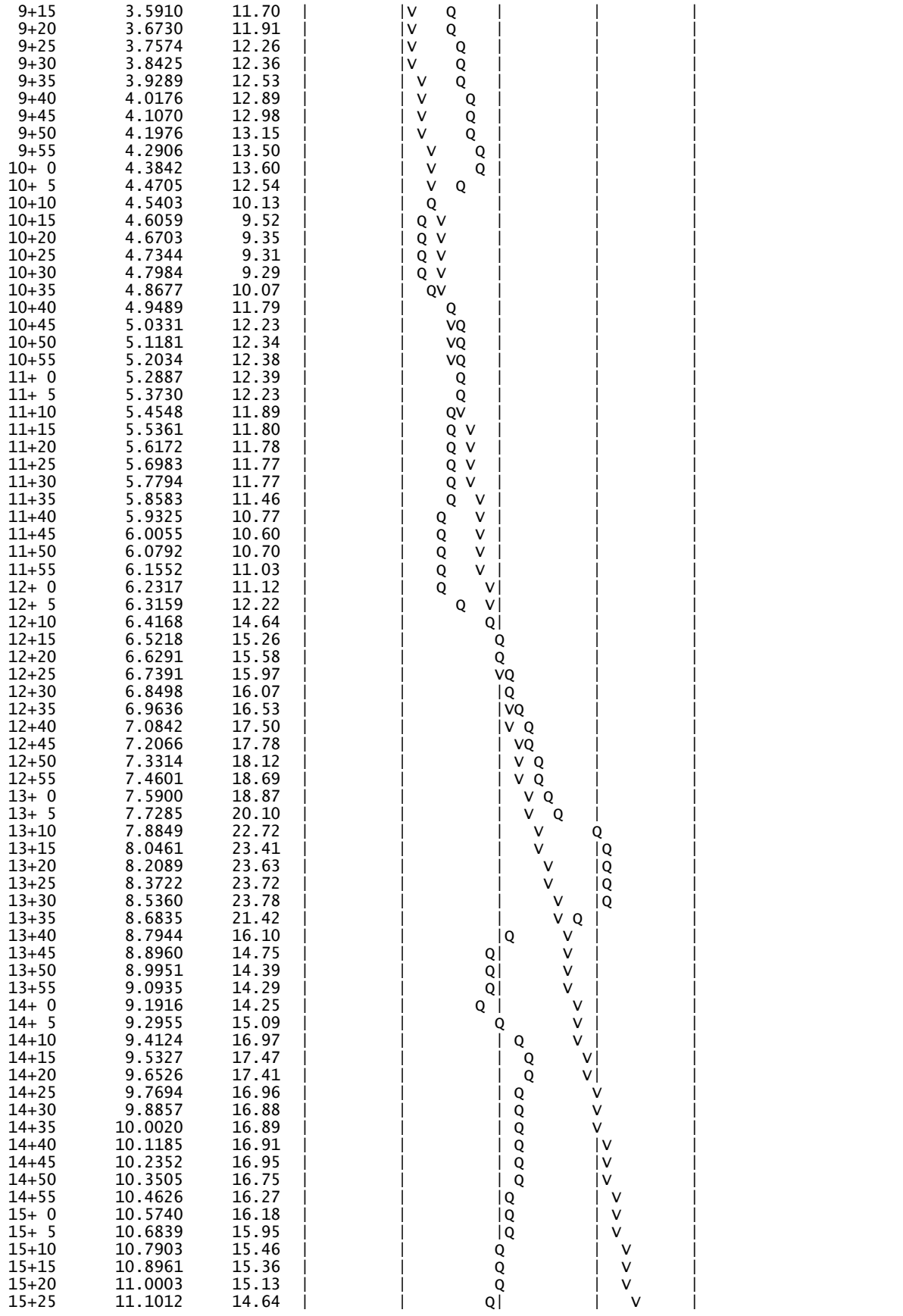
120	10.00	0.73	0.365	(0.168)	0.120	0.244
121	10.08	0.50	0.249	(0.168)	0.082	0.167
122	10.17	0.50	0.249	(0.167)	0.082	0.167
123	10.25	0.50	0.249	(0.166)	0.082	0.167
124	10.33	0.50	0.249	(0.165)	0.082	0.167
125	10.42	0.50	0.249	(0.164)	0.082	0.167
126	10.50	0.50	0.249	(0.164)	0.082	0.167
127	10.58	0.67	0.332	(0.163)	0.109	0.222
128	10.67	0.67	0.332	(0.162)	0.109	0.222
129	10.75	0.67	0.332	(0.161)	0.109	0.222
130	10.83	0.67	0.332	(0.160)	0.109	0.222
131	10.92	0.67	0.332	(0.160)	0.109	0.222
132	11.00	0.67	0.332	(0.159)	0.109	0.222
133	11.08	0.63	0.315	(0.158)	0.104	0.211
134	11.17	0.63	0.315	(0.157)	0.104	0.211
135	11.25	0.63	0.315	(0.157)	0.104	0.211
136	11.33	0.63	0.315	(0.156)	0.104	0.211
137	11.42	0.63	0.315	(0.155)	0.104	0.211
138	11.50	0.63	0.315	(0.154)	0.104	0.211
139	11.58	0.57	0.282	(0.153)	0.093	0.189
140	11.67	0.57	0.282	(0.153)	0.093	0.189
141	11.75	0.57	0.282	(0.152)	0.093	0.189
142	11.83	0.60	0.298	(0.151)	0.098	0.200
143	11.92	0.60	0.298	(0.150)	0.098	0.200
144	12.00	0.60	0.298	(0.150)	0.098	0.200
145	12.08	0.83	0.415	(0.149)	0.137	0.278
146	12.17	0.83	0.415	(0.148)	0.137	0.278
147	12.25	0.83	0.415	(0.147)	0.137	0.278
148	12.33	0.87	0.431	(0.147)	0.142	0.289
149	12.42	0.87	0.431	(0.146)	0.142	0.289
150	12.50	0.87	0.431	(0.145)	0.142	0.289
151	12.58	0.93	0.464	0.144	(0.153)	0.320
152	12.67	0.93	0.464	0.144	(0.153)	0.320
153	12.75	0.93	0.464	0.143	(0.153)	0.321
154	12.83	0.97	0.481	0.142	(0.159)	0.339
155	12.92	0.97	0.481	0.142	(0.159)	0.339
156	13.00	0.97	0.481	0.141	(0.159)	0.340
157	13.08	1.13	0.564	0.140	(0.186)	0.424
158	13.17	1.13	0.564	0.139	(0.186)	0.424
159	13.25	1.13	0.564	0.139	(0.186)	0.425
160	13.33	1.13	0.564	0.138	(0.186)	0.426
161	13.42	1.13	0.564	0.137	(0.186)	0.426
162	13.50	1.13	0.564	0.137	(0.186)	0.427
163	13.58	0.77	0.381	(0.136)	0.126	0.256
164	13.67	0.77	0.381	(0.135)	0.126	0.256
165	13.75	0.77	0.381	(0.135)	0.126	0.256
166	13.83	0.77	0.381	(0.134)	0.126	0.256
167	13.92	0.77	0.381	(0.133)	0.126	0.256
168	14.00	0.77	0.381	(0.133)	0.126	0.256
169	14.08	0.90	0.448	0.132	(0.148)	0.316
170	14.17	0.90	0.448	0.131	(0.148)	0.317
171	14.25	0.90	0.448	0.130	(0.148)	0.317
172	14.33	0.87	0.431	0.130	(0.142)	0.301
173	14.42	0.87	0.431	0.129	(0.142)	0.302
174	14.50	0.87	0.431	0.129	(0.142)	0.303
175	14.58	0.87	0.431	0.128	(0.142)	0.303
176	14.67	0.87	0.431	0.127	(0.142)	0.304
177	14.75	0.87	0.431	0.127	(0.142)	0.305
178	14.83	0.83	0.415	0.126	(0.137)	0.289
179	14.92	0.83	0.415	0.125	(0.137)	0.289
180	15.00	0.83	0.415	0.125	(0.137)	0.290
181	15.08	0.80	0.398	0.124	(0.131)	0.274
182	15.17	0.80	0.398	0.123	(0.131)	0.275
183	15.25	0.80	0.398	0.123	(0.131)	0.275
184	15.33	0.77	0.381	0.122	(0.126)	0.259
185	15.42	0.77	0.381	0.121	(0.126)	0.260
186	15.50	0.77	0.381	0.121	(0.126)	0.261
187	15.58	0.63	0.315	(0.120)	0.104	0.211
188	15.67	0.63	0.315	(0.120)	0.104	0.211
189	15.75	0.63	0.315	(0.119)	0.104	0.211
190	15.83	0.63	0.315	(0.118)	0.104	0.211
191	15.92	0.63	0.315	(0.118)	0.104	0.211
192	16.00	0.63	0.315	(0.117)	0.104	0.211
193	16.08	0.13	0.066	(0.117)	0.022	0.044
194	16.17	0.13	0.066	(0.116)	0.022	0.044

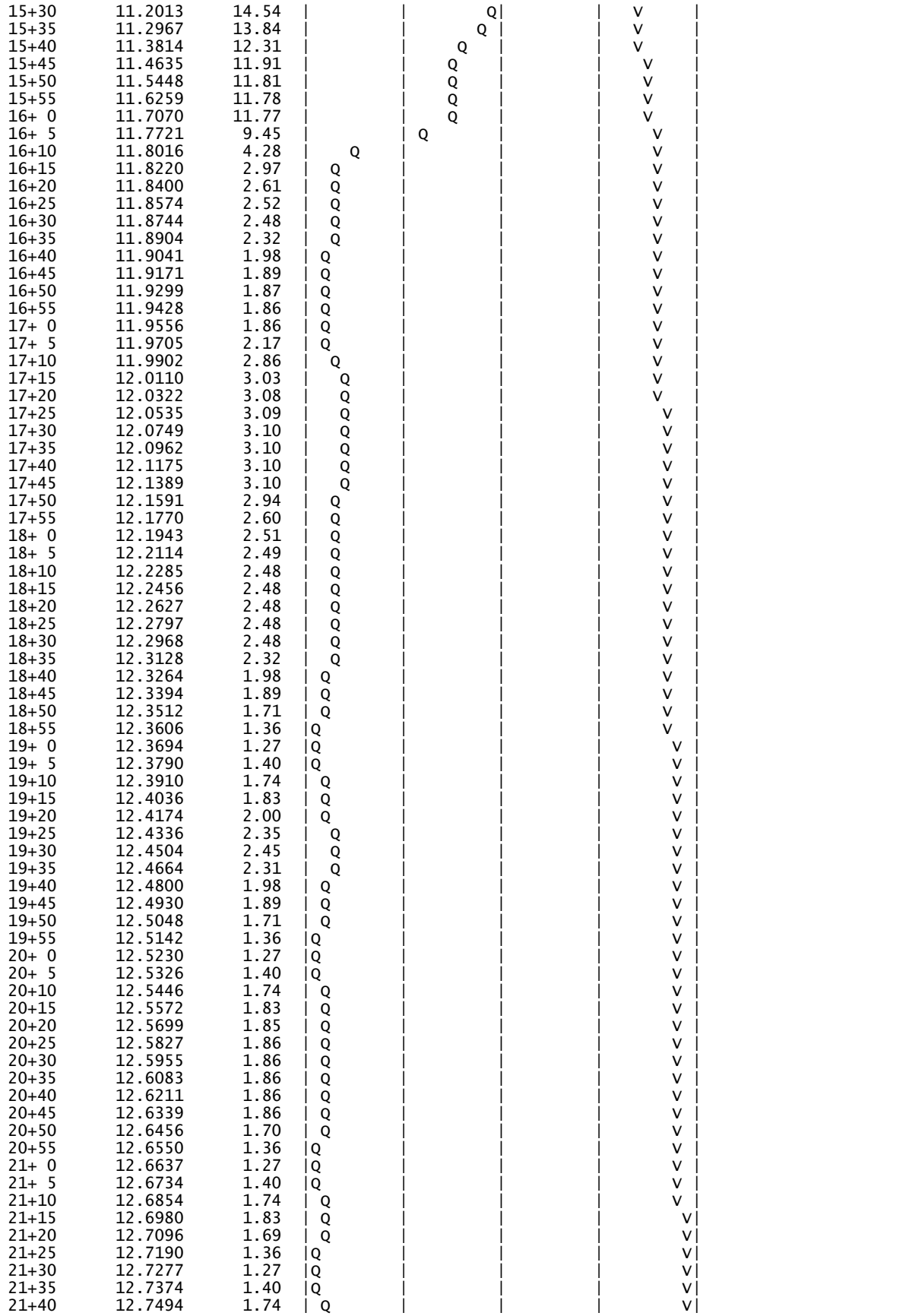
195	16.25	0.13	0.066	(0.115)	0.022	0.044
196	16.33	0.13	0.066	(0.115)	0.022	0.044
197	16.42	0.13	0.066	(0.114)	0.022	0.044
198	16.50	0.13	0.066	(0.114)	0.022	0.044
199	16.58	0.10	0.050	(0.113)	0.016	0.033
200	16.67	0.10	0.050	(0.112)	0.016	0.033
201	16.75	0.10	0.050	(0.112)	0.016	0.033
202	16.83	0.10	0.050	(0.111)	0.016	0.033
203	16.92	0.10	0.050	(0.111)	0.016	0.033
204	17.00	0.10	0.050	(0.110)	0.016	0.033
205	17.08	0.17	0.083	(0.110)	0.027	0.056
206	17.17	0.17	0.083	(0.109)	0.027	0.056
207	17.25	0.17	0.083	(0.109)	0.027	0.056
208	17.33	0.17	0.083	(0.108)	0.027	0.056
209	17.42	0.17	0.083	(0.107)	0.027	0.056
210	17.50	0.17	0.083	(0.107)	0.027	0.056
211	17.58	0.17	0.083	(0.106)	0.027	0.056
212	17.67	0.17	0.083	(0.106)	0.027	0.056
213	17.75	0.17	0.083	(0.105)	0.027	0.056
214	17.83	0.13	0.066	(0.105)	0.022	0.044
215	17.92	0.13	0.066	(0.104)	0.022	0.044
216	18.00	0.13	0.066	(0.104)	0.022	0.044
217	18.08	0.13	0.066	(0.103)	0.022	0.044
218	18.17	0.13	0.066	(0.103)	0.022	0.044
219	18.25	0.13	0.066	(0.102)	0.022	0.044
220	18.33	0.13	0.066	(0.102)	0.022	0.044
221	18.42	0.13	0.066	(0.101)	0.022	0.044
222	18.50	0.13	0.066	(0.101)	0.022	0.044
223	18.58	0.10	0.050	(0.100)	0.016	0.033
224	18.67	0.10	0.050	(0.100)	0.016	0.033
225	18.75	0.10	0.050	(0.099)	0.016	0.033
226	18.83	0.07	0.033	(0.099)	0.011	0.022
227	18.92	0.07	0.033	(0.098)	0.011	0.022
228	19.00	0.07	0.033	(0.098)	0.011	0.022
229	19.08	0.10	0.050	(0.097)	0.016	0.033
230	19.17	0.10	0.050	(0.097)	0.016	0.033
231	19.25	0.10	0.050	(0.097)	0.016	0.033
232	19.33	0.13	0.066	(0.096)	0.022	0.044
233	19.42	0.13	0.066	(0.096)	0.022	0.044
234	19.50	0.13	0.066	(0.095)	0.022	0.044
235	19.58	0.10	0.050	(0.095)	0.016	0.033
236	19.67	0.10	0.050	(0.094)	0.016	0.033
237	19.75	0.10	0.050	(0.094)	0.016	0.033
238	19.83	0.07	0.033	(0.093)	0.011	0.022
239	19.92	0.07	0.033	(0.093)	0.011	0.022
240	20.00	0.07	0.033	(0.093)	0.011	0.022
241	20.08	0.10	0.050	(0.092)	0.016	0.033
242	20.17	0.10	0.050	(0.092)	0.016	0.033
243	20.25	0.10	0.050	(0.091)	0.016	0.033
244	20.33	0.10	0.050	(0.091)	0.016	0.033
245	20.42	0.10	0.050	(0.091)	0.016	0.033
246	20.50	0.10	0.050	(0.090)	0.016	0.033
247	20.58	0.10	0.050	(0.090)	0.016	0.033
248	20.67	0.10	0.050	(0.089)	0.016	0.033
249	20.75	0.10	0.050	(0.089)	0.016	0.033
250	20.83	0.07	0.033	(0.089)	0.011	0.022
251	20.92	0.07	0.033	(0.088)	0.011	0.022
252	21.00	0.07	0.033	(0.088)	0.011	0.022
253	21.08	0.10	0.050	(0.088)	0.016	0.033
254	21.17	0.10	0.050	(0.087)	0.016	0.033
255	21.25	0.10	0.050	(0.087)	0.016	0.033
256	21.33	0.07	0.033	(0.087)	0.011	0.022
257	21.42	0.07	0.033	(0.086)	0.011	0.022
258	21.50	0.07	0.033	(0.086)	0.011	0.022
259	21.58	0.10	0.050	(0.086)	0.016	0.033
260	21.67	0.10	0.050	(0.085)	0.016	0.033
261	21.75	0.10	0.050	(0.085)	0.016	0.033
262	21.83	0.07	0.033	(0.085)	0.011	0.022
263	21.92	0.07	0.033	(0.085)	0.011	0.022
264	22.00	0.07	0.033	(0.084)	0.011	0.022
265	22.08	0.10	0.050	(0.084)	0.016	0.033
266	22.17	0.10	0.050	(0.084)	0.016	0.033
267	22.25	0.10	0.050	(0.083)	0.016	0.033
268	22.33	0.07	0.033	(0.083)	0.011	0.022
269	22.42	0.07	0.033	(0.083)	0.011	0.022

```
270  22.50     0.07      0.033       (  0.083)       0.011        0.022
271  22.58     0.07      0.033       (  0.082)       0.011        0.022
272  22.67     0.07      0.033       (  0.082)       0.011        0.022
273  22.75     0.07      0.033       (  0.082)       0.011        0.022
274  22.83     0.07      0.033       (  0.082)       0.011        0.022
275  22.92     0.07      0.033       (  0.082)       0.011        0.022
276  23.00     0.07      0.033       (  0.081)       0.011        0.022
277  23.08     0.07      0.033       (  0.081)       0.011        0.022
278  23.17     0.07      0.033       (  0.081)       0.011        0.022
279  23.25     0.07      0.033       (  0.081)       0.011        0.022
280  23.33     0.07      0.033       (  0.081)       0.011        0.022
281  23.42     0.07      0.033       (  0.080)       0.011        0.022
282  23.50     0.07      0.033       (  0.080)       0.011        0.022
283  23.58     0.07      0.033       (  0.080)       0.011        0.022
284  23.67     0.07      0.033       (  0.080)       0.011        0.022
285  23.75     0.07      0.033       (  0.080)       0.011        0.022
286  23.83     0.07      0.033       (  0.080)       0.011        0.022
287  23.92     0.07      0.033       (  0.080)       0.011        0.022
288  24.00     0.07      0.033       (  0.080)       0.011        0.022
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    33.9
      Flood volume = Effective rainfall      2.82(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =      13.0(Ac.Ft)
      Total soil loss =      1.32(In)
      Total soil loss =     6.084(Ac.Ft)
      Total rainfall =      4.15(In)
      Flood volume =      567066.4 Cubic Feet
      Total soil loss =      265033.9 Cubic Feet
      --------------------------------------------------------------------
       Peak flow rate of this hydrograph =     23.776(CFS)
      --------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      --------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      --------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
 ------------------------------------------------------------------------
   0+ 5       0.0021      0.31  Q         |         |         |         |
   0+10       0.0090      1.00  VQ        |         |         |         |
   0+15       0.0171      1.17  VQ        |         |         |         |
   0+20       0.0266      1.38  VQ        |         |         |         |
   0+25       0.0385      1.73  V Q       |         |         |         |
   0+30       0.0511      1.83  V Q       |         |         |         |
   0+35       0.0638      1.85  V Q       |         |         |         |
   0+40       0.0766      1.86  V Q       |         |         |         |
   0+45       0.0894      1.86  V Q       |         |         |         |
   0+50       0.1032      2.01  V Q       |         |         |         |
   0+55       0.1195      2.36  V  Q      |         |         |         |
   1+ 0       0.1363      2.45  V  Q      |         |         |         |
   1+ 5       0.1523      2.31  V  Q      |         |         |         |
   1+10       0.1659      1.98  V Q       |         |         |         |
   1+15       0.1789      1.89  V Q       |         |         |         |
   1+20       0.1918      1.87  V Q       |         |         |         |
   1+25       0.2046      1.86  V Q       |         |         |         |
   1+30       0.2174      1.86  V Q       |         |         |         |
   1+35       0.2302      1.86  V Q       |         |         |         |
   1+40       0.2430      1.86  V Q       |         |         |         |
   1+45       0.2558      1.86  V Q       |         |         |         |
   1+50       0.2696      2.01  V Q       |         |         |         |
   1+55       0.2859      2.36  V  Q      |         |         |         |
   2+ 0       0.3027      2.45  V  Q      |         |         |         |
   2+ 5       0.3197      2.47  V  Q      |         |         |         |
   2+10       0.3368      2.48  |V Q       |         |         |         |
   2+15       0.3538      2.48  |V Q       |         |         |         |
   2+20       0.3709      2.48  |V Q       |         |         |         |
   2+25       0.3879      2.48  |V Q       |         |         |         |
   2+30       0.4050      2.48  |V Q       |         |         |         |
   2+35       0.4231      2.63  |V Q       |         |         |         |
   2+40       0.4436      2.98  |V Q       |         |         |         |
   2+45       0.4647      3.06  |V  Q      |         |         |         |
   2+50       0.4860      3.09  |V  Q      |         |         |         |
   2+55       0.5073      3.09  |V  Q      |         |         |         |
```

3+ 0	0.5287	3.10	V Q			
3+ 5	0.5500	3.10	V Q			
3+10	0.5713	3.10	V Q			
3+15	0.5927	3.10	V Q			
3+20	0.6140	3.10	V Q			
3+25	0.6353	3.10	V Q			
3+30	0.6566	3.10	V Q			
3+35	0.6780	3.10	V Q			
3+40	0.6993	3.10	V Q			
3+45	0.7206	3.10	V Q			
3+50	0.7430	3.25	V Q			
3+55	0.7678	3.60	V Q			
4+ 0	0.7932	3.68	V Q			
4+ 5	0.8187	3.71	V Q			
4+10	0.8443	3.71	V Q			
4+15	0.8699	3.72	V Q			
4+20	0.8965	3.87	V Q			
4+25	0.9256	4.22	V Q			
4+30	0.9552	4.30	V Q			
4+35	0.9850	4.33	V Q			
4+40	1.0149	4.33	V Q			
4+45	1.0447	4.34	V Q			
4+50	1.0757	4.49	V Q			
4+55	1.1090	4.84	V Q			
5+ 0	1.1429	4.92	V Q			
5+ 5	1.1748	4.64	V Q			
5+10	1.2020	3.95	V Q			
5+15	1.2281	3.78	V Q			
5+20	1.2549	3.89	V Q			
5+25	1.2839	4.22	V Q			
5+30	1.3136	4.30	VQ			
5+35	1.3444	4.48	VQ			
5+40	1.3777	4.83	V Q			
5+45	1.4116	4.92	V Q			
5+50	1.4457	4.95	V Q			
5+55	1.4798	4.95	V Q			
6+ 0	1.5139	4.96	V Q			
6+ 5	1.5491	5.11	V Q			
6+10	1.5867	5.45	V Q			
6+15	1.6249	5.54	V Q			
6+20	1.6632	5.57	V Q			
6+25	1.7016	5.57	V Q			
6+30	1.7400	5.58	V Q			
6+35	1.7794	5.73	V Q			
6+40	1.8213	6.07	V Q			
6+45	1.8637	6.16	V Q			
6+50	1.9063	6.19	V Q			
6+55	1.9490	6.19	V Q			
7+ 0	1.9916	6.19	V Q			
7+ 5	2.0343	6.19	V Q			
7+10	2.0769	6.19	V Q			
7+15	2.1196	6.19	V Q			
7+20	2.1633	6.35	V Q			
7+25	2.2094	6.69	V Q			
7+30	2.2561	6.78	V Q			
7+35	2.3041	6.96	V Q			
7+40	2.3544	7.31	V Q			
7+45	2.4054	7.40	V Q			
7+50	2.4576	7.58	V Q			
7+55	2.5122	7.93	V Q			
8+ 0	2.5674	8.02	V Q			
8+ 5	2.6250	8.35	V Q			
8+10	2.6873	9.05	V Q			
8+15	2.7508	9.23	V Q			
8+20	2.8147	9.27	V Q			
8+25	2.8786	9.29	V Q			
8+30	2.9426	9.29	V Q			
8+35	3.0077	9.45	V Q			
8+40	3.0751	9.79	V Q			
8+45	3.1432	9.88	V Q			
8+50	3.2124	10.06	V Q			
8+55	3.2841	10.41	V Q			
9+ 0	3.3564	10.50	V Q			
9+ 5	3.4310	10.83	V Q			
9+10	3.5104	11.53	V Q			





```
  21+45      12.7620      1.83  | Q       |         |         |        v|
  21+50      12.7736      1.69  | Q       |         |         |        v|
  21+55      12.7830      1.36  |Q        |         |         |        v|
  22+ 0      12.7917      1.27  |Q        |         |         |        v|
  22+ 5      12.8014      1.40  |Q        |         |         |        v|
  22+10      12.8134      1.74  | Q       |         |         |        v|
  22+15      12.8259      1.83  | Q       |         |         |        v|
  22+20      12.8376      1.69  | Q       |         |         |        v|
  22+25      12.8470      1.36  |Q        |         |         |        v|
  22+30      12.8557      1.27  |Q        |         |         |        v|
  22+35      12.8643      1.25  |Q        |         |         |        v|
  22+40      12.8729      1.24  |Q        |         |         |        v|
  22+45      12.8814      1.24  |Q        |         |         |        v|
  22+50      12.8899      1.24  |Q        |         |         |        v|
  22+55      12.8985      1.24  |Q        |         |         |        v|
  23+ 0      12.9070      1.24  |Q        |         |         |        v|
  23+ 5      12.9155      1.24  |Q        |         |         |        v|
  23+10      12.9241      1.24  |Q        |         |         |        v|
  23+15      12.9326      1.24  |Q        |         |         |        v|
  23+20      12.9411      1.24  |Q        |         |         |        v|
  23+25      12.9497      1.24  |Q        |         |         |        v|
  23+30      12.9582      1.24  |Q        |         |         |        v|
  23+35      12.9667      1.24  |Q        |         |         |        v|
  23+40      12.9753      1.24  |Q        |         |         |        v|
  23+45      12.9838      1.24  |Q        |         |         |        v|
  23+50      12.9923      1.24  |Q        |         |         |        v|
  23+55      13.0008      1.24  |Q        |         |         |        v|
  24+ 0      13.0094      1.24  |Q        |         |         |        v|
  24+ 5      13.0158      0.93  |Q        |         |         |        v|
  24+10      13.0174      0.24  Q         |         |         |        v|
  24+15      13.0179      0.07  Q         |         |         |        v|
  24+20      13.0180      0.02  Q         |         |         |        v|
  24+25      13.0181      0.01  Q         |         |         |        v|
-------------------------------------------------------------------------
```

PROPOSED CONDITION
100-YEAR, 1 / 3 / 6 / 24-HOUR UNIT HYDROGRAPH

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: WEST100YR1100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.55	30.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.25	69.13

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.550(In)
Area Averaged 100-Year Rainfall = 1.250(In)

Point rain (area averaged) = 1.250(In)
Areal adjustment factor = 99.95 %
Adjusted average point rain = 1.249(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

```
      62.6  62.6      0.442     0.710        0.160       1.000      0.160
                                                        Sum (F) =   0.160
      Area averaged mean soil loss (F) (In/Hr) =  0.160
      Minimum soil loss rate ((In/Hr)) =  0.080
      (for 24 hour storm duration)
      Soil low loss rate (decimal) =   0.330
      ------------------------------------------------------------------------
      Slope of intensity-duration curve for a 1 hour storm =0.5300
      ------------------------------------------------------------------------

                  U n i t  H y d r o g r a p h
                         FOOTHILL S-Curve
      ------------------------------------------------------------------------
                  Unit Hydrograph Data
      ------------------------------------------------------------------------
      Unit time period   Time % of lag   Distribution   Unit Hydrograph
          (hrs)                          Graph %           (CFS)
      ------------------------------------------------------------------------
          1   0.083        131.015         24.971             13.917
          2   0.167        262.030         55.588             30.980
          3   0.250        393.045         14.152              7.887
          4   0.333        524.061          3.839              2.140
          5   0.417        655.076          1.026              0.572
          6   0.500        786.091          0.425              0.237
                                   Sum = 100.000    Sum=      55.732
------------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value

  Unit Time   Pattern   Storm Rain     Loss rate(In./Hr)     Effective
       (Hr.)  Percent   (In/Hr)         Max   |   Low        (In/Hr)
   1   0.08     3.40      0.510          0.160    (  0.168)        0.350
   2   0.17     4.70      0.705          0.160    (  0.233)        0.545
   3   0.25     4.70      0.705          0.160    (  0.233)        0.545
   4   0.33     5.10      0.765          0.160    (  0.252)        0.605
   5   0.42     5.80      0.870          0.160    (  0.287)        0.710
   6   0.50     5.90      0.885          0.160    (  0.292)        0.725
   7   0.58     7.10      1.064          0.160    (  0.351)        0.905
   8   0.67     8.70      1.304          0.160    (  0.430)        1.145
   9   0.75    13.20      1.979          0.160    (  0.653)        1.819
  10   0.83    29.70      4.453          0.160    (  1.469)        4.293
  11   0.92     7.70      1.154          0.160    (  0.381)        0.995
  12   1.00     4.00      0.600          0.160    (  0.198)        0.440
               (Loss Rate Not Used)
     Sum =     100.0                                 Sum =    13.1
       Flood volume = Effective rainfall      1.09(In)
        times area      55.3(Ac.)/[(In)/(Ft.)] =       5.0(Ac.Ft)
       Total soil loss =      0.16(In)
       Total soil loss =     0.735(Ac.Ft)
       Total rainfall =      1.25(In)
       Flood volume =      218773.5 Cubic Feet
       Total soil loss =       32024.5 Cubic Feet
       ------------------------------------------------------------------------
        Peak flow rate of this hydrograph =    164.424(CFS)
       ------------------------------------------------------------------------
       ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          1 - H O U R    S T O R M
                     R u n o f f     H y d r o g r a p h
       ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

       ------------------------------------------------------------------------
  Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
  ----------------------------------------------------------------------------
    0+ 5       0.0336      4.88  Q         |         |         |         |
    0+10       0.1606     18.45  |V Q      |         |         |         |
    0+15       0.3483     27.25  | V  Q    |         |         |         |
    0+20       0.5575     30.37  |   V Q   |         |         |         |
    0+25       0.7938     34.31  |     Q   |         |         |         |
    0+30       1.0585     38.44  |      QV |         |         |         |
    0+35       1.3506     42.41  |       Q V         |         |         |
    0+40       1.7067     51.71  |         Q  V      |         |         |
    0+45       2.1892     70.06  |         |   Q  V  |         |         |
```

```
    0+50       3.0689    127.73  |          |          |   VQ     |          |
    0+55       4.2013    164.42  |          |          |          | QV       |
    1+ 0       4.7220     75.61  |          |     Q    |          |       V  |
    1+ 5       4.9424     32.00  |     Q    |          |          |         V|
    1+10       5.0009      8.49  |Q         |          |          |         V|
    1+15       5.0183      2.53  Q          |          |          |         V|
    1+20       5.0216      0.49  Q          |          |          |         V|
    1+25       5.0223      0.10  Q          |          |          |         V|
-------------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: WEST100YR3100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	0.95	52.53

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.05	113.36

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 0.950(In)
Area Averaged 100-Year Rainfall = 2.050(In)

Point rain (area averaged) = 2.050(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.050(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 62.6 0.442 0.710 0.160 1.000 0.160
Sum (F) = 0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.320	(0.160)	0.106	0.214
2	0.17	1.30	0.320	(0.160)	0.106	0.214
3	0.25	1.10	0.271	(0.160)	0.089	0.181
4	0.33	1.50	0.369	(0.160)	0.122	0.247
5	0.42	1.50	0.369	(0.160)	0.122	0.247
6	0.50	1.80	0.443	(0.160)	0.146	0.297
7	0.58	1.50	0.369	(0.160)	0.122	0.247
8	0.67	1.80	0.443	(0.160)	0.146	0.297
9	0.75	1.80	0.443	(0.160)	0.146	0.297
10	0.83	1.50	0.369	(0.160)	0.122	0.247
11	0.92	1.60	0.394	(0.160)	0.130	0.264
12	1.00	1.80	0.443	(0.160)	0.146	0.297
13	1.08	2.20	0.541	0.160	(0.179)	0.382
14	1.17	2.20	0.541	0.160	(0.179)	0.382
15	1.25	2.20	0.541	0.160	(0.179)	0.382
16	1.33	2.00	0.492	0.160	(0.162)	0.332
17	1.42	2.60	0.639	0.160	(0.211)	0.480
18	1.50	2.70	0.664	0.160	(0.219)	0.505
19	1.58	2.40	0.590	0.160	(0.195)	0.431
20	1.67	2.70	0.664	0.160	(0.219)	0.505
21	1.75	3.30	0.812	0.160	(0.268)	0.652
22	1.83	3.10	0.762	0.160	(0.252)	0.603
23	1.92	2.90	0.713	0.160	(0.235)	0.554
24	2.00	3.00	0.738	0.160	(0.243)	0.578
25	2.08	3.10	0.762	0.160	(0.252)	0.603
26	2.17	4.20	1.033	0.160	(0.341)	0.873
27	2.25	5.00	1.230	0.160	(0.406)	1.070
28	2.33	3.50	0.861	0.160	(0.284)	0.701
29	2.42	6.80	1.672	0.160	(0.552)	1.513
30	2.50	7.30	1.795	0.160	(0.592)	1.636
31	2.58	8.20	2.017	0.160	(0.666)	1.857
32	2.67	5.90	1.451	0.160	(0.479)	1.292
33	2.75	2.00	0.492	0.160	(0.162)	0.332
34	2.83	1.80	0.443	(0.160)	0.146	0.297
35	2.92	1.80	0.443	(0.160)	0.146	0.297
36	3.00	0.60	0.148	(0.160)	0.049	0.099
		(Loss Rate Not Used)				
Sum =		100.0			Sum =	19.4

Flood volume = Effective rainfall 1.62(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 7.5(Ac.Ft)
Total soil loss = 0.43(In)
Total soil loss = 1.994(Ac.Ft)
Total rainfall = 2.05(In)
Flood volume = 324553.4 Cubic Feet

Total soil loss = 86862.0 Cubic Feet

Peak flow rate of this hydrograph = 92.350(CFS)

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3 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	25.0	50.0	75.0	100.0
0+ 5	0.0205	2.98	VQ				
0+10	0.0868	9.62	V Q				
0+15	0.1616	10.85	V Q				
0+20	0.2388	11.21	V Q				
0+25	0.3291	13.11	V Q				
0+30	0.4276	14.30	V Q				
0+35	0.5327	15.27	V Q				
0+40	0.6350	14.85	V Q				
0+45	0.7459	16.11	V Q				
0+50	0.8543	15.73	V Q				
0+55	0.9543	14.52	Q				
1+ 0	1.0584	15.12	VQ				
1+ 5	1.1779	17.36	Q				
1+10	1.3174	20.26	VQ				
1+15	1.4620	20.99	VQ				
1+20	1.6033	20.51	Q				
1+25	1.7486	21.10	QV				
1+30	1.9252	25.65	Q				
1+35	2.1073	26.44	QV				
1+40	2.2841	25.66	Q V				
1+45	2.4876	29.55	Q V				
1+50	2.7211	33.91	QV				
1+55	2.9483	32.99	Q V				
2+ 0	3.1671	31.76	Q V				
2+ 5	3.3907	32.47	Q V				
2+10	3.6462	37.10	Q V				
2+15	3.9797	48.43	Q V				
2+20	4.3349	51.58	Q V				
2+25	4.7041	53.60	Q V				
2+30	5.2422	78.14	V			Q	
2+35	5.8677	90.82	V			Q	
2+40	6.5037	92.35	V Q				
2+45	6.9434	63.85	Q	V			
2+50	7.1493	29.89	Q	V			
2+55	7.2882	20.16	Q	V			
3+ 0	7.3901	14.80	Q	V			
3+ 5	7.4351	6.54	Q	V			
3+10	7.4466	1.66	Q	V			
3+15	7.4497	0.45	Q	V			
3+20	7.4506	0.13	Q	V			
3+25	7.4507	0.02	Q	V			

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: WEST100YR6100.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	1.40	77.42

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	3.00	165.90

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 1.400(In)
Area Averaged 100-Year Rainfall = 3.000(In)

Point rain (area averaged) = 3.000(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 2.999(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6	62.6	0.442	0.710	0.160	1.000	0.160
					Sum (F) =	0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.180	(0.160)	0.059	0.121
2	0.17	0.60	0.216	(0.160)	0.071	0.145
3	0.25	0.60	0.216	(0.160)	0.071	0.145
4	0.33	0.60	0.216	(0.160)	0.071	0.145
5	0.42	0.60	0.216	(0.160)	0.071	0.145
6	0.50	0.70	0.252	(0.160)	0.083	0.169
7	0.58	0.70	0.252	(0.160)	0.083	0.169
8	0.67	0.70	0.252	(0.160)	0.083	0.169
9	0.75	0.70	0.252	(0.160)	0.083	0.169
10	0.83	0.70	0.252	(0.160)	0.083	0.169
11	0.92	0.70	0.252	(0.160)	0.083	0.169
12	1.00	0.80	0.288	(0.160)	0.095	0.193
13	1.08	0.80	0.288	(0.160)	0.095	0.193
14	1.17	0.80	0.288	(0.160)	0.095	0.193
15	1.25	0.80	0.288	(0.160)	0.095	0.193
16	1.33	0.80	0.288	(0.160)	0.095	0.193
17	1.42	0.80	0.288	(0.160)	0.095	0.193
18	1.50	0.80	0.288	(0.160)	0.095	0.193
19	1.58	0.80	0.288	(0.160)	0.095	0.193
20	1.67	0.80	0.288	(0.160)	0.095	0.193
21	1.75	0.80	0.288	(0.160)	0.095	0.193
22	1.83	0.80	0.288	(0.160)	0.095	0.193
23	1.92	0.80	0.288	(0.160)	0.095	0.193
24	2.00	0.90	0.324	(0.160)	0.107	0.217
25	2.08	0.80	0.288	(0.160)	0.095	0.193
26	2.17	0.90	0.324	(0.160)	0.107	0.217
27	2.25	0.90	0.324	(0.160)	0.107	0.217
28	2.33	0.90	0.324	(0.160)	0.107	0.217
29	2.42	0.90	0.324	(0.160)	0.107	0.217
30	2.50	0.90	0.324	(0.160)	0.107	0.217
31	2.58	0.90	0.324	(0.160)	0.107	0.217
32	2.67	0.90	0.324	(0.160)	0.107	0.217
33	2.75	1.00	0.360	(0.160)	0.119	0.241
34	2.83	1.00	0.360	(0.160)	0.119	0.241
35	2.92	1.00	0.360	(0.160)	0.119	0.241
36	3.00	1.00	0.360	(0.160)	0.119	0.241
37	3.08	1.00	0.360	(0.160)	0.119	0.241
38	3.17	1.10	0.396	(0.160)	0.131	0.265
39	3.25	1.10	0.396	(0.160)	0.131	0.265
40	3.33	1.10	0.396	(0.160)	0.131	0.265
41	3.42	1.20	0.432	(0.160)	0.143	0.289
42	3.50	1.30	0.468	(0.160)	0.154	0.314
43	3.58	1.40	0.504	0.160	(0.166)	0.344
44	3.67	1.40	0.504	0.160	(0.166)	0.344

45	3.75	1.50	0.540	0.160	(0.178)		0.380
46	3.83	1.50	0.540	0.160	(0.178)		0.380
47	3.92	1.60	0.576	0.160	(0.190)		0.416
48	4.00	1.60	0.576	0.160	(0.190)		0.416
49	4.08	1.70	0.612	0.160	(0.202)		0.452
50	4.17	1.80	0.648	0.160	(0.214)		0.488
51	4.25	1.90	0.684	0.160	(0.226)		0.524
52	4.33	2.00	0.720	0.160	(0.238)		0.560
53	4.42	2.10	0.756	0.160	(0.249)		0.596
54	4.50	2.10	0.756	0.160	(0.249)		0.596
55	4.58	2.20	0.792	0.160	(0.261)		0.632
56	4.67	2.30	0.828	0.160	(0.273)		0.668
57	4.75	2.40	0.864	0.160	(0.285)		0.704
58	4.83	2.40	0.864	0.160	(0.285)		0.704
59	4.92	2.50	0.900	0.160	(0.297)		0.740
60	5.00	2.60	0.936	0.160	(0.309)		0.776
61	5.08	3.10	1.116	0.160	(0.368)		0.956
62	5.17	3.60	1.296	0.160	(0.428)		1.136
63	5.25	3.90	1.404	0.160	(0.463)		1.244
64	5.33	4.20	1.512	0.160	(0.499)		1.352
65	5.42	4.70	1.692	0.160	(0.558)		1.532
66	5.50	5.60	2.016	0.160	(0.665)		1.856
67	5.58	1.90	0.684	0.160	(0.226)		0.524
68	5.67	0.90	0.324	(0.160)	0.107		0.217
69	5.75	0.60	0.216	(0.160)	0.071		0.145
70	5.83	0.50	0.180	(0.160)	0.059		0.121
71	5.92	0.30	0.108	(0.160)	0.036		0.072
72	6.00	0.20	0.072	(0.160)	0.024		0.048

(Loss Rate Not Used)

Sum = 100.0 Sum = 27.5

Flood volume = Effective rainfall 2.29(In)
times area 55.3(Ac.)/[(In)/(Ft.)] = 10.6(Ac.Ft)
Total soil loss = 0.71(In)
Total soil loss = 3.265(Ac.Ft)
Total rainfall = 3.00(In)
Flood volume = 459881.1 Cubic Feet
Total soil loss = 142221.4 Cubic Feet

Peak flow rate of this hydrograph = 87.545(CFS)

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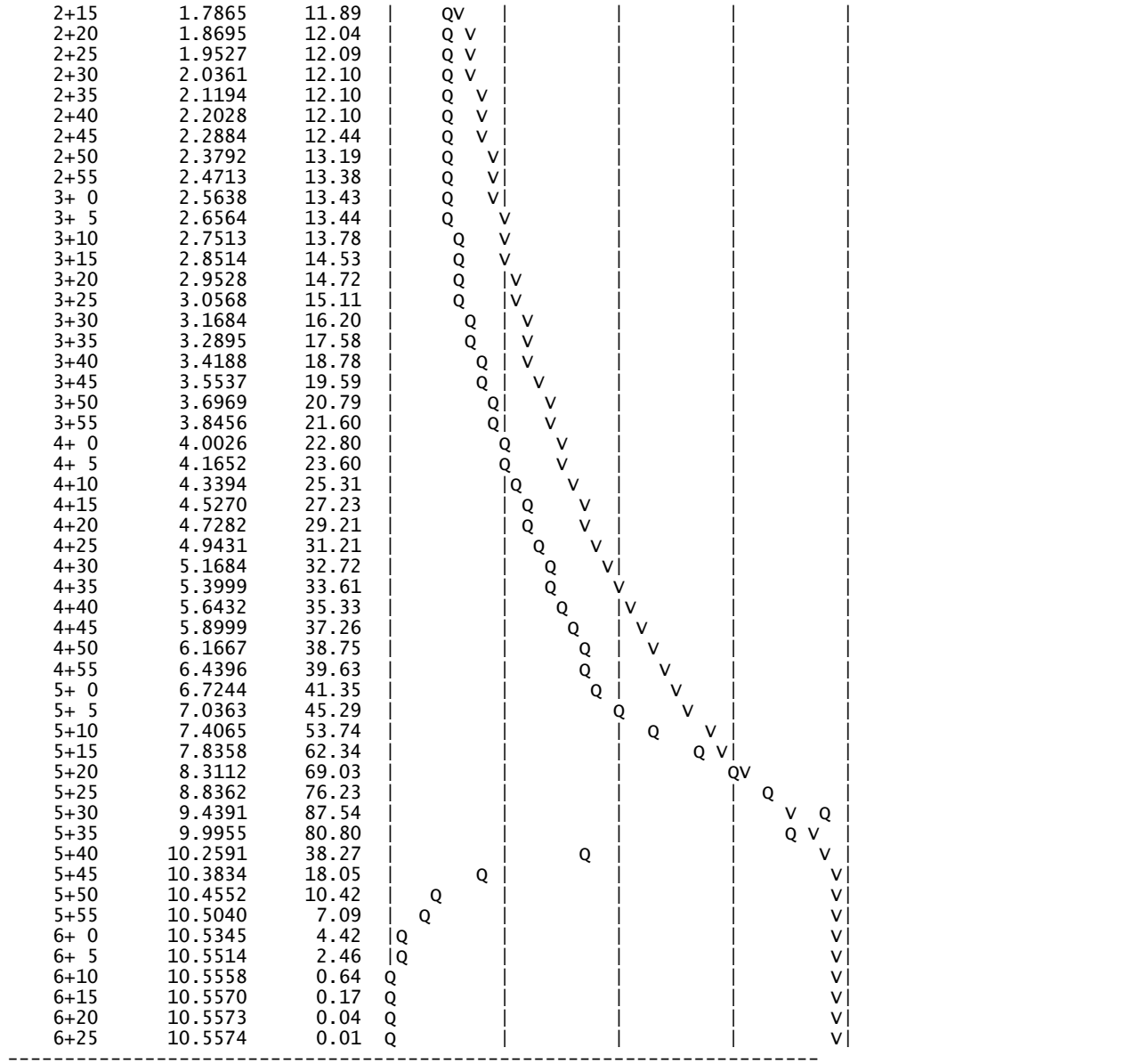
6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	22.5	45.0	67.5	90.0
0+ 5	0.0116	1.68	Q				
0+10	0.0512	5.75	V Q				
0+15	0.1025	7.45	V Q				
0+20	0.1569	7.90	V Q				
0+25	0.2121	8.02	V Q				
0+30	0.2700	8.40	V Q				
0+35	0.3330	9.15	V Q				
0+40	0.3973	9.34	V Q				
0+45	0.4620	9.39	V Q				
0+50	0.5268	9.41	V Q				
0+55	0.5916	9.41	V Q				
1+ 0	0.6588	9.75	V Q				
1+ 5	0.7311	10.50	V Q				
1+10	0.8047	10.69	VQ				
1+15	0.8786	10.74	VQ				
1+20	0.9527	10.75	VQ				
1+25	1.0268	10.76	VQ				
1+30	1.1008	10.76	Q				
1+35	1.1749	10.76	Q				
1+40	1.2490	10.76	Q				
1+45	1.3231	10.76	QV				
1+50	1.3972	10.76	QV				
1+55	1.4713	10.76	QV				
2+ 0	1.5477	11.09	QV				
2+ 5	1.6269	11.51	QV				
2+10	1.7046	11.28	QV				


2+15 1.7865 11.89
2+20 1.8695 12.04
2+25 1.9527 12.09
2+30 2.0361 12.10
2+35 2.1194 12.10
2+40 2.2028 12.10
2+45 2.2884 12.44
2+50 2.3792 13.19
2+55 2.4713 13.38
3+ 0 2.5638 13.43
3+ 5 2.6564 13.44
3+10 2.7513 13.78
3+15 2.8514 14.53
3+20 2.9528 14.72
3+25 3.0568 15.11
3+30 3.1684 16.20
3+35 3.2895 17.58
3+40 3.4188 18.78
3+45 3.5537 19.59
3+50 3.6969 20.79
3+55 3.8456 21.60
4+ 0 4.0026 22.80
4+ 5 4.1652 23.60
4+10 4.3394 25.31
4+15 4.5270 27.23
4+20 4.7282 29.21
4+25 4.9431 31.21
4+30 5.1684 32.72
4+35 5.3999 33.61
4+40 5.6432 35.33
4+45 5.8999 37.26
4+50 6.1667 38.75
4+55 6.4396 39.63
5+ 0 6.7244 41.35
5+ 5 7.0363 45.29
5+10 7.4065 53.74
5+15 7.8358 62.34
5+20 8.3112 69.03
5+25 8.8362 76.23
5+30 9.4391 87.54
5+35 9.9955 80.80
5+40 10.2591 38.27
5+45 10.3834 18.05
5+50 10.4552 10.42
5+55 10.5040 7.09
6+ 0 10.5345 4.42
6+ 5 10.5514 2.46
6+10 10.5558 0.64
6+15 10.5570 0.17
6+20 10.5573 0.04
6+25 10.5574 0.01

U n i t H y d r o g r a p h A n a l y s i s

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Study date 02/10/22 File: WEST100YR2410O.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
100-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2022-02-10 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 6.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 6.499(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6	62.6	0.442	0.710	0.160	1.000	0.160
					Sum (F) =	0.160

Area averaged mean soil loss (F) (In/Hr) = 0.160
Minimum soil loss rate ((In/Hr)) = 0.080
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000 Sum=	55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.052	(0.283)	0.017	0.035
2	0.17	0.07	0.052	(0.282)	0.017	0.035
3	0.25	0.07	0.052	(0.281)	0.017	0.035
4	0.33	0.10	0.078	(0.280)	0.026	0.052
5	0.42	0.10	0.078	(0.278)	0.026	0.052
6	0.50	0.10	0.078	(0.277)	0.026	0.052
7	0.58	0.10	0.078	(0.276)	0.026	0.052
8	0.67	0.10	0.078	(0.275)	0.026	0.052
9	0.75	0.10	0.078	(0.274)	0.026	0.052
10	0.83	0.13	0.104	(0.273)	0.034	0.070
11	0.92	0.13	0.104	(0.272)	0.034	0.070
12	1.00	0.13	0.104	(0.271)	0.034	0.070
13	1.08	0.10	0.078	(0.270)	0.026	0.052
14	1.17	0.10	0.078	(0.269)	0.026	0.052
15	1.25	0.10	0.078	(0.268)	0.026	0.052
16	1.33	0.10	0.078	(0.267)	0.026	0.052
17	1.42	0.10	0.078	(0.266)	0.026	0.052
18	1.50	0.10	0.078	(0.265)	0.026	0.052
19	1.58	0.10	0.078	(0.263)	0.026	0.052
20	1.67	0.10	0.078	(0.262)	0.026	0.052
21	1.75	0.10	0.078	(0.261)	0.026	0.052
22	1.83	0.13	0.104	(0.260)	0.034	0.070
23	1.92	0.13	0.104	(0.259)	0.034	0.070
24	2.00	0.13	0.104	(0.258)	0.034	0.070
25	2.08	0.13	0.104	(0.257)	0.034	0.070
26	2.17	0.13	0.104	(0.256)	0.034	0.070
27	2.25	0.13	0.104	(0.255)	0.034	0.070
28	2.33	0.13	0.104	(0.254)	0.034	0.070
29	2.42	0.13	0.104	(0.253)	0.034	0.070
30	2.50	0.13	0.104	(0.252)	0.034	0.070
31	2.58	0.17	0.130	(0.251)	0.043	0.087
32	2.67	0.17	0.130	(0.250)	0.043	0.087
33	2.75	0.17	0.130	(0.249)	0.043	0.087
34	2.83	0.17	0.130	(0.248)	0.043	0.087
35	2.92	0.17	0.130	(0.247)	0.043	0.087
36	3.00	0.17	0.130	(0.246)	0.043	0.087
37	3.08	0.17	0.130	(0.245)	0.043	0.087
38	3.17	0.17	0.130	(0.244)	0.043	0.087
39	3.25	0.17	0.130	(0.243)	0.043	0.087
40	3.33	0.17	0.130	(0.242)	0.043	0.087
41	3.42	0.17	0.130	(0.241)	0.043	0.087
42	3.50	0.17	0.130	(0.240)	0.043	0.087
43	3.58	0.17	0.130	(0.239)	0.043	0.087
44	3.67	0.17	0.130	(0.238)	0.043	0.087

45	3.75	0.17	0.130	(0.237)	0.043	0.087
46	3.83	0.20	0.156	(0.236)	0.051	0.105
47	3.92	0.20	0.156	(0.235)	0.051	0.105
48	4.00	0.20	0.156	(0.234)	0.051	0.105
49	4.08	0.20	0.156	(0.233)	0.051	0.105
50	4.17	0.20	0.156	(0.232)	0.051	0.105
51	4.25	0.20	0.156	(0.231)	0.051	0.105
52	4.33	0.23	0.182	(0.230)	0.060	0.122
53	4.42	0.23	0.182	(0.229)	0.060	0.122
54	4.50	0.23	0.182	(0.228)	0.060	0.122
55	4.58	0.23	0.182	(0.227)	0.060	0.122
56	4.67	0.23	0.182	(0.226)	0.060	0.122
57	4.75	0.23	0.182	(0.225)	0.060	0.122
58	4.83	0.27	0.208	(0.224)	0.069	0.139
59	4.92	0.27	0.208	(0.223)	0.069	0.139
60	5.00	0.27	0.208	(0.222)	0.069	0.139
61	5.08	0.20	0.156	(0.221)	0.051	0.105
62	5.17	0.20	0.156	(0.220)	0.051	0.105
63	5.25	0.20	0.156	(0.219)	0.051	0.105
64	5.33	0.23	0.182	(0.218)	0.060	0.122
65	5.42	0.23	0.182	(0.217)	0.060	0.122
66	5.50	0.23	0.182	(0.216)	0.060	0.122
67	5.58	0.27	0.208	(0.215)	0.069	0.139
68	5.67	0.27	0.208	(0.214)	0.069	0.139
69	5.75	0.27	0.208	(0.213)	0.069	0.139
70	5.83	0.27	0.208	(0.212)	0.069	0.139
71	5.92	0.27	0.208	(0.212)	0.069	0.139
72	6.00	0.27	0.208	(0.211)	0.069	0.139
73	6.08	0.30	0.234	(0.210)	0.077	0.157
74	6.17	0.30	0.234	(0.209)	0.077	0.157
75	6.25	0.30	0.234	(0.208)	0.077	0.157
76	6.33	0.30	0.234	(0.207)	0.077	0.157
77	6.42	0.30	0.234	(0.206)	0.077	0.157
78	6.50	0.30	0.234	(0.205)	0.077	0.157
79	6.58	0.33	0.260	(0.204)	0.086	0.174
80	6.67	0.33	0.260	(0.203)	0.086	0.174
81	6.75	0.33	0.260	(0.202)	0.086	0.174
82	6.83	0.33	0.260	(0.201)	0.086	0.174
83	6.92	0.33	0.260	(0.200)	0.086	0.174
84	7.00	0.33	0.260	(0.200)	0.086	0.174
85	7.08	0.33	0.260	(0.199)	0.086	0.174
86	7.17	0.33	0.260	(0.198)	0.086	0.174
87	7.25	0.33	0.260	(0.197)	0.086	0.174
88	7.33	0.37	0.286	(0.196)	0.094	0.192
89	7.42	0.37	0.286	(0.195)	0.094	0.192
90	7.50	0.37	0.286	(0.194)	0.094	0.192
91	7.58	0.40	0.312	(0.193)	0.103	0.209
92	7.67	0.40	0.312	(0.192)	0.103	0.209
93	7.75	0.40	0.312	(0.191)	0.103	0.209
94	7.83	0.43	0.338	(0.191)	0.112	0.226
95	7.92	0.43	0.338	(0.190)	0.112	0.226
96	8.00	0.43	0.338	(0.189)	0.112	0.226
97	8.08	0.50	0.390	(0.188)	0.129	0.261
98	8.17	0.50	0.390	(0.187)	0.129	0.261
99	8.25	0.50	0.390	(0.186)	0.129	0.261
100	8.33	0.50	0.390	(0.185)	0.129	0.261
101	8.42	0.50	0.390	(0.184)	0.129	0.261
102	8.50	0.50	0.390	(0.184)	0.129	0.261
103	8.58	0.53	0.416	(0.183)	0.137	0.279
104	8.67	0.53	0.416	(0.182)	0.137	0.279
105	8.75	0.53	0.416	(0.181)	0.137	0.279
106	8.83	0.57	0.442	(0.180)	0.146	0.296
107	8.92	0.57	0.442	(0.179)	0.146	0.296
108	9.00	0.57	0.442	(0.178)	0.146	0.296
109	9.08	0.63	0.494	(0.178)	0.163	0.331
110	9.17	0.63	0.494	(0.177)	0.163	0.331
111	9.25	0.63	0.494	(0.176)	0.163	0.331
112	9.33	0.67	0.520	(0.175)	0.172	0.348
113	9.42	0.67	0.520	(0.174)	0.172	0.348
114	9.50	0.67	0.520	(0.173)	0.172	0.348
115	9.58	0.70	0.546	0.173	(0.180)	0.373
116	9.67	0.70	0.546	0.172	(0.180)	0.374
117	9.75	0.70	0.546	0.171	(0.180)	0.375
118	9.83	0.73	0.572	0.170	(0.189)	0.402
119	9.92	0.73	0.572	0.169	(0.189)	0.403

120	10.00	0.73	0.572		0.168	(0.189)	0.403
121	10.08	0.50	0.390	(	0.168)	0.129	0.261
122	10.17	0.50	0.390	(	0.167)	0.129	0.261
123	10.25	0.50	0.390	(	0.166)	0.129	0.261
124	10.33	0.50	0.390	(	0.165)	0.129	0.261
125	10.42	0.50	0.390	(	0.164)	0.129	0.261
126	10.50	0.50	0.390	(	0.164)	0.129	0.261
127	10.58	0.67	0.520		0.163	(0.172)	0.357
128	10.67	0.67	0.520		0.162	(0.172)	0.358
129	10.75	0.67	0.520		0.161	(0.172)	0.359
130	10.83	0.67	0.520		0.160	(0.172)	0.360
131	10.92	0.67	0.520		0.160	(0.172)	0.360
132	11.00	0.67	0.520		0.159	(0.172)	0.361
133	11.08	0.63	0.494		0.158	(0.163)	0.336
134	11.17	0.63	0.494		0.157	(0.163)	0.337
135	11.25	0.63	0.494		0.157	(0.163)	0.337
136	11.33	0.63	0.494		0.156	(0.163)	0.338
137	11.42	0.63	0.494		0.155	(0.163)	0.339
138	11.50	0.63	0.494		0.154	(0.163)	0.340
139	11.58	0.57	0.442	(	0.153)	0.146	0.296
140	11.67	0.57	0.442	(	0.153)	0.146	0.296
141	11.75	0.57	0.442	(	0.152)	0.146	0.296
142	11.83	0.60	0.468		0.151	(0.154)	0.317
143	11.92	0.60	0.468		0.150	(0.154)	0.318
144	12.00	0.60	0.468		0.150	(0.154)	0.318
145	12.08	0.83	0.650		0.149	(0.214)	0.501
146	12.17	0.83	0.650		0.148	(0.214)	0.502
147	12.25	0.83	0.650		0.147	(0.214)	0.502
148	12.33	0.87	0.676		0.147	(0.223)	0.529
149	12.42	0.87	0.676		0.146	(0.223)	0.530
150	12.50	0.87	0.676		0.145	(0.223)	0.531
151	12.58	0.93	0.728		0.144	(0.240)	0.583
152	12.67	0.93	0.728		0.144	(0.240)	0.584
153	12.75	0.93	0.728		0.143	(0.240)	0.585
154	12.83	0.97	0.754		0.142	(0.249)	0.612
155	12.92	0.97	0.754		0.142	(0.249)	0.612
156	13.00	0.97	0.754		0.141	(0.249)	0.613
157	13.08	1.13	0.884		0.140	(0.292)	0.744
158	13.17	1.13	0.884		0.139	(0.292)	0.744
159	13.25	1.13	0.884		0.139	(0.292)	0.745
160	13.33	1.13	0.884		0.138	(0.292)	0.746
161	13.42	1.13	0.884		0.137	(0.292)	0.747
162	13.50	1.13	0.884		0.137	(0.292)	0.747
163	13.58	0.77	0.598		0.136	(0.197)	0.462
164	13.67	0.77	0.598		0.135	(0.197)	0.463
165	13.75	0.77	0.598		0.135	(0.197)	0.463
166	13.83	0.77	0.598		0.134	(0.197)	0.464
167	13.92	0.77	0.598		0.133	(0.197)	0.465
168	14.00	0.77	0.598		0.133	(0.197)	0.465
169	14.08	0.90	0.702		0.132	(0.232)	0.570
170	14.17	0.90	0.702		0.131	(0.232)	0.571
171	14.25	0.90	0.702		0.130	(0.232)	0.571
172	14.33	0.87	0.676		0.130	(0.223)	0.546
173	14.42	0.87	0.676		0.129	(0.223)	0.547
174	14.50	0.87	0.676		0.129	(0.223)	0.547
175	14.58	0.87	0.676		0.128	(0.223)	0.548
176	14.67	0.87	0.676		0.127	(0.223)	0.549
177	14.75	0.87	0.676		0.127	(0.223)	0.549
178	14.83	0.83	0.650		0.126	(0.214)	0.524
179	14.92	0.83	0.650		0.125	(0.214)	0.525
180	15.00	0.83	0.650		0.125	(0.214)	0.525
181	15.08	0.80	0.624		0.124	(0.206)	0.500
182	15.17	0.80	0.624		0.123	(0.206)	0.501
183	15.25	0.80	0.624		0.123	(0.206)	0.501
184	15.33	0.77	0.598		0.122	(0.197)	0.476
185	15.42	0.77	0.598		0.121	(0.197)	0.476
186	15.50	0.77	0.598		0.121	(0.197)	0.477
187	15.58	0.63	0.494		0.120	(0.163)	0.374
188	15.67	0.63	0.494		0.120	(0.163)	0.374
189	15.75	0.63	0.494		0.119	(0.163)	0.375
190	15.83	0.63	0.494		0.118	(0.163)	0.376
191	15.92	0.63	0.494		0.118	(0.163)	0.376
192	16.00	0.63	0.494		0.117	(0.163)	0.377
193	16.08	0.13	0.104	(	0.117)	0.034	0.070
194	16.17	0.13	0.104	(	0.116)	0.034	0.070

195	16.25	0.13	0.104	(0.115)	0.034	0.070
196	16.33	0.13	0.104	(0.115)	0.034	0.070
197	16.42	0.13	0.104	(0.114)	0.034	0.070
198	16.50	0.13	0.104	(0.114)	0.034	0.070
199	16.58	0.10	0.078	(0.113)	0.026	0.052
200	16.67	0.10	0.078	(0.112)	0.026	0.052
201	16.75	0.10	0.078	(0.112)	0.026	0.052
202	16.83	0.10	0.078	(0.111)	0.026	0.052
203	16.92	0.10	0.078	(0.111)	0.026	0.052
204	17.00	0.10	0.078	(0.110)	0.026	0.052
205	17.08	0.17	0.130	(0.110)	0.043	0.087
206	17.17	0.17	0.130	(0.109)	0.043	0.087
207	17.25	0.17	0.130	(0.109)	0.043	0.087
208	17.33	0.17	0.130	(0.108)	0.043	0.087
209	17.42	0.17	0.130	(0.107)	0.043	0.087
210	17.50	0.17	0.130	(0.107)	0.043	0.087
211	17.58	0.17	0.130	(0.106)	0.043	0.087
212	17.67	0.17	0.130	(0.106)	0.043	0.087
213	17.75	0.17	0.130	(0.105)	0.043	0.087
214	17.83	0.13	0.104	(0.105)	0.034	0.070
215	17.92	0.13	0.104	(0.104)	0.034	0.070
216	18.00	0.13	0.104	(0.104)	0.034	0.070
217	18.08	0.13	0.104	(0.103)	0.034	0.070
218	18.17	0.13	0.104	(0.103)	0.034	0.070
219	18.25	0.13	0.104	(0.102)	0.034	0.070
220	18.33	0.13	0.104	(0.102)	0.034	0.070
221	18.42	0.13	0.104	(0.101)	0.034	0.070
222	18.50	0.13	0.104	(0.101)	0.034	0.070
223	18.58	0.10	0.078	(0.100)	0.026	0.052
224	18.67	0.10	0.078	(0.100)	0.026	0.052
225	18.75	0.10	0.078	(0.099)	0.026	0.052
226	18.83	0.07	0.052	(0.099)	0.017	0.035
227	18.92	0.07	0.052	(0.098)	0.017	0.035
228	19.00	0.07	0.052	(0.098)	0.017	0.035
229	19.08	0.10	0.078	(0.097)	0.026	0.052
230	19.17	0.10	0.078	(0.097)	0.026	0.052
231	19.25	0.10	0.078	(0.097)	0.026	0.052
232	19.33	0.13	0.104	(0.096)	0.034	0.070
233	19.42	0.13	0.104	(0.096)	0.034	0.070
234	19.50	0.13	0.104	(0.095)	0.034	0.070
235	19.58	0.10	0.078	(0.095)	0.026	0.052
236	19.67	0.10	0.078	(0.094)	0.026	0.052
237	19.75	0.10	0.078	(0.094)	0.026	0.052
238	19.83	0.07	0.052	(0.093)	0.017	0.035
239	19.92	0.07	0.052	(0.093)	0.017	0.035
240	20.00	0.07	0.052	(0.093)	0.017	0.035
241	20.08	0.10	0.078	(0.092)	0.026	0.052
242	20.17	0.10	0.078	(0.092)	0.026	0.052
243	20.25	0.10	0.078	(0.091)	0.026	0.052
244	20.33	0.10	0.078	(0.091)	0.026	0.052
245	20.42	0.10	0.078	(0.091)	0.026	0.052
246	20.50	0.10	0.078	(0.090)	0.026	0.052
247	20.58	0.10	0.078	(0.090)	0.026	0.052
248	20.67	0.10	0.078	(0.089)	0.026	0.052
249	20.75	0.10	0.078	(0.089)	0.026	0.052
250	20.83	0.07	0.052	(0.089)	0.017	0.035
251	20.92	0.07	0.052	(0.088)	0.017	0.035
252	21.00	0.07	0.052	(0.088)	0.017	0.035
253	21.08	0.10	0.078	(0.088)	0.026	0.052
254	21.17	0.10	0.078	(0.087)	0.026	0.052
255	21.25	0.10	0.078	(0.087)	0.026	0.052
256	21.33	0.07	0.052	(0.087)	0.017	0.035
257	21.42	0.07	0.052	(0.086)	0.017	0.035
258	21.50	0.07	0.052	(0.086)	0.017	0.035
259	21.58	0.10	0.078	(0.086)	0.026	0.052
260	21.67	0.10	0.078	(0.085)	0.026	0.052
261	21.75	0.10	0.078	(0.085)	0.026	0.052
262	21.83	0.07	0.052	(0.085)	0.017	0.035
263	21.92	0.07	0.052	(0.085)	0.017	0.035
264	22.00	0.07	0.052	(0.084)	0.017	0.035
265	22.08	0.10	0.078	(0.084)	0.026	0.052
266	22.17	0.10	0.078	(0.084)	0.026	0.052
267	22.25	0.10	0.078	(0.083)	0.026	0.052
268	22.33	0.07	0.052	(0.083)	0.017	0.035
269	22.42	0.07	0.052	(0.083)	0.017	0.035

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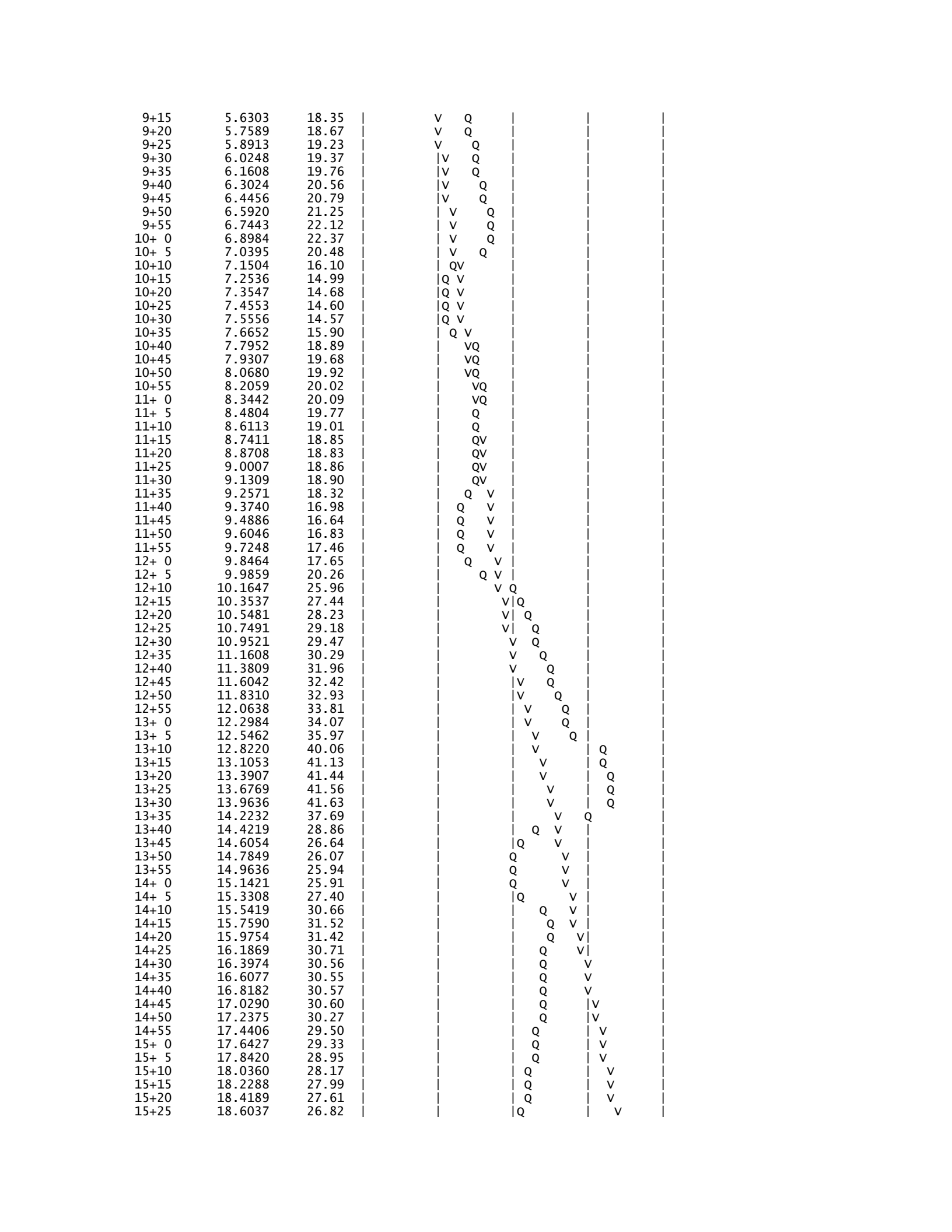
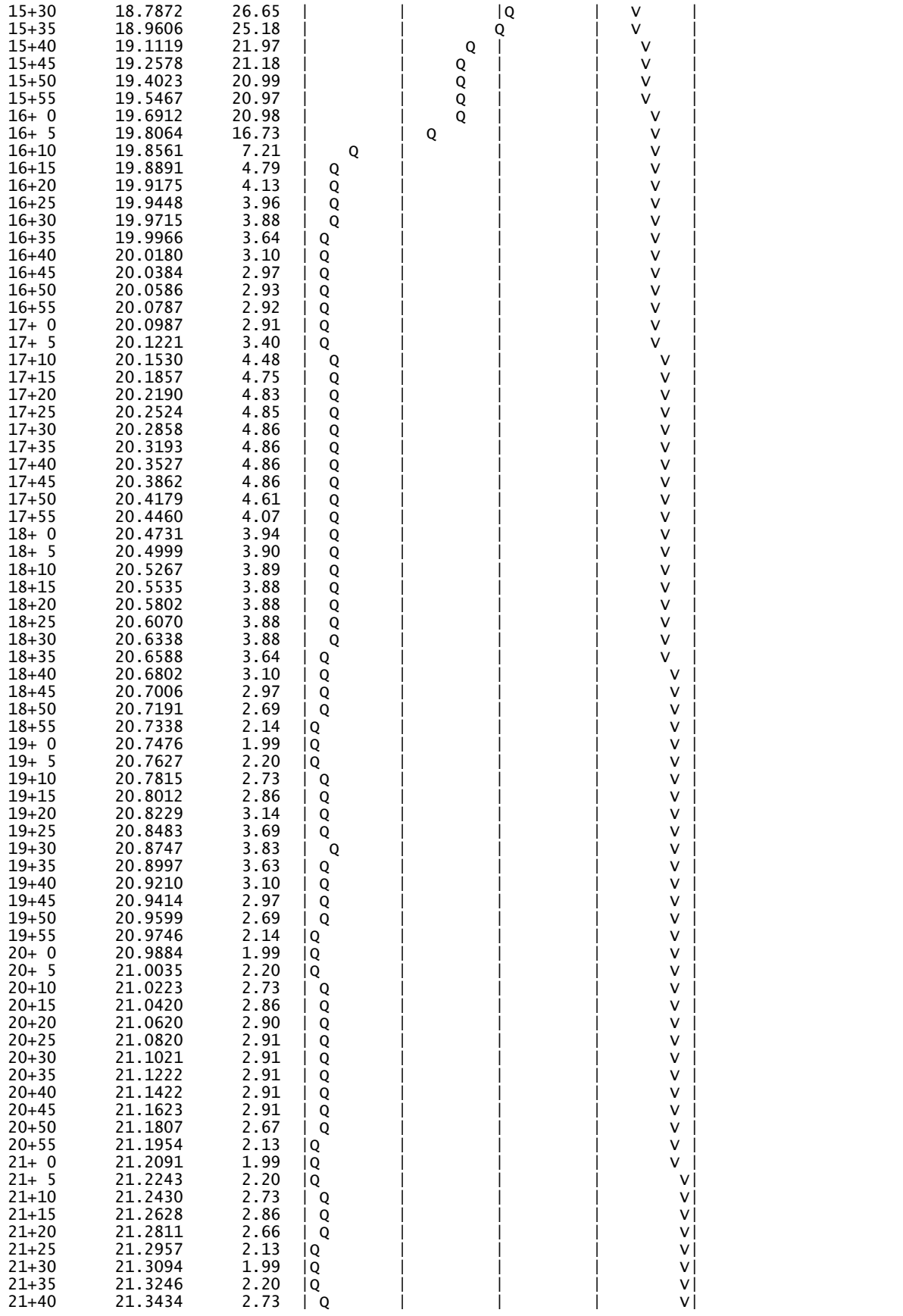
270  22.50     0.07      0.052       (  0.083)       0.017        0.035
271  22.58     0.07      0.052       (  0.082)       0.017        0.035
272  22.67     0.07      0.052       (  0.082)       0.017        0.035
273  22.75     0.07      0.052       (  0.082)       0.017        0.035
274  22.83     0.07      0.052       (  0.082)       0.017        0.035
275  22.92     0.07      0.052       (  0.082)       0.017        0.035
276  23.00     0.07      0.052       (  0.081)       0.017        0.035
277  23.08     0.07      0.052       (  0.081)       0.017        0.035
278  23.17     0.07      0.052       (  0.081)       0.017        0.035
279  23.25     0.07      0.052       (  0.081)       0.017        0.035
280  23.33     0.07      0.052       (  0.081)       0.017        0.035
281  23.42     0.07      0.052       (  0.080)       0.017        0.035
282  23.50     0.07      0.052       (  0.080)       0.017        0.035
283  23.58     0.07      0.052       (  0.080)       0.017        0.035
284  23.67     0.07      0.052       (  0.080)       0.017        0.035
285  23.75     0.07      0.052       (  0.080)       0.017        0.035
286  23.83     0.07      0.052       (  0.080)       0.017        0.035
287  23.92     0.07      0.052       (  0.080)       0.017        0.035
288  24.00     0.07      0.052       (  0.080)       0.017        0.035
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    56.7
      Flood volume = Effective rainfall      4.72(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =      21.8(Ac.Ft)
      Total soil loss =      1.78(In)
      Total soil loss =     8.186(Ac.Ft)
      Total rainfall =      6.50(In)
      Flood volume =      948067.8 Cubic Feet
      Total soil loss =      356594.8 Cubic Feet
      ---------------------------------------------------------------------
       Peak flow rate of this hydrograph =     41.628(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
 ---------------------------------------------------------------------------
   0+ 5       0.0033      0.49  Q        |         |         |         |
   0+10       0.0141      1.56  VQ       |         |         |         |
   0+15       0.0268      1.84  VQ       |         |         |         |
   0+20       0.0416      2.16  VQ       |         |         |         |
   0+25       0.0604      2.72  V Q      |         |         |         |
   0+30       0.0801      2.86  V Q      |         |         |         |
   0+35       0.1000      2.90  V Q      |         |         |         |
   0+40       0.1201      2.91  V Q      |         |         |         |
   0+45       0.1401      2.91  V Q      |         |         |         |
   0+50       0.1619      3.16  V Q      |         |         |         |
   0+55       0.1873      3.70  V Q      |         |         |         |
   1+ 0       0.2137      3.83  V  Q     |         |         |         |
   1+ 5       0.2387      3.63  V Q      |         |         |         |
   1+10       0.2601      3.10  V Q      |         |         |         |
   1+15       0.2805      2.97  V Q      |         |         |         |
   1+20       0.3006      2.93  V Q      |         |         |         |
   1+25       0.3207      2.92  V Q      |         |         |         |
   1+30       0.3408      2.91  V Q      |         |         |         |
   1+35       0.3609      2.91  V Q      |         |         |         |
   1+40       0.3809      2.91  V Q      |         |         |         |
   1+45       0.4010      2.91  V Q      |         |         |         |
   1+50       0.4228      3.16  V Q      |         |         |         |
   1+55       0.4482      3.70  V Q      |         |         |         |
   2+ 0       0.4746      3.83  V  Q     |         |         |         |
   2+ 5       0.5013      3.87  V  Q     |         |         |         |
   2+10       0.5280      3.88  V  Q     |         |         |         |
   2+15       0.5548      3.88  |V Q     |         |         |         |
   2+20       0.5815      3.88  |V Q     |         |         |         |
   2+25       0.6083      3.88  |V Q     |         |         |         |
   2+30       0.6350      3.88  |V Q     |         |         |         |
   2+35       0.6634      4.13  |V Q     |         |         |         |
   2+40       0.6956      4.67  |V Q     |         |         |         |
   2+45       0.7287      4.80  |V Q     |         |         |         |
   2+50       0.7620      4.84  |V Q     |         |         |         |
   2+55       0.7954      4.85  |V Q     |         |         |         |
```

3+ 0	0.8289	4.86	V Q			
3+ 5	0.8623	4.86	V Q			
3+10	0.8958	4.86	V Q			
3+15	0.9292	4.86	V Q			
3+20	0.9627	4.86	V Q			
3+25	0.9961	4.86	V Q			
3+30	1.0296	4.86	V Q			
3+35	1.0630	4.86	V Q			
3+40	1.0965	4.86	VQ			
3+45	1.1299	4.86	VQ			
3+50	1.1650	5.10	V Q			
3+55	1.2038	5.64	V Q			
4+ 0	1.2436	5.78	V Q			
4+ 5	1.2837	5.81	V Q			
4+10	1.3238	5.82	V Q			
4+15	1.3639	5.83	V Q			
4+20	1.4057	6.07	V Q			
4+25	1.4512	6.61	V Q			
4+30	1.4977	6.75	V Q			
4+35	1.5444	6.78	V Q			
4+40	1.5912	6.79	V Q			
4+45	1.6380	6.80	V Q			
4+50	1.6865	7.04	V Q			
4+55	1.7388	7.58	V Q			
5+ 0	1.7919	7.72	V Q			
5+ 5	1.8420	7.27	V Q			
5+10	1.8847	6.20	VQ			
5+15	1.9255	5.93	VQ			
5+20	1.9675	6.10	VQ			
5+25	2.0131	6.62	V Q			
5+30	2.0596	6.75	V Q			
5+35	2.1080	7.03	V Q			
5+40	2.1602	7.58	V Q			
5+45	2.2133	7.72	V Q			
5+50	2.2667	7.76	V Q			
5+55	2.3202	7.77	V Q			
6+ 0	2.3737	7.77	V Q			
6+ 5	2.4289	8.01	V Q			
6+10	2.4878	8.55	V Q			
6+15	2.5477	8.69	V Q			
6+20	2.6078	8.73	V Q			
6+25	2.6679	8.74	V Q			
6+30	2.7281	8.74	VQ			
6+35	2.7900	8.98	V Q			
6+40	2.8556	9.52	V Q			
6+45	2.9221	9.66	V Q			
6+50	2.9889	9.70	V Q			
6+55	3.0558	9.71	V Q			
7+ 0	3.1227	9.71	V Q			
7+ 5	3.1896	9.71	V Q			
7+10	3.2565	9.71	V Q			
7+15	3.3234	9.71	VQ			
7+20	3.3919	9.96	VQ			
7+25	3.4642	10.49	V Q			
7+30	3.5374	10.63	V Q			
7+35	3.6126	10.91	V Q			
7+40	3.6915	11.46	V Q			
7+45	3.7714	11.60	V Q			
7+50	3.8533	11.88	V Q			
7+55	3.9389	12.43	V Q			
8+ 0	4.0255	12.57	V Q			
8+ 5	4.1157	13.10	V Q			
8+10	4.2134	14.19	V Q			
8+15	4.3130	14.47	V Q			
8+20	4.4132	14.54	V Q			
8+25	4.5135	14.56	V Q			
8+30	4.6138	14.57	V Q			
8+35	4.7158	14.81	V Q			
8+40	4.8215	15.35	V Q			
8+45	4.9282	15.49	V Q			
8+50	5.0368	15.77	V Q			
8+55	5.1492	16.32	V Q			
9+ 0	5.2625	16.46	V Q			
9+ 5	5.3795	16.98	V Q			
9+10	5.5040	18.07	V Q			





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   21+45      21.3631      2.86  | Q       |         |         |        V|
   21+50      21.3814      2.66  | Q       |         |         |        V|
   21+55      21.3960      2.13  |Q        |         |         |        V|
   22+ 0      21.4098      1.99  |Q        |         |         |        V|
   22+ 5      21.4249      2.20  |Q        |         |         |        V|
   22+10      21.4437      2.73  | Q       |         |         |        V|
   22+15      21.4634      2.86  | Q       |         |         |        V|
   22+20      21.4817      2.66  | Q       |         |         |        V|
   22+25      21.4964      2.13  |Q        |         |         |        V|
   22+30      21.5101      1.99  |Q        |         |         |        V|
   22+35      21.5236      1.96  |Q        |         |         |        V|
   22+40      21.5370      1.95  |Q        |         |         |        V|
   22+45      21.5504      1.94  |Q        |         |         |        V|
   22+50      21.5638      1.94  |Q        |         |         |        V|
   22+55      21.5771      1.94  |Q        |         |         |        V|
   23+ 0      21.5905      1.94  |Q        |         |         |        V|
   23+ 5      21.6039      1.94  |Q        |         |         |        V|
   23+10      21.6173      1.94  |Q        |         |         |        V|
   23+15      21.6306      1.94  |Q        |         |         |        V|
   23+20      21.6440      1.94  |Q        |         |         |        V|
   23+25      21.6574      1.94  |Q        |         |         |        V|
   23+30      21.6708      1.94  |Q        |         |         |        V|
   23+35      21.6842      1.94  |Q        |         |         |        V|
   23+40      21.6975      1.94  |Q        |         |         |        V|
   23+45      21.7109      1.94  |Q        |         |         |        V|
   23+50      21.7243      1.94  |Q        |         |         |        V|
   23+55      21.7377      1.94  |Q        |         |         |        V|
   24+ 0      21.7510      1.94  |Q        |         |         |        V|
   24+ 5      21.7611      1.46  |Q        |         |         |        V|
   24+10      21.7637      0.38  Q         |         |         |        V|
   24+15      21.7644      0.10  Q         |         |         |        V|
   24+20      21.7646      0.03  Q         |         |         |        V|
   24+25      21.7646      0.01  Q         |         |         |         V
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STAGE-STORAGE/OUTFLOW TABLE

Building 1 CMP Chambers - Stage/Storage/Outflow Table
W.O.# 21-0044

Basin Information: Infiltration Basin			2-YEAR	ORIFICE	5-YEAR	WEIR	10/100-YEAR	WEIR
Tributary Area:	42.9	AC	Q EXISTING	3.6	Q EXISTING	9	Q EXISTING	30.8/59.1
DCV=	103,000	CF						
Bottom Elevation:	2476.60	FT	Opening (in)	4	L(ft)	1.5	L(ft)	7
			# of Orifices	4	C	3	C	3
Bottom Area:	84,533	SF	Orifice Area (sf)	0.0873				
Bottom Slope:	0	%	Orifice Diameter (ft)	0.3333				
Constant Infiltration:	0	cfs	Total Area (sf)	0.3491				
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$			G (ft/s^2)	32.2				
Q_{WEIR}= C*L*H$^{3/2}$			Cd	0.66				
			Invert H (ft)	0	Invert H (ft)	5.82	Invert H (ft)	6.96

#	Elevation (ft)	Depth (ft)	Storage (cf)	Storage (ac-ft)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	Total Q (cfs)	Total Q (cfs)	Total Q (cfs)	Comments
											2 Year Total	5 Year Total	10/100 Year Total	
1	**2476.6**	**0**	**0.00**	**0.000**							**0.00**	**0.00**	**0.00**	**Bottom of Chambers**
2	**2479.00**	**2.4**	**1036.80**	**0.024**							**0.00**	**0.00**	**0.00**	**Vbmp/Invert of 2 Yr Orifice**
3	**2479.2**	**2.6**	**13202.10**	**0.303**	**0.00**						**0.00**	**0.00**	**0.00**	**Middle of 2 Yr Orifice**
4	2479.6	3	38230.02	0.878	0.40	1.17					1.17	1.17	1.17	
5	2480.1	3.5	70437.53	1.617	0.90	1.75					1.75	1.75	1.75	
6	2480.6	4	103163.88	2.368	1.40	2.19					2.19	2.19	2.19	
7	2481.1	4.5	135890.23	3.120	1.90	2.55					2.55	2.55	2.55	
8	2481.6	5	168097.74	3.859	2.40	2.86					2.86	2.86	2.86	
9	2482.1	5.5	199241.49	4.574	2.90	3.15					3.15	3.15	3.15	
10	**2482.42**	**5.82**	**218105.9573**	**5.007**	**3.22**	**3.317583**	**0**				**3.32**	**3.32**	**3.32**	**Top of 2 Yr Ponding/Inv 5 Yr**
11	2482.6	6	228717.22	5.251	3.40	3.41	0.18	0.34			3.41	3.75	3.75	
12	2483.1	6.5	255808.19	5.873	3.90	3.65	0.68	2.52			3.65	6.17	6.17	
13	**2483.56**	**6.96**	**277677.9073**	**6.375**	**4.36**	**3.86**	**1.14**	**5.48**	**0**		**3.86**	**9.34**	**9.34**	**Top of 5 Yr Ponding/Inv 10/100 Yr**
14	2483.6	7	279579.62	6.418	4.40	3.88	1.18	5.77	0.04	0.17	3.88	9.65	9.81	
15	**2483.87**	**7.27**	**289849.46**	**6.654**	**4.67**	**4.00**	**1.45**	**7.86**	**0.31**	**3.62**	**4.00**	**11.85**	**15.48**	**Top of 10 Yr Ponding**
16	2484.1	7.5	298597.84	6.855	4.90	4.09	1.68	9.80	0.54	8.33	4.09	13.89	22.22	
17	**2484.59**	**7.99**	**309113.1544**	**7.096**	**5.39**	**4.29**	**2.17**	**14.38**	**1.03**	**21.95**	**4.29**	**18.68**	**40.63**	**Top of 100 Yr Ponding**
18	**2484.6**	**8**	**309327.75**	**7.101**	**5.40**	**4.30**	**2.18**	**14.48**	**1.04**	**22.27**	**4.30**	**18.78**	**41.05**	**Top of Chambers**

BASIN ROUTING
2-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

21-0044 EXETER INDUSTRIAL BLDG 1
2-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST2YR242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 12.701 (CFS)
Total volume = 7.718 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

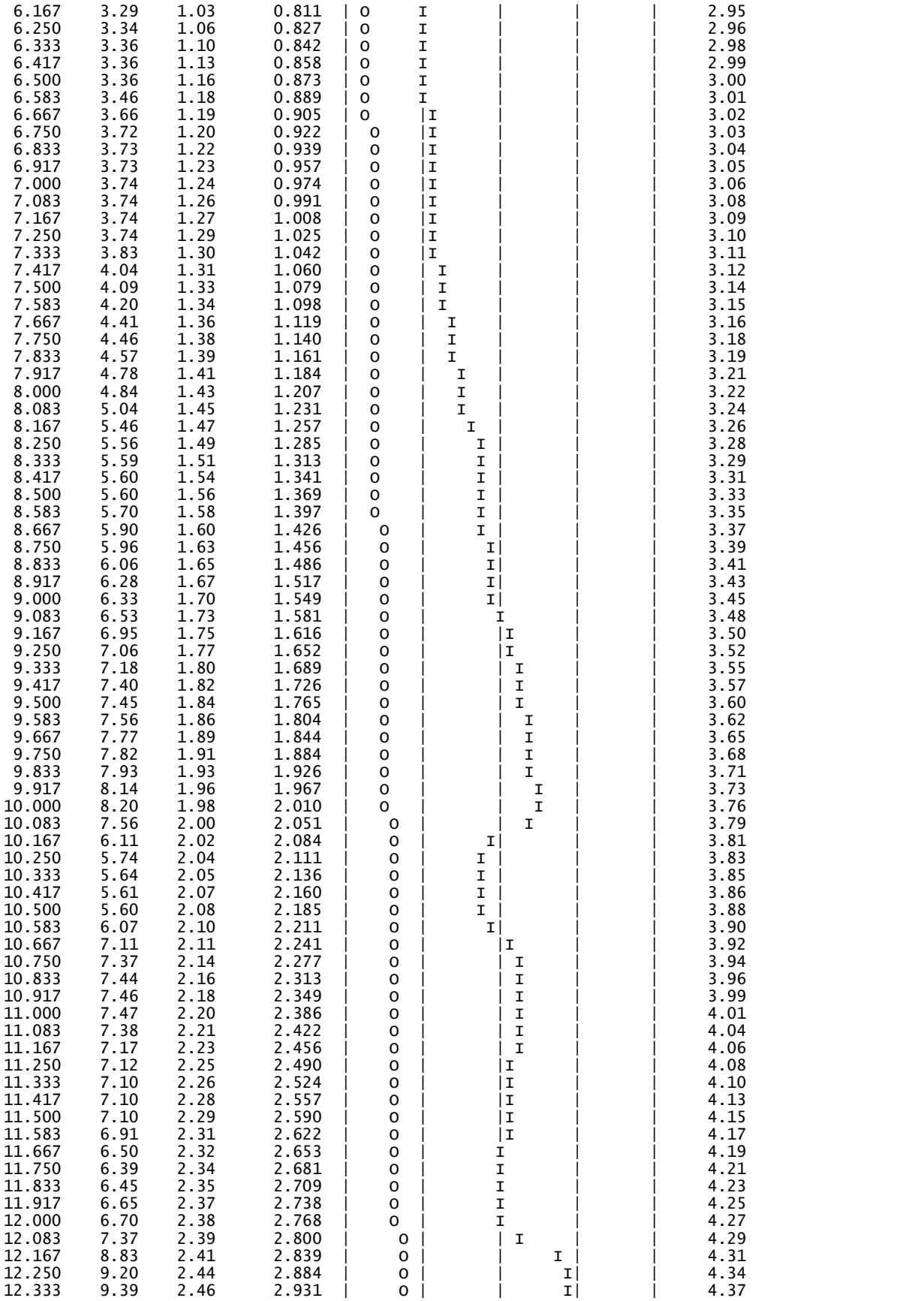
Depth vs. Storage and Depth vs. Discharge data:

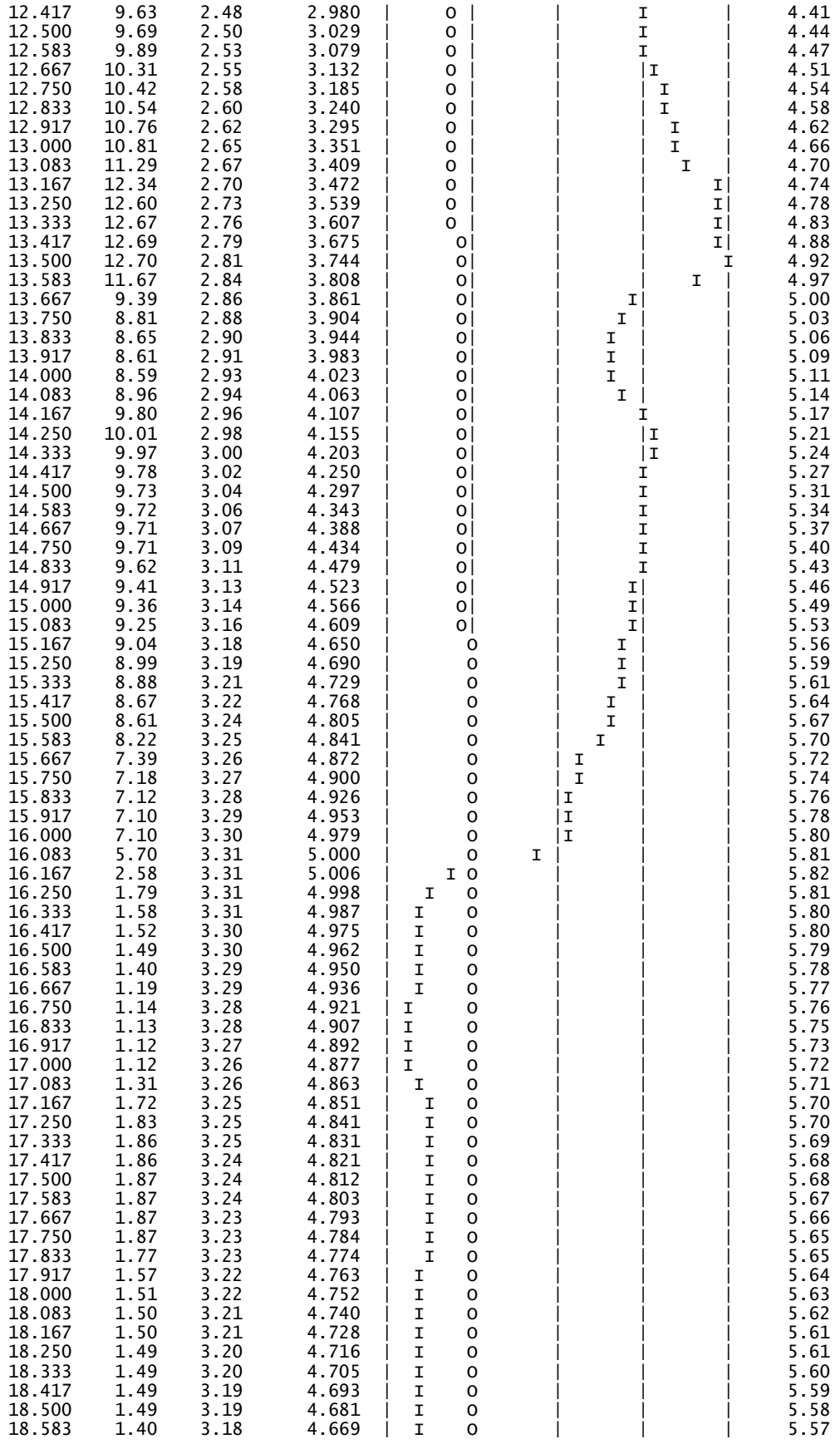
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
6.000	5.251	3.409	5.239	5.263
6.500	5.873	3.651	5.860	5.886
7.000	6.418	3.878	6.405	6.431
7.500	6.855	4.093	6.841	6.869
8.000	7.101	4.296	7.086	7.116

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	3.2	6.35	9.53	12.70	Depth (Ft.)
0.083	0.19	0.00	0.001	O	|	|	|	|	0.01
0.167	0.60	0.00	0.003	OI	|	|	|	|	0.03
0.250	0.71	0.00	0.008	OI	|	|	|	|	0.07
0.333	0.83	0.00	0.013	O I	|	|	|	|	0.11
0.417	1.04	0.00	0.020	O I	|	|	|	|	0.17
0.500	1.10	0.00	0.027	O I	|	|	|	|	0.23
0.583	1.12	0.00	0.035	O I	|	|	|	|	0.30
0.667	1.12	0.00	0.042	O I	|	|	|	|	0.36
0.750	1.12	0.00	0.050	O I	|	|	|	|	0.43
0.833	1.21	0.00	0.058	O I	|	|	|	|	0.50
0.917	1.42	0.00	0.067	O I	|	|	|	|	0.58
1.000	1.47	0.00	0.077	O I	|	|	|	|	0.66
1.083	1.40	0.00	0.087	O I	|	|	|	|	0.75
1.167	1.19	0.00	0.096	O I	|	|	|	|	0.82
1.250	1.14	0.00	0.104	O I	|	|	|	|	0.89
1.333	1.13	0.00	0.112	O I	|	|	|	|	0.96
1.417	1.12	0.00	0.119	O I	|	|	|	|	1.03
1.500	1.12	0.00	0.127	O I	|	|	|	|	1.09
1.583	1.12	0.00	0.135	O I	|	|	|	|	1.16
1.667	1.12	0.00	0.143	O I	|	|	|	|	1.22
1.750	1.12	0.00	0.150	O I	|	|	|	|	1.29
1.833	1.21	0.00	0.158	O I	|	|	|	|	1.36
1.917	1.42	0.00	0.167	O I	|	|	|	|	1.44
2.000	1.47	0.00	0.177	O I	|	|	|	|	1.52
2.083	1.49	0.00	0.188	O I	|	|	|	|	1.61
2.167	1.49	0.00	0.198	O I	|	|	|	|	1.70
2.250	1.49	0.00	0.208	O I	|	|	|	|	1.79
2.333	1.49	0.00	0.218	O I	|	|	|	|	1.87
2.417	1.49	0.00	0.229	O I	|	|	|	|	1.96
2.500	1.49	0.00	0.239	O I	|	|	|	|	2.05
2.583	1.59	0.00	0.250	O I	|	|	|	|	2.14
2.667	1.80	0.00	0.261	O I	|	|	|	|	2.24
2.750	1.85	0.00	0.274	O I	|	|	|	|	2.35
2.833	1.86	0.00	0.287	O I	|	|	|	|	2.46
2.917	1.87	0.00	0.299	O I	|	|	|	|	2.57
3.000	1.87	0.02	0.312	O I	|	|	|	|	2.61
3.083	1.87	0.05	0.325	O I	|	|	|	|	2.62
3.167	1.87	0.07	0.337	O I	|	|	|	|	2.62
3.250	1.87	0.10	0.350	O I	|	|	|	|	2.63
3.333	1.87	0.12	0.362	O I	|	|	|	|	2.64
3.417	1.87	0.14	0.374	O I	|	|	|	|	2.65
3.500	1.87	0.17	0.385	O I	|	|	|	|	2.66
3.583	1.87	0.19	0.397	O I	|	|	|	|	2.67
3.667	1.87	0.22	0.409	O I	|	|	|	|	2.67
3.750	1.87	0.24	0.420	O I	|	|	|	|	2.68
3.833	1.96	0.26	0.431	O I	|	|	|	|	2.69
3.917	2.17	0.29	0.444	O I	|	|	|	|	2.70
4.000	2.22	0.31	0.457	O I	|	|	|	|	2.71
4.083	2.24	0.34	0.470	O I	|	|	|	|	2.72
4.167	2.24	0.37	0.483	O I	|	|	|	|	2.73
4.250	2.24	0.39	0.496	O I	|	|	|	|	2.73
4.333	2.33	0.42	0.509	|O I	|	|	|	|	2.74
4.417	2.54	0.45	0.522	|O I	|	|	|	|	2.75
4.500	2.60	0.48	0.537	|O I	|	|	|	|	2.76
4.583	2.61	0.51	0.551	|O I	|	|	|	|	2.77
4.667	2.61	0.53	0.566	|O I	|	|	|	|	2.78
4.750	2.61	0.56	0.580	|O I	|	|	|	|	2.79
4.833	2.71	0.59	0.594	|O I	|	|	|	|	2.80
4.917	2.92	0.62	0.610	|O I|	|	|	|	|	2.81
5.000	2.97	0.66	0.625	|O I|	|	|	|	|	2.82
5.083	2.80	0.69	0.641	|O I|	|	|	|	|	2.83
5.167	2.39	0.71	0.654	|O I |	|	|	|	|	2.84
5.250	2.28	0.74	0.665	|O I |	|	|	|	|	2.85
5.333	2.35	0.76	0.676	|O I |	|	|	|	|	2.86
5.417	2.55	0.78	0.687	|O I |	|	|	|	|	2.87
5.500	2.60	0.81	0.699	| O I |	|	|	|	|	2.88
5.583	2.70	0.83	0.712	| O I |	|	|	|	|	2.88
5.667	2.91	0.86	0.725	| O I|	|	|	|	|	2.89
5.750	2.97	0.89	0.740	| O I|	|	|	|	|	2.90
5.833	2.98	0.92	0.754	| O I|	|	|	|	|	2.91
5.917	2.99	0.95	0.768	| O I|	|	|	|	|	2.92
6.000	2.99	0.97	0.782	| O I|	|	|	|	|	2.93
6.083	3.08	1.00	0.796	| O I|	|	|	|	|	2.94





18.667	1.19	3.18	4.656	| I O |	|	|	|	5.56
18.750	1.14	3.17	4.643	| I O|	|	|	|	5.55
18.833	1.03	3.17	4.628	| I O|	|	|	|	5.54
18.917	0.82	3.16	4.613	| I O|	|	|	|	5.53
19.000	0.77	3.16	4.596	|I O|	|	|	|	5.52
19.083	0.85	3.15	4.580	| I O|	|	|	|	5.50
19.167	1.05	3.14	4.565	| I O|	|	|	|	5.49
19.250	1.10	3.14	4.551	| I O|	|	|	|	5.48
19.333	1.21	3.13	4.537	| I O|	|	|	|	5.47
19.417	1.42	3.13	4.525	| I O|	|	|	|	5.47
19.500	1.47	3.12	4.513	| I O|	|	|	|	5.46
19.583	1.40	3.12	4.502	| I O|	|	|	|	5.45
19.667	1.19	3.11	4.489	| I O|	|	|	|	5.44
19.750	1.14	3.11	4.476	| I O|	|	|	|	5.43
19.833	1.03	3.10	4.462	| I O|	|	|	|	5.42
19.917	0.82	3.10	4.447	| I O|	|	|	|	5.41
20.000	0.77	3.09	4.431	|I O|	|	|	|	5.40
20.083	0.85	3.08	4.415	| I O|	|	|	|	5.39
20.167	1.05	3.08	4.400	| I O|	|	|	|	5.38
20.250	1.10	3.07	4.387	| I O|	|	|	|	5.37
20.333	1.12	3.07	4.373	| I O|	|	|	|	5.36
20.417	1.12	3.06	4.360	| I O|	|	|	|	5.35
20.500	1.12	3.06	4.346	| I O|	|	|	|	5.34
20.583	1.12	3.05	4.333	| I O|	|	|	|	5.33
20.667	1.12	3.05	4.320	| I O|	|	|	|	5.32
20.750	1.12	3.04	4.307	| I O|	|	|	|	5.31
20.833	1.03	3.04	4.293	| I O|	|	|	|	5.30
20.917	0.82	3.03	4.278	| I O|	|	|	|	5.29
21.000	0.77	3.02	4.263	|I O|	|	|	|	5.28
21.083	0.85	3.02	4.248	| I O|	|	|	|	5.27
21.167	1.05	3.01	4.234	| I O|	|	|	|	5.26
21.250	1.10	3.01	4.220	| I O|	|	|	|	5.25
21.333	1.02	3.00	4.207	| I O|	|	|	|	5.24
21.417	0.82	3.00	4.193	| I O|	|	|	|	5.23
21.500	0.77	2.99	4.177	|I O|	|	|	|	5.22
21.583	0.85	2.98	4.162	| I O|	|	|	|	5.21
21.667	1.05	2.98	4.148	| I O|	|	|	|	5.20
21.750	1.10	2.97	4.135	| I O|	|	|	|	5.19
21.833	1.02	2.97	4.122	| I O|	|	|	|	5.18
21.917	0.82	2.96	4.108	| I O|	|	|	|	5.17
22.000	0.77	2.96	4.093	|I O|	|	|	|	5.16
22.083	0.85	2.95	4.078	| I O|	|	|	|	5.15
22.167	1.05	2.95	4.065	| I O|	|	|	|	5.14
22.250	1.10	2.94	4.052	| I O|	|	|	|	5.13
22.333	1.02	2.94	4.039	| I O|	|	|	|	5.13
22.417	0.82	2.93	4.025	| I O|	|	|	|	5.12
22.500	0.77	2.92	4.010	|I O|	|	|	|	5.11
22.583	0.75	2.92	3.995	|I O|	|	|	|	5.10
22.667	0.75	2.91	3.980	|I O|	|	|	|	5.08
22.750	0.75	2.91	3.966	|I O|	|	|	|	5.07
22.833	0.75	2.90	3.951	|I O|	|	|	|	5.06
22.917	0.75	2.89	3.936	|I O|	|	|	|	5.05
23.000	0.75	2.89	3.921	|I O|	|	|	|	5.04
23.083	0.75	2.88	3.906	|I O|	|	|	|	5.03
23.167	0.75	2.88	3.892	|I O|	|	|	|	5.02
23.250	0.75	2.87	3.877	|I O|	|	|	|	5.01
23.333	0.75	2.87	3.862	|I O|	|	|	|	5.00
23.417	0.75	2.86	3.848	|I O|	|	|	|	4.99
23.500	0.75	2.85	3.833	|I O|	|	|	|	4.98
23.583	0.75	2.85	3.819	|I O|	|	|	|	4.97
23.667	0.75	2.84	3.804	|I O|	|	|	|	4.96
23.750	0.75	2.83	3.790	|I O|	|	|	|	4.95
23.833	0.75	2.83	3.776	|I O|	|	|	|	4.94
23.917	0.75	2.82	3.761	|I O|	|	|	|	4.93
24.000	0.75	2.82	3.747	|I O|	|	|	|	4.92
24.083	0.56	2.81	3.732	|I O|	|	|	|	4.91
24.167	0.15	2.80	3.715	I O|	|	|	|	4.90
24.250	0.04	2.79	3.697	I O|	|	|	|	4.89
24.333	0.01	2.79	3.678	I O|	|	|	|	4.88
24.417	0.00	2.78	3.658	I O |	|	|	|	4.86
24.500	0.00	2.77	3.639	I O |	|	|	|	4.85
24.583	0.00	2.76	3.620	I O |	|	|	|	4.84
24.667	0.00	2.75	3.601	I O |	|	|	|	4.83
24.750	0.00	2.75	3.582	I O |	|	|	|	4.81
24.833	0.00	2.74	3.564	I O |	|	|	|	4.80

24.917	0.00	2.73	3.545	I	o	|	|	|	4.79
25.000	0.00	2.72	3.526	I	o	|	|	|	4.77
25.083	0.00	2.71	3.507	I	o	|	|	|	4.76
25.167	0.00	2.71	3.489	I	o	|	|	|	4.75
25.250	0.00	2.70	3.470	I	o	|	|	|	4.74
25.333	0.00	2.69	3.451	I	o	|	|	|	4.72
25.417	0.00	2.68	3.433	I	o	|	|	|	4.71
25.500	0.00	2.67	3.414	I	o	|	|	|	4.70
25.583	0.00	2.67	3.396	I	o	|	|	|	4.69
25.667	0.00	2.66	3.378	I	o	|	|	|	4.67
25.750	0.00	2.65	3.359	I	o	|	|	|	4.66
25.833	0.00	2.64	3.341	I	o	|	|	|	4.65
25.917	0.00	2.63	3.323	I	o	|	|	|	4.64
26.000	0.00	2.63	3.305	I	o	|	|	|	4.63
26.083	0.00	2.62	3.287	I	o	|	|	|	4.61
26.167	0.00	2.61	3.269	I	o	|	|	|	4.60
26.250	0.00	2.60	3.251	I	o	|	|	|	4.59
26.333	0.00	2.60	3.233	I	o	|	|	|	4.58
26.417	0.00	2.59	3.215	I	o	|	|	|	4.56
26.500	0.00	2.58	3.197	I	o	|	|	|	4.55
26.583	0.00	2.57	3.180	I	o	|	|	|	4.54
26.667	0.00	2.57	3.162	I	o	|	|	|	4.53
26.750	0.00	2.56	3.144	I	o	|	|	|	4.52
26.833	0.00	2.55	3.127	I	o	|	|	|	4.50
26.917	0.00	2.54	3.109	I	o	|	|	|	4.49
27.000	0.00	2.53	3.092	I	o	|	|	|	4.48
27.083	0.00	2.53	3.074	I	o	|	|	|	4.47
27.167	0.00	2.52	3.057	I	o	|	|	|	4.46
27.250	0.00	2.51	3.040	I	o	|	|	|	4.45
27.333	0.00	2.50	3.022	I	o	|	|	|	4.44
27.417	0.00	2.49	3.005	I	o	|	|	|	4.42
27.500	0.00	2.48	2.988	I	o	|	|	|	4.41
27.583	0.00	2.48	2.971	I	o	|	|	|	4.40
27.667	0.00	2.47	2.954	I	o	|	|	|	4.39
27.750	0.00	2.46	2.937	I	o	|	|	|	4.38
27.833	0.00	2.45	2.920	I	o	|	|	|	4.37
27.917	0.00	2.44	2.903	I	o	|	|	|	4.36
28.000	0.00	2.44	2.886	I	o	|	|	|	4.34
28.083	0.00	2.43	2.870	I	o	|	|	|	4.33
28.167	0.00	2.42	2.853	I	o	|	|	|	4.32
28.250	0.00	2.41	2.836	I	o	|	|	|	4.31
28.333	0.00	2.40	2.820	I	o	|	|	|	4.30
28.417	0.00	2.40	2.803	I	o	|	|	|	4.29
28.500	0.00	2.39	2.787	I	o	|	|	|	4.28
28.583	0.00	2.38	2.770	I	o	|	|	|	4.27
28.667	0.00	2.37	2.754	I	o	|	|	|	4.26
28.750	0.00	2.36	2.737	I	o	|	|	|	4.25
28.833	0.00	2.36	2.721	I	o	|	|	|	4.23
28.917	0.00	2.35	2.705	I	o	|	|	|	4.22
29.000	0.00	2.34	2.689	I	o	|	|	|	4.21
29.083	0.00	2.33	2.673	I	o	|	|	|	4.20
29.167	0.00	2.33	2.657	I	o	|	|	|	4.19
29.250	0.00	2.32	2.641	I	o	|	|	|	4.18
29.333	0.00	2.31	2.625	I	o	|	|	|	4.17
29.417	0.00	2.30	2.609	I	o	|	|	|	4.16
29.500	0.00	2.30	2.593	I	o	|	|	|	4.15
29.583	0.00	2.29	2.577	I	o	|	|	|	4.14
29.667	0.00	2.28	2.562	I	o	|	|	|	4.13
29.750	0.00	2.27	2.546	I	o	|	|	|	4.12
29.833	0.00	2.27	2.530	I	o	|	|	|	4.11
29.917	0.00	2.26	2.515	I	o	|	|	|	4.10
30.000	0.00	2.25	2.499	I	o	|	|	|	4.09
30.083	0.00	2.24	2.484	I	o	|	|	|	4.08
30.167	0.00	2.24	2.468	I	o	|	|	|	4.07
30.250	0.00	2.23	2.453	I	o	|	|	|	4.06
30.333	0.00	2.22	2.438	I	o	|	|	|	4.05
30.417	0.00	2.21	2.422	I	o	|	|	|	4.04
30.500	0.00	2.21	2.407	I	o	|	|	|	4.03
30.583	0.00	2.20	2.392	I	o	|	|	|	4.02
30.667	0.00	2.19	2.377	I	o	|	|	|	4.01
30.750	0.00	2.18	2.362	I	o	|	|	|	4.00
30.833	0.00	2.18	2.347	I	o	|	|	|	3.99
30.917	0.00	2.17	2.332	I	o	|	|	|	3.98
31.000	0.00	2.16	2.317	I	o	|	|	|	3.97
31.083	0.00	2.15	2.302	I	o	|	|	|	3.96

31.167	0.00	2.14	2.287	I	o	|	|	|	3.95
31.250	0.00	2.13	2.272	I	o	|	|	|	3.94
31.333	0.00	2.12	2.258	I	o	|	|	|	3.93
31.417	0.00	2.12	2.243	I	o	|	|	|	3.92
31.500	0.00	2.11	2.229	I	o	|	|	|	3.91
31.583	0.00	2.10	2.214	I	o	|	|	|	3.90
31.667	0.00	2.09	2.200	I	o	|	|	|	3.89
31.750	0.00	2.08	2.185	I	o	|	|	|	3.88
31.833	0.00	2.07	2.171	I	o	|	|	|	3.87
31.917	0.00	2.07	2.157	I	o	|	|	|	3.86
32.000	0.00	2.06	2.143	I	o	|	|	|	3.85
32.083	0.00	2.05	2.128	I	o	|	|	|	3.84
32.167	0.00	2.04	2.114	I	o	|	|	|	3.83
32.250	0.00	2.03	2.100	I	o	|	|	|	3.82
32.333	0.00	2.03	2.086	I	o	|	|	|	3.81
32.417	0.00	2.02	2.072	I	o	|	|	|	3.80
32.500	0.00	2.01	2.059	I	o	|	|	|	3.79
32.583	0.00	2.00	2.045	I	o	|	|	|	3.78
32.667	0.00	1.99	2.031	I	o	|	|	|	3.78
32.750	0.00	1.99	2.017	I	o	|	|	|	3.77
32.833	0.00	1.98	2.004	I	o	|	|	|	3.76
32.917	0.00	1.97	1.990	I	o	|	|	|	3.75
33.000	0.00	1.96	1.977	I	o	|	|	|	3.74
33.083	0.00	1.95	1.963	I	o	|	|	|	3.73
33.167	0.00	1.95	1.950	I	o	|	|	|	3.72
33.250	0.00	1.94	1.936	I	o	|	|	|	3.71
33.333	0.00	1.93	1.923	I	o	|	|	|	3.70
33.417	0.00	1.92	1.910	I	o	|	|	|	3.69
33.500	0.00	1.92	1.896	I	o	|	|	|	3.69
33.583	0.00	1.91	1.883	I	o	|	|	|	3.68
33.667	0.00	1.90	1.870	I	o	|	|	|	3.67
33.750	0.00	1.89	1.857	I	o	|	|	|	3.66
33.833	0.00	1.89	1.844	I	o	|	|	|	3.65
33.917	0.00	1.88	1.831	I	o	|	|	|	3.64
34.000	0.00	1.87	1.818	I	o	|	|	|	3.63
34.083	0.00	1.86	1.805	I	o	|	|	|	3.63
34.167	0.00	1.86	1.793	I	o	|	|	|	3.62
34.250	0.00	1.85	1.780	I	o	|	|	|	3.61
34.333	0.00	1.84	1.767	I	o	|	|	|	3.60
34.417	0.00	1.83	1.754	I	o	|	|	|	3.59
34.500	0.00	1.83	1.742	I	o	|	|	|	3.58
34.583	0.00	1.82	1.729	I	o	|	|	|	3.57
34.667	0.00	1.81	1.717	I	o	|	|	|	3.57
34.750	0.00	1.80	1.704	I	o	|	|	|	3.56
34.833	0.00	1.80	1.692	I	o	|	|	|	3.55
34.917	0.00	1.79	1.680	I	o	|	|	|	3.54
35.000	0.00	1.78	1.667	I	o	|	|	|	3.53
35.083	0.00	1.78	1.655	I	o	|	|	|	3.53
35.167	0.00	1.77	1.643	I	o	|	|	|	3.52
35.250	0.00	1.76	1.631	I	o	|	|	|	3.51
35.333	0.00	1.75	1.619	I	o	|	|	|	3.50
35.417	0.00	1.75	1.606	I	o	|	|	|	3.49
35.500	0.00	1.74	1.595	I	o	|	|	|	3.48
35.583	0.00	1.73	1.583	I	o	|	|	|	3.48
35.667	0.00	1.72	1.571	I	o	|	|	|	3.47
35.750	0.00	1.71	1.559	I	o	|	|	|	3.46
35.833	0.00	1.70	1.547	I	o	|	|	|	3.45
35.917	0.00	1.69	1.536	I	o	|	|	|	3.44
36.000	0.00	1.68	1.524	I	o	|	|	|	3.44
36.083	0.00	1.67	1.512	I	o	|	|	|	3.43
36.167	0.00	1.66	1.501	I	o	|	|	|	3.42
36.250	0.00	1.65	1.489	I	o	|	|	|	3.41
36.333	0.00	1.64	1.478	I	o	|	|	|	3.41
36.417	0.00	1.64	1.467	I	o	|	|	|	3.40
36.500	0.00	1.63	1.456	I	o	|	|	|	3.39
36.583	0.00	1.62	1.444	I	o	|	|	|	3.38
36.667	0.00	1.61	1.433	I	o	|	|	|	3.38
36.750	0.00	1.60	1.422	I	o	|	|	|	3.37
36.833	0.00	1.59	1.411	I	o	|	|	|	3.36
36.917	0.00	1.58	1.400	I	o	|	|	|	3.35
37.000	0.00	1.57	1.390	I	o	|	|	|	3.35
37.083	0.00	1.57	1.379	I	o	|	|	|	3.34
37.167	0.00	1.56	1.368	I	o	|	|	|	3.33
37.250	0.00	1.55	1.357	I	o	|	|	|	3.32
37.333	0.00	1.54	1.347	I	o	|	|	|	3.32

37.417	0.00	1.53	1.336	I	o	|	|	|	3.31
37.500	0.00	1.52	1.326	I	o	|	|	|	3.30
37.583	0.00	1.51	1.315	I	o	|	|	|	3.30
37.667	0.00	1.51	1.305	I	o	|	|	|	3.29
37.750	0.00	1.50	1.294	I	o	|	|	|	3.28
37.833	0.00	1.49	1.284	I	o	|	|	|	3.27
37.917	0.00	1.48	1.274	I	o	|	|	|	3.27
38.000	0.00	1.47	1.264	I	o	|	|	|	3.26
38.083	0.00	1.47	1.253	I	o	|	|	|	3.25
38.167	0.00	1.46	1.243	I	o	|	|	|	3.25
38.250	0.00	1.45	1.233	I	o	|	|	|	3.24
38.333	0.00	1.44	1.223	I	o	|	|	|	3.23
38.417	0.00	1.43	1.214	I	o	|	|	|	3.23
38.500	0.00	1.43	1.204	I	o	|	|	|	3.22
38.583	0.00	1.42	1.194	I	o	|	|	|	3.21
38.667	0.00	1.41	1.184	I	o	|	|	|	3.21
38.750	0.00	1.40	1.174	I	o	|	|	|	3.20
38.833	0.00	1.40	1.165	I	o	|	|	|	3.19
38.917	0.00	1.39	1.155	I	o	|	|	|	3.19
39.000	0.00	1.38	1.146	I	o	|	|	|	3.18
39.083	0.00	1.37	1.136	I	o	|	|	|	3.17
39.167	0.00	1.37	1.127	I	o	|	|	|	3.17
39.250	0.00	1.36	1.117	I	o	|	|	|	3.16
39.333	0.00	1.35	1.108	I	o	|	|	|	3.16
39.417	0.00	1.34	1.099	I	o	|	|	|	3.15
39.500	0.00	1.34	1.090	I	o	|	|	|	3.14
39.583	0.00	1.33	1.080	I	o	|	|	|	3.14
39.667	0.00	1.32	1.071	I	o	|	|	|	3.13
39.750	0.00	1.31	1.062	I	o	|	|	|	3.12
39.833	0.00	1.31	1.053	I	o	|	|	|	3.12
39.917	0.00	1.30	1.044	I	o	|	|	|	3.11
40.000	0.00	1.29	1.035	I	o	|	|	|	3.11
40.083	0.00	1.29	1.026	I	o	|	|	|	3.10
40.167	0.00	1.28	1.017	I	o	|	|	|	3.09
40.250	0.00	1.27	1.009	I	o	|	|	|	3.09
40.333	0.00	1.27	1.000	I	o	|	|	|	3.08
40.417	0.00	1.26	0.991	I	o	|	|	|	3.08
40.500	0.00	1.25	0.983	I	o	|	|	|	3.07
40.583	0.00	1.24	0.974	I	o	|	|	|	3.06
40.667	0.00	1.24	0.965	I	o	|	|	|	3.06
40.750	0.00	1.23	0.957	I	o	|	|	|	3.05
40.833	0.00	1.22	0.948	I	o	|	|	|	3.05
40.917	0.00	1.22	0.940	I	o	|	|	|	3.04
41.000	0.00	1.21	0.932	I	o	|	|	|	3.04
41.083	0.00	1.20	0.923	I	o	|	|	|	3.03
41.167	0.00	1.20	0.915	I	o	|	|	|	3.03
41.250	0.00	1.19	0.907	I	o	|	|	|	3.02
41.333	0.00	1.19	0.899	I	o	|	|	|	3.01
41.417	0.00	1.18	0.891	I	o	|	|	|	3.01
41.500	0.00	1.17	0.882	I	o	|	|	|	3.00
41.583	0.00	1.16	0.874	I	o	|	|	|	3.00
41.667	0.00	1.15	0.866	I	o	|	|	|	2.99
41.750	0.00	1.13	0.859	I	o	|	|	|	2.99
41.833	0.00	1.11	0.851	I	o	|	|	|	2.98
41.917	0.00	1.10	0.843	I	o	|	|	|	2.98
42.000	0.00	1.08	0.836	I	o	|	|	|	2.97
42.083	0.00	1.07	0.828	I	o	|	|	|	2.97
42.167	0.00	1.05	0.821	I	o	|	|	|	2.96
42.250	0.00	1.04	0.814	I	o	|	|	|	2.96
42.333	0.00	1.02	0.807	I	o	|	|	|	2.95
42.417	0.00	1.01	0.800	I	o	|	|	|	2.95
42.500	0.00	1.00	0.793	I	o	|	|	|	2.94
42.583	0.00	0.98	0.786	I	o	|	|	|	2.94
42.667	0.00	0.97	0.779	I	o	|	|	|	2.93
42.750	0.00	0.96	0.773	I	o	|	|	|	2.93
42.833	0.00	0.94	0.766	I	o	|	|	|	2.92
42.917	0.00	0.93	0.760	I	o	|	|	|	2.92
43.000	0.00	0.92	0.753	I	o	|	|	|	2.91
43.083	0.00	0.90	0.747	I	o	|	|	|	2.91
43.167	0.00	0.89	0.741	I	o	|	|	|	2.90
43.250	0.00	0.88	0.735	I	o	|	|	|	2.90
43.333	0.00	0.87	0.729	I	o	|	|	|	2.90
43.417	0.00	0.85	0.723	I	o	|	|	|	2.89
43.500	0.00	0.84	0.717	I	o	|	|	|	2.89
43.583	0.00	0.83	0.711	I	o	|	|	|	2.88

43.667	0.00	0.82	0.706	I O				2.88
43.750	0.00	0.81	0.700	I O				2.88
43.833	0.00	0.80	0.695	I O				2.87
43.917	0.00	0.79	0.689	IO				2.87
44.000	0.00	0.77	0.684	IO				2.86
44.083	0.00	0.76	0.678	IO				2.86
44.167	0.00	0.75	0.673	IO				2.86
44.250	0.00	0.74	0.668	IO				2.85
44.333	0.00	0.73	0.663	IO				2.85
44.417	0.00	0.72	0.658	IO				2.85
44.500	0.00	0.71	0.653	IO				2.84
44.583	0.00	0.70	0.648	IO				2.84
44.667	0.00	0.69	0.643	IO				2.84
44.750	0.00	0.68	0.639	IO				2.83
44.833	0.00	0.67	0.634	IO				2.83
44.917	0.00	0.66	0.629	IO				2.83
45.000	0.00	0.65	0.625	IO				2.82
45.083	0.00	0.65	0.620	IO				2.82
45.167	0.00	0.64	0.616	IO				2.82
45.250	0.00	0.63	0.612	IO				2.81
45.333	0.00	0.62	0.607	IO				2.81
45.417	0.00	0.61	0.603	IO				2.81
45.500	0.00	0.60	0.599	IO				2.81
45.583	0.00	0.59	0.595	IO				2.80
45.667	0.00	0.59	0.591	IO				2.80
45.750	0.00	0.58	0.587	IO				2.80
45.833	0.00	0.57	0.583	IO				2.79
45.917	0.00	0.56	0.579	IO				2.79
46.000	0.00	0.55	0.575	IO				2.79
46.083	0.00	0.55	0.571	IO				2.79
46.167	0.00	0.54	0.567	IO				2.78
46.250	0.00	0.53	0.564	IO				2.78
46.333	0.00	0.52	0.560	IO				2.78
46.417	0.00	0.52	0.557	IO				2.78
46.500	0.00	0.51	0.553	IO				2.77
46.583	0.00	0.50	0.550	IO				2.77
46.667	0.00	0.49	0.546	IO				2.77
46.750	0.00	0.49	0.543	IO				2.77
46.833	0.00	0.48	0.539	IO				2.76
46.917	0.00	0.47	0.536	IO				2.76
47.000	0.00	0.47	0.533	IO				2.76
47.083	0.00	0.46	0.530	IO				2.76
47.167	0.00	0.46	0.527	IO				2.76
47.250	0.00	0.45	0.523	IO				2.75
47.333	0.00	0.44	0.520	IO				2.75
47.417	0.00	0.44	0.517	IO				2.75
47.500	0.00	0.43	0.514	IO				2.75
47.583	0.00	0.42	0.511	IO				2.74
47.667	0.00	0.42	0.508	IO				2.74
47.750	0.00	0.41	0.506	IO				2.74
47.833	0.00	0.41	0.503	IO				2.74
47.917	0.00	0.40	0.500	IO				2.74
48.000	0.00	0.40	0.497	O				2.74
48.083	0.00	0.39	0.495	O				2.73
48.167	0.00	0.38	0.492	O				2.73
48.250	0.00	0.38	0.489	O				2.73
48.333	0.00	0.37	0.487	O				2.73
48.417	0.00	0.37	0.484	O				2.73
48.500	0.00	0.36	0.482	O				2.72
48.583	0.00	0.36	0.479	O				2.72
48.667	0.00	0.35	0.477	O				2.72
48.750	0.00	0.35	0.474	O				2.72
48.833	0.00	0.34	0.472	O				2.72
48.917	0.00	0.34	0.469	O				2.72
49.000	0.00	0.33	0.467	O				2.71
49.083	0.00	0.33	0.465	O				2.71
49.167	0.00	0.33	0.463	O				2.71
49.250	0.00	0.32	0.460	O				2.71
49.333	0.00	0.32	0.458	O				2.71
49.417	0.00	0.31	0.456	O				2.71
49.500	0.00	0.31	0.454	O				2.70
49.583	0.00	0.30	0.452	O				2.70
49.667	0.00	0.30	0.450	O				2.70
49.750	0.00	0.29	0.448	O				2.70
49.833	0.00	0.29	0.446	O				2.70

49.917	0.00	0.29	0.444	o	|	|	|	|	2.70
50.000	0.00	0.28	0.442	o	|	|	|	|	2.70
50.083	0.00	0.28	0.440	o	|	|	|	|	2.70
50.167	0.00	0.27	0.438	o	|	|	|	|	2.69
50.250	0.00	0.27	0.436	o	|	|	|	|	2.69
50.333	0.00	0.27	0.434	o	|	|	|	|	2.69
50.417	0.00	0.26	0.432	o	|	|	|	|	2.69
50.500	0.00	0.26	0.431	o	|	|	|	|	2.69
50.583	0.00	0.26	0.429	o	|	|	|	|	2.69
50.667	0.00	0.25	0.427	o	|	|	|	|	2.69
50.750	0.00	0.25	0.425	o	|	|	|	|	2.69
50.833	0.00	0.25	0.424	o	|	|	|	|	2.68
50.917	0.00	0.24	0.422	o	|	|	|	|	2.68
51.000	0.00	0.24	0.420	o	|	|	|	|	2.68
51.083	0.00	0.24	0.419	o	|	|	|	|	2.68
51.167	0.00	0.23	0.417	o	|	|	|	|	2.68
51.250	0.00	0.23	0.415	o	|	|	|	|	2.68
51.333	0.00	0.23	0.414	o	|	|	|	|	2.68
51.417	0.00	0.22	0.412	o	|	|	|	|	2.68
51.500	0.00	0.22	0.411	o	|	|	|	|	2.67
51.583	0.00	0.22	0.409	o	|	|	|	|	2.67
51.667	0.00	0.21	0.408	o	|	|	|	|	2.67
51.750	0.00	0.21	0.406	o	|	|	|	|	2.67
51.833	0.00	0.21	0.405	o	|	|	|	|	2.67
51.917	0.00	0.20	0.403	o	|	|	|	|	2.67
52.000	0.00	0.20	0.402	o	|	|	|	|	2.67
52.083	0.00	0.20	0.401	o	|	|	|	|	2.67
52.167	0.00	0.20	0.399	o	|	|	|	|	2.67
52.250	0.00	0.19	0.398	o	|	|	|	|	2.67
52.333	0.00	0.19	0.397	o	|	|	|	|	2.67
52.417	0.00	0.19	0.395	o	|	|	|	|	2.66
52.500	0.00	0.19	0.394	o	|	|	|	|	2.66
52.583	0.00	0.18	0.393	o	|	|	|	|	2.66
52.667	0.00	0.18	0.391	o	|	|	|	|	2.66
52.750	0.00	0.18	0.390	o	|	|	|	|	2.66
52.833	0.00	0.18	0.389	o	|	|	|	|	2.66
52.917	0.00	0.17	0.388	o	|	|	|	|	2.66
53.000	0.00	0.17	0.387	o	|	|	|	|	2.66
53.083	0.00	0.17	0.385	o	|	|	|	|	2.66
53.167	0.00	0.17	0.384	o	|	|	|	|	2.66
53.250	0.00	0.16	0.383	o	|	|	|	|	2.66
53.333	0.00	0.16	0.382	o	|	|	|	|	2.65
53.417	0.00	0.16	0.381	o	|	|	|	|	2.65
53.500	0.00	0.16	0.380	o	|	|	|	|	2.65
53.583	0.00	0.15	0.379	o	|	|	|	|	2.65
53.667	0.00	0.15	0.378	o	|	|	|	|	2.65
53.750	0.00	0.15	0.377	o	|	|	|	|	2.65
53.833	0.00	0.15	0.376	o	|	|	|	|	2.65
53.917	0.00	0.15	0.375	o	|	|	|	|	2.65
54.000	0.00	0.14	0.374	o	|	|	|	|	2.65
54.083	0.00	0.14	0.373	o	|	|	|	|	2.65
54.167	0.00	0.14	0.372	o	|	|	|	|	2.65
54.250	0.00	0.14	0.371	o	|	|	|	|	2.65
54.333	0.00	0.14	0.370	o	|	|	|	|	2.65
54.417	0.00	0.13	0.369	o	|	|	|	|	2.65
54.500	0.00	0.13	0.368	o	|	|	|	|	2.65
54.583	0.00	0.13	0.367	o	|	|	|	|	2.64
54.667	0.00	0.13	0.366	o	|	|	|	|	2.64
54.750	0.00	0.13	0.365	o	|	|	|	|	2.64
54.833	0.00	0.13	0.364	o	|	|	|	|	2.64
54.917	0.00	0.12	0.363	o	|	|	|	|	2.64
55.000	0.00	0.12	0.363	o	|	|	|	|	2.64
55.083	0.00	0.12	0.362	o	|	|	|	|	2.64
55.167	0.00	0.12	0.361	o	|	|	|	|	2.64
55.250	0.00	0.12	0.360	o	|	|	|	|	2.64
55.333	0.00	0.12	0.359	o	|	|	|	|	2.64
55.417	0.00	0.11	0.359	o	|	|	|	|	2.64
55.500	0.00	0.11	0.358	o	|	|	|	|	2.64
55.583	0.00	0.11	0.357	o	|	|	|	|	2.64
55.667	0.00	0.11	0.356	o	|	|	|	|	2.64
55.750	0.00	0.11	0.356	o	|	|	|	|	2.64
55.833	0.00	0.11	0.355	o	|	|	|	|	2.64
55.917	0.00	0.10	0.354	o	|	|	|	|	2.64
56.000	0.00	0.10	0.353	o	|	|	|	|	2.64
56.083	0.00	0.10	0.353	o	|	|	|	|	2.63

56.167	0.00	0.10	0.352	o	|	|	|	2.63
56.250	0.00	0.10	0.351	o	|	|	|	2.63
56.333	0.00	0.10	0.351	o	|	|	|	2.63
56.417	0.00	0.10	0.350	o	|	|	|	2.63
56.500	0.00	0.09	0.349	o	|	|	|	2.63
56.583	0.00	0.09	0.349	o	|	|	|	2.63
56.667	0.00	0.09	0.348	o	|	|	|	2.63
56.750	0.00	0.09	0.347	o	|	|	|	2.63
56.833	0.00	0.09	0.347	o	|	|	|	2.63
56.917	0.00	0.09	0.346	o	|	|	|	2.63
57.000	0.00	0.09	0.345	o	|	|	|	2.63
57.083	0.00	0.09	0.345	o	|	|	|	2.63
57.167	0.00	0.08	0.344	o	|	|	|	2.63
57.250	0.00	0.08	0.344	o	|	|	|	2.63
57.333	0.00	0.08	0.343	o	|	|	|	2.63
57.417	0.00	0.08	0.343	o	|	|	|	2.63
57.500	0.00	0.08	0.342	o	|	|	|	2.63
57.583	0.00	0.08	0.341	o	|	|	|	2.63
57.667	0.00	0.08	0.341	o	|	|	|	2.63
57.750	0.00	0.08	0.340	o	|	|	|	2.63
57.833	0.00	0.08	0.340	o	|	|	|	2.63
57.917	0.00	0.07	0.339	o	|	|	|	2.63
58.000	0.00	0.07	0.339	o	|	|	|	2.62
58.083	0.00	0.07	0.338	o	|	|	|	2.62
58.167	0.00	0.07	0.338	o	|	|	|	2.62
58.250	0.00	0.07	0.337	o	|	|	|	2.62
58.333	0.00	0.07	0.337	o	|	|	|	2.62
58.417	0.00	0.07	0.336	o	|	|	|	2.62
58.500	0.00	0.07	0.336	o	|	|	|	2.62
58.583	0.00	0.07	0.335	o	|	|	|	2.62
58.667	0.00	0.07	0.335	o	|	|	|	2.62
58.750	0.00	0.07	0.335	o	|	|	|	2.62
58.833	0.00	0.06	0.334	o	|	|	|	2.62
58.917	0.00	0.06	0.334	o	|	|	|	2.62
59.000	0.00	0.06	0.333	o	|	|	|	2.62
59.083	0.00	0.06	0.333	o	|	|	|	2.62
59.167	0.00	0.06	0.332	o	|	|	|	2.62
59.250	0.00	0.06	0.332	o	|	|	|	2.62
59.333	0.00	0.06	0.332	o	|	|	|	2.62
59.417	0.00	0.06	0.331	o	|	|	|	2.62
59.500	0.00	0.06	0.331	o	|	|	|	2.62
59.583	0.00	0.06	0.330	o	|	|	|	2.62
59.667	0.00	0.06	0.330	o	|	|	|	2.62
59.750	0.00	0.06	0.330	o	|	|	|	2.62
59.833	0.00	0.05	0.329	o	|	|	|	2.62
59.917	0.00	0.05	0.329	o	|	|	|	2.62
60.000	0.00	0.05	0.328	o	|	|	|	2.62
60.083	0.00	0.05	0.328	o	|	|	|	2.62
60.167	0.00	0.05	0.328	o	|	|	|	2.62
60.250	0.00	0.05	0.327	o	|	|	|	2.62
60.333	0.00	0.05	0.327	o	|	|	|	2.62
60.417	0.00	0.05	0.327	o	|	|	|	2.62
60.500	0.00	0.05	0.326	o	|	|	|	2.62
60.583	0.00	0.05	0.326	o	|	|	|	2.62
60.667	0.00	0.05	0.326	o	|	|	|	2.62
60.750	0.00	0.05	0.325	o	|	|	|	2.62
60.833	0.00	0.05	0.325	o	|	|	|	2.62
60.917	0.00	0.05	0.325	o	|	|	|	2.62
61.000	0.00	0.04	0.324	o	|	|	|	2.61
61.083	0.00	0.04	0.324	o	|	|	|	2.61
61.167	0.00	0.04	0.324	o	|	|	|	2.61
61.250	0.00	0.04	0.324	o	|	|	|	2.61
61.333	0.00	0.04	0.323	o	|	|	|	2.61
61.417	0.00	0.04	0.323	o	|	|	|	2.61
61.500	0.00	0.04	0.323	o	|	|	|	2.61
61.583	0.00	0.04	0.322	o	|	|	|	2.61
61.667	0.00	0.04	0.322	o	|	|	|	2.61
61.750	0.00	0.04	0.322	o	|	|	|	2.61
61.833	0.00	0.04	0.322	o	|	|	|	2.61
61.917	0.00	0.04	0.321	o	|	|	|	2.61
62.000	0.00	0.04	0.321	o	|	|	|	2.61
62.083	0.00	0.04	0.321	o	|	|	|	2.61
62.167	0.00	0.04	0.321	o	|	|	|	2.61
62.250	0.00	0.04	0.320	o	|	|	|	2.61
62.333	0.00	0.04	0.320	o	|	|	|	2.61

62.417	0.00	0.04	0.320	o	|	|	|	|	2.61
62.500	0.00	0.03	0.320	o	|	|	|	|	2.61
62.583	0.00	0.03	0.319	o	|	|	|	|	2.61
62.667	0.00	0.03	0.319	o	|	|	|	|	2.61
62.750	0.00	0.03	0.319	o	|	|	|	|	2.61
62.833	0.00	0.03	0.319	o	|	|	|	|	2.61
62.917	0.00	0.03	0.318	o	|	|	|	|	2.61
63.000	0.00	0.03	0.318	o	|	|	|	|	2.61
63.083	0.00	0.03	0.318	o	|	|	|	|	2.61
63.167	0.00	0.03	0.318	o	|	|	|	|	2.61
63.250	0.00	0.03	0.318	o	|	|	|	|	2.61
63.333	0.00	0.03	0.317	o	|	|	|	|	2.61
63.417	0.00	0.03	0.317	o	|	|	|	|	2.61
63.500	0.00	0.03	0.317	o	|	|	|	|	2.61
63.583	0.00	0.03	0.317	o	|	|	|	|	2.61
63.667	0.00	0.03	0.317	o	|	|	|	|	2.61
63.750	0.00	0.03	0.316	o	|	|	|	|	2.61
63.833	0.00	0.03	0.316	o	|	|	|	|	2.61
63.917	0.00	0.03	0.316	o	|	|	|	|	2.61
64.000	0.00	0.03	0.316	o	|	|	|	|	2.61
64.083	0.00	0.03	0.316	o	|	|	|	|	2.61
64.167	0.00	0.03	0.315	o	|	|	|	|	2.61
64.250	0.00	0.03	0.315	o	|	|	|	|	2.61
64.333	0.00	0.03	0.315	o	|	|	|	|	2.61
64.417	0.00	0.03	0.315	o	|	|	|	|	2.61
64.500	0.00	0.02	0.315	o	|	|	|	|	2.61
64.583	0.00	0.02	0.315	o	|	|	|	|	2.61
64.667	0.00	0.02	0.314	o	|	|	|	|	2.61
64.750	0.00	0.02	0.314	o	|	|	|	|	2.61
64.833	0.00	0.02	0.314	o	|	|	|	|	2.61
64.917	0.00	0.02	0.314	o	|	|	|	|	2.61
65.000	0.00	0.02	0.314	o	|	|	|	|	2.61
65.083	0.00	0.02	0.314	o	|	|	|	|	2.61
65.167	0.00	0.02	0.313	o	|	|	|	|	2.61
65.250	0.00	0.02	0.313	o	|	|	|	|	2.61
65.333	0.00	0.02	0.313	o	|	|	|	|	2.61
65.417	0.00	0.02	0.313	o	|	|	|	|	2.61
65.500	0.00	0.02	0.313	o	|	|	|	|	2.61
65.583	0.00	0.02	0.313	o	|	|	|	|	2.61
65.667	0.00	0.02	0.313	o	|	|	|	|	2.61
65.750	0.00	0.02	0.312	o	|	|	|	|	2.61
65.833	0.00	0.02	0.312	o	|	|	|	|	2.61
65.917	0.00	0.02	0.312	o	|	|	|	|	2.61
66.000	0.00	0.02	0.312	o	|	|	|	|	2.61
66.083	0.00	0.02	0.312	o	|	|	|	|	2.61
66.167	0.00	0.02	0.312	o	|	|	|	|	2.61
66.250	0.00	0.02	0.312	o	|	|	|	|	2.61
66.333	0.00	0.02	0.311	o	|	|	|	|	2.61
66.417	0.00	0.02	0.311	o	|	|	|	|	2.61
66.500	0.00	0.02	0.311	o	|	|	|	|	2.61
66.583	0.00	0.02	0.311	o	|	|	|	|	2.61
66.667	0.00	0.02	0.311	o	|	|	|	|	2.61
66.750	0.00	0.02	0.311	o	|	|	|	|	2.61
66.833	0.00	0.02	0.311	o	|	|	|	|	2.61
66.917	0.00	0.02	0.311	o	|	|	|	|	2.61
67.000	0.00	0.02	0.311	o	|	|	|	|	2.61
67.083	0.00	0.02	0.310	o	|	|	|	|	2.61
67.167	0.00	0.02	0.310	o	|	|	|	|	2.61
67.250	0.00	0.02	0.310	o	|	|	|	|	2.61
67.333	0.00	0.02	0.310	o	|	|	|	|	2.60
67.417	0.00	0.02	0.310	o	|	|	|	|	2.60
67.500	0.00	0.01	0.310	o	|	|	|	|	2.60
67.583	0.00	0.01	0.310	o	|	|	|	|	2.60
67.667	0.00	0.01	0.310	o	|	|	|	|	2.60
67.750	0.00	0.01	0.310	o	|	|	|	|	2.60
67.833	0.00	0.01	0.309	o	|	|	|	|	2.60
67.917	0.00	0.01	0.309	o	|	|	|	|	2.60
68.000	0.00	0.01	0.309	o	|	|	|	|	2.60
68.083	0.00	0.01	0.309	o	|	|	|	|	2.60
68.167	0.00	0.01	0.309	o	|	|	|	|	2.60
68.250	0.00	0.01	0.309	o	|	|	|	|	2.60
68.333	0.00	0.01	0.309	o	|	|	|	|	2.60
68.417	0.00	0.01	0.309	o	|	|	|	|	2.60
68.500	0.00	0.01	0.309	o	|	|	|	|	2.60
68.583	0.00	0.01	0.309	o	|	|	|	|	2.60

68.667	0.00	0.01	0.309	o	|	|	|	|	2.60
68.750	0.00	0.01	0.308	o	|	|	|	|	2.60
68.833	0.00	0.01	0.308	o	|	|	|	|	2.60
68.917	0.00	0.01	0.308	o	|	|	|	|	2.60
69.000	0.00	0.01	0.308	o	|	|	|	|	2.60
69.083	0.00	0.01	0.308	o	|	|	|	|	2.60
69.167	0.00	0.01	0.308	o	|	|	|	|	2.60
69.250	0.00	0.01	0.308	o	|	|	|	|	2.60
69.333	0.00	0.01	0.308	o	|	|	|	|	2.60
69.417	0.00	0.01	0.308	o	|	|	|	|	2.60
69.500	0.00	0.01	0.308	o	|	|	|	|	2.60
69.583	0.00	0.01	0.308	o	|	|	|	|	2.60
69.667	0.00	0.01	0.308	o	|	|	|	|	2.60
69.750	0.00	0.01	0.308	o	|	|	|	|	2.60
69.833	0.00	0.01	0.307	o	|	|	|	|	2.60
69.917	0.00	0.01	0.307	o	|	|	|	|	2.60
70.000	0.00	0.01	0.307	o	|	|	|	|	2.60
70.083	0.00	0.01	0.307	o	|	|	|	|	2.60
70.167	0.00	0.01	0.307	o	|	|	|	|	2.60
70.250	0.00	0.01	0.307	o	|	|	|	|	2.60
70.333	0.00	0.01	0.307	o	|	|	|	|	2.60
70.417	0.00	0.01	0.307	o	|	|	|	|	2.60
70.500	0.00	0.01	0.307	o	|	|	|	|	2.60
70.583	0.00	0.01	0.307	o	|	|	|	|	2.60
70.667	0.00	0.01	0.307	o	|	|	|	|	2.60
70.750	0.00	0.01	0.307	o	|	|	|	|	2.60
70.833	0.00	0.01	0.307	o	|	|	|	|	2.60
70.917	0.00	0.01	0.307	o	|	|	|	|	2.60
71.000	0.00	0.01	0.307	o	|	|	|	|	2.60
71.083	0.00	0.01	0.307	o	|	|	|	|	2.60
71.167	0.00	0.01	0.306	o	|	|	|	|	2.60
71.250	0.00	0.01	0.306	o	|	|	|	|	2.60
71.333	0.00	0.01	0.306	o	|	|	|	|	2.60
71.417	0.00	0.01	0.306	o	|	|	|	|	2.60
71.500	0.00	0.01	0.306	o	|	|	|	|	2.60
71.583	0.00	0.01	0.306	o	|	|	|	|	2.60
71.667	0.00	0.01	0.306	o	|	|	|	|	2.60
71.750	0.00	0.01	0.306	o	|	|	|	|	2.60
71.833	0.00	0.01	0.306	o	|	|	|	|	2.60
71.917	0.00	0.01	0.306	o	|	|	|	|	2.60
72.000	0.00	0.01	0.306	o	|	|	|	|	2.60
72.083	0.00	0.01	0.306	o	|	|	|	|	2.60
72.167	0.00	0.01	0.306	o	|	|	|	|	2.60
72.250	0.00	0.01	0.306	o	|	|	|	|	2.60
72.333	0.00	0.01	0.306	o	|	|	|	|	2.60
72.417	0.00	0.01	0.306	o	|	|	|	|	2.60
72.500	0.00	0.01	0.306	o	|	|	|	|	2.60
72.583	0.00	0.01	0.306	o	|	|	|	|	2.60
72.667	0.00	0.01	0.306	o	|	|	|	|	2.60
72.750	0.00	0.01	0.306	o	|	|	|	|	2.60
72.833	0.00	0.01	0.306	o	|	|	|	|	2.60
72.917	0.00	0.01	0.305	o	|	|	|	|	2.60
73.000	0.00	0.01	0.305	o	|	|	|	|	2.60
73.083	0.00	0.01	0.305	o	|	|	|	|	2.60
73.167	0.00	0.01	0.305	o	|	|	|	|	2.60
73.250	0.00	0.01	0.305	o	|	|	|	|	2.60
73.333	0.00	0.01	0.305	o	|	|	|	|	2.60
73.417	0.00	0.01	0.305	o	|	|	|	|	2.60
73.500	0.00	0.01	0.305	o	|	|	|	|	2.60
73.583	0.00	0.01	0.305	o	|	|	|	|	2.60
73.667	0.00	0.01	0.305	o	|	|	|	|	2.60
73.750	0.00	0.01	0.305	o	|	|	|	|	2.60
73.833	0.00	0.01	0.305	o	|	|	|	|	2.60
73.917	0.00	0.01	0.305	o	|	|	|	|	2.60
74.000	0.00	0.01	0.305	o	|	|	|	|	2.60
74.083	0.00	0.00	0.305	o	|	|	|	|	2.60
74.167	0.00	0.00	0.305	o	|	|	|	|	2.60
74.250	0.00	0.00	0.305	o	|	|	|	|	2.60
74.333	0.00	0.00	0.305	o	|	|	|	|	2.60
74.417	0.00	0.00	0.305	o	|	|	|	|	2.60
74.500	0.00	0.00	0.305	o	|	|	|	|	2.60
74.583	0.00	0.00	0.305	o	|	|	|	|	2.60
74.667	0.00	0.00	0.305	o	|	|	|	|	2.60
74.750	0.00	0.00	0.305	o	|	|	|	|	2.60
74.833	0.00	0.00	0.305	o	|	|	|	|	2.60

74.917	0.00	0.00	0.305	o	|	|	|	|	2.60
75.000	0.00	0.00	0.305	o	|	|	|	|	2.60
75.083	0.00	0.00	0.305	o	|	|	|	|	2.60
75.167	0.00	0.00	0.305	o	|	|	|	|	2.60
75.250	0.00	0.00	0.305	o	|	|	|	|	2.60
75.333	0.00	0.00	0.304	o	|	|	|	|	2.60
75.417	0.00	0.00	0.304	o	|	|	|	|	2.60
75.500	0.00	0.00	0.304	o	|	|	|	|	2.60
75.583	0.00	0.00	0.304	o	|	|	|	|	2.60
75.667	0.00	0.00	0.304	o	|	|	|	|	2.60
75.750	0.00	0.00	0.304	o	|	|	|	|	2.60
75.833	0.00	0.00	0.304	o	|	|	|	|	2.60
75.917	0.00	0.00	0.304	o	|	|	|	|	2.60
76.000	0.00	0.00	0.304	o	|	|	|	|	2.60
76.083	0.00	0.00	0.304	o	|	|	|	|	2.60
76.167	0.00	0.00	0.304	o	|	|	|	|	2.60
76.250	0.00	0.00	0.304	o	|	|	|	|	2.60
76.333	0.00	0.00	0.304	o	|	|	|	|	2.60
76.417	0.00	0.00	0.304	o	|	|	|	|	2.60
76.500	0.00	0.00	0.304	o	|	|	|	|	2.60
76.583	0.00	0.00	0.304	o	|	|	|	|	2.60
76.667	0.00	0.00	0.304	o	|	|	|	|	2.60
76.750	0.00	0.00	0.304	o	|	|	|	|	2.60
76.833	0.00	0.00	0.304	o	|	|	|	|	2.60
76.917	0.00	0.00	0.304	o	|	|	|	|	2.60
77.000	0.00	0.00	0.304	o	|	|	|	|	2.60
77.083	0.00	0.00	0.304	o	|	|	|	|	2.60
77.167	0.00	0.00	0.304	o	|	|	|	|	2.60
77.250	0.00	0.00	0.304	o	|	|	|	|	2.60
77.333	0.00	0.00	0.304	o	|	|	|	|	2.60
77.417	0.00	0.00	0.304	o	|	|	|	|	2.60
77.500	0.00	0.00	0.304	o	|	|	|	|	2.60
77.583	0.00	0.00	0.304	o	|	|	|	|	2.60
77.667	0.00	0.00	0.304	o	|	|	|	|	2.60
77.750	0.00	0.00	0.304	o	|	|	|	|	2.60
77.833	0.00	0.00	0.304	o	|	|	|	|	2.60
77.917	0.00	0.00	0.304	o	|	|	|	|	2.60
78.000	0.00	0.00	0.304	o	|	|	|	|	2.60
78.083	0.00	0.00	0.304	o	|	|	|	|	2.60
78.167	0.00	0.00	0.304	o	|	|	|	|	2.60
78.250	0.00	0.00	0.304	o	|	|	|	|	2.60
78.333	0.00	0.00	0.304	o	|	|	|	|	2.60
78.417	0.00	0.00	0.304	o	|	|	|	|	2.60
78.500	0.00	0.00	0.304	o	|	|	|	|	2.60
78.583	0.00	0.00	0.304	o	|	|	|	|	2.60
78.667	0.00	0.00	0.304	o	|	|	|	|	2.60
78.750	0.00	0.00	0.304	o	|	|	|	|	2.60
78.833	0.00	0.00	0.304	o	|	|	|	|	2.60
78.917	0.00	0.00	0.304	o	|	|	|	|	2.60
79.000	0.00	0.00	0.304	o	|	|	|	|	2.60
79.083	0.00	0.00	0.304	o	|	|	|	|	2.60
79.167	0.00	0.00	0.304	o	|	|	|	|	2.60
79.250	0.00	0.00	0.304	o	|	|	|	|	2.60
79.333	0.00	0.00	0.304	o	|	|	|	|	2.60
79.417	0.00	0.00	0.304	o	|	|	|	|	2.60
79.500	0.00	0.00	0.303	o	|	|	|	|	2.60
79.583	0.00	0.00	0.303	o	|	|	|	|	2.60
79.667	0.00	0.00	0.303	o	|	|	|	|	2.60
79.750	0.00	0.00	0.303	o	|	|	|	|	2.60
79.833	0.00	0.00	0.303	o	|	|	|	|	2.60
79.917	0.00	0.00	0.303	o	|	|	|	|	2.60
80.000	0.00	0.00	0.303	o	|	|	|	|	2.60
80.083	0.00	0.00	0.303	o	|	|	|	|	2.60
80.167	0.00	0.00	0.303	o	|	|	|	|	2.60
80.250	0.00	0.00	0.303	o	|	|	|	|	2.60
80.333	0.00	0.00	0.303	o	|	|	|	|	2.60
80.417	0.00	0.00	0.303	o	|	|	|	|	2.60
80.500	0.00	0.00	0.303	o	|	|	|	|	2.60
80.583	0.00	0.00	0.303	o	|	|	|	|	2.60
80.667	0.00	0.00	0.303	o	|	|	|	|	2.60
80.750	0.00	0.00	0.303	o	|	|	|	|	2.60
80.833	0.00	0.00	0.303	o	|	|	|	|	2.60
80.917	0.00	0.00	0.303	o	|	|	|	|	2.60
81.000	0.00	0.00	0.303	o	|	|	|	|	2.60
81.083	0.00	0.00	0.303	o	|	|	|	|	2.60

81.167	0.00	0.00	0.303	o	|	|	|	2.60
81.250	0.00	0.00	0.303	o	|	|	|	2.60
81.333	0.00	0.00	0.303	o	|	|	|	2.60
81.417	0.00	0.00	0.303	o	|	|	|	2.60
81.500	0.00	0.00	0.303	o	|	|	|	2.60
81.583	0.00	0.00	0.303	o	|	|	|	2.60
81.667	0.00	0.00	0.303	o	|	|	|	2.60
81.750	0.00	0.00	0.303	o	|	|	|	2.60
81.833	0.00	0.00	0.303	o	|	|	|	2.60
81.917	0.00	0.00	0.303	o	|	|	|	2.60
82.000	0.00	0.00	0.303	o	|	|	|	2.60
82.083	0.00	0.00	0.303	o	|	|	|	2.60
82.167	0.00	0.00	0.303	o	|	|	|	2.60
82.250	0.00	0.00	0.303	o	|	|	|	2.60
82.333	0.00	0.00	0.303	o	|	|	|	2.60
82.417	0.00	0.00	0.303	o	|	|	|	2.60
82.500	0.00	0.00	0.303	o	|	|	|	2.60
82.583	0.00	0.00	0.303	o	|	|	|	2.60
82.667	0.00	0.00	0.303	o	|	|	|	2.60
82.750	0.00	0.00	0.303	o	|	|	|	2.60
82.833	0.00	0.00	0.303	o	|	|	|	2.60
82.917	0.00	0.00	0.303	o	|	|	|	2.60
83.000	0.00	0.00	0.303	o	|	|	|	2.60
83.083	0.00	0.00	0.303	o	|	|	|	2.60
83.167	0.00	0.00	0.303	o	|	|	|	2.60
83.250	0.00	0.00	0.303	o	|	|	|	2.60
83.333	0.00	0.00	0.303	o	|	|	|	2.60
83.417	0.00	0.00	0.303	o	|	|	|	2.60
83.500	0.00	0.00	0.303	o	|	|	|	2.60
83.583	0.00	0.00	0.303	o	|	|	|	2.60
83.667	0.00	0.00	0.303	o	|	|	|	2.60

Remaining water in basin = 0.30 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 1004
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.314 (CFS)
Total volume = 7.415 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

BASIN ROUTING
5-YEAR, 24-HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
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Study date: 04/07/22

21-0044 EXETER INDUSTRIAL BLDG 1
5-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST5YR245.rte

**********HYDROGRAPH DATA**********

Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 17.461 (CFS)
Total volume = 10.611 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
5.820	5.007	3.318	4.996	5.018
6.000	5.251	3.753	5.238	5.264
6.500	5.873	6.174	5.852	5.894
7.000	6.418	9.646	6.385	6.451
7.500	6.855	13.891	6.807	6.903
8.000	7.101	18.781	7.036	7.166

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	4.4	8.73	13.10	17.46	Depth (Ft.)
0.083	0.26	0.00	0.001	O	|	|	|	|	0.01
0.167	0.83	0.00	0.005	OI	|	|	|	|	0.04
0.250	0.97	0.00	0.011	OI	|	|	|	|	0.09
0.333	1.14	0.00	0.018	O I	|	|	|	|	0.16
0.417	1.44	0.00	0.027	O I	|	|	|	|	0.23
0.500	1.51	0.00	0.037	O I	|	|	|	|	0.32
0.583	1.53	0.00	0.048	O I	|	|	|	|	0.41
0.667	1.54	0.00	0.058	O I	|	|	|	|	0.50
0.750	1.54	0.00	0.069	O I	|	|	|	|	0.59
0.833	1.67	0.00	0.080	O I	|	|	|	|	0.69
0.917	1.95	0.00	0.092	O I	|	|	|	|	0.79
1.000	2.03	0.00	0.106	O I	|	|	|	|	0.91
1.083	1.92	0.00	0.120	O I	|	|	|	|	1.03
1.167	1.64	0.00	0.132	O I	|	|	|	|	1.13
1.250	1.57	0.00	0.143	O I	|	|	|	|	1.23
1.333	1.55	0.00	0.154	O I	|	|	|	|	1.32
1.417	1.54	0.00	0.164	O I	|	|	|	|	1.41
1.500	1.54	0.00	0.175	O I	|	|	|	|	1.50
1.583	1.54	0.00	0.185	O I	|	|	|	|	1.59
1.667	1.54	0.00	0.196	O I	|	|	|	|	1.68
1.750	1.54	0.00	0.207	O I	|	|	|	|	1.77
1.833	1.67	0.00	0.218	O I	|	|	|	|	1.87
1.917	1.95	0.00	0.230	O I	|	|	|	|	1.98
2.000	2.03	0.00	0.244	O I	|	|	|	|	2.09
2.083	2.05	0.00	0.258	O I	|	|	|	|	2.21
2.167	2.05	0.00	0.272	O I	|	|	|	|	2.33
2.250	2.05	0.00	0.286	O I	|	|	|	|	2.46
2.333	2.05	0.00	0.300	O I	|	|	|	|	2.58
2.417	2.05	0.02	0.314	O I	|	|	|	|	2.61
2.500	2.05	0.05	0.328	O I	|	|	|	|	2.62
2.583	2.18	0.08	0.342	O I	|	|	|	|	2.63
2.667	2.47	0.11	0.358	O I	|	|	|	|	2.64
2.750	2.54	0.15	0.374	O I	|	|	|	|	2.65
2.833	2.56	0.18	0.391	O I	|	|	|	|	2.66
2.917	2.57	0.21	0.407	O I	|	|	|	|	2.67
3.000	2.57	0.24	0.423	O I	|	|	|	|	2.68
3.083	2.57	0.28	0.439	O I	|	|	|	|	2.69
3.167	2.57	0.31	0.455	O I	|	|	|	|	2.71
3.250	2.57	0.34	0.470	O I	|	|	|	|	2.72
3.333	2.57	0.37	0.485	O I	|	|	|	|	2.73
3.417	2.57	0.40	0.500	O I	|	|	|	|	2.74
3.500	2.57	0.43	0.515	O I	|	|	|	|	2.75
3.583	2.57	0.46	0.530	O I	|	|	|	|	2.76
3.667	2.57	0.49	0.544	O I	|	|	|	|	2.77
3.750	2.57	0.52	0.558	O I	|	|	|	|	2.78
3.833	2.70	0.55	0.573	|O I	|	|	|	|	2.79
3.917	2.98	0.58	0.588	|O I	|	|	|	|	2.80
4.000	3.05	0.61	0.605	|O I	|	|	|	|	2.81
4.083	3.07	0.65	0.622	|O I	|	|	|	|	2.82
4.167	3.08	0.68	0.638	|O I	|	|	|	|	2.83
4.250	3.08	0.72	0.655	|O I	|	|	|	|	2.84
4.333	3.21	0.75	0.671	|O I	|	|	|	|	2.86
4.417	3.50	0.79	0.689	|O I	|	|	|	|	2.87
4.500	3.57	0.82	0.708	|O I	|	|	|	|	2.88
4.583	3.59	0.86	0.727	|O I	|	|	|	|	2.89
4.667	3.59	0.90	0.745	|O I	|	|	|	|	2.91
4.750	3.59	0.94	0.764	|O I	|	|	|	|	2.92
4.833	3.72	0.98	0.783	|O I	|	|	|	|	2.93
4.917	4.01	1.02	0.802	|O I|	|	|	|	2.95
5.000	4.08	1.06	0.823	|O I|	|	|	|	2.96
5.083	3.84	1.10	0.843	| O I|	|	|	|	2.98
5.167	3.28	1.13	0.860	| O I |	|	|	|	2.99
5.250	3.14	1.16	0.874	| O I |	|	|	|	3.00
5.333	3.22	1.18	0.888	| O I |	|	|	|	3.01
5.417	3.50	1.19	0.903	| O I |	|	|	|	3.02
5.500	3.57	1.20	0.919	| O I |	|	|	|	3.03
5.583	3.72	1.21	0.936	| O I |	|	|	|	3.04
5.667	4.01	1.23	0.954	| O I|	|	|	|	3.05
5.750	4.08	1.24	0.973	| O I|	|	|	|	3.06
5.833	4.10	1.26	0.993	| O I|	|	|	|	3.08
5.917	4.11	1.28	1.012	| O I|	|	|	|	3.09
6.000	4.11	1.29	1.032	| O I|	|	|	|	3.10

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 6.083    4.24    1.31      1.051  | o    I|       |       |       |     3.12
 6.167    4.52    1.32      1.073  | o     I       |       |       |     3.13
 6.250    4.59    1.34      1.095  | o     I       |       |       |     3.15
 6.333    4.61    1.36      1.117  | o     I       |       |       |     3.16
 6.417    4.62    1.38      1.140  | o     I       |       |       |     3.18
 6.500    4.62    1.39      1.162  | o     I       |       |       |     3.19
 6.583    4.75    1.41      1.185  | o     I       |       |       |     3.21
 6.667    5.04    1.43      1.208  | o     |I      |       |       |     3.22
 6.750    5.11    1.45      1.233  | o     |I      |       |       |     3.24
 6.833    5.13    1.47      1.259  | o     |I      |       |       |     3.26
 6.917    5.13    1.49      1.284  | o     |I      |       |       |     3.27
 7.000    5.14    1.51      1.309  | o     |I      |       |       |     3.29
 7.083    5.14    1.53      1.334  | o     |I      |       |       |     3.31
 7.167    5.14    1.55      1.358  | o     |I      |       |       |     3.33
 7.250    5.14    1.57      1.383  | o     |I      |       |       |     3.34
 7.333    5.26    1.59      1.408  | o     |I      |       |       |     3.36
 7.417    5.55    1.61      1.434  | o     | I     |       |       |     3.38
 7.500    5.62    1.63      1.462  | o     | I     |       |       |     3.39
 7.583    5.77    1.65      1.489  |  o    | I     |       |       |     3.41
 7.667    6.06    1.68      1.519  |  o    |  I    |       |       |     3.43
 7.750    6.14    1.70      1.549  |  o    |  I    |       |       |     3.45
 7.833    6.28    1.72      1.580  |  o    |  I    |       |       |     3.48
 7.917    6.57    1.75      1.612  |  o    |   I   |       |       |     3.50
 8.000    6.65    1.77      1.646  |  o    |   I   |       |       |     3.52
 8.083    6.93    1.79      1.680  |  o    |   I   |       |       |     3.54
 8.167    7.50    1.81      1.718  |  o    |    I  |       |       |     3.57
 8.250    7.65    1.84      1.757  |  o    |     I |       |       |     3.59
 8.333    7.69    1.86      1.797  |  o    |     I |       |       |     3.62
 8.417    7.70    1.88      1.837  |  o    |     I |       |       |     3.65
 8.500    7.70    1.90      1.877  |  o    |     I |       |       |     3.67
 8.583    7.83    1.93      1.918  |  o    |     I |       |       |     3.70
 8.667    8.12    1.95      1.959  |  o    |     I |       |       |     3.73
 8.750    8.19    1.98      2.002  |  o    |      I|       |       |     3.76
 8.833    8.34    2.00      2.045  |  o    |      I|       |       |     3.79
 8.917    8.63    2.03      2.090  |  o    |      I|       |       |     3.81
 9.000    8.70    2.05      2.135  |  o    |      I|       |       |     3.85
 9.083    8.98    2.08      2.182  |  o    |       I       |       |     3.88
 9.167    9.56    2.11      2.231  |  o    |       |I      |       |     3.91
 9.250    9.70    2.14      2.283  |  o    |       |I      |       |     3.94
 9.333    9.87    2.17      2.336  |  o    |       | I     |       |     3.98
 9.417   10.17    2.20      2.390  |   o   |       | I     |       |     4.01
 9.500   10.24    2.22      2.445  |   o   |       | I     |       |     4.05
 9.583   10.39    2.25      2.500  |   o   |       |  I    |       |     4.09
 9.667   10.68    2.28      2.557  |   o   |       |  I    |       |     4.13
 9.750   10.76    2.31      2.615  |   o   |       |  I    |       |     4.16
 9.833   10.91    2.33      2.674  |   o   |       |  I    |       |     4.20
 9.917   11.20    2.36      2.734  |   o   |       |   I   |       |     4.24
10.000   11.27    2.39      2.795  |   o   |       |   I   |       |     4.28
10.083   10.39    2.42      2.853  |   o   |       |  I    |       |     4.32
10.167    8.40    2.44      2.901  |   o   |      I|       |       |     4.35
10.250    7.89    2.46      2.940  |   o   |     I |       |       |     4.38
10.333    7.76    2.48      2.977  |   o   |     I |       |       |     4.40
10.417    7.72    2.50      3.013  |   o   |     I |       |       |     4.43
10.500    7.70    2.51      3.049  |   o   |     I |       |       |     4.45
10.583    8.34    2.53      3.087  |   o   |      I|       |       |     4.48
10.667    9.77    2.55      3.132  |   o   |       |I      |       |     4.51
10.750   10.14    2.57      3.183  |   o   |       | I     |       |     4.54
10.833   10.23    2.60      3.235  |   o   |       | I     |       |     4.58
10.917   10.26    2.62      3.287  |   o   |       | I     |       |     4.61
11.000   10.27    2.64      3.340  |   o   |       | I     |       |     4.65
11.083   10.14    2.66      3.392  |   o   |       | I     |       |     4.68
11.167    9.86    2.69      3.443  |   o   |       | I     |       |     4.72
11.250    9.78    2.71      3.492  |   o   |       |I      |       |     4.75
11.333    9.76    2.73      3.540  |   o   |       |I      |       |     4.78
11.417    9.76    2.75      3.589  |    o  |       |I      |       |     4.82
11.500    9.76    2.77      3.637  |    o  |       |I      |       |     4.85
11.583    9.50    2.79      3.684  |    o  |       |I      |       |     4.88
11.667    8.93    2.81      3.728  |    o  |       I       |       |     4.91
11.750    8.78    2.83      3.770  |    o  |       I       |       |     4.94
11.833    8.87    2.84      3.811  |    o  |       I       |       |     4.97
11.917    9.15    2.86      3.853  |    o  |       I       |       |     5.00
12.000    9.22    2.88      3.897  |    o  |       I       |       |     5.03
12.083   10.13    2.90      3.944  |    o  |       | I     |       |     5.06
12.167   12.14    2.92      4.000  |    o  |       |     I |       |     5.10
12.250   12.65    2.95      4.065  |    o  |       |      I|       |     5.14
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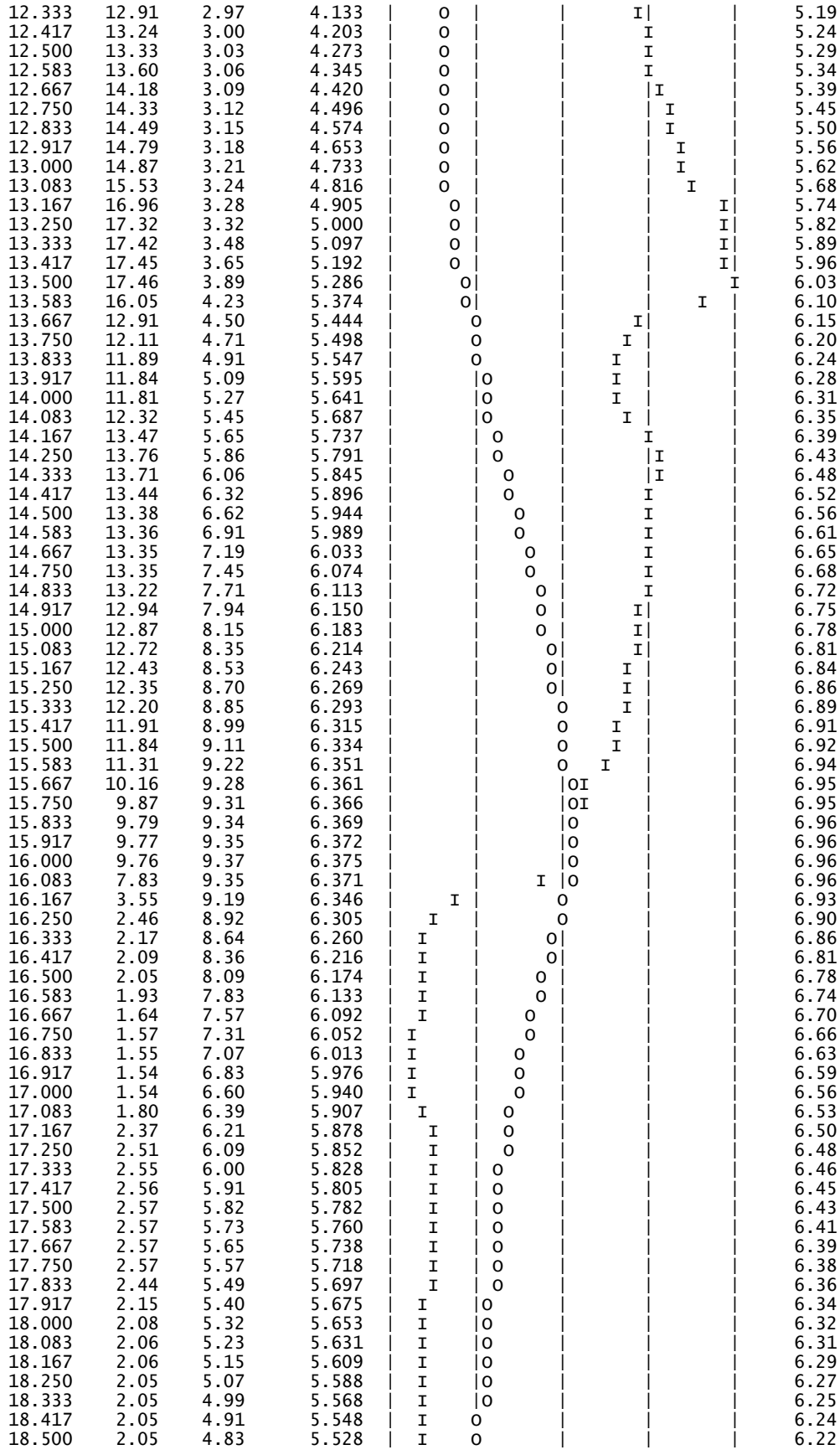

18.583	1.93	4.76	5.509	| I o | | |	6.21
18.667	1.64	4.68	5.489	| I o | | |	6.19
18.750	1.57	4.60	5.468	| I o | | |	6.17
18.833	1.42	4.52	5.447	| I o | | |	6.16
18.917	1.13	4.43	5.425	| I o | | |	6.14
19.000	1.05	4.34	5.402	|I o| | |	6.12
19.083	1.16	4.26	5.380	| I o| | |	6.10
19.167	1.44	4.18	5.360	| I o| | |	6.09
19.250	1.51	4.11	5.342	| I o| | |	6.07
19.333	1.66	4.04	5.325	| I o| | |	6.06
19.417	1.95	3.98	5.309	| I o| | |	6.05
19.500	2.03	3.93	5.296	| I o| | |	6.04
19.583	1.92	3.88	5.283	| I o| | |	6.03
19.667	1.64	3.82	5.268	| I o| | |	6.01
19.750	1.57	3.76	5.253	| I o | | |	6.00
19.833	1.42	3.73	5.238	| I o | | |	5.99
19.917	1.13	3.70	5.221	| I o | | |	5.98
20.000	1.05	3.67	5.203	|I o | | |	5.96
20.083	1.16	3.64	5.186	| I o | | |	5.95
20.167	1.44	3.61	5.170	| I o | | |	5.94
20.250	1.51	3.58	5.155	| I o | | |	5.93
20.333	1.53	3.56	5.141	| I o | | |	5.92
20.417	1.54	3.53	5.127	| I o | | |	5.91
20.500	1.54	3.51	5.113	| I o | | |	5.90
20.583	1.54	3.48	5.100	| I o | | |	5.89
20.667	1.54	3.46	5.087	| I o | | |	5.88
20.750	1.54	3.44	5.074	| I o | | |	5.87
20.833	1.41	3.41	5.060	| I o | | |	5.86
20.917	1.13	3.39	5.045	| I o | | |	5.85
21.000	1.05	3.36	5.030	|I o | | |	5.84
21.083	1.16	3.33	5.014	| I o | | |	5.83
21.167	1.44	3.32	5.000	| I o | | |	5.82
21.250	1.51	3.31	4.988	| I o | | |	5.81
21.333	1.40	3.31	4.975	| I o | | |	5.80
21.417	1.12	3.30	4.961	| I o | | |	5.79
21.500	1.05	3.29	4.946	|I o | | |	5.77
21.583	1.16	3.29	4.931	| I o | | |	5.76
21.667	1.44	3.28	4.917	| I o | | |	5.75
21.750	1.51	3.28	4.905	| I o | | |	5.74
21.833	1.40	3.27	4.892	| I o | | |	5.74
21.917	1.12	3.27	4.878	| I o | | |	5.72
22.000	1.05	3.26	4.863	|I o | | |	5.71
22.083	1.16	3.26	4.849	| I o | | |	5.70
22.167	1.44	3.25	4.835	| I o | | |	5.69
22.250	1.51	3.25	4.823	| I o | | |	5.68
22.333	1.40	3.24	4.811	| I o | | |	5.67
22.417	1.12	3.24	4.797	| I o | | |	5.66
22.500	1.05	3.23	4.782	|I o | | |	5.65
22.583	1.03	3.22	4.767	|I o | | |	5.64
22.667	1.03	3.22	4.752	|I o | | |	5.63
22.750	1.03	3.21	4.737	|I o | | |	5.62
22.833	1.03	3.21	4.722	|I o | | |	5.61
22.917	1.03	3.20	4.707	|I o | | |	5.60
23.000	1.03	3.19	4.692	|I o | | |	5.59
23.083	1.03	3.19	4.677	|I o | | |	5.58
23.167	1.03	3.18	4.662	|I o | | |	5.57
23.250	1.03	3.18	4.648	|I o | | |	5.55
23.333	1.03	3.17	4.633	|I o | | |	5.54
23.417	1.03	3.17	4.618	|I o | | |	5.53
23.500	1.03	3.16	4.603	|I o | | |	5.52
23.583	1.03	3.15	4.589	|I o | | |	5.51
23.667	1.03	3.15	4.574	|I o | | |	5.50
23.750	1.03	3.14	4.560	|I o | | |	5.49
23.833	1.03	3.14	4.545	|I o | | |	5.48
23.917	1.03	3.13	4.530	|I o | | |	5.47
24.000	1.03	3.12	4.516	|I o | | |	5.46
24.083	0.77	3.12	4.501	|I o | | |	5.45
24.167	0.20	3.11	4.483	I o | | |	5.44
24.250	0.05	3.10	4.462	I o | | |	5.42
24.333	0.01	3.10	4.441	I o | | |	5.41
24.417	0.00	3.09	4.420	I o | | |	5.39
24.500	0.00	3.08	4.399	I o | | |	5.38
24.583	0.00	3.07	4.377	I o | | |	5.36
24.667	0.00	3.06	4.356	I o | | |	5.35
24.750	0.00	3.05	4.335	I o | | |	5.33

24.833	0.00	3.04	4.314	I	o	|	|	|	5.32
24.917	0.00	3.04	4.293	I	o	|	|	|	5.30
25.000	0.00	3.03	4.272	I	o	|	|	|	5.29
25.083	0.00	3.02	4.252	I	o	|	|	|	5.27
25.167	0.00	3.01	4.231	I	o	|	|	|	5.26
25.250	0.00	3.00	4.210	I	o	|	|	|	5.25
25.333	0.00	3.00	4.189	I	o	|	|	|	5.23
25.417	0.00	2.99	4.169	I	o	|	|	|	5.22
25.500	0.00	2.98	4.148	I	o	|	|	|	5.20
25.583	0.00	2.97	4.128	I	o	|	|	|	5.19
25.667	0.00	2.96	4.107	I	o	|	|	|	5.17
25.750	0.00	2.95	4.087	I	o	|	|	|	5.16
25.833	0.00	2.95	4.067	I	o	|	|	|	5.15
25.917	0.00	2.94	4.046	I	o	|	|	|	5.13
26.000	0.00	2.93	4.026	I	o	|	|	|	5.12
26.083	0.00	2.92	4.006	I	o	|	|	|	5.10
26.167	0.00	2.91	3.986	I	o	|	|	|	5.09
26.250	0.00	2.91	3.966	I	o	|	|	|	5.07
26.333	0.00	2.90	3.946	I	o	|	|	|	5.06
26.417	0.00	2.89	3.926	I	o	|	|	|	5.05
26.500	0.00	2.88	3.906	I	o	|	|	|	5.03
26.583	0.00	2.87	3.886	I	o	|	|	|	5.02
26.667	0.00	2.87	3.866	I	o	|	|	|	5.01
26.750	0.00	2.86	3.847	I	o	|	|	|	4.99
26.833	0.00	2.85	3.827	I	o	|	|	|	4.98
26.917	0.00	2.84	3.807	I	o	|	|	|	4.97
27.000	0.00	2.83	3.788	I	o	|	|	|	4.95
27.083	0.00	2.83	3.768	I	o	|	|	|	4.94
27.167	0.00	2.82	3.749	I	o	|	|	|	4.93
27.250	0.00	2.81	3.730	I	o	|	|	|	4.91
27.333	0.00	2.80	3.710	I	o	|	|	|	4.90
27.417	0.00	2.79	3.691	I	o	|	|	|	4.89
27.500	0.00	2.78	3.672	I	o	|	|	|	4.87
27.583	0.00	2.78	3.653	I	o	|	|	|	4.86
27.667	0.00	2.77	3.634	I	o	|	|	|	4.85
27.750	0.00	2.76	3.615	I	o	|	|	|	4.83
27.833	0.00	2.75	3.596	I	o	|	|	|	4.82
27.917	0.00	2.74	3.577	I	o	|	|	|	4.81
28.000	0.00	2.74	3.558	I	o	|	|	|	4.80
28.083	0.00	2.73	3.539	I	o	|	|	|	4.78
28.167	0.00	2.72	3.520	I	o	|	|	|	4.77
28.250	0.00	2.71	3.502	I	o	|	|	|	4.76
28.333	0.00	2.70	3.483	I	o	|	|	|	4.75
28.417	0.00	2.70	3.464	I	o	|	|	|	4.73
28.500	0.00	2.69	3.446	I	o	|	|	|	4.72
28.583	0.00	2.68	3.427	I	o	|	|	|	4.71
28.667	0.00	2.67	3.409	I	o	|	|	|	4.70
28.750	0.00	2.66	3.391	I	o	|	|	|	4.68
28.833	0.00	2.66	3.372	I	o	|	|	|	4.67
28.917	0.00	2.65	3.354	I	o	|	|	|	4.66
29.000	0.00	2.64	3.336	I	o	|	|	|	4.65
29.083	0.00	2.63	3.318	I	o	|	|	|	4.63
29.167	0.00	2.62	3.299	I	o	|	|	|	4.62
29.250	0.00	2.62	3.281	I	o	|	|	|	4.61
29.333	0.00	2.61	3.263	I	o	|	|	|	4.60
29.417	0.00	2.60	3.245	I	o	|	|	|	4.58
29.500	0.00	2.59	3.228	I	o	|	|	|	4.57
29.583	0.00	2.59	3.210	I	o	|	|	|	4.56
29.667	0.00	2.58	3.192	I	o	|	|	|	4.55
29.750	0.00	2.57	3.174	I	o	|	|	|	4.54
29.833	0.00	2.56	3.157	I	o	|	|	|	4.52
29.917	0.00	2.56	3.139	I	o	|	|	|	4.51
30.000	0.00	2.55	3.121	I	o	|	|	|	4.50
30.083	0.00	2.54	3.104	I	o	|	|	|	4.49
30.167	0.00	2.53	3.086	I	o	|	|	|	4.48
30.250	0.00	2.52	3.069	I	o	|	|	|	4.47
30.333	0.00	2.52	3.052	I	o	|	|	|	4.45
30.417	0.00	2.51	3.034	I	o	|	|	|	4.44
30.500	0.00	2.50	3.017	I	o	|	|	|	4.43
30.583	0.00	2.49	3.000	I	o	|	|	|	4.42
30.667	0.00	2.48	2.983	I	o	|	|	|	4.41
30.750	0.00	2.47	2.966	I	o	|	|	|	4.40
30.833	0.00	2.47	2.949	I	o	|	|	|	4.39
30.917	0.00	2.46	2.932	I	o	|	|	|	4.37
31.000	0.00	2.45	2.915	I	o	|	|	|	4.36

31.083	0.00	2.44	2.898	I	o	|	|	|	|	4.35
31.167	0.00	2.43	2.881	I	o	|	|	|	|	4.34
31.250	0.00	2.43	2.864	I	o	|	|	|	|	4.33
31.333	0.00	2.42	2.848	I	o	|	|	|	|	4.32
31.417	0.00	2.41	2.831	I	o	|	|	|	|	4.31
31.500	0.00	2.40	2.815	I	o	|	|	|	|	4.30
31.583	0.00	2.39	2.798	I	o	|	|	|	|	4.29
31.667	0.00	2.39	2.782	I	o	|	|	|	|	4.28
31.750	0.00	2.38	2.765	I	o	|	|	|	|	4.26
31.833	0.00	2.37	2.749	I	o	|	|	|	|	4.25
31.917	0.00	2.36	2.733	I	o	|	|	|	|	4.24
32.000	0.00	2.35	2.716	I	o	|	|	|	|	4.23
32.083	0.00	2.35	2.700	I	o	|	|	|	|	4.22
32.167	0.00	2.34	2.684	I	o	|	|	|	|	4.21
32.250	0.00	2.33	2.668	I	o	|	|	|	|	4.20
32.333	0.00	2.32	2.652	I	o	|	|	|	|	4.19
32.417	0.00	2.32	2.636	I	o	|	|	|	|	4.18
32.500	0.00	2.31	2.620	I	o	|	|	|	|	4.17
32.583	0.00	2.30	2.604	I	o	|	|	|	|	4.16
32.667	0.00	2.29	2.588	I	o	|	|	|	|	4.15
32.750	0.00	2.29	2.573	I	o	|	|	|	|	4.14
32.833	0.00	2.28	2.557	I	o	|	|	|	|	4.13
32.917	0.00	2.27	2.541	I	o	|	|	|	|	4.12
33.000	0.00	2.26	2.526	I	o	|	|	|	|	4.10
33.083	0.00	2.26	2.510	I	o	|	|	|	|	4.09
33.167	0.00	2.25	2.494	I	o	|	|	|	|	4.08
33.250	0.00	2.24	2.479	I	o	|	|	|	|	4.07
33.333	0.00	2.23	2.464	I	o	|	|	|	|	4.06
33.417	0.00	2.23	2.448	I	o	|	|	|	|	4.05
33.500	0.00	2.22	2.433	I	o	|	|	|	|	4.04
33.583	0.00	2.21	2.418	I	o	|	|	|	|	4.03
33.667	0.00	2.20	2.402	I	o	|	|	|	|	4.02
33.750	0.00	2.20	2.387	I	o	|	|	|	|	4.01
33.833	0.00	2.19	2.372	I	o	|	|	|	|	4.00
33.917	0.00	2.18	2.357	I	o	|	|	|	|	3.99
34.000	0.00	2.17	2.342	I	o	|	|	|	|	3.98
34.083	0.00	2.16	2.327	I	o	|	|	|	|	3.97
34.167	0.00	2.16	2.312	I	o	|	|	|	|	3.96
34.250	0.00	2.15	2.297	I	o	|	|	|	|	3.95
34.333	0.00	2.14	2.283	I	o	|	|	|	|	3.94
34.417	0.00	2.13	2.268	I	o	|	|	|	|	3.93
34.500	0.00	2.12	2.253	I	o	|	|	|	|	3.92
34.583	0.00	2.11	2.239	I	o	|	|	|	|	3.91
34.667	0.00	2.10	2.224	I	o	|	|	|	|	3.90
34.750	0.00	2.10	2.210	I	o	|	|	|	|	3.89
34.833	0.00	2.09	2.195	I	o	|	|	|	|	3.89
34.917	0.00	2.08	2.181	I	o	|	|	|	|	3.88
35.000	0.00	2.07	2.167	I	o	|	|	|	|	3.87
35.083	0.00	2.06	2.153	I	o	|	|	|	|	3.86
35.167	0.00	2.06	2.138	I	o	|	|	|	|	3.85
35.250	0.00	2.05	2.124	I	o	|	|	|	|	3.84
35.333	0.00	2.04	2.110	I	o	|	|	|	|	3.83
35.417	0.00	2.03	2.096	I	o	|	|	|	|	3.82
35.500	0.00	2.02	2.082	I	o	|	|	|	|	3.81
35.583	0.00	2.01	2.068	I	o	|	|	|	|	3.80
35.667	0.00	2.01	2.054	I	o	|	|	|	|	3.79
35.750	0.00	2.00	2.041	I	o	|	|	|	|	3.78
35.833	0.00	1.99	2.027	I	o	|	|	|	|	3.77
35.917	0.00	1.98	2.013	I	o	|	|	|	|	3.76
36.000	0.00	1.98	2.000	I	o	|	|	|	|	3.75
36.083	0.00	1.97	1.986	I	o	|	|	|	|	3.75
36.167	0.00	1.96	1.972	I	o	|	|	|	|	3.74
36.250	0.00	1.95	1.959	I	o	|	|	|	|	3.73
36.333	0.00	1.94	1.946	I	o	|	|	|	|	3.72
36.417	0.00	1.94	1.932	I	o	|	|	|	|	3.71
36.500	0.00	1.93	1.919	I	o	|	|	|	|	3.70
36.583	0.00	1.92	1.906	I	o	|	|	|	|	3.69
36.667	0.00	1.91	1.892	I	o	|	|	|	|	3.68
36.750	0.00	1.91	1.879	I	o	|	|	|	|	3.67
36.833	0.00	1.90	1.866	I	o	|	|	|	|	3.67
36.917	0.00	1.89	1.853	I	o	|	|	|	|	3.66
37.000	0.00	1.88	1.840	I	o	|	|	|	|	3.65
37.083	0.00	1.88	1.827	I	o	|	|	|	|	3.64
37.167	0.00	1.87	1.814	I	o	|	|	|	|	3.63
37.250	0.00	1.86	1.801	I	o	|	|	|	|	3.62

37.333	0.00	1.85	1.789	I o	|	|	|	3.61
37.417	0.00	1.85	1.776	I o	|	|	|	3.61
37.500	0.00	1.84	1.763	I o	|	|	|	3.60
37.583	0.00	1.83	1.751	I o	|	|	|	3.59
37.667	0.00	1.82	1.738	I o	|	|	|	3.58
37.750	0.00	1.82	1.726	I o	|	|	|	3.57
37.833	0.00	1.81	1.713	I o	|	|	|	3.56
37.917	0.00	1.80	1.701	I o	|	|	|	3.56
38.000	0.00	1.80	1.688	I o	|	|	|	3.55
38.083	0.00	1.79	1.676	I o	|	|	|	3.54
38.167	0.00	1.78	1.664	I o	|	|	|	3.53
38.250	0.00	1.77	1.651	I o	|	|	|	3.52
38.333	0.00	1.77	1.639	I o	|	|	|	3.51
38.417	0.00	1.76	1.627	I o	|	|	|	3.51
38.500	0.00	1.75	1.615	I o	|	|	|	3.50
38.583	0.00	1.74	1.603	I o	|	|	|	3.49
38.667	0.00	1.73	1.591	I o	|	|	|	3.48
38.750	0.00	1.72	1.579	I o	|	|	|	3.47
38.833	0.00	1.71	1.567	I o	|	|	|	3.47
38.917	0.00	1.71	1.555	I o	|	|	|	3.46
39.000	0.00	1.70	1.544	I o	|	|	|	3.45
39.083	0.00	1.69	1.532	I o	|	|	|	3.44
39.167	0.00	1.68	1.520	I o	|	|	|	3.43
39.250	0.00	1.67	1.509	I o	|	|	|	3.43
39.333	0.00	1.66	1.497	I o	|	|	|	3.42
39.417	0.00	1.65	1.486	I o	|	|	|	3.41
39.500	0.00	1.64	1.475	I o	|	|	|	3.40
39.583	0.00	1.63	1.463	I o	|	|	|	3.40
39.667	0.00	1.62	1.452	I o	|	|	|	3.39
39.750	0.00	1.61	1.441	I o	|	|	|	3.38
39.833	0.00	1.61	1.430	I o	|	|	|	3.37
39.917	0.00	1.60	1.419	I o	|	|	|	3.37
40.000	0.00	1.59	1.408	I o	|	|	|	3.36
40.083	0.00	1.58	1.397	I o	|	|	|	3.35
40.167	0.00	1.57	1.386	I o	|	|	|	3.34
40.250	0.00	1.56	1.375	I o	|	|	|	3.34
40.333	0.00	1.55	1.365	I o	|	|	|	3.33
40.417	0.00	1.55	1.354	I o	|	|	|	3.32
40.500	0.00	1.54	1.343	I o	|	|	|	3.31
40.583	0.00	1.53	1.333	I o	|	|	|	3.31
40.667	0.00	1.52	1.322	I o	|	|	|	3.30
40.750	0.00	1.51	1.312	I o	|	|	|	3.29
40.833	0.00	1.50	1.302	I o	|	|	|	3.29
40.917	0.00	1.50	1.291	I o	|	|	|	3.28
41.000	0.00	1.49	1.281	I o	|	|	|	3.27
41.083	0.00	1.48	1.271	I o	|	|	|	3.27
41.167	0.00	1.47	1.261	I o	|	|	|	3.26
41.250	0.00	1.46	1.250	I o	|	|	|	3.25
41.333	0.00	1.46	1.240	I o	|	|	|	3.25
41.417	0.00	1.45	1.230	I o	|	|	|	3.24
41.500	0.00	1.44	1.220	I o	|	|	|	3.23
41.583	0.00	1.43	1.211	I o	|	|	|	3.22
41.667	0.00	1.42	1.201	I o	|	|	|	3.22
41.750	0.00	1.42	1.191	I o	|	|	|	3.21
41.833	0.00	1.41	1.181	I o	|	|	|	3.21
41.917	0.00	1.40	1.172	I o	|	|	|	3.20
42.000	0.00	1.39	1.162	I o	|	|	|	3.19
42.083	0.00	1.39	1.152	I o	|	|	|	3.19
42.167	0.00	1.38	1.143	I o	|	|	|	3.18
42.250	0.00	1.37	1.133	I o	|	|	|	3.17
42.333	0.00	1.36	1.124	I o	|	|	|	3.17
42.417	0.00	1.36	1.115	I o	|	|	|	3.16
42.500	0.00	1.35	1.105	I o	|	|	|	3.15
42.583	0.00	1.34	1.096	I o	|	|	|	3.15
42.667	0.00	1.33	1.087	I o	|	|	|	3.14
42.750	0.00	1.33	1.078	I o	|	|	|	3.14
42.833	0.00	1.32	1.068	I o	|	|	|	3.13
42.917	0.00	1.31	1.059	I o	|	|	|	3.12
43.000	0.00	1.31	1.050	I o	|	|	|	3.12
43.083	0.00	1.30	1.041	I o	|	|	|	3.11
43.167	0.00	1.29	1.032	I o	|	|	|	3.10
43.250	0.00	1.28	1.024	I o	|	|	|	3.10
43.333	0.00	1.28	1.015	I o	|	|	|	3.09
43.417	0.00	1.27	1.006	I o	|	|	|	3.09
43.500	0.00	1.26	0.997	I o	|	|	|	3.08

43.583	0.00	1.26	0.989	I O					3.07
43.667	0.00	1.25	0.980	I O					3.07
43.750	0.00	1.24	0.971	I O					3.06
43.833	0.00	1.24	0.963	I O					3.06
43.917	0.00	1.23	0.954	I O					3.05
44.000	0.00	1.22	0.946	I O					3.05
44.083	0.00	1.22	0.938	I O					3.04
44.167	0.00	1.21	0.929	I O					3.03
44.250	0.00	1.20	0.921	I O					3.03
44.333	0.00	1.20	0.913	I O					3.02
44.417	0.00	1.19	0.904	I O					3.02
44.500	0.00	1.18	0.896	I O					3.01
44.583	0.00	1.18	0.888	I O					3.01
44.667	0.00	1.17	0.880	I O					3.00
44.750	0.00	1.16	0.872	I O					3.00
44.833	0.00	1.14	0.864	I O					2.99
44.917	0.00	1.12	0.856	I O					2.98
45.000	0.00	1.11	0.849	I O					2.98
45.083	0.00	1.09	0.841	I O					2.97
45.167	0.00	1.08	0.834	IO					2.97
45.250	0.00	1.06	0.826	IO					2.96
45.333	0.00	1.05	0.819	IO					2.96
45.417	0.00	1.03	0.812	IO					2.95
45.500	0.00	1.02	0.805	IO					2.95
45.583	0.00	1.01	0.798	IO					2.94
45.667	0.00	0.99	0.791	IO					2.94
45.750	0.00	0.98	0.784	IO					2.93
45.833	0.00	0.96	0.777	IO					2.93
45.917	0.00	0.95	0.771	IO					2.93
46.000	0.00	0.94	0.764	IO					2.92
46.083	0.00	0.92	0.758	IO					2.92
46.167	0.00	0.91	0.751	IO					2.91
46.250	0.00	0.90	0.745	IO					2.91
46.333	0.00	0.89	0.739	IO					2.90
46.417	0.00	0.87	0.733	IO					2.90
46.500	0.00	0.86	0.727	IO					2.89
46.583	0.00	0.85	0.721	IO					2.89
46.667	0.00	0.84	0.715	IO					2.89
46.750	0.00	0.83	0.710	IO					2.88
46.833	0.00	0.82	0.704	IO					2.88
46.917	0.00	0.80	0.698	IO					2.88
47.000	0.00	0.79	0.693	IO					2.87
47.083	0.00	0.78	0.687	IO					2.87
47.167	0.00	0.77	0.682	IO					2.86
47.250	0.00	0.76	0.677	IO					2.86
47.333	0.00	0.75	0.672	IO					2.86
47.417	0.00	0.74	0.666	IO					2.85
47.500	0.00	0.73	0.661	IO					2.85
47.583	0.00	0.72	0.656	IO					2.85
47.667	0.00	0.71	0.652	IO					2.84
47.750	0.00	0.70	0.647	IO					2.84
47.833	0.00	0.69	0.642	IO					2.84
47.917	0.00	0.68	0.637	IO					2.83
48.000	0.00	0.67	0.633	IO					2.83
48.083	0.00	0.66	0.628	IO					2.83
48.167	0.00	0.65	0.623	IO					2.82
48.250	0.00	0.64	0.619	IO					2.82
48.333	0.00	0.63	0.615	IO					2.82
48.417	0.00	0.63	0.610	IO					2.81
48.500	0.00	0.62	0.606	IO					2.81
48.583	0.00	0.61	0.602	IO					2.81
48.667	0.00	0.60	0.598	IO					2.80
48.750	0.00	0.59	0.593	IO					2.80
48.833	0.00	0.58	0.589	IO					2.80
48.917	0.00	0.57	0.585	IO					2.80
49.000	0.00	0.57	0.582	IO					2.79
49.083	0.00	0.56	0.578	IO					2.79
49.167	0.00	0.55	0.574	IO					2.79
49.250	0.00	0.54	0.570	O					2.79
49.333	0.00	0.54	0.566	O					2.78
49.417	0.00	0.53	0.563	O					2.78
49.500	0.00	0.52	0.559	O					2.78
49.583	0.00	0.51	0.555	O					2.78
49.667	0.00	0.51	0.552	O					2.77
49.750	0.00	0.50	0.549	O					2.77

49.833	0.00	0.49	0.545	o	|	|	|	|	2.77
49.917	0.00	0.49	0.542	o	|	|	|	|	2.77
50.000	0.00	0.48	0.538	o	|	|	|	|	2.76
50.083	0.00	0.47	0.535	o	|	|	|	|	2.76
50.167	0.00	0.47	0.532	o	|	|	|	|	2.76
50.250	0.00	0.46	0.529	o	|	|	|	|	2.76
50.333	0.00	0.45	0.526	o	|	|	|	|	2.75
50.417	0.00	0.45	0.522	o	|	|	|	|	2.75
50.500	0.00	0.44	0.519	o	|	|	|	|	2.75
50.583	0.00	0.43	0.516	o	|	|	|	|	2.75
50.667	0.00	0.43	0.513	o	|	|	|	|	2.75
50.750	0.00	0.42	0.510	o	|	|	|	|	2.74
50.833	0.00	0.42	0.508	o	|	|	|	|	2.74
50.917	0.00	0.41	0.505	o	|	|	|	|	2.74
51.000	0.00	0.41	0.502	o	|	|	|	|	2.74
51.083	0.00	0.40	0.499	o	|	|	|	|	2.74
51.167	0.00	0.39	0.496	o	|	|	|	|	2.73
51.250	0.00	0.39	0.494	o	|	|	|	|	2.73
51.333	0.00	0.38	0.491	o	|	|	|	|	2.73
51.417	0.00	0.38	0.488	o	|	|	|	|	2.73
51.500	0.00	0.37	0.486	o	|	|	|	|	2.73
51.583	0.00	0.37	0.483	o	|	|	|	|	2.73
51.667	0.00	0.36	0.481	o	|	|	|	|	2.72
51.750	0.00	0.36	0.478	o	|	|	|	|	2.72
51.833	0.00	0.35	0.476	o	|	|	|	|	2.72
51.917	0.00	0.35	0.474	o	|	|	|	|	2.72
52.000	0.00	0.34	0.471	o	|	|	|	|	2.72
52.083	0.00	0.34	0.469	o	|	|	|	|	2.72
52.167	0.00	0.33	0.466	o	|	|	|	|	2.71
52.250	0.00	0.33	0.464	o	|	|	|	|	2.71
52.333	0.00	0.32	0.462	o	|	|	|	|	2.71
52.417	0.00	0.32	0.460	o	|	|	|	|	2.71
52.500	0.00	0.31	0.458	o	|	|	|	|	2.71
52.583	0.00	0.31	0.455	o	|	|	|	|	2.71
52.667	0.00	0.31	0.453	o	|	|	|	|	2.70
52.750	0.00	0.30	0.451	o	|	|	|	|	2.70
52.833	0.00	0.30	0.449	o	|	|	|	|	2.70
52.917	0.00	0.29	0.447	o	|	|	|	|	2.70
53.000	0.00	0.29	0.445	o	|	|	|	|	2.70
53.083	0.00	0.29	0.443	o	|	|	|	|	2.70
53.167	0.00	0.28	0.441	o	|	|	|	|	2.70
53.250	0.00	0.28	0.439	o	|	|	|	|	2.69
53.333	0.00	0.27	0.437	o	|	|	|	|	2.69
53.417	0.00	0.27	0.435	o	|	|	|	|	2.69
53.500	0.00	0.27	0.434	o	|	|	|	|	2.69
53.583	0.00	0.26	0.432	o	|	|	|	|	2.69
53.667	0.00	0.26	0.430	o	|	|	|	|	2.69
53.750	0.00	0.26	0.428	o	|	|	|	|	2.69
53.833	0.00	0.25	0.426	o	|	|	|	|	2.69
53.917	0.00	0.25	0.425	o	|	|	|	|	2.68
54.000	0.00	0.24	0.423	o	|	|	|	|	2.68
54.083	0.00	0.24	0.421	o	|	|	|	|	2.68
54.167	0.00	0.24	0.420	o	|	|	|	|	2.68
54.250	0.00	0.23	0.418	o	|	|	|	|	2.68
54.333	0.00	0.23	0.416	o	|	|	|	|	2.68
54.417	0.00	0.23	0.415	o	|	|	|	|	2.68
54.500	0.00	0.23	0.413	o	|	|	|	|	2.68
54.583	0.00	0.22	0.412	o	|	|	|	|	2.68
54.667	0.00	0.22	0.410	o	|	|	|	|	2.67
54.750	0.00	0.22	0.409	o	|	|	|	|	2.67
54.833	0.00	0.21	0.407	o	|	|	|	|	2.67
54.917	0.00	0.21	0.406	o	|	|	|	|	2.67
55.000	0.00	0.21	0.404	o	|	|	|	|	2.67
55.083	0.00	0.20	0.403	o	|	|	|	|	2.67
55.167	0.00	0.20	0.402	o	|	|	|	|	2.67
55.250	0.00	0.20	0.400	o	|	|	|	|	2.67
55.333	0.00	0.20	0.399	o	|	|	|	|	2.67
55.417	0.00	0.19	0.398	o	|	|	|	|	2.67
55.500	0.00	0.19	0.396	o	|	|	|	|	2.66
55.583	0.00	0.19	0.395	o	|	|	|	|	2.66
55.667	0.00	0.19	0.394	o	|	|	|	|	2.66
55.750	0.00	0.18	0.392	o	|	|	|	|	2.66
55.833	0.00	0.18	0.391	o	|	|	|	|	2.66
55.917	0.00	0.18	0.390	o	|	|	|	|	2.66
56.000	0.00	0.18	0.389	o	|	|	|	|	2.66

56.083	0.00	0.17	0.387	o	|	|	|	2.66
56.167	0.00	0.17	0.386	o	|	|	|	2.66
56.250	0.00	0.17	0.385	o	|	|	|	2.66
56.333	0.00	0.17	0.384	o	|	|	|	2.66
56.417	0.00	0.16	0.383	o	|	|	|	2.66
56.500	0.00	0.16	0.382	o	|	|	|	2.65
56.583	0.00	0.16	0.381	o	|	|	|	2.65
56.667	0.00	0.16	0.380	o	|	|	|	2.65
56.750	0.00	0.15	0.378	o	|	|	|	2.65
56.833	0.00	0.15	0.377	o	|	|	|	2.65
56.917	0.00	0.15	0.376	o	|	|	|	2.65
57.000	0.00	0.15	0.375	o	|	|	|	2.65
57.083	0.00	0.15	0.374	o	|	|	|	2.65
57.167	0.00	0.14	0.373	o	|	|	|	2.65
57.250	0.00	0.14	0.372	o	|	|	|	2.65
57.333	0.00	0.14	0.371	o	|	|	|	2.65
57.417	0.00	0.14	0.370	o	|	|	|	2.65
57.500	0.00	0.14	0.369	o	|	|	|	2.65
57.583	0.00	0.13	0.369	o	|	|	|	2.65
57.667	0.00	0.13	0.368	o	|	|	|	2.64
57.750	0.00	0.13	0.367	o	|	|	|	2.64
57.833	0.00	0.13	0.366	o	|	|	|	2.64
57.917	0.00	0.13	0.365	o	|	|	|	2.64
58.000	0.00	0.13	0.364	o	|	|	|	2.64
58.083	0.00	0.12	0.363	o	|	|	|	2.64
58.167	0.00	0.12	0.362	o	|	|	|	2.64
58.250	0.00	0.12	0.362	o	|	|	|	2.64
58.333	0.00	0.12	0.361	o	|	|	|	2.64
58.417	0.00	0.12	0.360	o	|	|	|	2.64
58.500	0.00	0.12	0.359	o	|	|	|	2.64
58.583	0.00	0.11	0.358	o	|	|	|	2.64
58.667	0.00	0.11	0.358	o	|	|	|	2.64
58.750	0.00	0.11	0.357	o	|	|	|	2.64
58.833	0.00	0.11	0.356	o	|	|	|	2.64
58.917	0.00	0.11	0.355	o	|	|	|	2.64
59.000	0.00	0.11	0.355	o	|	|	|	2.64
59.083	0.00	0.10	0.354	o	|	|	|	2.64
59.167	0.00	0.10	0.353	o	|	|	|	2.63
59.250	0.00	0.10	0.352	o	|	|	|	2.63
59.333	0.00	0.10	0.352	o	|	|	|	2.63
59.417	0.00	0.10	0.351	o	|	|	|	2.63
59.500	0.00	0.10	0.350	o	|	|	|	2.63
59.583	0.00	0.10	0.350	o	|	|	|	2.63
59.667	0.00	0.09	0.349	o	|	|	|	2.63
59.750	0.00	0.09	0.348	o	|	|	|	2.63
59.833	0.00	0.09	0.348	o	|	|	|	2.63
59.917	0.00	0.09	0.347	o	|	|	|	2.63
60.000	0.00	0.09	0.347	o	|	|	|	2.63
60.083	0.00	0.09	0.346	o	|	|	|	2.63
60.167	0.00	0.09	0.345	o	|	|	|	2.63
60.250	0.00	0.09	0.345	o	|	|	|	2.63
60.333	0.00	0.08	0.344	o	|	|	|	2.63
60.417	0.00	0.08	0.344	o	|	|	|	2.63
60.500	0.00	0.08	0.343	o	|	|	|	2.63
60.583	0.00	0.08	0.342	o	|	|	|	2.63
60.667	0.00	0.08	0.342	o	|	|	|	2.63
60.750	0.00	0.08	0.341	o	|	|	|	2.63
60.833	0.00	0.08	0.341	o	|	|	|	2.63
60.917	0.00	0.08	0.340	o	|	|	|	2.63
61.000	0.00	0.08	0.340	o	|	|	|	2.63
61.083	0.00	0.07	0.339	o	|	|	|	2.63
61.167	0.00	0.07	0.339	o	|	|	|	2.62
61.250	0.00	0.07	0.338	o	|	|	|	2.62
61.333	0.00	0.07	0.338	o	|	|	|	2.62
61.417	0.00	0.07	0.337	o	|	|	|	2.62
61.500	0.00	0.07	0.337	o	|	|	|	2.62
61.583	0.00	0.07	0.336	o	|	|	|	2.62
61.667	0.00	0.07	0.336	o	|	|	|	2.62
61.750	0.00	0.07	0.335	o	|	|	|	2.62
61.833	0.00	0.07	0.335	o	|	|	|	2.62
61.917	0.00	0.06	0.334	o	|	|	|	2.62
62.000	0.00	0.06	0.334	o	|	|	|	2.62
62.083	0.00	0.06	0.334	o	|	|	|	2.62
62.167	0.00	0.06	0.333	o	|	|	|	2.62
62.250	0.00	0.06	0.333	o	|	|	|	2.62

62.333	0.00	0.06	0.332	o	|	|	|	|	2.62
62.417	0.00	0.06	0.332	o	|	|	|	|	2.62
62.500	0.00	0.06	0.331	o	|	|	|	|	2.62
62.583	0.00	0.06	0.331	o	|	|	|	|	2.62
62.667	0.00	0.06	0.331	o	|	|	|	|	2.62
62.750	0.00	0.06	0.330	o	|	|	|	|	2.62
62.833	0.00	0.06	0.330	o	|	|	|	|	2.62
62.917	0.00	0.05	0.329	o	|	|	|	|	2.62
63.000	0.00	0.05	0.329	o	|	|	|	|	2.62
63.083	0.00	0.05	0.329	o	|	|	|	|	2.62
63.167	0.00	0.05	0.328	o	|	|	|	|	2.62
63.250	0.00	0.05	0.328	o	|	|	|	|	2.62
63.333	0.00	0.05	0.328	o	|	|	|	|	2.62
63.417	0.00	0.05	0.327	o	|	|	|	|	2.62
63.500	0.00	0.05	0.327	o	|	|	|	|	2.62
63.583	0.00	0.05	0.327	o	|	|	|	|	2.62
63.667	0.00	0.05	0.326	o	|	|	|	|	2.62
63.750	0.00	0.05	0.326	o	|	|	|	|	2.62
63.833	0.00	0.05	0.326	o	|	|	|	|	2.62
63.917	0.00	0.05	0.325	o	|	|	|	|	2.62
64.000	0.00	0.05	0.325	o	|	|	|	|	2.62
64.083	0.00	0.05	0.325	o	|	|	|	|	2.62
64.167	0.00	0.04	0.324	o	|	|	|	|	2.61
64.250	0.00	0.04	0.324	o	|	|	|	|	2.61
64.333	0.00	0.04	0.324	o	|	|	|	|	2.61
64.417	0.00	0.04	0.323	o	|	|	|	|	2.61
64.500	0.00	0.04	0.323	o	|	|	|	|	2.61
64.583	0.00	0.04	0.323	o	|	|	|	|	2.61
64.667	0.00	0.04	0.323	o	|	|	|	|	2.61
64.750	0.00	0.04	0.322	o	|	|	|	|	2.61
64.833	0.00	0.04	0.322	o	|	|	|	|	2.61
64.917	0.00	0.04	0.322	o	|	|	|	|	2.61
65.000	0.00	0.04	0.322	o	|	|	|	|	2.61
65.083	0.00	0.04	0.321	o	|	|	|	|	2.61
65.167	0.00	0.04	0.321	o	|	|	|	|	2.61
65.250	0.00	0.04	0.321	o	|	|	|	|	2.61
65.333	0.00	0.04	0.320	o	|	|	|	|	2.61
65.417	0.00	0.04	0.320	o	|	|	|	|	2.61
65.500	0.00	0.04	0.320	o	|	|	|	|	2.61
65.583	0.00	0.04	0.320	o	|	|	|	|	2.61
65.667	0.00	0.03	0.320	o	|	|	|	|	2.61
65.750	0.00	0.03	0.319	o	|	|	|	|	2.61
65.833	0.00	0.03	0.319	o	|	|	|	|	2.61
65.917	0.00	0.03	0.319	o	|	|	|	|	2.61
66.000	0.00	0.03	0.319	o	|	|	|	|	2.61
66.083	0.00	0.03	0.318	o	|	|	|	|	2.61
66.167	0.00	0.03	0.318	o	|	|	|	|	2.61
66.250	0.00	0.03	0.318	o	|	|	|	|	2.61
66.333	0.00	0.03	0.318	o	|	|	|	|	2.61
66.417	0.00	0.03	0.317	o	|	|	|	|	2.61
66.500	0.00	0.03	0.317	o	|	|	|	|	2.61
66.583	0.00	0.03	0.317	o	|	|	|	|	2.61
66.667	0.00	0.03	0.317	o	|	|	|	|	2.61
66.750	0.00	0.03	0.317	o	|	|	|	|	2.61
66.833	0.00	0.03	0.316	o	|	|	|	|	2.61
66.917	0.00	0.03	0.316	o	|	|	|	|	2.61
67.000	0.00	0.03	0.316	o	|	|	|	|	2.61
67.083	0.00	0.03	0.316	o	|	|	|	|	2.61
67.167	0.00	0.03	0.316	o	|	|	|	|	2.61
67.250	0.00	0.03	0.316	o	|	|	|	|	2.61
67.333	0.00	0.03	0.315	o	|	|	|	|	2.61
67.417	0.00	0.03	0.315	o	|	|	|	|	2.61
67.500	0.00	0.03	0.315	o	|	|	|	|	2.61
67.583	0.00	0.03	0.315	o	|	|	|	|	2.61
67.667	0.00	0.02	0.315	o	|	|	|	|	2.61
67.750	0.00	0.02	0.314	o	|	|	|	|	2.61
67.833	0.00	0.02	0.314	o	|	|	|	|	2.61
67.917	0.00	0.02	0.314	o	|	|	|	|	2.61
68.000	0.00	0.02	0.314	o	|	|	|	|	2.61
68.083	0.00	0.02	0.314	o	|	|	|	|	2.61
68.167	0.00	0.02	0.314	o	|	|	|	|	2.61
68.250	0.00	0.02	0.314	o	|	|	|	|	2.61
68.333	0.00	0.02	0.313	o	|	|	|	|	2.61
68.417	0.00	0.02	0.313	o	|	|	|	|	2.61
68.500	0.00	0.02	0.313	o	|	|	|	|	2.61

68.583	0.00	0.02	0.313	o	|	|	|	|	2.61
68.667	0.00	0.02	0.313	o	|	|	|	|	2.61
68.750	0.00	0.02	0.313	o	|	|	|	|	2.61
68.833	0.00	0.02	0.312	o	|	|	|	|	2.61
68.917	0.00	0.02	0.312	o	|	|	|	|	2.61
69.000	0.00	0.02	0.312	o	|	|	|	|	2.61
69.083	0.00	0.02	0.312	o	|	|	|	|	2.61
69.167	0.00	0.02	0.312	o	|	|	|	|	2.61
69.250	0.00	0.02	0.312	o	|	|	|	|	2.61
69.333	0.00	0.02	0.312	o	|	|	|	|	2.61
69.417	0.00	0.02	0.312	o	|	|	|	|	2.61
69.500	0.00	0.02	0.311	o	|	|	|	|	2.61
69.583	0.00	0.02	0.311	o	|	|	|	|	2.61
69.667	0.00	0.02	0.311	o	|	|	|	|	2.61
69.750	0.00	0.02	0.311	o	|	|	|	|	2.61
69.833	0.00	0.02	0.311	o	|	|	|	|	2.61
69.917	0.00	0.02	0.311	o	|	|	|	|	2.61
70.000	0.00	0.02	0.311	o	|	|	|	|	2.61
70.083	0.00	0.02	0.311	o	|	|	|	|	2.61
70.167	0.00	0.02	0.310	o	|	|	|	|	2.61
70.250	0.00	0.02	0.310	o	|	|	|	|	2.61
70.333	0.00	0.02	0.310	o	|	|	|	|	2.61
70.417	0.00	0.02	0.310	o	|	|	|	|	2.60
70.500	0.00	0.02	0.310	o	|	|	|	|	2.60
70.583	0.00	0.02	0.310	o	|	|	|	|	2.60
70.667	0.00	0.01	0.310	o	|	|	|	|	2.60
70.750	0.00	0.01	0.310	o	|	|	|	|	2.60
70.833	0.00	0.01	0.310	o	|	|	|	|	2.60
70.917	0.00	0.01	0.310	o	|	|	|	|	2.60
71.000	0.00	0.01	0.309	o	|	|	|	|	2.60
71.083	0.00	0.01	0.309	o	|	|	|	|	2.60
71.167	0.00	0.01	0.309	o	|	|	|	|	2.60
71.250	0.00	0.01	0.309	o	|	|	|	|	2.60
71.333	0.00	0.01	0.309	o	|	|	|	|	2.60
71.417	0.00	0.01	0.309	o	|	|	|	|	2.60
71.500	0.00	0.01	0.309	o	|	|	|	|	2.60
71.583	0.00	0.01	0.309	o	|	|	|	|	2.60
71.667	0.00	0.01	0.309	o	|	|	|	|	2.60
71.750	0.00	0.01	0.309	o	|	|	|	|	2.60
71.833	0.00	0.01	0.309	o	|	|	|	|	2.60
71.917	0.00	0.01	0.308	o	|	|	|	|	2.60
72.000	0.00	0.01	0.308	o	|	|	|	|	2.60
72.083	0.00	0.01	0.308	o	|	|	|	|	2.60
72.167	0.00	0.01	0.308	o	|	|	|	|	2.60
72.250	0.00	0.01	0.308	o	|	|	|	|	2.60
72.333	0.00	0.01	0.308	o	|	|	|	|	2.60
72.417	0.00	0.01	0.308	o	|	|	|	|	2.60
72.500	0.00	0.01	0.308	o	|	|	|	|	2.60
72.583	0.00	0.01	0.308	o	|	|	|	|	2.60
72.667	0.00	0.01	0.308	o	|	|	|	|	2.60
72.750	0.00	0.01	0.308	o	|	|	|	|	2.60
72.833	0.00	0.01	0.308	o	|	|	|	|	2.60
72.917	0.00	0.01	0.308	o	|	|	|	|	2.60
73.000	0.00	0.01	0.307	o	|	|	|	|	2.60
73.083	0.00	0.01	0.307	o	|	|	|	|	2.60
73.167	0.00	0.01	0.307	o	|	|	|	|	2.60
73.250	0.00	0.01	0.307	o	|	|	|	|	2.60
73.333	0.00	0.01	0.307	o	|	|	|	|	2.60
73.417	0.00	0.01	0.307	o	|	|	|	|	2.60
73.500	0.00	0.01	0.307	o	|	|	|	|	2.60
73.583	0.00	0.01	0.307	o	|	|	|	|	2.60
73.667	0.00	0.01	0.307	o	|	|	|	|	2.60
73.750	0.00	0.01	0.307	o	|	|	|	|	2.60
73.833	0.00	0.01	0.307	o	|	|	|	|	2.60
73.917	0.00	0.01	0.307	o	|	|	|	|	2.60
74.000	0.00	0.01	0.307	o	|	|	|	|	2.60
74.083	0.00	0.01	0.307	o	|	|	|	|	2.60
74.167	0.00	0.01	0.307	o	|	|	|	|	2.60
74.250	0.00	0.01	0.307	o	|	|	|	|	2.60
74.333	0.00	0.01	0.306	o	|	|	|	|	2.60
74.417	0.00	0.01	0.306	o	|	|	|	|	2.60
74.500	0.00	0.01	0.306	o	|	|	|	|	2.60
74.583	0.00	0.01	0.306	o	|	|	|	|	2.60
74.667	0.00	0.01	0.306	o	|	|	|	|	2.60
74.750	0.00	0.01	0.306	o	|	|	|	|	2.60

74.833	0.00	0.01	0.306	o	|	|	|	|	2.60
74.917	0.00	0.01	0.306	o	|	|	|	|	2.60
75.000	0.00	0.01	0.306	o	|	|	|	|	2.60
75.083	0.00	0.01	0.306	o	|	|	|	|	2.60
75.167	0.00	0.01	0.306	o	|	|	|	|	2.60
75.250	0.00	0.01	0.306	o	|	|	|	|	2.60
75.333	0.00	0.01	0.306	o	|	|	|	|	2.60
75.417	0.00	0.01	0.306	o	|	|	|	|	2.60
75.500	0.00	0.01	0.306	o	|	|	|	|	2.60
75.583	0.00	0.01	0.306	o	|	|	|	|	2.60
75.667	0.00	0.01	0.306	o	|	|	|	|	2.60
75.750	0.00	0.01	0.306	o	|	|	|	|	2.60
75.833	0.00	0.01	0.306	o	|	|	|	|	2.60
75.917	0.00	0.01	0.306	o	|	|	|	|	2.60
76.000	0.00	0.01	0.306	o	|	|	|	|	2.60
76.083	0.00	0.01	0.305	o	|	|	|	|	2.60
76.167	0.00	0.01	0.305	o	|	|	|	|	2.60
76.250	0.00	0.01	0.305	o	|	|	|	|	2.60
76.333	0.00	0.01	0.305	o	|	|	|	|	2.60
76.417	0.00	0.01	0.305	o	|	|	|	|	2.60
76.500	0.00	0.01	0.305	o	|	|	|	|	2.60
76.583	0.00	0.01	0.305	o	|	|	|	|	2.60
76.667	0.00	0.01	0.305	o	|	|	|	|	2.60
76.750	0.00	0.01	0.305	o	|	|	|	|	2.60
76.833	0.00	0.01	0.305	o	|	|	|	|	2.60
76.917	0.00	0.01	0.305	o	|	|	|	|	2.60
77.000	0.00	0.01	0.305	o	|	|	|	|	2.60
77.083	0.00	0.01	0.305	o	|	|	|	|	2.60
77.167	0.00	0.01	0.305	o	|	|	|	|	2.60
77.250	0.00	0.00	0.305	o	|	|	|	|	2.60
77.333	0.00	0.00	0.305	o	|	|	|	|	2.60
77.417	0.00	0.00	0.305	o	|	|	|	|	2.60
77.500	0.00	0.00	0.305	o	|	|	|	|	2.60
77.583	0.00	0.00	0.305	o	|	|	|	|	2.60
77.667	0.00	0.00	0.305	o	|	|	|	|	2.60
77.750	0.00	0.00	0.305	o	|	|	|	|	2.60
77.833	0.00	0.00	0.305	o	|	|	|	|	2.60
77.917	0.00	0.00	0.305	o	|	|	|	|	2.60
78.000	0.00	0.00	0.305	o	|	|	|	|	2.60
78.083	0.00	0.00	0.305	o	|	|	|	|	2.60
78.167	0.00	0.00	0.305	o	|	|	|	|	2.60
78.250	0.00	0.00	0.305	o	|	|	|	|	2.60
78.333	0.00	0.00	0.305	o	|	|	|	|	2.60
78.417	0.00	0.00	0.305	o	|	|	|	|	2.60
78.500	0.00	0.00	0.304	o	|	|	|	|	2.60
78.583	0.00	0.00	0.304	o	|	|	|	|	2.60
78.667	0.00	0.00	0.304	o	|	|	|	|	2.60
78.750	0.00	0.00	0.304	o	|	|	|	|	2.60
78.833	0.00	0.00	0.304	o	|	|	|	|	2.60
78.917	0.00	0.00	0.304	o	|	|	|	|	2.60
79.000	0.00	0.00	0.304	o	|	|	|	|	2.60
79.083	0.00	0.00	0.304	o	|	|	|	|	2.60
79.167	0.00	0.00	0.304	o	|	|	|	|	2.60
79.250	0.00	0.00	0.304	o	|	|	|	|	2.60
79.333	0.00	0.00	0.304	o	|	|	|	|	2.60
79.417	0.00	0.00	0.304	o	|	|	|	|	2.60
79.500	0.00	0.00	0.304	o	|	|	|	|	2.60
79.583	0.00	0.00	0.304	o	|	|	|	|	2.60
79.667	0.00	0.00	0.304	o	|	|	|	|	2.60
79.750	0.00	0.00	0.304	o	|	|	|	|	2.60
79.833	0.00	0.00	0.304	o	|	|	|	|	2.60
79.917	0.00	0.00	0.304	o	|	|	|	|	2.60
80.000	0.00	0.00	0.304	o	|	|	|	|	2.60
80.083	0.00	0.00	0.304	o	|	|	|	|	2.60
80.167	0.00	0.00	0.304	o	|	|	|	|	2.60
80.250	0.00	0.00	0.304	o	|	|	|	|	2.60
80.333	0.00	0.00	0.304	o	|	|	|	|	2.60
80.417	0.00	0.00	0.304	o	|	|	|	|	2.60
80.500	0.00	0.00	0.304	o	|	|	|	|	2.60
80.583	0.00	0.00	0.304	o	|	|	|	|	2.60
80.667	0.00	0.00	0.304	o	|	|	|	|	2.60
80.750	0.00	0.00	0.304	o	|	|	|	|	2.60
80.833	0.00	0.00	0.304	o	|	|	|	|	2.60
80.917	0.00	0.00	0.304	o	|	|	|	|	2.60
81.000	0.00	0.00	0.304	o	|	|	|	|	2.60

81.083	0.00	0.00	0.304	o	|	|	|	|	2.60
81.167	0.00	0.00	0.304	o	|	|	|	|	2.60
81.250	0.00	0.00	0.304	o	|	|	|	|	2.60
81.333	0.00	0.00	0.304	o	|	|	|	|	2.60
81.417	0.00	0.00	0.304	o	|	|	|	|	2.60
81.500	0.00	0.00	0.304	o	|	|	|	|	2.60
81.583	0.00	0.00	0.304	o	|	|	|	|	2.60
81.667	0.00	0.00	0.304	o	|	|	|	|	2.60
81.750	0.00	0.00	0.304	o	|	|	|	|	2.60
81.833	0.00	0.00	0.304	o	|	|	|	|	2.60
81.917	0.00	0.00	0.304	o	|	|	|	|	2.60
82.000	0.00	0.00	0.304	o	|	|	|	|	2.60
82.083	0.00	0.00	0.304	o	|	|	|	|	2.60
82.167	0.00	0.00	0.304	o	|	|	|	|	2.60
82.250	0.00	0.00	0.304	o	|	|	|	|	2.60
82.333	0.00	0.00	0.304	o	|	|	|	|	2.60
82.417	0.00	0.00	0.304	o	|	|	|	|	2.60
82.500	0.00	0.00	0.304	o	|	|	|	|	2.60
82.583	0.00	0.00	0.304	o	|	|	|	|	2.60
82.667	0.00	0.00	0.303	o	|	|	|	|	2.60
82.750	0.00	0.00	0.303	o	|	|	|	|	2.60
82.833	0.00	0.00	0.303	o	|	|	|	|	2.60
82.917	0.00	0.00	0.303	o	|	|	|	|	2.60
83.000	0.00	0.00	0.303	o	|	|	|	|	2.60
83.083	0.00	0.00	0.303	o	|	|	|	|	2.60
83.167	0.00	0.00	0.303	o	|	|	|	|	2.60
83.250	0.00	0.00	0.303	o	|	|	|	|	2.60
83.333	0.00	0.00	0.303	o	|	|	|	|	2.60
83.417	0.00	0.00	0.303	o	|	|	|	|	2.60
83.500	0.00	0.00	0.303	o	|	|	|	|	2.60
83.583	0.00	0.00	0.303	o	|	|	|	|	2.60
83.667	0.00	0.00	0.303	o	|	|	|	|	2.60
83.750	0.00	0.00	0.303	o	|	|	|	|	2.60
83.833	0.00	0.00	0.303	o	|	|	|	|	2.60
83.917	0.00	0.00	0.303	o	|	|	|	|	2.60
84.000	0.00	0.00	0.303	o	|	|	|	|	2.60
84.083	0.00	0.00	0.303	o	|	|	|	|	2.60
84.167	0.00	0.00	0.303	o	|	|	|	|	2.60
84.250	0.00	0.00	0.303	o	|	|	|	|	2.60
84.333	0.00	0.00	0.303	o	|	|	|	|	2.60
84.417	0.00	0.00	0.303	o	|	|	|	|	2.60
84.500	0.00	0.00	0.303	o	|	|	|	|	2.60
84.583	0.00	0.00	0.303	o	|	|	|	|	2.60
84.667	0.00	0.00	0.303	o	|	|	|	|	2.60
84.750	0.00	0.00	0.303	o	|	|	|	|	2.60
84.833	0.00	0.00	0.303	o	|	|	|	|	2.60
84.917	0.00	0.00	0.303	o	|	|	|	|	2.60
85.000	0.00	0.00	0.303	o	|	|	|	|	2.60
85.083	0.00	0.00	0.303	o	|	|	|	|	2.60
85.167	0.00	0.00	0.303	o	|	|	|	|	2.60
85.250	0.00	0.00	0.303	o	|	|	|	|	2.60
85.333	0.00	0.00	0.303	o	|	|	|	|	2.60
85.417	0.00	0.00	0.303	o	|	|	|	|	2.60
85.500	0.00	0.00	0.303	o	|	|	|	|	2.60
85.583	0.00	0.00	0.303	o	|	|	|	|	2.60
85.667	0.00	0.00	0.303	o	|	|	|	|	2.60
85.750	0.00	0.00	0.303	o	|	|	|	|	2.60
85.833	0.00	0.00	0.303	o	|	|	|	|	2.60
85.917	0.00	0.00	0.303	o	|	|	|	|	2.60
86.000	0.00	0.00	0.303	o	|	|	|	|	2.60
86.083	0.00	0.00	0.303	o	|	|	|	|	2.60
86.167	0.00	0.00	0.303	o	|	|	|	|	2.60
86.250	0.00	0.00	0.303	o	|	|	|	|	2.60
86.333	0.00	0.00	0.303	o	|	|	|	|	2.60
86.417	0.00	0.00	0.303	o	|	|	|	|	2.60
86.500	0.00	0.00	0.303	o	|	|	|	|	2.60
86.583	0.00	0.00	0.303	o	|	|	|	|	2.60
86.667	0.00	0.00	0.303	o	|	|	|	|	2.60
86.750	0.00	0.00	0.303	o	|	|	|	|	2.60
86.833	0.00	0.00	0.303	o	|	|	|	|	2.60

Remaining water in basin = 0.30 (Ac.Ft)

```
**************************HYDROGRAPH DATA**************************
               Number of intervals =  1042
               Time interval =    5.0 (Min.)
               Maximum/Peak flow rate =        9.372 (CFS)
               Total volume =      10.308 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
*******************************************************************************

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BASIN ROUTING
10-YEAR, 24-HOUR -HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

21-0044 EXETER INDUSTRIAL BLDG 1
10-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST10YR2410.rte
**********HYDROGRAPH DATA**********
Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 23.776 (CFS)
Total volume = 13.018 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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++
Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
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User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

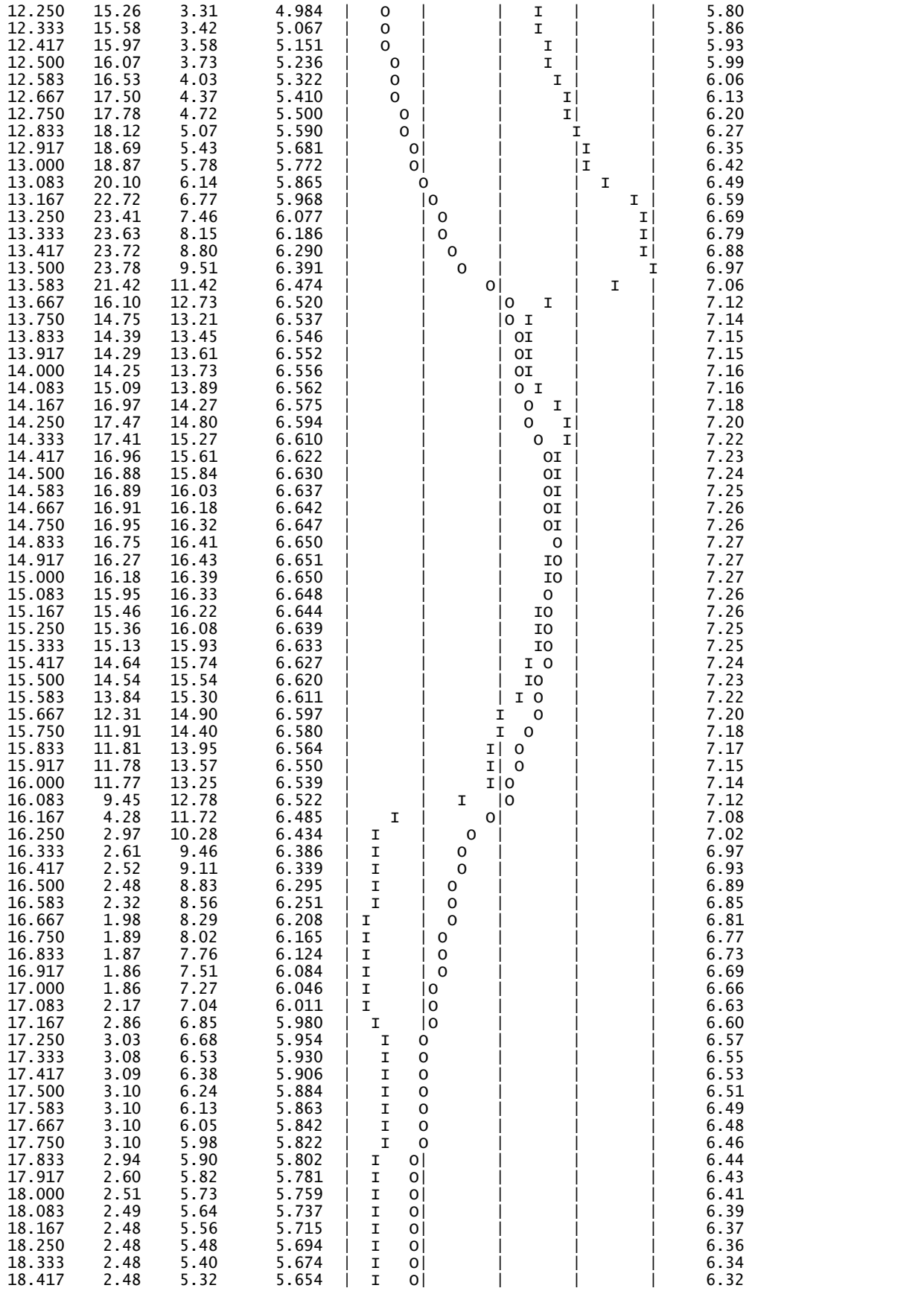
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
5.820	5.007	3.318	4.996	5.018
6.000	5.251	3.753	5.238	5.264
6.500	5.873	6.174	5.852	5.894
6.960	6.375	9.338	6.343	6.407
7.000	6.418	9.814	6.384	6.452
7.500	6.855	22.225	6.778	6.932
8.000	7.101	41.053	6.960	7.242

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 5.9 11.89 17.83 23.78	Depth (Ft.)
0.083	0.31	0.00	0.001	O	0.01
0.167	1.00	0.00	0.006	OI	0.05
0.250	1.17	0.00	0.013	OI	0.11
0.333	1.38	0.00	0.022	OI	0.19
0.417	1.73	0.00	0.033	O I	0.28
0.500	1.83	0.00	0.045	O I	0.38
0.583	1.85	0.00	0.057	O I	0.49
0.667	1.86	0.00	0.070	O I	0.60
0.750	1.86	0.00	0.083	O I	0.71
0.833	2.01	0.00	0.096	O I	0.83
0.917	2.36	0.00	0.111	O I	0.96
1.000	2.45	0.00	0.128	O I	1.10
1.083	2.31	0.00	0.144	O I	1.24
1.167	1.98	0.00	0.159	O I	1.36
1.250	1.89	0.00	0.172	O I	1.48
1.333	1.87	0.00	0.185	O I	1.59
1.417	1.86	0.00	0.198	O I	1.70
1.500	1.86	0.00	0.211	O I	1.81
1.583	1.86	0.00	0.224	O I	1.92
1.667	1.86	0.00	0.237	O I	2.03
1.750	1.86	0.00	0.249	O I	2.14
1.833	2.01	0.00	0.263	O I	2.25
1.917	2.36	0.00	0.278	O I	2.38
2.000	2.45	0.00	0.294	O I	2.52
2.083	2.47	0.02	0.311	O I	2.61
2.167	2.48	0.05	0.328	O I	2.62
2.250	2.48	0.09	0.344	O I	2.63
2.333	2.48	0.12	0.361	O I	2.64
2.417	2.48	0.15	0.377	O I	2.65
2.500	2.48	0.18	0.393	O I	2.66
2.583	2.63	0.22	0.409	O I	2.67
2.667	2.98	0.25	0.427	O I	2.69
2.750	3.06	0.29	0.446	O I	2.70
2.833	3.09	0.33	0.465	O I	2.71
2.917	3.09	0.37	0.484	O I	2.73
3.000	3.10	0.41	0.502	O I	2.74
3.083	3.10	0.44	0.521	O I	2.75
3.167	3.10	0.48	0.539	O I	2.76
3.250	3.10	0.52	0.557	O I	2.78
3.333	3.10	0.55	0.574	O I	2.79
3.417	3.10	0.59	0.592	O I	2.80
3.500	3.10	0.62	0.609	O I	2.81
3.583	3.10	0.66	0.626	O I	2.82
3.667	3.10	0.69	0.643	O I	2.84
3.750	3.10	0.72	0.659	O I	2.85
3.833	3.25	0.76	0.676	|O I	2.86
3.917	3.60	0.80	0.694	|O I	2.87
4.000	3.68	0.83	0.714	|O I	2.89
4.083	3.71	0.87	0.733	|O I	2.90
4.167	3.71	0.91	0.752	|O I	2.91
4.250	3.72	0.95	0.772	|O I	2.93
4.333	3.87	0.99	0.791	|O I	2.94
4.417	4.22	1.03	0.812	|O I	2.95
4.500	4.30	1.08	0.834	|O I	2.97
4.583	4.33	1.12	0.856	|O I	2.98
4.667	4.33	1.17	0.878	|O I	3.00
4.750	4.34	1.19	0.900	|O I	3.01
4.833	4.49	1.20	0.922	|O I	3.03
4.917	4.84	1.22	0.946	|O I	3.05
5.000	4.92	1.24	0.971	|O I	3.06
5.083	4.64	1.26	0.995	|O I	3.08
5.167	3.95	1.28	1.016	|O I	3.09
5.250	3.78	1.29	1.034	|O I	3.11
5.333	3.89	1.31	1.051	|O I	3.12
5.417	4.22	1.32	1.070	|O I	3.13
5.500	4.30	1.34	1.090	|O I	3.14
5.583	4.48	1.35	1.111	|O I	3.16
5.667	4.83	1.37	1.134	|O I	3.17
5.750	4.92	1.39	1.158	|O I	3.19
5.833	4.95	1.41	1.182	|O I	3.21
5.917	4.95	1.43	1.207	|O I	3.22

6.000	4.96	1.45	1.231	|O I |	|	|	|	3.24
6.083	5.11	1.47	1.256	|O I |	|	|	|	3.26
6.167	5.45	1.49	1.282	| O I|	|	|	|	3.27
6.250	5.54	1.51	1.309	| O I|	|	|	|	3.29
6.333	5.57	1.53	1.337	| O I|	|	|	|	3.31
6.417	5.57	1.55	1.365	| O I|	|	|	|	3.33
6.500	5.58	1.58	1.392	| O I|	|	|	|	3.35
6.583	5.73	1.60	1.420	| O I|	|	|	|	3.37
6.667	6.07	1.62	1.450	| O I |	|	|	|	3.39
6.750	6.16	1.65	1.481	| O I |	|	|	|	3.41
6.833	6.19	1.67	1.512	| O I |	|	|	|	3.43
6.917	6.19	1.70	1.543	| O I |	|	|	|	3.45
7.000	6.19	1.72	1.574	| O I |	|	|	|	3.47
7.083	6.19	1.74	1.605	| O I |	|	|	|	3.49
7.167	6.19	1.76	1.635	| O I |	|	|	|	3.51
7.250	6.19	1.78	1.666	| O I |	|	|	|	3.53
7.333	6.35	1.80	1.696	| O I |	|	|	|	3.55
7.417	6.69	1.82	1.729	| O |I |	|	|	|	3.57
7.500	6.78	1.84	1.763	| O |I |	|	|	|	3.60
7.583	6.96	1.86	1.797	| O |I |	|	|	|	3.62
7.667	7.31	1.88	1.834	| O |I |	|	|	|	3.64
7.750	7.40	1.90	1.871	| O |I |	|	|	|	3.67
7.833	7.58	1.92	1.910	| O | I |	|	|	|	3.69
7.917	7.93	1.95	1.950	| O | I |	|	|	|	3.72
8.000	8.02	1.97	1.991	| O | I |	|	|	|	3.75
8.083	8.35	1.99	2.034	| O | I |	|	|	|	3.78
8.167	9.05	2.02	2.080	| O | I |	|	|	|	3.81
8.250	9.23	2.05	2.129	| O | I |	|	|	|	3.84
8.333	9.27	2.08	2.178	| O | I |	|	|	|	3.87
8.417	9.29	2.11	2.228	| O | I |	|	|	|	3.91
8.500	9.29	2.14	2.277	| O | I |	|	|	|	3.94
8.583	9.45	2.16	2.327	| O | I |	|	|	|	3.97
8.667	9.79	2.19	2.378	| O | I |	|	|	|	4.01
8.750	9.88	2.22	2.431	| O | I |	|	|	|	4.04
8.833	10.06	2.24	2.484	| O | I |	|	|	|	4.08
8.917	10.41	2.27	2.539	| O | I |	|	|	|	4.11
9.000	10.50	2.30	2.595	| O | I |	|	|	|	4.15
9.083	10.83	2.32	2.653	| O | I |	|	|	|	4.19
9.167	11.53	2.35	2.714	| O | I|	|	|	|	4.23
9.250	11.70	2.38	2.777	| O | I|	|	|	|	4.27
9.333	11.91	2.41	2.842	| O | I |	|	|	|	4.32
9.417	12.26	2.45	2.909	| O | I |	|	|	|	4.36
9.500	12.36	2.48	2.976	| O | I |	|	|	|	4.40
9.583	12.53	2.51	3.045	| O | I |	|	|	|	4.45
9.667	12.89	2.55	3.115	| O | |I |	|	|	|	4.50
9.750	12.98	2.58	3.186	| O | |I |	|	|	|	4.54
9.833	13.15	2.61	3.259	| O | |I |	|	|	|	4.59
9.917	13.50	2.64	3.332	| O | | I |	|	|	|	4.64
10.000	13.60	2.67	3.407	| O | | I |	|	|	|	4.69
10.083	12.54	2.70	3.479	| O | I |	|	|	|	4.74
10.167	10.13	2.73	3.538	| O | I |	|	|	|	4.78
10.250	9.52	2.75	3.587	| O | I |	|	|	|	4.82
10.333	9.35	2.77	3.633	| O | I |	|	|	|	4.85
10.417	9.31	2.79	3.678	| O | I |	|	|	|	4.88
10.500	9.29	2.81	3.723	| O | I |	|	|	|	4.91
10.583	10.07	2.83	3.770	| O | I |	|	|	|	4.94
10.667	11.79	2.85	3.826	| O | I|	|	|	|	4.98
10.750	12.23	2.88	3.889	| O | I |	|	|	|	5.02
10.833	12.34	2.90	3.954	| O | I |	|	|	|	5.07
10.917	12.38	2.93	4.019	| O | I |	|	|	|	5.11
11.000	12.39	2.95	4.084	| O | I |	|	|	|	5.16
11.083	12.23	2.98	4.148	| O | I |	|	|	|	5.20
11.167	11.89	3.00	4.211	| O | I |	|	|	|	5.25
11.250	11.80	3.03	4.271	| O | I|	|	|	|	5.29
11.333	11.78	3.05	4.332	| O | I|	|	|	|	5.33
11.417	11.77	3.08	4.392	| O | I|	|	|	|	5.37
11.500	11.77	3.10	4.451	| O | I|	|	|	|	5.41
11.583	11.46	3.12	4.510	| O | I|	|	|	|	5.46
11.667	10.77	3.14	4.565	| O | I |	|	|	|	5.49
11.750	10.60	3.16	4.617	| O | I |	|	|	|	5.53
11.833	10.70	3.19	4.668	| O | I |	|	|	|	5.57
11.917	11.03	3.21	4.721	| O | I |	|	|	|	5.61
12.000	11.12	3.23	4.775	| O | I |	|	|	|	5.65
12.083	12.22	3.25	4.833	| O | I |	|	|	|	5.69
12.167	14.64	3.28	4.903	| O | | I |	|	|	|	5.74



18.500	2.48	5.25	5.635	| I O|	|	|	|	6.31
18.583	2.32	5.17	5.615	| I O |	|	|	|	6.29
18.667	1.98	5.09	5.595	| I O |	|	|	|	6.28
18.750	1.89	5.01	5.573	| I O |	|	|	|	6.26
18.833	1.71	4.92	5.552	| I O |	|	|	|	6.24
18.917	1.36	4.83	5.529	|I O |	|	|	|	6.22
19.000	1.27	4.74	5.505	|I O |	|	|	|	6.20
19.083	1.40	4.65	5.482	|I O |	|	|	|	6.19
19.167	1.74	4.57	5.461	| I O |	|	|	|	6.17
19.250	1.83	4.50	5.442	| I O |	|	|	|	6.15
19.333	2.00	4.43	5.424	| I O |	|	|	|	6.14
19.417	2.35	4.37	5.409	| I O |	|	|	|	6.13
19.500	2.45	4.32	5.396	| I O |	|	|	|	6.12
19.583	2.31	4.26	5.382	| I O |	|	|	|	6.11
19.667	1.98	4.21	5.368	| I O |	|	|	|	6.09
19.750	1.89	4.15	5.353	| I O |	|	|	|	6.08
19.833	1.71	4.09	5.337	| I O |	|	|	|	6.07
19.917	1.36	4.02	5.319	|I O |	|	|	|	6.05
20.000	1.27	3.95	5.301	|I O |	|	|	|	6.04
20.083	1.40	3.88	5.283	|I O |	|	|	|	6.03
20.167	1.74	3.82	5.267	| I O |	|	|	|	6.01
20.250	1.83	3.76	5.254	| I O |	|	|	|	6.00
20.333	1.85	3.73	5.240	| I O |	|	|	|	5.99
20.417	1.86	3.71	5.228	| I O |	|	|	|	5.98
20.500	1.86	3.69	5.215	| I O |	|	|	|	5.97
20.583	1.86	3.67	5.202	| I O |	|	|	|	5.96
20.667	1.86	3.64	5.190	| I O |	|	|	|	5.96
20.750	1.86	3.62	5.178	| I O |	|	|	|	5.95
20.833	1.70	3.60	5.165	| I O |	|	|	|	5.94
20.917	1.36	3.57	5.151	|I O |	|	|	|	5.93
21.000	1.27	3.55	5.136	|I O |	|	|	|	5.91
21.083	1.40	3.52	5.120	|I O |	|	|	|	5.90
21.167	1.74	3.50	5.107	| I O |	|	|	|	5.89
21.250	1.83	3.48	5.095	| I O |	|	|	|	5.89
21.333	1.69	3.45	5.084	| I O |	|	|	|	5.88
21.417	1.36	3.43	5.070	|I O |	|	|	|	5.87
21.500	1.27	3.41	5.056	|I O |	|	|	|	5.86
21.583	1.40	3.38	5.042	|I O |	|	|	|	5.85
21.667	1.74	3.36	5.029	| I O |	|	|	|	5.84
21.750	1.83	3.34	5.019	| I O |	|	|	|	5.83
21.833	1.69	3.32	5.008	| I O |	|	|	|	5.82
21.917	1.36	3.31	4.995	|I O |	|	|	|	5.81
22.000	1.27	3.31	4.982	|I O |	|	|	|	5.80
22.083	1.40	3.30	4.968	|I O |	|	|	|	5.79
22.167	1.74	3.30	4.956	| I O |	|	|	|	5.78
22.250	1.83	3.29	4.946	| I O |	|	|	|	5.77
22.333	1.69	3.29	4.935	| I O |	|	|	|	5.77
22.417	1.36	3.29	4.923	|I O |	|	|	|	5.76
22.500	1.27	3.28	4.910	|I O |	|	|	|	5.75
22.583	1.25	3.27	4.896	|I O |	|	|	|	5.74
22.667	1.24	3.27	4.882	|I O |	|	|	|	5.73
22.750	1.24	3.26	4.868	|I O |	|	|	|	5.72
22.833	1.24	3.26	4.854	|I O |	|	|	|	5.71
22.917	1.24	3.25	4.840	|I O |	|	|	|	5.70
23.000	1.24	3.25	4.826	|I O |	|	|	|	5.69
23.083	1.24	3.24	4.812	|I O |	|	|	|	5.68
23.167	1.24	3.24	4.799	|I O |	|	|	|	5.67
23.250	1.24	3.23	4.785	|I O |	|	|	|	5.66
23.333	1.24	3.23	4.771	|I O |	|	|	|	5.65
23.417	1.24	3.22	4.757	|I O |	|	|	|	5.64
23.500	1.24	3.21	4.744	|I O |	|	|	|	5.63
23.583	1.24	3.21	4.730	|I O |	|	|	|	5.62
23.667	1.24	3.20	4.717	|I O |	|	|	|	5.61
23.750	1.24	3.20	4.703	|I O |	|	|	|	5.60
23.833	1.24	3.19	4.690	|I O |	|	|	|	5.59
23.917	1.24	3.19	4.676	|I O |	|	|	|	5.58
24.000	1.24	3.18	4.663	|I O |	|	|	|	5.57
24.083	0.93	3.18	4.648	|I O |	|	|	|	5.55
24.167	0.24	3.17	4.631	I O |	|	|	|	5.54
24.250	0.07	3.16	4.610	I O |	|	|	|	5.53
24.333	0.02	3.15	4.588	I O |	|	|	|	5.51
24.417	0.01	3.15	4.567	I O |	|	|	|	5.49
24.500	0.00	3.14	4.545	I O |	|	|	|	5.48
24.583	0.00	3.13	4.524	I O |	|	|	|	5.46
24.667	0.00	3.12	4.502	I O |	|	|	|	5.45

24.750	0.00	3.11	4.481	I	o	|	|	|	5.43
24.833	0.00	3.10	4.459	I	o	|	|	|	5.42
24.917	0.00	3.09	4.438	I	o	|	|	|	5.40
25.000	0.00	3.09	4.417	I	o	|	|	|	5.39
25.083	0.00	3.08	4.395	I	o	|	|	|	5.38
25.167	0.00	3.07	4.374	I	o	|	|	|	5.36
25.250	0.00	3.06	4.353	I	o	|	|	|	5.35
25.333	0.00	3.05	4.332	I	o	|	|	|	5.33
25.417	0.00	3.04	4.311	I	o	|	|	|	5.32
25.500	0.00	3.04	4.290	I	o	|	|	|	5.30
25.583	0.00	3.03	4.269	I	o	|	|	|	5.29
25.667	0.00	3.02	4.248	I	o	|	|	|	5.27
25.750	0.00	3.01	4.228	I	o	|	|	|	5.26
25.833	0.00	3.00	4.207	I	o	|	|	|	5.24
25.917	0.00	2.99	4.186	I	o	|	|	|	5.23
26.000	0.00	2.99	4.166	I	o	|	|	|	5.21
26.083	0.00	2.98	4.145	I	o	|	|	|	5.20
26.167	0.00	2.97	4.125	I	o	|	|	|	5.19
26.250	0.00	2.96	4.104	I	o	|	|	|	5.17
26.333	0.00	2.95	4.084	I	o	|	|	|	5.16
26.417	0.00	2.95	4.064	I	o	|	|	|	5.14
26.500	0.00	2.94	4.043	I	o	|	|	|	5.13
26.583	0.00	2.93	4.023	I	o	|	|	|	5.11
26.667	0.00	2.92	4.003	I	o	|	|	|	5.10
26.750	0.00	2.91	3.983	I	o	|	|	|	5.09
26.833	0.00	2.91	3.963	I	o	|	|	|	5.07
26.917	0.00	2.90	3.943	I	o	|	|	|	5.06
27.000	0.00	2.89	3.923	I	o	|	|	|	5.04
27.083	0.00	2.88	3.903	I	o	|	|	|	5.03
27.167	0.00	2.87	3.883	I	o	|	|	|	5.02
27.250	0.00	2.87	3.864	I	o	|	|	|	5.00
27.333	0.00	2.86	3.844	I	o	|	|	|	4.99
27.417	0.00	2.85	3.824	I	o	|	|	|	4.98
27.500	0.00	2.84	3.805	I	o	|	|	|	4.96
27.583	0.00	2.83	3.785	I	o	|	|	|	4.95
27.667	0.00	2.82	3.766	I	o	|	|	|	4.94
27.750	0.00	2.82	3.746	I	o	|	|	|	4.92
27.833	0.00	2.81	3.727	I	o	|	|	|	4.91
27.917	0.00	2.80	3.707	I	o	|	|	|	4.90
28.000	0.00	2.79	3.688	I	o	|	|	|	4.88
28.083	0.00	2.78	3.669	I	o	|	|	|	4.87
28.167	0.00	2.77	3.650	I	o	|	|	|	4.86
28.250	0.00	2.77	3.631	I	o	|	|	|	4.85
28.333	0.00	2.76	3.612	I	o	|	|	|	4.83
28.417	0.00	2.75	3.593	I	o	|	|	|	4.82
28.500	0.00	2.74	3.574	I	o	|	|	|	4.81
28.583	0.00	2.73	3.555	I	o	|	|	|	4.79
28.667	0.00	2.73	3.536	I	o	|	|	|	4.78
28.750	0.00	2.72	3.517	I	o	|	|	|	4.77
28.833	0.00	2.71	3.499	I	o	|	|	|	4.76
28.917	0.00	2.70	3.480	I	o	|	|	|	4.74
29.000	0.00	2.69	3.462	I	o	|	|	|	4.73
29.083	0.00	2.69	3.443	I	o	|	|	|	4.72
29.167	0.00	2.68	3.425	I	o	|	|	|	4.71
29.250	0.00	2.67	3.406	I	o	|	|	|	4.69
29.333	0.00	2.66	3.388	I	o	|	|	|	4.68
29.417	0.00	2.65	3.369	I	o	|	|	|	4.67
29.500	0.00	2.65	3.351	I	o	|	|	|	4.66
29.583	0.00	2.64	3.333	I	o	|	|	|	4.64
29.667	0.00	2.63	3.315	I	o	|	|	|	4.63
29.750	0.00	2.62	3.297	I	o	|	|	|	4.62
29.833	0.00	2.62	3.279	I	o	|	|	|	4.61
29.917	0.00	2.61	3.261	I	o	|	|	|	4.60
30.000	0.00	2.60	3.243	I	o	|	|	|	4.58
30.083	0.00	2.59	3.225	I	o	|	|	|	4.57
30.167	0.00	2.59	3.207	I	o	|	|	|	4.56
30.250	0.00	2.58	3.189	I	o	|	|	|	4.55
30.333	0.00	2.57	3.172	I	o	|	|	|	4.53
30.417	0.00	2.56	3.154	I	o	|	|	|	4.52
30.500	0.00	2.55	3.136	I	o	|	|	|	4.51
30.583	0.00	2.55	3.119	I	o	|	|	|	4.50
30.667	0.00	2.54	3.101	I	o	|	|	|	4.49
30.750	0.00	2.53	3.084	I	o	|	|	|	4.48
30.833	0.00	2.52	3.066	I	o	|	|	|	4.46
30.917	0.00	2.51	3.049	I	o	|	|	|	4.45

31.000	0.00	2.51	3.032	I	o	|	|	|	4.44
31.083	0.00	2.50	3.015	I	o	|	|	|	4.43
31.167	0.00	2.49	2.997	I	o	|	|	|	4.42
31.250	0.00	2.48	2.980	I	o	|	|	|	4.41
31.333	0.00	2.47	2.963	I	o	|	|	|	4.40
31.417	0.00	2.46	2.946	I	o	|	|	|	4.38
31.500	0.00	2.46	2.929	I	o	|	|	|	4.37
31.583	0.00	2.45	2.912	I	o	|	|	|	4.36
31.667	0.00	2.44	2.895	I	o	|	|	|	4.35
31.750	0.00	2.43	2.879	I	o	|	|	|	4.34
31.833	0.00	2.42	2.862	I	o	|	|	|	4.33
31.917	0.00	2.42	2.845	I	o	|	|	|	4.32
32.000	0.00	2.41	2.829	I	o	|	|	|	4.31
32.083	0.00	2.40	2.812	I	o	|	|	|	4.30
32.167	0.00	2.39	2.796	I	o	|	|	|	4.28
32.250	0.00	2.38	2.779	I	o	|	|	|	4.27
32.333	0.00	2.38	2.763	I	o	|	|	|	4.26
32.417	0.00	2.37	2.746	I	o	|	|	|	4.25
32.500	0.00	2.36	2.730	I	o	|	|	|	4.24
32.583	0.00	2.35	2.714	I	o	|	|	|	4.23
32.667	0.00	2.35	2.698	I	o	|	|	|	4.22
32.750	0.00	2.34	2.682	I	o	|	|	|	4.21
32.833	0.00	2.33	2.666	I	o	|	|	|	4.20
32.917	0.00	2.32	2.649	I	o	|	|	|	4.19
33.000	0.00	2.32	2.634	I	o	|	|	|	4.18
33.083	0.00	2.31	2.618	I	o	|	|	|	4.17
33.167	0.00	2.30	2.602	I	o	|	|	|	4.16
33.250	0.00	2.29	2.586	I	o	|	|	|	4.14
33.333	0.00	2.28	2.570	I	o	|	|	|	4.13
33.417	0.00	2.28	2.554	I	o	|	|	|	4.12
33.500	0.00	2.27	2.539	I	o	|	|	|	4.11
33.583	0.00	2.26	2.523	I	o	|	|	|	4.10
33.667	0.00	2.25	2.508	I	o	|	|	|	4.09
33.750	0.00	2.25	2.492	I	o	|	|	|	4.08
33.833	0.00	2.24	2.477	I	o	|	|	|	4.07
33.917	0.00	2.23	2.461	I	o	|	|	|	4.06
34.000	0.00	2.23	2.446	I	o	|	|	|	4.05
34.083	0.00	2.22	2.431	I	o	|	|	|	4.04
34.167	0.00	2.21	2.415	I	o	|	|	|	4.03
34.250	0.00	2.20	2.400	I	o	|	|	|	4.02
34.333	0.00	2.20	2.385	I	o	|	|	|	4.01
34.417	0.00	2.19	2.370	I	o	|	|	|	4.00
34.500	0.00	2.18	2.355	I	o	|	|	|	3.99
34.583	0.00	2.17	2.340	I	o	|	|	|	3.98
34.667	0.00	2.16	2.325	I	o	|	|	|	3.97
34.750	0.00	2.15	2.310	I	o	|	|	|	3.96
34.833	0.00	2.15	2.295	I	o	|	|	|	3.95
34.917	0.00	2.14	2.281	I	o	|	|	|	3.94
35.000	0.00	2.13	2.266	I	o	|	|	|	3.93
35.083	0.00	2.12	2.251	I	o	|	|	|	3.92
35.167	0.00	2.11	2.237	I	o	|	|	|	3.91
35.250	0.00	2.10	2.222	I	o	|	|	|	3.90
35.333	0.00	2.10	2.208	I	o	|	|	|	3.89
35.417	0.00	2.09	2.193	I	o	|	|	|	3.88
35.500	0.00	2.08	2.179	I	o	|	|	|	3.87
35.583	0.00	2.07	2.165	I	o	|	|	|	3.86
35.667	0.00	2.06	2.150	I	o	|	|	|	3.86
35.750	0.00	2.05	2.136	I	o	|	|	|	3.85
35.833	0.00	2.05	2.122	I	o	|	|	|	3.84
35.917	0.00	2.04	2.108	I	o	|	|	|	3.83
36.000	0.00	2.03	2.094	I	o	|	|	|	3.82
36.083	0.00	2.02	2.080	I	o	|	|	|	3.81
36.167	0.00	2.01	2.066	I	o	|	|	|	3.80
36.250	0.00	2.01	2.052	I	o	|	|	|	3.79
36.333	0.00	2.00	2.039	I	o	|	|	|	3.78
36.417	0.00	1.99	2.025	I	o	|	|	|	3.77
36.500	0.00	1.98	2.011	I	o	|	|	|	3.76
36.583	0.00	1.97	1.998	I	o	|	|	|	3.75
36.667	0.00	1.97	1.984	I	o	|	|	|	3.74
36.750	0.00	1.96	1.970	I	o	|	|	|	3.74
36.833	0.00	1.95	1.957	I	o	|	|	|	3.73
36.917	0.00	1.94	1.944	I	o	|	|	|	3.72
37.000	0.00	1.94	1.930	I	o	|	|	|	3.71
37.083	0.00	1.93	1.917	I	o	|	|	|	3.70
37.167	0.00	1.92	1.904	I	o	|	|	|	3.69

37.250	0.00	1.91	1.890	I O	|	|	|	3.68
37.333	0.00	1.90	1.877	I O	|	|	|	3.67
37.417	0.00	1.90	1.864	I O	|	|	|	3.66
37.500	0.00	1.89	1.851	I O	|	|	|	3.66
37.583	0.00	1.88	1.838	I O	|	|	|	3.65
37.667	0.00	1.87	1.825	I O	|	|	|	3.64
37.750	0.00	1.87	1.812	I O	|	|	|	3.63
37.833	0.00	1.86	1.800	I O	|	|	|	3.62
37.917	0.00	1.85	1.787	I O	|	|	|	3.61
38.000	0.00	1.84	1.774	I O	|	|	|	3.60
38.083	0.00	1.84	1.761	I O	|	|	|	3.60
38.167	0.00	1.83	1.749	I O	|	|	|	3.59
38.250	0.00	1.82	1.736	I O	|	|	|	3.58
38.333	0.00	1.82	1.724	I O	|	|	|	3.57
38.417	0.00	1.81	1.711	I O	|	|	|	3.56
38.500	0.00	1.80	1.699	I O	|	|	|	3.55
38.583	0.00	1.79	1.686	I O	|	|	|	3.55
38.667	0.00	1.79	1.674	I O	|	|	|	3.54
38.750	0.00	1.78	1.662	I O	|	|	|	3.53
38.833	0.00	1.77	1.650	I O	|	|	|	3.52
38.917	0.00	1.77	1.637	I O	|	|	|	3.51
39.000	0.00	1.76	1.625	I O	|	|	|	3.51
39.083	0.00	1.75	1.613	I O	|	|	|	3.50
39.167	0.00	1.74	1.601	I O	|	|	|	3.49
39.250	0.00	1.73	1.589	I O	|	|	|	3.48
39.333	0.00	1.72	1.577	I O	|	|	|	3.47
39.417	0.00	1.71	1.565	I O	|	|	|	3.47
39.500	0.00	1.70	1.554	I O	|	|	|	3.46
39.583	0.00	1.69	1.542	I O	|	|	|	3.45
39.667	0.00	1.69	1.530	I O	|	|	|	3.44
39.750	0.00	1.68	1.519	I O	|	|	|	3.43
39.833	0.00	1.67	1.507	I O	|	|	|	3.43
39.917	0.00	1.66	1.496	I O	|	|	|	3.42
40.000	0.00	1.65	1.484	I O	|	|	|	3.41
40.083	0.00	1.64	1.473	I O	|	|	|	3.40
40.167	0.00	1.63	1.462	I O	|	|	|	3.39
40.250	0.00	1.62	1.451	I O	|	|	|	3.39
40.333	0.00	1.61	1.439	I O	|	|	|	3.38
40.417	0.00	1.60	1.428	I O	|	|	|	3.37
40.500	0.00	1.60	1.417	I O	|	|	|	3.36
40.583	0.00	1.59	1.406	I O	|	|	|	3.36
40.667	0.00	1.58	1.395	I O	|	|	|	3.35
40.750	0.00	1.57	1.385	I O	|	|	|	3.34
40.833	0.00	1.56	1.374	I O	|	|	|	3.34
40.917	0.00	1.55	1.363	I O	|	|	|	3.33
41.000	0.00	1.54	1.352	I O	|	|	|	3.32
41.083	0.00	1.54	1.342	I O	|	|	|	3.31
41.167	0.00	1.53	1.331	I O	|	|	|	3.31
41.250	0.00	1.52	1.321	I O	|	|	|	3.30
41.333	0.00	1.51	1.310	I O	|	|	|	3.29
41.417	0.00	1.50	1.300	I O	|	|	|	3.29
41.500	0.00	1.49	1.290	I O	|	|	|	3.28
41.583	0.00	1.49	1.279	I O	|	|	|	3.27
41.667	0.00	1.48	1.269	IO	|	|	|	3.26
41.750	0.00	1.47	1.259	IO	|	|	|	3.26
41.833	0.00	1.46	1.249	IO	|	|	|	3.25
41.917	0.00	1.45	1.239	IO	|	|	|	3.24
42.000	0.00	1.45	1.229	IO	|	|	|	3.24
42.083	0.00	1.44	1.219	IO	|	|	|	3.23
42.167	0.00	1.43	1.209	IO	|	|	|	3.22
42.250	0.00	1.42	1.199	IO	|	|	|	3.22
42.333	0.00	1.42	1.189	IO	|	|	|	3.21
42.417	0.00	1.41	1.180	IO	|	|	|	3.20
42.500	0.00	1.40	1.170	IO	|	|	|	3.20
42.583	0.00	1.39	1.160	IO	|	|	|	3.19
42.667	0.00	1.39	1.151	IO	|	|	|	3.18
42.750	0.00	1.38	1.141	IO	|	|	|	3.18
42.833	0.00	1.37	1.132	IO	|	|	|	3.17
42.917	0.00	1.36	1.123	IO	|	|	|	3.17
43.000	0.00	1.36	1.113	IO	|	|	|	3.16
43.083	0.00	1.35	1.104	IO	|	|	|	3.15
43.167	0.00	1.34	1.095	IO	|	|	|	3.15
43.250	0.00	1.33	1.085	IO	|	|	|	3.14
43.333	0.00	1.33	1.076	IO	|	|	|	3.13
43.417	0.00	1.32	1.067	IO	|	|	|	3.13

43.500	0.00	1.31	1.058	IO				3.12
43.583	0.00	1.30	1.049	IO				3.12
43.667	0.00	1.30	1.040	IO				3.11
43.750	0.00	1.29	1.031	IO				3.10
43.833	0.00	1.28	1.022	IO				3.10
43.917	0.00	1.28	1.013	IO				3.09
44.000	0.00	1.27	1.005	IO				3.09
44.083	0.00	1.26	0.996	IO				3.08
44.167	0.00	1.26	0.987	IO				3.07
44.250	0.00	1.25	0.979	IO				3.07
44.333	0.00	1.24	0.970	IO				3.06
44.417	0.00	1.24	0.962	IO				3.06
44.500	0.00	1.23	0.953	IO				3.05
44.583	0.00	1.22	0.945	IO				3.05
44.667	0.00	1.22	0.936	IO				3.04
44.750	0.00	1.21	0.928	IO				3.03
44.833	0.00	1.20	0.920	IO				3.03
44.917	0.00	1.20	0.911	IO				3.02
45.000	0.00	1.19	0.903	IO				3.02
45.083	0.00	1.18	0.895	IO				3.01
45.167	0.00	1.18	0.887	IO				3.01
45.250	0.00	1.17	0.879	IO				3.00
45.333	0.00	1.15	0.871	IO				3.00
45.417	0.00	1.14	0.863	IO				2.99
45.500	0.00	1.12	0.855	IO				2.98
45.583	0.00	1.11	0.847	IO				2.98
45.667	0.00	1.09	0.840	IO				2.97
45.750	0.00	1.08	0.832	IO				2.97
45.833	0.00	1.06	0.825	IO				2.96
45.917	0.00	1.05	0.818	IO				2.96
46.000	0.00	1.03	0.811	IO				2.95
46.083	0.00	1.02	0.804	IO				2.95
46.167	0.00	1.00	0.797	IO				2.94
46.250	0.00	0.99	0.790	IO				2.94
46.333	0.00	0.98	0.783	IO				2.93
46.417	0.00	0.96	0.776	IO				2.93
46.500	0.00	0.95	0.770	IO				2.92
46.583	0.00	0.94	0.763	IO				2.92
46.667	0.00	0.92	0.757	IO				2.92
46.750	0.00	0.91	0.751	IO				2.91
46.833	0.00	0.90	0.744	IO				2.91
46.917	0.00	0.88	0.738	IO				2.90
47.000	0.00	0.87	0.732	IO				2.90
47.083	0.00	0.86	0.726	IO				2.89
47.167	0.00	0.85	0.720	IO				2.89
47.250	0.00	0.84	0.714	IO				2.89
47.333	0.00	0.83	0.709	IO				2.88
47.417	0.00	0.81	0.703	IO				2.88
47.500	0.00	0.80	0.698	IO				2.87
47.583	0.00	0.79	0.692	IO				2.87
47.667	0.00	0.78	0.687	IO				2.87
47.750	0.00	0.77	0.681	IO				2.86
47.833	0.00	0.76	0.676	IO				2.86
47.917	0.00	0.75	0.671	IO				2.86
48.000	0.00	0.74	0.666	O				2.85
48.083	0.00	0.73	0.661	O				2.85
48.167	0.00	0.72	0.656	O				2.85
48.250	0.00	0.71	0.651	O				2.84
48.333	0.00	0.70	0.646	O				2.84
48.417	0.00	0.69	0.641	O				2.84
48.500	0.00	0.68	0.636	O				2.83
48.583	0.00	0.67	0.632	O				2.83
48.667	0.00	0.66	0.627	O				2.83
48.750	0.00	0.65	0.623	O				2.82
48.833	0.00	0.64	0.618	O				2.82
48.917	0.00	0.63	0.614	O				2.82
49.000	0.00	0.62	0.610	O				2.81
49.083	0.00	0.62	0.605	O				2.81
49.167	0.00	0.61	0.601	O				2.81
49.250	0.00	0.60	0.597	O				2.80
49.333	0.00	0.59	0.593	O				2.80
49.417	0.00	0.58	0.589	O				2.80
49.500	0.00	0.57	0.585	O				2.80
49.583	0.00	0.57	0.581	O				2.79
49.667	0.00	0.56	0.577	O				2.79

49.750	0.00	0.55	0.573	o	|	|	|	2.79
49.833	0.00	0.54	0.569	o	|	|	|	2.79
49.917	0.00	0.53	0.566	o	|	|	|	2.78
50.000	0.00	0.53	0.562	o	|	|	|	2.78
50.083	0.00	0.52	0.559	o	|	|	|	2.78
50.167	0.00	0.51	0.555	o	|	|	|	2.78
50.250	0.00	0.51	0.551	o	|	|	|	2.77
50.333	0.00	0.50	0.548	o	|	|	|	2.77
50.417	0.00	0.49	0.545	o	|	|	|	2.77
50.500	0.00	0.48	0.541	o	|	|	|	2.77
50.583	0.00	0.48	0.538	o	|	|	|	2.76
50.667	0.00	0.47	0.535	o	|	|	|	2.76
50.750	0.00	0.46	0.531	o	|	|	|	2.76
50.833	0.00	0.46	0.528	o	|	|	|	2.76
50.917	0.00	0.45	0.525	o	|	|	|	2.75
51.000	0.00	0.45	0.522	o	|	|	|	2.75
51.083	0.00	0.44	0.519	o	|	|	|	2.75
51.167	0.00	0.43	0.516	o	|	|	|	2.75
51.250	0.00	0.43	0.513	o	|	|	|	2.75
51.333	0.00	0.42	0.510	o	|	|	|	2.74
51.417	0.00	0.42	0.507	o	|	|	|	2.74
51.500	0.00	0.41	0.504	o	|	|	|	2.74
51.583	0.00	0.40	0.502	o	|	|	|	2.74
51.667	0.00	0.40	0.499	o	|	|	|	2.74
51.750	0.00	0.39	0.496	o	|	|	|	2.73
51.833	0.00	0.39	0.493	o	|	|	|	2.73
51.917	0.00	0.38	0.491	o	|	|	|	2.73
52.000	0.00	0.38	0.488	o	|	|	|	2.73
52.083	0.00	0.37	0.486	o	|	|	|	2.73
52.167	0.00	0.37	0.483	o	|	|	|	2.73
52.250	0.00	0.36	0.480	o	|	|	|	2.72
52.333	0.00	0.36	0.478	o	|	|	|	2.72
52.417	0.00	0.35	0.476	o	|	|	|	2.72
52.500	0.00	0.35	0.473	o	|	|	|	2.72
52.583	0.00	0.34	0.471	o	|	|	|	2.72
52.667	0.00	0.34	0.468	o	|	|	|	2.72
52.750	0.00	0.33	0.466	o	|	|	|	2.71
52.833	0.00	0.33	0.464	o	|	|	|	2.71
52.917	0.00	0.32	0.462	o	|	|	|	2.71
53.000	0.00	0.32	0.459	o	|	|	|	2.71
53.083	0.00	0.31	0.457	o	|	|	|	2.71
53.167	0.00	0.31	0.455	o	|	|	|	2.71
53.250	0.00	0.31	0.453	o	|	|	|	2.70
53.333	0.00	0.30	0.451	o	|	|	|	2.70
53.417	0.00	0.30	0.449	o	|	|	|	2.70
53.500	0.00	0.29	0.447	o	|	|	|	2.70
53.583	0.00	0.29	0.445	o	|	|	|	2.70
53.667	0.00	0.28	0.443	o	|	|	|	2.70
53.750	0.00	0.28	0.441	o	|	|	|	2.70
53.833	0.00	0.28	0.439	o	|	|	|	2.69
53.917	0.00	0.27	0.437	o	|	|	|	2.69
54.000	0.00	0.27	0.435	o	|	|	|	2.69
54.083	0.00	0.27	0.433	o	|	|	|	2.69
54.167	0.00	0.26	0.431	o	|	|	|	2.69
54.250	0.00	0.26	0.430	o	|	|	|	2.69
54.333	0.00	0.25	0.428	o	|	|	|	2.69
54.417	0.00	0.25	0.426	o	|	|	|	2.69
54.500	0.00	0.25	0.424	o	|	|	|	2.68
54.583	0.00	0.24	0.423	o	|	|	|	2.68
54.667	0.00	0.24	0.421	o	|	|	|	2.68
54.750	0.00	0.24	0.419	o	|	|	|	2.68
54.833	0.00	0.23	0.418	o	|	|	|	2.68
54.917	0.00	0.23	0.416	o	|	|	|	2.68
55.000	0.00	0.23	0.415	o	|	|	|	2.68
55.083	0.00	0.22	0.413	o	|	|	|	2.68
55.167	0.00	0.22	0.412	o	|	|	|	2.68
55.250	0.00	0.22	0.410	o	|	|	|	2.67
55.333	0.00	0.22	0.409	o	|	|	|	2.67
55.417	0.00	0.21	0.407	o	|	|	|	2.67
55.500	0.00	0.21	0.406	o	|	|	|	2.67
55.583	0.00	0.21	0.404	o	|	|	|	2.67
55.667	0.00	0.20	0.403	o	|	|	|	2.67
55.750	0.00	0.20	0.401	o	|	|	|	2.67
55.833	0.00	0.20	0.400	o	|	|	|	2.67
55.917	0.00	0.20	0.399	o	|	|	|	2.67

56.000	0.00	0.19	0.397	o				2.67
56.083	0.00	0.19	0.396	o				2.66
56.167	0.00	0.19	0.395	o				2.66
56.250	0.00	0.18	0.393	o				2.66
56.333	0.00	0.18	0.392	o				2.66
56.417	0.00	0.18	0.391	o				2.66
56.500	0.00	0.18	0.390	o				2.66
56.583	0.00	0.17	0.388	o				2.66
56.667	0.00	0.17	0.387	o				2.66
56.750	0.00	0.17	0.386	o				2.66
56.833	0.00	0.17	0.385	o				2.66
56.917	0.00	0.17	0.384	o				2.66
57.000	0.00	0.16	0.383	o				2.66
57.083	0.00	0.16	0.382	o				2.65
57.167	0.00	0.16	0.380	o				2.65
57.250	0.00	0.16	0.379	o				2.65
57.333	0.00	0.15	0.378	o				2.65
57.417	0.00	0.15	0.377	o				2.65
57.500	0.00	0.15	0.376	o				2.65
57.583	0.00	0.15	0.375	o				2.65
57.667	0.00	0.15	0.374	o				2.65
57.750	0.00	0.14	0.373	o				2.65
57.833	0.00	0.14	0.372	o				2.65
57.917	0.00	0.14	0.371	o				2.65
58.000	0.00	0.14	0.370	o				2.65
58.083	0.00	0.14	0.369	o				2.65
58.167	0.00	0.13	0.368	o				2.65
58.250	0.00	0.13	0.367	o				2.64
58.333	0.00	0.13	0.367	o				2.64
58.417	0.00	0.13	0.366	o				2.64
58.500	0.00	0.13	0.365	o				2.64
58.583	0.00	0.12	0.364	o				2.64
58.667	0.00	0.12	0.363	o				2.64
58.750	0.00	0.12	0.362	o				2.64
58.833	0.00	0.12	0.361	o				2.64
58.917	0.00	0.12	0.361	o				2.64
59.000	0.00	0.12	0.360	o				2.64
59.083	0.00	0.11	0.359	o				2.64
59.167	0.00	0.11	0.358	o				2.64
59.250	0.00	0.11	0.357	o				2.64
59.333	0.00	0.11	0.357	o				2.64
59.417	0.00	0.11	0.356	o				2.64
59.500	0.00	0.11	0.355	o				2.64
59.583	0.00	0.11	0.354	o				2.64
59.667	0.00	0.10	0.354	o				2.64
59.750	0.00	0.10	0.353	o				2.63
59.833	0.00	0.10	0.352	o				2.63
59.917	0.00	0.10	0.352	o				2.63
60.000	0.00	0.10	0.351	o				2.63
60.083	0.00	0.10	0.350	o				2.63
60.167	0.00	0.10	0.350	o				2.63
60.250	0.00	0.09	0.349	o				2.63
60.333	0.00	0.09	0.348	o				2.63
60.417	0.00	0.09	0.348	o				2.63
60.500	0.00	0.09	0.347	o				2.63
60.583	0.00	0.09	0.346	o				2.63
60.667	0.00	0.09	0.346	o				2.63
60.750	0.00	0.09	0.345	o				2.63
60.833	0.00	0.09	0.345	o				2.63
60.917	0.00	0.08	0.344	o				2.63
61.000	0.00	0.08	0.343	o				2.63
61.083	0.00	0.08	0.343	o				2.63
61.167	0.00	0.08	0.342	o				2.63
61.250	0.00	0.08	0.342	o				2.63
61.333	0.00	0.08	0.341	o				2.63
61.417	0.00	0.08	0.341	o				2.63
61.500	0.00	0.08	0.340	o				2.63
61.583	0.00	0.08	0.340	o				2.63
61.667	0.00	0.07	0.339	o				2.63
61.750	0.00	0.07	0.339	o				2.62
61.833	0.00	0.07	0.338	o				2.62
61.917	0.00	0.07	0.338	o				2.62
62.000	0.00	0.07	0.337	o				2.62
62.083	0.00	0.07	0.337	o				2.62
62.167	0.00	0.07	0.336	o				2.62

62.250	0.00	0.07	0.336	o	|	|	|	|	2.62
62.333	0.00	0.07	0.335	o	|	|	|	|	2.62
62.417	0.00	0.07	0.335	o	|	|	|	|	2.62
62.500	0.00	0.06	0.334	o	|	|	|	|	2.62
62.583	0.00	0.06	0.334	o	|	|	|	|	2.62
62.667	0.00	0.06	0.333	o	|	|	|	|	2.62
62.750	0.00	0.06	0.333	o	|	|	|	|	2.62
62.833	0.00	0.06	0.333	o	|	|	|	|	2.62
62.917	0.00	0.06	0.332	o	|	|	|	|	2.62
63.000	0.00	0.06	0.332	o	|	|	|	|	2.62
63.083	0.00	0.06	0.331	o	|	|	|	|	2.62
63.167	0.00	0.06	0.331	o	|	|	|	|	2.62
63.250	0.00	0.06	0.331	o	|	|	|	|	2.62
63.333	0.00	0.06	0.330	o	|	|	|	|	2.62
63.417	0.00	0.06	0.330	o	|	|	|	|	2.62
63.500	0.00	0.05	0.329	o	|	|	|	|	2.62
63.583	0.00	0.05	0.329	o	|	|	|	|	2.62
63.667	0.00	0.05	0.329	o	|	|	|	|	2.62
63.750	0.00	0.05	0.328	o	|	|	|	|	2.62
63.833	0.00	0.05	0.328	o	|	|	|	|	2.62
63.917	0.00	0.05	0.328	o	|	|	|	|	2.62
64.000	0.00	0.05	0.327	o	|	|	|	|	2.62
64.083	0.00	0.05	0.327	o	|	|	|	|	2.62
64.167	0.00	0.05	0.327	o	|	|	|	|	2.62
64.250	0.00	0.05	0.326	o	|	|	|	|	2.62
64.333	0.00	0.05	0.326	o	|	|	|	|	2.62
64.417	0.00	0.05	0.326	o	|	|	|	|	2.62
64.500	0.00	0.05	0.325	o	|	|	|	|	2.62
64.583	0.00	0.05	0.325	o	|	|	|	|	2.62
64.667	0.00	0.04	0.325	o	|	|	|	|	2.62
64.750	0.00	0.04	0.324	o	|	|	|	|	2.61
64.833	0.00	0.04	0.324	o	|	|	|	|	2.61
64.917	0.00	0.04	0.324	o	|	|	|	|	2.61
65.000	0.00	0.04	0.323	o	|	|	|	|	2.61
65.083	0.00	0.04	0.323	o	|	|	|	|	2.61
65.167	0.00	0.04	0.323	o	|	|	|	|	2.61
65.250	0.00	0.04	0.323	o	|	|	|	|	2.61
65.333	0.00	0.04	0.322	o	|	|	|	|	2.61
65.417	0.00	0.04	0.322	o	|	|	|	|	2.61
65.500	0.00	0.04	0.322	o	|	|	|	|	2.61
65.583	0.00	0.04	0.321	o	|	|	|	|	2.61
65.667	0.00	0.04	0.321	o	|	|	|	|	2.61
65.750	0.00	0.04	0.321	o	|	|	|	|	2.61
65.833	0.00	0.04	0.321	o	|	|	|	|	2.61
65.917	0.00	0.04	0.320	o	|	|	|	|	2.61
66.000	0.00	0.04	0.320	o	|	|	|	|	2.61
66.083	0.00	0.04	0.320	o	|	|	|	|	2.61
66.167	0.00	0.03	0.320	o	|	|	|	|	2.61
66.250	0.00	0.03	0.319	o	|	|	|	|	2.61
66.333	0.00	0.03	0.319	o	|	|	|	|	2.61
66.417	0.00	0.03	0.319	o	|	|	|	|	2.61
66.500	0.00	0.03	0.319	o	|	|	|	|	2.61
66.583	0.00	0.03	0.319	o	|	|	|	|	2.61
66.667	0.00	0.03	0.318	o	|	|	|	|	2.61
66.750	0.00	0.03	0.318	o	|	|	|	|	2.61
66.833	0.00	0.03	0.318	o	|	|	|	|	2.61
66.917	0.00	0.03	0.318	o	|	|	|	|	2.61
67.000	0.00	0.03	0.317	o	|	|	|	|	2.61
67.083	0.00	0.03	0.317	o	|	|	|	|	2.61
67.167	0.00	0.03	0.317	o	|	|	|	|	2.61
67.250	0.00	0.03	0.317	o	|	|	|	|	2.61
67.333	0.00	0.03	0.317	o	|	|	|	|	2.61
67.417	0.00	0.03	0.316	o	|	|	|	|	2.61
67.500	0.00	0.03	0.316	o	|	|	|	|	2.61
67.583	0.00	0.03	0.316	o	|	|	|	|	2.61
67.667	0.00	0.03	0.316	o	|	|	|	|	2.61
67.750	0.00	0.03	0.316	o	|	|	|	|	2.61
67.833	0.00	0.03	0.316	o	|	|	|	|	2.61
67.917	0.00	0.03	0.315	o	|	|	|	|	2.61
68.000	0.00	0.03	0.315	o	|	|	|	|	2.61
68.083	0.00	0.03	0.315	o	|	|	|	|	2.61
68.167	0.00	0.02	0.315	o	|	|	|	|	2.61
68.250	0.00	0.02	0.315	o	|	|	|	|	2.61
68.333	0.00	0.02	0.314	o	|	|	|	|	2.61
68.417	0.00	0.02	0.314	o	|	|	|	|	2.61

68.500	0.00	0.02	0.314	o	|	|	|	|	2.61
68.583	0.00	0.02	0.314	o	|	|	|	|	2.61
68.667	0.00	0.02	0.314	o	|	|	|	|	2.61
68.750	0.00	0.02	0.314	o	|	|	|	|	2.61
68.833	0.00	0.02	0.314	o	|	|	|	|	2.61
68.917	0.00	0.02	0.313	o	|	|	|	|	2.61
69.000	0.00	0.02	0.313	o	|	|	|	|	2.61
69.083	0.00	0.02	0.313	o	|	|	|	|	2.61
69.167	0.00	0.02	0.313	o	|	|	|	|	2.61
69.250	0.00	0.02	0.313	o	|	|	|	|	2.61
69.333	0.00	0.02	0.313	o	|	|	|	|	2.61
69.417	0.00	0.02	0.312	o	|	|	|	|	2.61
69.500	0.00	0.02	0.312	o	|	|	|	|	2.61
69.583	0.00	0.02	0.312	o	|	|	|	|	2.61
69.667	0.00	0.02	0.312	o	|	|	|	|	2.61
69.750	0.00	0.02	0.312	o	|	|	|	|	2.61
69.833	0.00	0.02	0.312	o	|	|	|	|	2.61
69.917	0.00	0.02	0.312	o	|	|	|	|	2.61
70.000	0.00	0.02	0.312	o	|	|	|	|	2.61
70.083	0.00	0.02	0.311	o	|	|	|	|	2.61
70.167	0.00	0.02	0.311	o	|	|	|	|	2.61
70.250	0.00	0.02	0.311	o	|	|	|	|	2.61
70.333	0.00	0.02	0.311	o	|	|	|	|	2.61
70.417	0.00	0.02	0.311	o	|	|	|	|	2.61
70.500	0.00	0.02	0.311	o	|	|	|	|	2.61
70.583	0.00	0.02	0.311	o	|	|	|	|	2.61
70.667	0.00	0.02	0.311	o	|	|	|	|	2.61
70.750	0.00	0.02	0.310	o	|	|	|	|	2.61
70.833	0.00	0.02	0.310	o	|	|	|	|	2.61
70.917	0.00	0.02	0.310	o	|	|	|	|	2.61
71.000	0.00	0.02	0.310	o	|	|	|	|	2.60
71.083	0.00	0.02	0.310	o	|	|	|	|	2.60
71.167	0.00	0.02	0.310	o	|	|	|	|	2.60
71.250	0.00	0.01	0.310	o	|	|	|	|	2.60
71.333	0.00	0.01	0.310	o	|	|	|	|	2.60
71.417	0.00	0.01	0.310	o	|	|	|	|	2.60
71.500	0.00	0.01	0.310	o	|	|	|	|	2.60
71.583	0.00	0.01	0.309	o	|	|	|	|	2.60
71.667	0.00	0.01	0.309	o	|	|	|	|	2.60
71.750	0.00	0.01	0.309	o	|	|	|	|	2.60
71.833	0.00	0.01	0.309	o	|	|	|	|	2.60
71.917	0.00	0.01	0.309	o	|	|	|	|	2.60
72.000	0.00	0.01	0.309	o	|	|	|	|	2.60
72.083	0.00	0.01	0.309	o	|	|	|	|	2.60
72.167	0.00	0.01	0.309	o	|	|	|	|	2.60
72.250	0.00	0.01	0.309	o	|	|	|	|	2.60
72.333	0.00	0.01	0.309	o	|	|	|	|	2.60
72.417	0.00	0.01	0.309	o	|	|	|	|	2.60
72.500	0.00	0.01	0.308	o	|	|	|	|	2.60
72.583	0.00	0.01	0.308	o	|	|	|	|	2.60
72.667	0.00	0.01	0.308	o	|	|	|	|	2.60
72.750	0.00	0.01	0.308	o	|	|	|	|	2.60
72.833	0.00	0.01	0.308	o	|	|	|	|	2.60
72.917	0.00	0.01	0.308	o	|	|	|	|	2.60
73.000	0.00	0.01	0.308	o	|	|	|	|	2.60
73.083	0.00	0.01	0.308	o	|	|	|	|	2.60
73.167	0.00	0.01	0.308	o	|	|	|	|	2.60
73.250	0.00	0.01	0.308	o	|	|	|	|	2.60
73.333	0.00	0.01	0.308	o	|	|	|	|	2.60
73.417	0.00	0.01	0.308	o	|	|	|	|	2.60
73.500	0.00	0.01	0.308	o	|	|	|	|	2.60
73.583	0.00	0.01	0.307	o	|	|	|	|	2.60
73.667	0.00	0.01	0.307	o	|	|	|	|	2.60
73.750	0.00	0.01	0.307	o	|	|	|	|	2.60
73.833	0.00	0.01	0.307	o	|	|	|	|	2.60
73.917	0.00	0.01	0.307	o	|	|	|	|	2.60
74.000	0.00	0.01	0.307	o	|	|	|	|	2.60
74.083	0.00	0.01	0.307	o	|	|	|	|	2.60
74.167	0.00	0.01	0.307	o	|	|	|	|	2.60
74.250	0.00	0.01	0.307	o	|	|	|	|	2.60
74.333	0.00	0.01	0.307	o	|	|	|	|	2.60
74.417	0.00	0.01	0.307	o	|	|	|	|	2.60
74.500	0.00	0.01	0.307	o	|	|	|	|	2.60
74.583	0.00	0.01	0.307	o	|	|	|	|	2.60
74.667	0.00	0.01	0.307	o	|	|	|	|	2.60

74.750	0.00	0.01	0.307	o	|	|	|	|	2.60
74.833	0.00	0.01	0.307	o	|	|	|	|	2.60
74.917	0.00	0.01	0.306	o	|	|	|	|	2.60
75.000	0.00	0.01	0.306	o	|	|	|	|	2.60
75.083	0.00	0.01	0.306	o	|	|	|	|	2.60
75.167	0.00	0.01	0.306	o	|	|	|	|	2.60
75.250	0.00	0.01	0.306	o	|	|	|	|	2.60
75.333	0.00	0.01	0.306	o	|	|	|	|	2.60
75.417	0.00	0.01	0.306	o	|	|	|	|	2.60
75.500	0.00	0.01	0.306	o	|	|	|	|	2.60
75.583	0.00	0.01	0.306	o	|	|	|	|	2.60
75.667	0.00	0.01	0.306	o	|	|	|	|	2.60
75.750	0.00	0.01	0.306	o	|	|	|	|	2.60
75.833	0.00	0.01	0.306	o	|	|	|	|	2.60
75.917	0.00	0.01	0.306	o	|	|	|	|	2.60
76.000	0.00	0.01	0.306	o	|	|	|	|	2.60
76.083	0.00	0.01	0.306	o	|	|	|	|	2.60
76.167	0.00	0.01	0.306	o	|	|	|	|	2.60
76.250	0.00	0.01	0.306	o	|	|	|	|	2.60
76.333	0.00	0.01	0.306	o	|	|	|	|	2.60
76.417	0.00	0.01	0.306	o	|	|	|	|	2.60
76.500	0.00	0.01	0.306	o	|	|	|	|	2.60
76.583	0.00	0.01	0.306	o	|	|	|	|	2.60
76.667	0.00	0.01	0.305	o	|	|	|	|	2.60
76.750	0.00	0.01	0.305	o	|	|	|	|	2.60
76.833	0.00	0.01	0.305	o	|	|	|	|	2.60
76.917	0.00	0.01	0.305	o	|	|	|	|	2.60
77.000	0.00	0.01	0.305	o	|	|	|	|	2.60
77.083	0.00	0.01	0.305	o	|	|	|	|	2.60
77.167	0.00	0.01	0.305	o	|	|	|	|	2.60
77.250	0.00	0.01	0.305	o	|	|	|	|	2.60
77.333	0.00	0.01	0.305	o	|	|	|	|	2.60
77.417	0.00	0.01	0.305	o	|	|	|	|	2.60
77.500	0.00	0.01	0.305	o	|	|	|	|	2.60
77.583	0.00	0.01	0.305	o	|	|	|	|	2.60
77.667	0.00	0.01	0.305	o	|	|	|	|	2.60
77.750	0.00	0.00	0.305	o	|	|	|	|	2.60
77.833	0.00	0.00	0.305	o	|	|	|	|	2.60
77.917	0.00	0.00	0.305	o	|	|	|	|	2.60
78.000	0.00	0.00	0.305	o	|	|	|	|	2.60
78.083	0.00	0.00	0.305	o	|	|	|	|	2.60
78.167	0.00	0.00	0.305	o	|	|	|	|	2.60
78.250	0.00	0.00	0.305	o	|	|	|	|	2.60
78.333	0.00	0.00	0.305	o	|	|	|	|	2.60
78.417	0.00	0.00	0.305	o	|	|	|	|	2.60
78.500	0.00	0.00	0.305	o	|	|	|	|	2.60
78.583	0.00	0.00	0.305	o	|	|	|	|	2.60
78.667	0.00	0.00	0.305	o	|	|	|	|	2.60
78.750	0.00	0.00	0.305	o	|	|	|	|	2.60
78.833	0.00	0.00	0.305	o	|	|	|	|	2.60
78.917	0.00	0.00	0.305	o	|	|	|	|	2.60
79.000	0.00	0.00	0.305	o	|	|	|	|	2.60
79.083	0.00	0.00	0.304	o	|	|	|	|	2.60
79.167	0.00	0.00	0.304	o	|	|	|	|	2.60
79.250	0.00	0.00	0.304	o	|	|	|	|	2.60
79.333	0.00	0.00	0.304	o	|	|	|	|	2.60
79.417	0.00	0.00	0.304	o	|	|	|	|	2.60
79.500	0.00	0.00	0.304	o	|	|	|	|	2.60
79.583	0.00	0.00	0.304	o	|	|	|	|	2.60
79.667	0.00	0.00	0.304	o	|	|	|	|	2.60
79.750	0.00	0.00	0.304	o	|	|	|	|	2.60
79.833	0.00	0.00	0.304	o	|	|	|	|	2.60
79.917	0.00	0.00	0.304	o	|	|	|	|	2.60
80.000	0.00	0.00	0.304	o	|	|	|	|	2.60
80.083	0.00	0.00	0.304	o	|	|	|	|	2.60
80.167	0.00	0.00	0.304	o	|	|	|	|	2.60
80.250	0.00	0.00	0.304	o	|	|	|	|	2.60
80.333	0.00	0.00	0.304	o	|	|	|	|	2.60
80.417	0.00	0.00	0.304	o	|	|	|	|	2.60
80.500	0.00	0.00	0.304	o	|	|	|	|	2.60
80.583	0.00	0.00	0.304	o	|	|	|	|	2.60
80.667	0.00	0.00	0.304	o	|	|	|	|	2.60
80.750	0.00	0.00	0.304	o	|	|	|	|	2.60
80.833	0.00	0.00	0.304	o	|	|	|	|	2.60
80.917	0.00	0.00	0.304	o	|	|	|	|	2.60

81.000	0.00	0.00	0.304	o					2.60
81.083	0.00	0.00	0.304	o					2.60
81.167	0.00	0.00	0.304	o					2.60
81.250	0.00	0.00	0.304	o					2.60
81.333	0.00	0.00	0.304	o					2.60
81.417	0.00	0.00	0.304	o					2.60
81.500	0.00	0.00	0.304	o					2.60
81.583	0.00	0.00	0.304	o					2.60
81.667	0.00	0.00	0.304	o					2.60
81.750	0.00	0.00	0.304	o					2.60
81.833	0.00	0.00	0.304	o					2.60
81.917	0.00	0.00	0.304	o					2.60
82.000	0.00	0.00	0.304	o					2.60
82.083	0.00	0.00	0.304	o					2.60
82.167	0.00	0.00	0.304	o					2.60
82.250	0.00	0.00	0.304	o					2.60
82.333	0.00	0.00	0.304	o					2.60
82.417	0.00	0.00	0.304	o					2.60
82.500	0.00	0.00	0.304	o					2.60
82.583	0.00	0.00	0.304	o					2.60
82.667	0.00	0.00	0.304	o					2.60
82.750	0.00	0.00	0.304	o					2.60
82.833	0.00	0.00	0.304	o					2.60
82.917	0.00	0.00	0.304	o					2.60
83.000	0.00	0.00	0.304	o					2.60
83.083	0.00	0.00	0.304	o					2.60
83.167	0.00	0.00	0.303	o					2.60
83.250	0.00	0.00	0.303	o					2.60
83.333	0.00	0.00	0.303	o					2.60
83.417	0.00	0.00	0.303	o					2.60
83.500	0.00	0.00	0.303	o					2.60
83.583	0.00	0.00	0.303	o					2.60
83.667	0.00	0.00	0.303	o					2.60
83.750	0.00	0.00	0.303	o					2.60
83.833	0.00	0.00	0.303	o					2.60
83.917	0.00	0.00	0.303	o					2.60
84.000	0.00	0.00	0.303	o					2.60
84.083	0.00	0.00	0.303	o					2.60
84.167	0.00	0.00	0.303	o					2.60
84.250	0.00	0.00	0.303	o					2.60
84.333	0.00	0.00	0.303	o					2.60
84.417	0.00	0.00	0.303	o					2.60
84.500	0.00	0.00	0.303	o					2.60
84.583	0.00	0.00	0.303	o					2.60
84.667	0.00	0.00	0.303	o					2.60
84.750	0.00	0.00	0.303	o					2.60
84.833	0.00	0.00	0.303	o					2.60
84.917	0.00	0.00	0.303	o					2.60
85.000	0.00	0.00	0.303	o					2.60
85.083	0.00	0.00	0.303	o					2.60
85.167	0.00	0.00	0.303	o					2.60
85.250	0.00	0.00	0.303	o					2.60
85.333	0.00	0.00	0.303	o					2.60
85.417	0.00	0.00	0.303	o					2.60
85.500	0.00	0.00	0.303	o					2.60
85.583	0.00	0.00	0.303	o					2.60
85.667	0.00	0.00	0.303	o					2.60
85.750	0.00	0.00	0.303	o					2.60
85.833	0.00	0.00	0.303	o					2.60
85.917	0.00	0.00	0.303	o					2.60
86.000	0.00	0.00	0.303	o					2.60
86.083	0.00	0.00	0.303	o					2.60
86.167	0.00	0.00	0.303	o					2.60
86.250	0.00	0.00	0.303	o					2.60
86.333	0.00	0.00	0.303	o					2.60
86.417	0.00	0.00	0.303	o					2.60
86.500	0.00	0.00	0.303	o					2.60
86.583	0.00	0.00	0.303	o					2.60
86.667	0.00	0.00	0.303	o					2.60
86.750	0.00	0.00	0.303	o					2.60
86.833	0.00	0.00	0.303	o					2.60
86.917	0.00	0.00	0.303	o					2.60
87.000	0.00	0.00	0.303	o					2.60
87.083	0.00	0.00	0.303	o					2.60
87.167	0.00	0.00	0.303	o					2.60

```
87.250    0.00    0.00      0.303  O       |       |       |       |     2.60
87.333    0.00    0.00      0.303  O       |       |       |       |     2.60
87.417    0.00    0.00      0.303  O       |       |       |       |     2.60

       Remaining water in basin =    0.30 (Ac.Ft)


       ****************************HYDROGRAPH DATA****************************
                     Number of intervals =  1049
                     Time interval =    5.0 (Min.)
                     Maximum/Peak flow rate =       16.430 (CFS)
                     Total volume =      12.715 (Ac.Ft)
              Status of hydrographs being held in storage
                         Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
              Peak (CFS)      0.000     0.000     0.000     0.000     0.000
              Vol (Ac.Ft)     0.000     0.000     0.000     0.000     0.000
       ***********************************************************************

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BASIN ROUTING
100-YEAR, 24-HOUR -HOUR STORM EVENT

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

21-0044 BLDG 1
100-YR STORM EVENT ROUTING
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST100YR24100.rte
**********HYDROGRAPH DATA**********
Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 41.628 (CFS)
Total volume = 21.765 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
_____

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

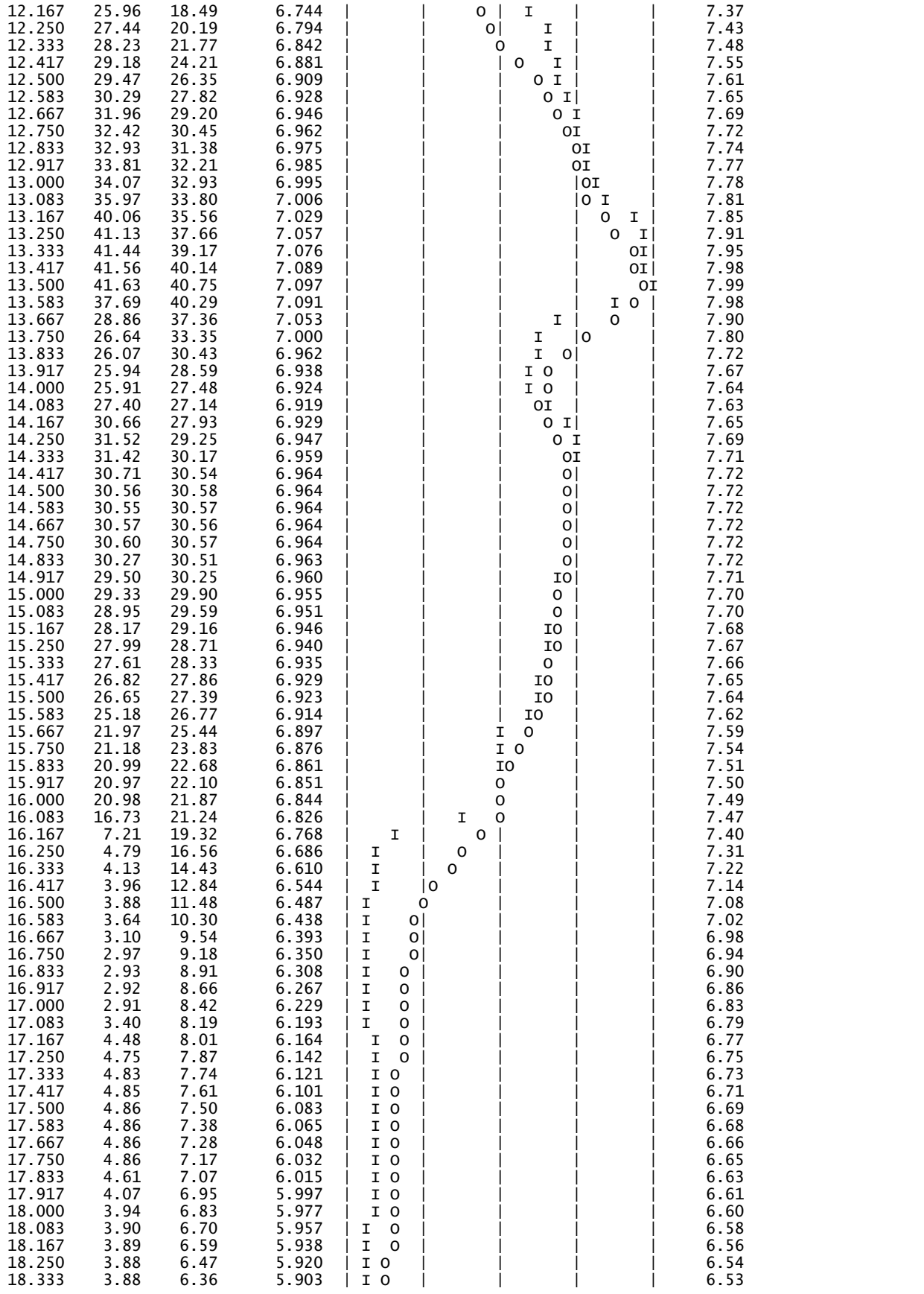
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
5.820	5.007	3.318	4.996	5.018
6.000	5.251	3.753	5.238	5.264
6.500	5.873	6.174	5.852	5.894
6.960	6.375	9.338	6.343	6.407
7.000	6.418	9.814	6.384	6.452
7.270	6.654	15.480	6.601	6.707
7.500	6.855	22.225	6.778	6.932
8.000	7.101	41.053	6.960	7.242

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 10.4 20.81 31.22 41.63	Depth (Ft.)
0.083	0.49	0.00	0.002	O | | | |	0.01
0.167	1.56	0.00	0.009	OI | | | |	0.07
0.250	1.84	0.00	0.020	OI | | | |	0.18
0.333	2.16	0.00	0.034	OI | | | |	0.29
0.417	2.72	0.00	0.051	O I | | | |	0.44
0.500	2.86	0.00	0.070	O I | | | |	0.60
0.583	2.90	0.00	0.090	O I | | | |	0.77
0.667	2.91	0.00	0.110	O I | | | |	0.94
0.750	2.91	0.00	0.130	O I | | | |	1.12
0.833	3.16	0.00	0.151	O I | | | |	1.30
0.917	3.70	0.00	0.175	O I | | | |	1.50
1.000	3.83	0.00	0.201	O I | | | |	1.72
1.083	3.63	0.00	0.226	O I | | | |	1.94
1.167	3.10	0.00	0.249	O I | | | |	2.14
1.250	2.97	0.00	0.270	O I | | | |	2.32
1.333	2.93	0.00	0.291	O I | | | |	2.49
1.417	2.92	0.02	0.311	O I | | | |	2.61
1.500	2.91	0.06	0.330	O I | | | |	2.62
1.583	2.91	0.10	0.350	O I | | | |	2.63
1.667	2.91	0.14	0.369	O I | | | |	2.65
1.750	2.91	0.17	0.388	O I | | | |	2.66
1.833	3.16	0.21	0.408	O I | | | |	2.67
1.917	3.70	0.26	0.430	O I | | | |	2.69
2.000	3.83	0.31	0.454	O I | | | |	2.70
2.083	3.87	0.36	0.478	O I | | | |	2.72
2.167	3.88	0.41	0.502	O I | | | |	2.74
2.250	3.88	0.45	0.526	O I | | | |	2.76
2.333	3.88	0.50	0.549	O I | | | |	2.77
2.417	3.88	0.55	0.572	O I | | | |	2.79
2.500	3.88	0.59	0.595	O I | | | |	2.80
2.583	4.13	0.64	0.619	O I | | | |	2.82
2.667	4.67	0.69	0.644	O I | | | |	2.84
2.750	4.80	0.75	0.672	O I | | | |	2.86
2.833	4.84	0.81	0.700	O I | | | |	2.88
2.917	4.85	0.86	0.727	O I | | | |	2.90
3.000	4.86	0.92	0.755	O I | | | |	2.91
3.083	4.86	0.97	0.782	O I | | | |	2.93
3.167	4.86	1.03	0.808	O I | | | |	2.95
3.250	4.86	1.08	0.834	O I | | | |	2.97
3.333	4.86	1.13	0.860	O I | | | |	2.99
3.417	4.86	1.18	0.886	O I | | | |	3.01
3.500	4.86	1.20	0.911	O I | | | |	3.02
3.583	4.86	1.22	0.936	O I | | | |	3.04
3.667	4.86	1.23	0.961	O I | | | |	3.06
3.750	4.86	1.25	0.986	O I | | | |	3.07
3.833	5.10	1.27	1.012	O I | | | |	3.09
3.917	5.64	1.30	1.040	O I | | | |	3.11
4.000	5.78	1.32	1.070	|O I | | | |	3.13
4.083	5.81	1.35	1.101	|O I | | | |	3.15
4.167	5.82	1.37	1.131	|O I | | | |	3.17
4.250	5.83	1.39	1.162	|O I | | | |	3.19
4.333	6.07	1.42	1.193	|O I | | | |	3.21
4.417	6.61	1.45	1.227	|O I | | | |	3.24
4.500	6.75	1.47	1.263	|O I | | | |	3.26
4.583	6.78	1.50	1.299	|O I | | | |	3.29
4.667	6.79	1.53	1.336	|O I | | | |	3.31
4.750	6.80	1.56	1.372	|O I | | | |	3.33
4.833	7.04	1.59	1.409	|O I | | | |	3.36
4.917	7.58	1.62	1.448	|O I | | | |	3.39
5.000	7.72	1.65	1.489	|O I | | | |	3.41
5.083	7.27	1.68	1.530	|O I | | | |	3.44
5.167	6.20	1.71	1.564	|O I | | | |	3.46
5.250	5.93	1.74	1.594	|O I | | | |	3.48
5.333	6.10	1.76	1.624	|O I | | | |	3.50
5.417	6.62	1.78	1.655	|O I | | | |	3.53
5.500	6.75	1.80	1.689	|O I | | | |	3.55
5.583	7.03	1.82	1.724	|O I | | | |	3.57
5.667	7.58	1.84	1.762	|O I | | | |	3.60
5.750	7.72	1.86	1.802	|O I | | | |	3.62
5.833	7.76	1.88	1.842	|O I | | | |	3.65

5.917	7.77	1.91	1.882	O I				3.68
6.000	7.77	1.93	1.923	O I				3.70
6.083	8.01	1.95	1.964	O I				3.73
6.167	8.55	1.98	2.007	O I				3.76
6.250	8.69	2.01	2.053	O I				3.79
6.333	8.73	2.03	2.099	O I				3.82
6.417	8.74	2.06	2.145	O I				3.85
6.500	8.74	2.09	2.191	O I				3.88
6.583	8.98	2.11	2.237	O I				3.91
6.667	9.52	2.14	2.286	O I				3.95
6.750	9.66	2.17	2.338	O I				3.98
6.833	9.70	2.20	2.389	O I				4.01
6.917	9.71	2.22	2.441	O I				4.05
7.000	9.71	2.25	2.492	O I				4.08
7.083	9.71	2.27	2.544	O I				4.12
7.167	9.71	2.30	2.595	O I				4.15
7.250	9.71	2.32	2.646	O I				4.18
7.333	9.96	2.35	2.697	O I				4.22
7.417	10.49	2.37	2.752	O I				4.26
7.500	10.63	2.40	2.808	O I				4.29
7.583	10.91	2.43	2.866	O I				4.33
7.667	11.46	2.46	2.926	O I				4.37
7.750	11.60	2.48	2.988	O I				4.41
7.833	11.88	2.52	3.052	O I				4.45
7.917	12.43	2.55	3.118	O I				4.50
8.000	12.57	2.58	3.187	O I				4.55
8.083	13.10	2.61	3.257	O I				4.59
8.167	14.19	2.64	3.333	O I				4.64
8.250	14.47	2.67	3.413	O I				4.70
8.333	14.54	2.71	3.495	O I				4.75
8.417	14.56	2.74	3.576	O I				4.81
8.500	14.57	2.78	3.658	O I				4.86
8.583	14.81	2.81	3.739	O I				4.92
8.667	15.35	2.85	3.824	O I				4.98
8.750	15.49	2.88	3.910	O I				5.04
8.833	15.77	2.92	3.998	O I				5.10
8.917	16.32	2.96	4.088	O I				5.16
9.000	16.46	2.99	4.181	O I				5.22
9.083	16.98	3.03	4.275	O I				5.29
9.167	18.07	3.07	4.375	O I				5.36
9.250	18.35	3.11	4.479	O I				5.43
9.333	18.67	3.15	4.585	O I				5.51
9.417	19.23	3.19	4.693	O I				5.59
9.500	19.37	3.24	4.804	O I				5.67
9.583	19.76	3.28	4.916	O I				5.75
9.667	20.56	3.36	5.032	O I				5.84
9.750	20.79	3.57	5.151	O I				5.93
9.833	21.25	3.83	5.270	O I				6.02
9.917	22.12	4.30	5.392	O I				6.11
10.000	22.37	4.77	5.514	O I				6.21
10.083	20.48	5.22	5.627	O I				6.30
10.167	16.10	5.56	5.716	O I				6.37
10.250	14.99	5.83	5.783	O I				6.43
10.333	14.68	6.06	5.845	O I				6.48
10.417	14.60	6.36	5.903	O I				6.53
10.500	14.57	6.71	5.958	O I				6.58
10.583	15.90	7.07	6.016	O I				6.63
10.667	18.89	7.51	6.085	O I				6.69
10.750	19.68	8.01	6.165	O I				6.77
10.833	19.92	8.51	6.244	O I				6.84
10.917	20.02	9.00	6.321	O I				6.91
11.000	20.09	9.56	6.395	O I				6.98
11.083	19.77	10.88	6.462	O I				7.05
11.167	19.01	12.18	6.516	O I				7.11
11.250	18.85	13.21	6.559	O I				7.16
11.333	18.83	14.07	6.595	O I				7.20
11.417	18.86	14.80	6.626	O I				7.24
11.500	18.90	15.42	6.652	O I				7.27
11.583	18.32	16.06	6.671	O I				7.29
11.667	16.98	16.39	6.681	OI				7.30
11.750	16.64	16.48	6.684	O				7.30
11.833	16.83	16.53	6.685	O				7.31
11.917	17.46	16.66	6.689	OI				7.31
12.000	17.65	16.84	6.695	OI				7.32
12.083	20.26	17.28	6.708	O I				7.33



18.417	3.88	6.26	5.886	| I O	|	|	|	6.51
18.500	3.88	6.16	5.870	| I O	|	|	|	6.50
18.583	3.64	6.10	5.854	| I O	|	|	|	6.48
18.667	3.10	6.03	5.835	| I O	|	|	|	6.47
18.750	2.97	5.95	5.815	| I O	|	|	|	6.45
18.833	2.69	5.86	5.794	| I O	|	|	|	6.44
18.917	2.14	5.77	5.770	|I O	|	|	|	6.42
19.000	1.99	5.68	5.745	|I O	|	|	|	6.40
19.083	2.20	5.58	5.721	|I O	|	|	|	6.38
19.167	2.73	5.50	5.699	| I O	|	|	|	6.36
19.250	2.86	5.43	5.681	| I O	|	|	|	6.35
19.333	3.14	5.36	5.665	| I O	|	|	|	6.33
19.417	3.69	5.31	5.651	| I O	|	|	|	6.32
19.500	3.83	5.27	5.641	| I O	|	|	|	6.31
19.583	3.63	5.23	5.630	| I O	|	|	|	6.30
19.667	3.10	5.18	5.618	| IO	|	|	|	6.29
19.750	2.97	5.12	5.603	| IO	|	|	|	6.28
19.833	2.69	5.06	5.587	| IO	|	|	|	6.27
19.917	2.14	4.99	5.569	|I O	|	|	|	6.26
20.000	1.99	4.91	5.550	|I O	|	|	|	6.24
20.083	2.20	4.84	5.530	|I O	|	|	|	6.22
20.167	2.73	4.78	5.514	| IO	|	|	|	6.21
20.250	2.86	4.73	5.501	| IO	|	|	|	6.20
20.333	2.90	4.68	5.488	| IO	|	|	|	6.19
20.417	2.91	4.63	5.476	| IO	|	|	|	6.18
20.500	2.91	4.58	5.465	| IO	|	|	|	6.17
20.583	2.91	4.54	5.453	| IO	|	|	|	6.16
20.667	2.91	4.50	5.442	| IO	|	|	|	6.15
20.750	2.91	4.45	5.431	| IO	|	|	|	6.14
20.833	2.67	4.41	5.420	| IO	|	|	|	6.14
20.917	2.13	4.36	5.406	|I O	|	|	|	6.12
21.000	1.99	4.30	5.391	|I O	|	|	|	6.11
21.083	2.20	4.24	5.376	|I O	|	|	|	6.10
21.167	2.73	4.19	5.364	| IO	|	|	|	6.09
21.250	2.86	4.16	5.354	| IO	|	|	|	6.08
21.333	2.66	4.12	5.345	| IO	|	|	|	6.08
21.417	2.13	4.07	5.333	|I O	|	|	|	6.07
21.500	1.99	4.02	5.319	|I O	|	|	|	6.05
21.583	2.20	3.97	5.306	|I O	|	|	|	6.04
21.667	2.73	3.93	5.296	| IO	|	|	|	6.04
21.750	2.86	3.90	5.288	| O	|	|	|	6.03
21.833	2.66	3.87	5.281	| O	|	|	|	6.02
21.917	2.13	3.83	5.271	|IO	|	|	|	6.02
22.000	1.99	3.78	5.259	|IO	|	|	|	6.01
22.083	2.20	3.75	5.247	|IO	|	|	|	6.00
22.167	2.73	3.73	5.238	| O	|	|	|	5.99
22.250	2.86	3.72	5.232	| O	|	|	|	5.99
22.333	2.66	3.71	5.225	| O	|	|	|	5.98
22.417	2.13	3.69	5.216	|IO	|	|	|	5.97
22.500	1.99	3.67	5.205	|IO	|	|	|	5.97
22.583	1.96	3.65	5.194	|IO	|	|	|	5.96
22.667	1.95	3.63	5.182	|IO	|	|	|	5.95
22.750	1.94	3.61	5.170	|IO	|	|	|	5.94
22.833	1.94	3.59	5.159	|IO	|	|	|	5.93
22.917	1.94	3.57	5.148	|IO	|	|	|	5.92
23.000	1.94	3.55	5.137	|IO	|	|	|	5.92
23.083	1.94	3.53	5.126	|IO	|	|	|	5.91
23.167	1.94	3.51	5.115	|IO	|	|	|	5.90
23.250	1.94	3.49	5.104	|IO	|	|	|	5.89
23.333	1.94	3.47	5.093	|IO	|	|	|	5.88
23.417	1.94	3.45	5.083	|IO	|	|	|	5.88
23.500	1.94	3.44	5.073	|IO	|	|	|	5.87
23.583	1.94	3.42	5.062	|IO	|	|	|	5.86
23.667	1.94	3.40	5.052	|IO	|	|	|	5.85
23.750	1.94	3.38	5.042	|IO	|	|	|	5.85
23.833	1.94	3.36	5.033	|IO	|	|	|	5.84
23.917	1.94	3.35	5.023	|IO	|	|	|	5.83
24.000	1.94	3.33	5.013	|IO	|	|	|	5.82
24.083	1.46	3.32	5.002	|IO	|	|	|	5.82
24.167	0.38	3.31	4.986	I O	|	|	|	5.80
24.250	0.10	3.30	4.964	I O	|	|	|	5.79
24.333	0.03	3.29	4.942	I O	|	|	|	5.77
24.417	0.01	3.28	4.920	I O	|	|	|	5.76
24.500	0.00	3.27	4.897	I O	|	|	|	5.74
24.583	0.00	3.27	4.875	I O	|	|	|	5.72

24.667	0.00	3.26	4.852	I	O	|	|	|	5.71
24.750	0.00	3.25	4.830	I	O	|	|	|	5.69
24.833	0.00	3.24	4.807	I	O	|	|	|	5.67
24.917	0.00	3.23	4.785	I	O	|	|	|	5.66
25.000	0.00	3.22	4.763	I	O	|	|	|	5.64
25.083	0.00	3.21	4.741	I	O	|	|	|	5.62
25.167	0.00	3.20	4.719	I	O	|	|	|	5.61
25.250	0.00	3.20	4.697	I	O	|	|	|	5.59
25.333	0.00	3.19	4.675	I	O	|	|	|	5.57
25.417	0.00	3.18	4.653	I	O	|	|	|	5.56
25.500	0.00	3.17	4.631	I	O	|	|	|	5.54
25.583	0.00	3.16	4.609	I	O	|	|	|	5.53
25.667	0.00	3.15	4.587	I	O	|	|	|	5.51
25.750	0.00	3.14	4.566	I	O	|	|	|	5.49
25.833	0.00	3.14	4.544	I	O	|	|	|	5.48
25.917	0.00	3.13	4.522	I	O	|	|	|	5.46
26.000	0.00	3.12	4.501	I	O	|	|	|	5.45
26.083	0.00	3.11	4.479	I	O	|	|	|	5.43
26.167	0.00	3.10	4.458	I	O	|	|	|	5.42
26.250	0.00	3.09	4.437	I	O	|	|	|	5.40
26.333	0.00	3.08	4.415	I	O	|	|	|	5.39
26.417	0.00	3.08	4.394	I	O	|	|	|	5.37
26.500	0.00	3.07	4.373	I	O	|	|	|	5.36
26.583	0.00	3.06	4.352	I	O	|	|	|	5.34
26.667	0.00	3.05	4.331	I	O	|	|	|	5.33
26.750	0.00	3.04	4.310	I	O	|	|	|	5.32
26.833	0.00	3.03	4.289	I	O	|	|	|	5.30
26.917	0.00	3.03	4.268	I	O	|	|	|	5.29
27.000	0.00	3.02	4.247	I	O	|	|	|	5.27
27.083	0.00	3.01	4.226	I	O	|	|	|	5.26
27.167	0.00	3.00	4.206	I	O	|	|	|	5.24
27.250	0.00	2.99	4.185	I	O	|	|	|	5.23
27.333	0.00	2.99	4.165	I	O	|	|	|	5.21
27.417	0.00	2.98	4.144	I	O	|	|	|	5.20
27.500	0.00	2.97	4.124	I	O	|	|	|	5.18
27.583	0.00	2.96	4.103	I	O	|	|	|	5.17
27.667	0.00	2.95	4.083	I	O	|	|	|	5.16
27.750	0.00	2.94	4.062	I	O	|	|	|	5.14
27.833	0.00	2.94	4.042	I	O	|	|	|	5.13
27.917	0.00	2.93	4.022	I	O	|	|	|	5.11
28.000	0.00	2.92	4.002	I	O	|	|	|	5.10
28.083	0.00	2.91	3.982	I	O	|	|	|	5.09
28.167	0.00	2.90	3.962	I	O	|	|	|	5.07
28.250	0.00	2.90	3.942	I	O	|	|	|	5.06
28.333	0.00	2.89	3.922	I	O	|	|	|	5.04
28.417	0.00	2.88	3.902	I	O	|	|	|	5.03
28.500	0.00	2.87	3.882	I	O	|	|	|	5.02
28.583	0.00	2.87	3.862	I	O	|	|	|	5.00
28.667	0.00	2.86	3.843	I	O	|	|	|	4.99
28.750	0.00	2.85	3.823	I	O	|	|	|	4.98
28.833	0.00	2.84	3.803	I	O	|	|	|	4.96
28.917	0.00	2.83	3.784	I	O	|	|	|	4.95
29.000	0.00	2.82	3.764	I	O	|	|	|	4.94
29.083	0.00	2.82	3.745	I	O	|	|	|	4.92
29.167	0.00	2.81	3.726	I	O	|	|	|	4.91
29.250	0.00	2.80	3.706	I	O	|	|	|	4.90
29.333	0.00	2.79	3.687	I	O	|	|	|	4.88
29.417	0.00	2.78	3.668	I	O	|	|	|	4.87
29.500	0.00	2.77	3.649	I	O	|	|	|	4.86
29.583	0.00	2.77	3.630	I	O	|	|	|	4.84
29.667	0.00	2.76	3.611	I	O	|	|	|	4.83
29.750	0.00	2.75	3.592	I	O	|	|	|	4.82
29.833	0.00	2.74	3.573	I	O	|	|	|	4.81
29.917	0.00	2.73	3.554	I	O	|	|	|	4.79
30.000	0.00	2.73	3.535	I	O	|	|	|	4.78
30.083	0.00	2.72	3.516	I	O	|	|	|	4.77
30.167	0.00	2.71	3.498	I	O	|	|	|	4.76
30.250	0.00	2.70	3.479	I	O	|	|	|	4.74
30.333	0.00	2.69	3.461	I	O	|	|	|	4.73
30.417	0.00	2.69	3.442	I	O	|	|	|	4.72
30.500	0.00	2.68	3.424	I	O	|	|	|	4.71
30.583	0.00	2.67	3.405	I	O	|	|	|	4.69
30.667	0.00	2.66	3.387	I	O	|	|	|	4.68
30.750	0.00	2.65	3.368	I	O	|	|	|	4.67
30.833	0.00	2.65	3.350	I	O	|	|	|	4.66

30.917	0.00	2.64	3.332	I O	|	|	|	4.64
31.000	0.00	2.63	3.314	I O	|	|	|	4.63
31.083	0.00	2.62	3.296	I O	|	|	|	4.62
31.167	0.00	2.62	3.278	I O	|	|	|	4.61
31.250	0.00	2.61	3.260	I O	|	|	|	4.59
31.333	0.00	2.60	3.242	IO	|	|	|	4.58
31.417	0.00	2.59	3.224	IO	|	|	|	4.57
31.500	0.00	2.58	3.206	IO	|	|	|	4.56
31.583	0.00	2.58	3.188	IO	|	|	|	4.55
31.667	0.00	2.57	3.171	IO	|	|	|	4.53
31.750	0.00	2.56	3.153	IO	|	|	|	4.52
31.833	0.00	2.55	3.135	IO	|	|	|	4.51
31.917	0.00	2.55	3.118	IO	|	|	|	4.50
32.000	0.00	2.54	3.100	IO	|	|	|	4.49
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32.167	0.00	2.52	3.065	IO	|	|	|	4.46
32.250	0.00	2.51	3.048	IO	|	|	|	4.45
32.333	0.00	2.51	3.031	IO	|	|	|	4.44
32.417	0.00	2.50	3.014	IO	|	|	|	4.43
32.500	0.00	2.49	2.996	IO	|	|	|	4.42
32.583	0.00	2.48	2.979	IO	|	|	|	4.41
32.667	0.00	2.47	2.962	IO	|	|	|	4.40
32.750	0.00	2.46	2.945	IO	|	|	|	4.38
32.833	0.00	2.46	2.928	IO	|	|	|	4.37
32.917	0.00	2.45	2.911	IO	|	|	|	4.36
33.000	0.00	2.44	2.895	IO	|	|	|	4.35
33.083	0.00	2.43	2.878	IO	|	|	|	4.34
33.167	0.00	2.42	2.861	IO	|	|	|	4.33
33.250	0.00	2.42	2.844	IO	|	|	|	4.32
33.333	0.00	2.41	2.828	IO	|	|	|	4.31
33.417	0.00	2.40	2.811	IO	|	|	|	4.29
33.500	0.00	2.39	2.795	IO	|	|	|	4.28
33.583	0.00	2.38	2.778	IO	|	|	|	4.27
33.667	0.00	2.38	2.762	IO	|	|	|	4.26
33.750	0.00	2.37	2.745	IO	|	|	|	4.25
33.833	0.00	2.36	2.729	IO	|	|	|	4.24
33.917	0.00	2.35	2.713	IO	|	|	|	4.23
34.000	0.00	2.35	2.697	IO	|	|	|	4.22
34.083	0.00	2.34	2.681	IO	|	|	|	4.21
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34.333	0.00	2.31	2.633	IO	|	|	|	4.18
34.417	0.00	2.31	2.617	IO	|	|	|	4.17
34.500	0.00	2.30	2.601	IO	|	|	|	4.15
34.583	0.00	2.29	2.585	IO	|	|	|	4.14
34.667	0.00	2.28	2.569	IO	|	|	|	4.13
34.750	0.00	2.28	2.554	IO	|	|	|	4.12
34.833	0.00	2.27	2.538	IO	|	|	|	4.11
34.917	0.00	2.26	2.522	IO	|	|	|	4.10
35.000	0.00	2.25	2.507	IO	|	|	|	4.09
35.083	0.00	2.25	2.491	IO	|	|	|	4.08
35.167	0.00	2.24	2.476	IO	|	|	|	4.07
35.250	0.00	2.23	2.460	IO	|	|	|	4.06
35.333	0.00	2.22	2.445	IO	|	|	|	4.05
35.417	0.00	2.22	2.430	IO	|	|	|	4.04
35.500	0.00	2.21	2.414	IO	|	|	|	4.03
35.583	0.00	2.20	2.399	IO	|	|	|	4.02
35.667	0.00	2.20	2.384	IO	|	|	|	4.01
35.750	0.00	2.19	2.369	IO	|	|	|	4.00
35.833	0.00	2.18	2.354	IO	|	|	|	3.99
35.917	0.00	2.17	2.339	IO	|	|	|	3.98
36.000	0.00	2.16	2.324	IO	|	|	|	3.97
36.083	0.00	2.15	2.309	IO	|	|	|	3.96
36.167	0.00	2.15	2.294	IO	|	|	|	3.95
36.250	0.00	2.14	2.280	IO	|	|	|	3.94
36.333	0.00	2.13	2.265	IO	|	|	|	3.93
36.417	0.00	2.12	2.250	IO	|	|	|	3.92
36.500	0.00	2.11	2.236	IO	|	|	|	3.91
36.583	0.00	2.10	2.221	IO	|	|	|	3.90
36.667	0.00	2.09	2.207	IO	|	|	|	3.89
36.750	0.00	2.09	2.192	IO	|	|	|	3.88
36.833	0.00	2.08	2.178	IO	|	|	|	3.87
36.917	0.00	2.07	2.164	IO	|	|	|	3.86
37.000	0.00	2.06	2.150	IO	|	|	|	3.85
37.083	0.00	2.05	2.135	IO	|	|	|	3.85

37.167	0.00	2.05	2.121	IO					3.84
37.250	0.00	2.04	2.107	IO					3.83
37.333	0.00	2.03	2.093	IO					3.82
37.417	0.00	2.02	2.079	IO					3.81
37.500	0.00	2.01	2.065	IO					3.80
37.583	0.00	2.01	2.052	IO					3.79
37.667	0.00	2.00	2.038	IO					3.78
37.750	0.00	1.99	2.024	IO					3.77
37.833	0.00	1.98	2.010	IO					3.76
37.917	0.00	1.97	1.997	IO					3.75
38.000	0.00	1.97	1.983	IO					3.74
38.083	0.00	1.96	1.970	IO					3.73
38.167	0.00	1.95	1.956	IO					3.73
38.250	0.00	1.94	1.943	IO					3.72
38.333	0.00	1.93	1.929	IO					3.71
38.417	0.00	1.93	1.916	IO					3.70
38.500	0.00	1.92	1.903	IO					3.69
38.583	0.00	1.91	1.890	IO					3.68
38.667	0.00	1.90	1.877	IO					3.67
38.750	0.00	1.90	1.864	IO					3.66
38.833	0.00	1.89	1.850	IO					3.66
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39.250	0.00	1.85	1.786	IO					3.61
39.333	0.00	1.84	1.773	IO					3.60
39.417	0.00	1.84	1.761	IO					3.60
39.500	0.00	1.83	1.748	IO					3.59
39.583	0.00	1.82	1.735	IO					3.58
39.667	0.00	1.82	1.723	IO					3.57
39.750	0.00	1.81	1.710	IO					3.56
39.833	0.00	1.80	1.698	IO					3.55
39.917	0.00	1.79	1.686	IO					3.55
40.000	0.00	1.79	1.673	IO					3.54
40.083	0.00	1.78	1.661	IO					3.53
40.167	0.00	1.77	1.649	IO					3.52
40.250	0.00	1.77	1.637	IO					3.51
40.333	0.00	1.76	1.625	IO					3.50
40.417	0.00	1.75	1.612	IO					3.50
40.500	0.00	1.74	1.600	IO					3.49
40.583	0.00	1.73	1.588	IO					3.48
40.667	0.00	1.72	1.577	IO					3.47
40.750	0.00	1.71	1.565	IO					3.46
40.833	0.00	1.70	1.553	IO					3.46
40.917	0.00	1.69	1.541	IO					3.45
41.000	0.00	1.68	1.530	IO					3.44
41.083	0.00	1.68	1.518	IO					3.43
41.167	0.00	1.67	1.507	IO					3.43
41.250	0.00	1.66	1.495	IO					3.42
41.333	0.00	1.65	1.484	IO					3.41
41.417	0.00	1.64	1.472	IO					3.40
41.500	0.00	1.63	1.461	IO					3.39
41.583	0.00	1.62	1.450	IO					3.39
41.667	0.00	1.61	1.439	IO					3.38
41.750	0.00	1.60	1.428	IO					3.37
41.833	0.00	1.60	1.417	IO					3.36
41.917	0.00	1.59	1.406	IO					3.36
42.000	0.00	1.58	1.395	IO					3.35
42.083	0.00	1.57	1.384	IO					3.34
42.167	0.00	1.56	1.373	IO					3.34
42.250	0.00	1.55	1.362	IO					3.33
42.333	0.00	1.54	1.352	IO					3.32
42.417	0.00	1.54	1.341	IO					3.31
42.500	0.00	1.53	1.331	IO					3.31
42.583	0.00	1.52	1.320	IO					3.30
42.667	0.00	1.51	1.310	IO					3.29
42.750	0.00	1.50	1.299	IO					3.29
42.833	0.00	1.49	1.289	IO					3.28
42.917	0.00	1.49	1.279	IO					3.27
43.000	0.00	1.48	1.269	IO					3.26
43.083	0.00	1.47	1.258	IO					3.26
43.167	0.00	1.46	1.248	IO					3.25
43.250	0.00	1.45	1.238	IO					3.24
43.333	0.00	1.45	1.228	IO					3.24

43.417	0.00	1.44	1.218	IO					3.23
43.500	0.00	1.43	1.208	IO					3.22
43.583	0.00	1.42	1.199	IO					3.22
43.667	0.00	1.42	1.189	IO					3.21
43.750	0.00	1.41	1.179	IO					3.20
43.833	0.00	1.40	1.170	IO					3.20
43.917	0.00	1.39	1.160	IO					3.19
44.000	0.00	1.38	1.150	IO					3.18
44.083	0.00	1.38	1.141	IO					3.18
44.167	0.00	1.37	1.131	IO					3.17
44.250	0.00	1.36	1.122	IO					3.17
44.333	0.00	1.35	1.113	IO					3.16
44.417	0.00	1.35	1.103	IO					3.15
44.500	0.00	1.34	1.094	IO					3.15
44.583	0.00	1.33	1.085	IO					3.14
44.667	0.00	1.33	1.076	IO					3.13
44.750	0.00	1.32	1.067	IO					3.13
44.833	0.00	1.31	1.058	IO					3.12
44.917	0.00	1.30	1.049	IO					3.12
45.000	0.00	1.30	1.040	O					3.11
45.083	0.00	1.29	1.031	O					3.10
45.167	0.00	1.28	1.022	O					3.10
45.250	0.00	1.28	1.013	O					3.09
45.333	0.00	1.27	1.004	O					3.09
45.417	0.00	1.26	0.996	O					3.08
45.500	0.00	1.26	0.987	O					3.07
45.583	0.00	1.25	0.978	O					3.07
45.667	0.00	1.24	0.970	O					3.06
45.750	0.00	1.23	0.961	O					3.06
45.833	0.00	1.23	0.953	O					3.05
45.917	0.00	1.22	0.944	O					3.04
46.000	0.00	1.21	0.936	O					3.04
46.083	0.00	1.21	0.927	O					3.03
46.167	0.00	1.20	0.919	O					3.03
46.250	0.00	1.20	0.911	O					3.02
46.333	0.00	1.19	0.903	O					3.02
46.417	0.00	1.18	0.895	O					3.01
46.500	0.00	1.18	0.886	O					3.01
46.583	0.00	1.17	0.878	O					3.00
46.667	0.00	1.15	0.870	O					2.99
46.750	0.00	1.14	0.862	O					2.99
46.833	0.00	1.12	0.855	O					2.98
46.917	0.00	1.11	0.847	O					2.98
47.000	0.00	1.09	0.839	O					2.97
47.083	0.00	1.08	0.832	O					2.97
47.167	0.00	1.06	0.825	O					2.96
47.250	0.00	1.05	0.817	O					2.96
47.333	0.00	1.03	0.810	O					2.95
47.417	0.00	1.02	0.803	O					2.95
47.500	0.00	1.00	0.796	O					2.94
47.583	0.00	0.99	0.789	O					2.94
47.667	0.00	0.98	0.783	O					2.93
47.750	0.00	0.96	0.776	O					2.93
47.833	0.00	0.95	0.769	O					2.92
47.917	0.00	0.94	0.763	O					2.92
48.000	0.00	0.92	0.756	O					2.92
48.083	0.00	0.91	0.750	O					2.91
48.167	0.00	0.90	0.744	O					2.91
48.250	0.00	0.88	0.738	O					2.90
48.333	0.00	0.87	0.732	O					2.90
48.417	0.00	0.86	0.726	O					2.89
48.500	0.00	0.85	0.720	O					2.89
48.583	0.00	0.84	0.714	O					2.89
48.667	0.00	0.82	0.708	O					2.88
48.750	0.00	0.81	0.703	O					2.88
48.833	0.00	0.80	0.697	O					2.87
48.917	0.00	0.79	0.692	O					2.87
49.000	0.00	0.78	0.686	O					2.87
49.083	0.00	0.77	0.681	O					2.86
49.167	0.00	0.76	0.676	O					2.86
49.250	0.00	0.75	0.671	O					2.86
49.333	0.00	0.74	0.665	O					2.85
49.417	0.00	0.73	0.660	O					2.85
49.500	0.00	0.72	0.655	O					2.85
49.583	0.00	0.71	0.651	O					2.84

49.667	0.00	0.70	0.646	o	|	|	|	|	2.84
49.750	0.00	0.69	0.641	o	|	|	|	|	2.84
49.833	0.00	0.68	0.636	o	|	|	|	|	2.83
49.917	0.00	0.67	0.632	o	|	|	|	|	2.83
50.000	0.00	0.66	0.627	o	|	|	|	|	2.83
50.083	0.00	0.65	0.622	o	|	|	|	|	2.82
50.167	0.00	0.64	0.618	o	|	|	|	|	2.82
50.250	0.00	0.63	0.614	o	|	|	|	|	2.82
50.333	0.00	0.62	0.609	o	|	|	|	|	2.81
50.417	0.00	0.61	0.605	o	|	|	|	|	2.81
50.500	0.00	0.61	0.601	o	|	|	|	|	2.81
50.583	0.00	0.60	0.597	o	|	|	|	|	2.80
50.667	0.00	0.59	0.593	o	|	|	|	|	2.80
50.750	0.00	0.58	0.589	o	|	|	|	|	2.80
50.833	0.00	0.57	0.585	o	|	|	|	|	2.80
50.917	0.00	0.57	0.581	o	|	|	|	|	2.79
51.000	0.00	0.56	0.577	o	|	|	|	|	2.79
51.083	0.00	0.55	0.573	o	|	|	|	|	2.79
51.167	0.00	0.54	0.569	o	|	|	|	|	2.79
51.250	0.00	0.53	0.566	o	|	|	|	|	2.78
51.333	0.00	0.53	0.562	o	|	|	|	|	2.78
51.417	0.00	0.52	0.558	o	|	|	|	|	2.78
51.500	0.00	0.51	0.555	o	|	|	|	|	2.78
51.583	0.00	0.51	0.551	o	|	|	|	|	2.77
51.667	0.00	0.50	0.548	o	|	|	|	|	2.77
51.750	0.00	0.49	0.544	o	|	|	|	|	2.77
51.833	0.00	0.48	0.541	o	|	|	|	|	2.77
51.917	0.00	0.48	0.538	o	|	|	|	|	2.76
52.000	0.00	0.47	0.534	o	|	|	|	|	2.76
52.083	0.00	0.46	0.531	o	|	|	|	|	2.76
52.167	0.00	0.46	0.528	o	|	|	|	|	2.76
52.250	0.00	0.45	0.525	o	|	|	|	|	2.75
52.333	0.00	0.45	0.522	o	|	|	|	|	2.75
52.417	0.00	0.44	0.519	o	|	|	|	|	2.75
52.500	0.00	0.43	0.516	o	|	|	|	|	2.75
52.583	0.00	0.43	0.513	o	|	|	|	|	2.75
52.667	0.00	0.42	0.510	o	|	|	|	|	2.74
52.750	0.00	0.42	0.507	o	|	|	|	|	2.74
52.833	0.00	0.41	0.504	o	|	|	|	|	2.74
52.917	0.00	0.40	0.501	o	|	|	|	|	2.74
53.000	0.00	0.40	0.499	o	|	|	|	|	2.74
53.083	0.00	0.39	0.496	o	|	|	|	|	2.73
53.167	0.00	0.39	0.493	o	|	|	|	|	2.73
53.250	0.00	0.38	0.491	o	|	|	|	|	2.73
53.333	0.00	0.38	0.488	o	|	|	|	|	2.73
53.417	0.00	0.37	0.485	o	|	|	|	|	2.73
53.500	0.00	0.37	0.483	o	|	|	|	|	2.73
53.583	0.00	0.36	0.480	o	|	|	|	|	2.72
53.667	0.00	0.36	0.478	o	|	|	|	|	2.72
53.750	0.00	0.35	0.475	o	|	|	|	|	2.72
53.833	0.00	0.35	0.473	o	|	|	|	|	2.72
53.917	0.00	0.34	0.471	o	|	|	|	|	2.72
54.000	0.00	0.34	0.468	o	|	|	|	|	2.71
54.083	0.00	0.33	0.466	o	|	|	|	|	2.71
54.167	0.00	0.33	0.464	o	|	|	|	|	2.71
54.250	0.00	0.32	0.461	o	|	|	|	|	2.71
54.333	0.00	0.32	0.459	o	|	|	|	|	2.71
54.417	0.00	0.31	0.457	o	|	|	|	|	2.71
54.500	0.00	0.31	0.455	o	|	|	|	|	2.71
54.583	0.00	0.31	0.453	o	|	|	|	|	2.70
54.667	0.00	0.30	0.451	o	|	|	|	|	2.70
54.750	0.00	0.30	0.449	o	|	|	|	|	2.70
54.833	0.00	0.29	0.447	o	|	|	|	|	2.70
54.917	0.00	0.29	0.445	o	|	|	|	|	2.70
55.000	0.00	0.28	0.443	o	|	|	|	|	2.70
55.083	0.00	0.28	0.441	o	|	|	|	|	2.70
55.167	0.00	0.28	0.439	o	|	|	|	|	2.69
55.250	0.00	0.27	0.437	o	|	|	|	|	2.69
55.333	0.00	0.27	0.435	o	|	|	|	|	2.69
55.417	0.00	0.27	0.433	o	|	|	|	|	2.69
55.500	0.00	0.26	0.431	o	|	|	|	|	2.69
55.583	0.00	0.26	0.430	o	|	|	|	|	2.69
55.667	0.00	0.25	0.428	o	|	|	|	|	2.69
55.750	0.00	0.25	0.426	o	|	|	|	|	2.69
55.833	0.00	0.25	0.424	o	|	|	|	|	2.68

55.917	0.00	0.24	0.423	o	|	|	|	|	2.68
56.000	0.00	0.24	0.421	o	|	|	|	|	2.68
56.083	0.00	0.24	0.419	o	|	|	|	|	2.68
56.167	0.00	0.23	0.418	o	|	|	|	|	2.68
56.250	0.00	0.23	0.416	o	|	|	|	|	2.68
56.333	0.00	0.23	0.415	o	|	|	|	|	2.68
56.417	0.00	0.22	0.413	o	|	|	|	|	2.68
56.500	0.00	0.22	0.411	o	|	|	|	|	2.68
56.583	0.00	0.22	0.410	o	|	|	|	|	2.67
56.667	0.00	0.22	0.408	o	|	|	|	|	2.67
56.750	0.00	0.21	0.407	o	|	|	|	|	2.67
56.833	0.00	0.21	0.406	o	|	|	|	|	2.67
56.917	0.00	0.21	0.404	o	|	|	|	|	2.67
57.000	0.00	0.20	0.403	o	|	|	|	|	2.67
57.083	0.00	0.20	0.401	o	|	|	|	|	2.67
57.167	0.00	0.20	0.400	o	|	|	|	|	2.67
57.250	0.00	0.20	0.399	o	|	|	|	|	2.67
57.333	0.00	0.19	0.397	o	|	|	|	|	2.67
57.417	0.00	0.19	0.396	o	|	|	|	|	2.66
57.500	0.00	0.19	0.395	o	|	|	|	|	2.66
57.583	0.00	0.18	0.393	o	|	|	|	|	2.66
57.667	0.00	0.18	0.392	o	|	|	|	|	2.66
57.750	0.00	0.18	0.391	o	|	|	|	|	2.66
57.833	0.00	0.18	0.390	o	|	|	|	|	2.66
57.917	0.00	0.17	0.388	o	|	|	|	|	2.66
58.000	0.00	0.17	0.387	o	|	|	|	|	2.66
58.083	0.00	0.17	0.386	o	|	|	|	|	2.66
58.167	0.00	0.17	0.385	o	|	|	|	|	2.66
58.250	0.00	0.16	0.384	o	|	|	|	|	2.66
58.333	0.00	0.16	0.383	o	|	|	|	|	2.66
58.417	0.00	0.16	0.381	o	|	|	|	|	2.65
58.500	0.00	0.16	0.380	o	|	|	|	|	2.65
58.583	0.00	0.16	0.379	o	|	|	|	|	2.65
58.667	0.00	0.15	0.378	o	|	|	|	|	2.65
58.750	0.00	0.15	0.377	o	|	|	|	|	2.65
58.833	0.00	0.15	0.376	o	|	|	|	|	2.65
58.917	0.00	0.15	0.375	o	|	|	|	|	2.65
59.000	0.00	0.15	0.374	o	|	|	|	|	2.65
59.083	0.00	0.14	0.373	o	|	|	|	|	2.65
59.167	0.00	0.14	0.372	o	|	|	|	|	2.65
59.250	0.00	0.14	0.371	o	|	|	|	|	2.65
59.333	0.00	0.14	0.370	o	|	|	|	|	2.65
59.417	0.00	0.14	0.369	o	|	|	|	|	2.65
59.500	0.00	0.13	0.368	o	|	|	|	|	2.65
59.583	0.00	0.13	0.367	o	|	|	|	|	2.64
59.667	0.00	0.13	0.367	o	|	|	|	|	2.64
59.750	0.00	0.13	0.366	o	|	|	|	|	2.64
59.833	0.00	0.13	0.365	o	|	|	|	|	2.64
59.917	0.00	0.12	0.364	o	|	|	|	|	2.64
60.000	0.00	0.12	0.363	o	|	|	|	|	2.64
60.083	0.00	0.12	0.362	o	|	|	|	|	2.64
60.167	0.00	0.12	0.361	o	|	|	|	|	2.64
60.250	0.00	0.12	0.361	o	|	|	|	|	2.64
60.333	0.00	0.12	0.360	o	|	|	|	|	2.64
60.417	0.00	0.11	0.359	o	|	|	|	|	2.64
60.500	0.00	0.11	0.358	o	|	|	|	|	2.64
60.583	0.00	0.11	0.357	o	|	|	|	|	2.64
60.667	0.00	0.11	0.357	o	|	|	|	|	2.64
60.750	0.00	0.11	0.356	o	|	|	|	|	2.64
60.833	0.00	0.11	0.355	o	|	|	|	|	2.64
60.917	0.00	0.11	0.354	o	|	|	|	|	2.64
61.000	0.00	0.10	0.354	o	|	|	|	|	2.64
61.083	0.00	0.10	0.353	o	|	|	|	|	2.63
61.167	0.00	0.10	0.352	o	|	|	|	|	2.63
61.250	0.00	0.10	0.352	o	|	|	|	|	2.63
61.333	0.00	0.10	0.351	o	|	|	|	|	2.63
61.417	0.00	0.10	0.350	o	|	|	|	|	2.63
61.500	0.00	0.10	0.350	o	|	|	|	|	2.63
61.583	0.00	0.09	0.349	o	|	|	|	|	2.63
61.667	0.00	0.09	0.348	o	|	|	|	|	2.63
61.750	0.00	0.09	0.348	o	|	|	|	|	2.63
61.833	0.00	0.09	0.347	o	|	|	|	|	2.63
61.917	0.00	0.09	0.346	o	|	|	|	|	2.63
62.000	0.00	0.09	0.346	o	|	|	|	|	2.63
62.083	0.00	0.09	0.345	o	|	|	|	|	2.63

62.167	0.00	0.09	0.345	o	|	|	|	|	2.63
62.250	0.00	0.08	0.344	o	|	|	|	|	2.63
62.333	0.00	0.08	0.343	o	|	|	|	|	2.63
62.417	0.00	0.08	0.343	o	|	|	|	|	2.63
62.500	0.00	0.08	0.342	o	|	|	|	|	2.63
62.583	0.00	0.08	0.342	o	|	|	|	|	2.63
62.667	0.00	0.08	0.341	o	|	|	|	|	2.63
62.750	0.00	0.08	0.341	o	|	|	|	|	2.63
62.833	0.00	0.08	0.340	o	|	|	|	|	2.63
62.917	0.00	0.08	0.340	o	|	|	|	|	2.63
63.000	0.00	0.07	0.339	o	|	|	|	|	2.63
63.083	0.00	0.07	0.339	o	|	|	|	|	2.62
63.167	0.00	0.07	0.338	o	|	|	|	|	2.62
63.250	0.00	0.07	0.338	o	|	|	|	|	2.62
63.333	0.00	0.07	0.337	o	|	|	|	|	2.62
63.417	0.00	0.07	0.337	o	|	|	|	|	2.62
63.500	0.00	0.07	0.336	o	|	|	|	|	2.62
63.583	0.00	0.07	0.336	o	|	|	|	|	2.62
63.667	0.00	0.07	0.335	o	|	|	|	|	2.62
63.750	0.00	0.07	0.335	o	|	|	|	|	2.62
63.833	0.00	0.06	0.334	o	|	|	|	|	2.62
63.917	0.00	0.06	0.334	o	|	|	|	|	2.62
64.000	0.00	0.06	0.333	o	|	|	|	|	2.62
64.083	0.00	0.06	0.333	o	|	|	|	|	2.62
64.167	0.00	0.06	0.333	o	|	|	|	|	2.62
64.250	0.00	0.06	0.332	o	|	|	|	|	2.62
64.333	0.00	0.06	0.332	o	|	|	|	|	2.62
64.417	0.00	0.06	0.331	o	|	|	|	|	2.62
64.500	0.00	0.06	0.331	o	|	|	|	|	2.62
64.583	0.00	0.06	0.331	o	|	|	|	|	2.62
64.667	0.00	0.06	0.330	o	|	|	|	|	2.62
64.750	0.00	0.06	0.330	o	|	|	|	|	2.62
64.833	0.00	0.05	0.329	o	|	|	|	|	2.62
64.917	0.00	0.05	0.329	o	|	|	|	|	2.62
65.000	0.00	0.05	0.329	o	|	|	|	|	2.62
65.083	0.00	0.05	0.328	o	|	|	|	|	2.62
65.167	0.00	0.05	0.328	o	|	|	|	|	2.62
65.250	0.00	0.05	0.328	o	|	|	|	|	2.62
65.333	0.00	0.05	0.327	o	|	|	|	|	2.62
65.417	0.00	0.05	0.327	o	|	|	|	|	2.62
65.500	0.00	0.05	0.327	o	|	|	|	|	2.62
65.583	0.00	0.05	0.326	o	|	|	|	|	2.62
65.667	0.00	0.05	0.326	o	|	|	|	|	2.62
65.750	0.00	0.05	0.326	o	|	|	|	|	2.62
65.833	0.00	0.05	0.325	o	|	|	|	|	2.62
65.917	0.00	0.05	0.325	o	|	|	|	|	2.62
66.000	0.00	0.04	0.325	o	|	|	|	|	2.62
66.083	0.00	0.04	0.324	o	|	|	|	|	2.61
66.167	0.00	0.04	0.324	o	|	|	|	|	2.61
66.250	0.00	0.04	0.324	o	|	|	|	|	2.61
66.333	0.00	0.04	0.323	o	|	|	|	|	2.61
66.417	0.00	0.04	0.323	o	|	|	|	|	2.61
66.500	0.00	0.04	0.323	o	|	|	|	|	2.61
66.583	0.00	0.04	0.323	o	|	|	|	|	2.61
66.667	0.00	0.04	0.322	o	|	|	|	|	2.61
66.750	0.00	0.04	0.322	o	|	|	|	|	2.61
66.833	0.00	0.04	0.322	o	|	|	|	|	2.61
66.917	0.00	0.04	0.321	o	|	|	|	|	2.61
67.000	0.00	0.04	0.321	o	|	|	|	|	2.61
67.083	0.00	0.04	0.321	o	|	|	|	|	2.61
67.167	0.00	0.04	0.321	o	|	|	|	|	2.61
67.250	0.00	0.04	0.320	o	|	|	|	|	2.61
67.333	0.00	0.04	0.320	o	|	|	|	|	2.61
67.417	0.00	0.04	0.320	o	|	|	|	|	2.61
67.500	0.00	0.03	0.320	o	|	|	|	|	2.61
67.583	0.00	0.03	0.319	o	|	|	|	|	2.61
67.667	0.00	0.03	0.319	o	|	|	|	|	2.61
67.750	0.00	0.03	0.319	o	|	|	|	|	2.61
67.833	0.00	0.03	0.319	o	|	|	|	|	2.61
67.917	0.00	0.03	0.319	o	|	|	|	|	2.61
68.000	0.00	0.03	0.318	o	|	|	|	|	2.61
68.083	0.00	0.03	0.318	o	|	|	|	|	2.61
68.167	0.00	0.03	0.318	o	|	|	|	|	2.61
68.250	0.00	0.03	0.318	o	|	|	|	|	2.61
68.333	0.00	0.03	0.317	o	|	|	|	|	2.61

68.417	0.00	0.03	0.317	o	|	|	|	|	2.61
68.500	0.00	0.03	0.317	o	|	|	|	|	2.61
68.583	0.00	0.03	0.317	o	|	|	|	|	2.61
68.667	0.00	0.03	0.317	o	|	|	|	|	2.61
68.750	0.00	0.03	0.316	o	|	|	|	|	2.61
68.833	0.00	0.03	0.316	o	|	|	|	|	2.61
68.917	0.00	0.03	0.316	o	|	|	|	|	2.61
69.000	0.00	0.03	0.316	o	|	|	|	|	2.61
69.083	0.00	0.03	0.316	o	|	|	|	|	2.61
69.167	0.00	0.03	0.316	o	|	|	|	|	2.61
69.250	0.00	0.03	0.315	o	|	|	|	|	2.61
69.333	0.00	0.03	0.315	o	|	|	|	|	2.61
69.417	0.00	0.03	0.315	o	|	|	|	|	2.61
69.500	0.00	0.02	0.315	o	|	|	|	|	2.61
69.583	0.00	0.02	0.315	o	|	|	|	|	2.61
69.667	0.00	0.02	0.314	o	|	|	|	|	2.61
69.750	0.00	0.02	0.314	o	|	|	|	|	2.61
69.833	0.00	0.02	0.314	o	|	|	|	|	2.61
69.917	0.00	0.02	0.314	o	|	|	|	|	2.61
70.000	0.00	0.02	0.314	o	|	|	|	|	2.61
70.083	0.00	0.02	0.314	o	|	|	|	|	2.61
70.167	0.00	0.02	0.313	o	|	|	|	|	2.61
70.250	0.00	0.02	0.313	o	|	|	|	|	2.61
70.333	0.00	0.02	0.313	o	|	|	|	|	2.61
70.417	0.00	0.02	0.313	o	|	|	|	|	2.61
70.500	0.00	0.02	0.313	o	|	|	|	|	2.61
70.583	0.00	0.02	0.313	o	|	|	|	|	2.61
70.667	0.00	0.02	0.313	o	|	|	|	|	2.61
70.750	0.00	0.02	0.312	o	|	|	|	|	2.61
70.833	0.00	0.02	0.312	o	|	|	|	|	2.61
70.917	0.00	0.02	0.312	o	|	|	|	|	2.61
71.000	0.00	0.02	0.312	o	|	|	|	|	2.61
71.083	0.00	0.02	0.312	o	|	|	|	|	2.61
71.167	0.00	0.02	0.312	o	|	|	|	|	2.61
71.250	0.00	0.02	0.312	o	|	|	|	|	2.61
71.333	0.00	0.02	0.312	o	|	|	|	|	2.61
71.417	0.00	0.02	0.311	o	|	|	|	|	2.61
71.500	0.00	0.02	0.311	o	|	|	|	|	2.61
71.583	0.00	0.02	0.311	o	|	|	|	|	2.61
71.667	0.00	0.02	0.311	o	|	|	|	|	2.61
71.750	0.00	0.02	0.311	o	|	|	|	|	2.61
71.833	0.00	0.02	0.311	o	|	|	|	|	2.61
71.917	0.00	0.02	0.311	o	|	|	|	|	2.61
72.000	0.00	0.02	0.311	o	|	|	|	|	2.61
72.083	0.00	0.02	0.310	o	|	|	|	|	2.61
72.167	0.00	0.02	0.310	o	|	|	|	|	2.61
72.250	0.00	0.02	0.310	o	|	|	|	|	2.61
72.333	0.00	0.02	0.310	o	|	|	|	|	2.60
72.417	0.00	0.02	0.310	o	|	|	|	|	2.60
72.500	0.00	0.02	0.310	o	|	|	|	|	2.60
72.583	0.00	0.01	0.310	o	|	|	|	|	2.60
72.667	0.00	0.01	0.310	o	|	|	|	|	2.60
72.750	0.00	0.01	0.310	o	|	|	|	|	2.60
72.833	0.00	0.01	0.310	o	|	|	|	|	2.60
72.917	0.00	0.01	0.309	o	|	|	|	|	2.60
73.000	0.00	0.01	0.309	o	|	|	|	|	2.60
73.083	0.00	0.01	0.309	o	|	|	|	|	2.60
73.167	0.00	0.01	0.309	o	|	|	|	|	2.60
73.250	0.00	0.01	0.309	o	|	|	|	|	2.60
73.333	0.00	0.01	0.309	o	|	|	|	|	2.60
73.417	0.00	0.01	0.309	o	|	|	|	|	2.60
73.500	0.00	0.01	0.309	o	|	|	|	|	2.60
73.583	0.00	0.01	0.309	o	|	|	|	|	2.60
73.667	0.00	0.01	0.309	o	|	|	|	|	2.60
73.750	0.00	0.01	0.309	o	|	|	|	|	2.60
73.833	0.00	0.01	0.308	o	|	|	|	|	2.60
73.917	0.00	0.01	0.308	o	|	|	|	|	2.60
74.000	0.00	0.01	0.308	o	|	|	|	|	2.60
74.083	0.00	0.01	0.308	o	|	|	|	|	2.60
74.167	0.00	0.01	0.308	o	|	|	|	|	2.60
74.250	0.00	0.01	0.308	o	|	|	|	|	2.60
74.333	0.00	0.01	0.308	o	|	|	|	|	2.60
74.417	0.00	0.01	0.308	o	|	|	|	|	2.60
74.500	0.00	0.01	0.308	o	|	|	|	|	2.60
74.583	0.00	0.01	0.308	o	|	|	|	|	2.60

74.667	0.00	0.01	0.308	o	|	|	|	|	2.60
74.750	0.00	0.01	0.308	o	|	|	|	|	2.60
74.833	0.00	0.01	0.308	o	|	|	|	|	2.60
74.917	0.00	0.01	0.307	o	|	|	|	|	2.60
75.000	0.00	0.01	0.307	o	|	|	|	|	2.60
75.083	0.00	0.01	0.307	o	|	|	|	|	2.60
75.167	0.00	0.01	0.307	o	|	|	|	|	2.60
75.250	0.00	0.01	0.307	o	|	|	|	|	2.60
75.333	0.00	0.01	0.307	o	|	|	|	|	2.60
75.417	0.00	0.01	0.307	o	|	|	|	|	2.60
75.500	0.00	0.01	0.307	o	|	|	|	|	2.60
75.583	0.00	0.01	0.307	o	|	|	|	|	2.60
75.667	0.00	0.01	0.307	o	|	|	|	|	2.60
75.750	0.00	0.01	0.307	o	|	|	|	|	2.60
75.833	0.00	0.01	0.307	o	|	|	|	|	2.60
75.917	0.00	0.01	0.307	o	|	|	|	|	2.60
76.000	0.00	0.01	0.307	o	|	|	|	|	2.60
76.083	0.00	0.01	0.307	o	|	|	|	|	2.60
76.167	0.00	0.01	0.307	o	|	|	|	|	2.60
76.250	0.00	0.01	0.306	o	|	|	|	|	2.60
76.333	0.00	0.01	0.306	o	|	|	|	|	2.60
76.417	0.00	0.01	0.306	o	|	|	|	|	2.60
76.500	0.00	0.01	0.306	o	|	|	|	|	2.60
76.583	0.00	0.01	0.306	o	|	|	|	|	2.60
76.667	0.00	0.01	0.306	o	|	|	|	|	2.60
76.750	0.00	0.01	0.306	o	|	|	|	|	2.60
76.833	0.00	0.01	0.306	o	|	|	|	|	2.60
76.917	0.00	0.01	0.306	o	|	|	|	|	2.60
77.000	0.00	0.01	0.306	o	|	|	|	|	2.60
77.083	0.00	0.01	0.306	o	|	|	|	|	2.60
77.167	0.00	0.01	0.306	o	|	|	|	|	2.60
77.250	0.00	0.01	0.306	o	|	|	|	|	2.60
77.333	0.00	0.01	0.306	o	|	|	|	|	2.60
77.417	0.00	0.01	0.306	o	|	|	|	|	2.60
77.500	0.00	0.01	0.306	o	|	|	|	|	2.60
77.583	0.00	0.01	0.306	o	|	|	|	|	2.60
77.667	0.00	0.01	0.306	o	|	|	|	|	2.60
77.750	0.00	0.01	0.306	o	|	|	|	|	2.60
77.833	0.00	0.01	0.306	o	|	|	|	|	2.60
77.917	0.00	0.01	0.305	o	|	|	|	|	2.60
78.000	0.00	0.01	0.305	o	|	|	|	|	2.60
78.083	0.00	0.01	0.305	o	|	|	|	|	2.60
78.167	0.00	0.01	0.305	o	|	|	|	|	2.60
78.250	0.00	0.01	0.305	o	|	|	|	|	2.60
78.333	0.00	0.01	0.305	o	|	|	|	|	2.60
78.417	0.00	0.01	0.305	o	|	|	|	|	2.60
78.500	0.00	0.01	0.305	o	|	|	|	|	2.60
78.583	0.00	0.01	0.305	o	|	|	|	|	2.60
78.667	0.00	0.01	0.305	o	|	|	|	|	2.60
78.750	0.00	0.01	0.305	o	|	|	|	|	2.60
78.833	0.00	0.01	0.305	o	|	|	|	|	2.60
78.917	0.00	0.01	0.305	o	|	|	|	|	2.60
79.000	0.00	0.01	0.305	o	|	|	|	|	2.60
79.083	0.00	0.00	0.305	o	|	|	|	|	2.60
79.167	0.00	0.00	0.305	o	|	|	|	|	2.60
79.250	0.00	0.00	0.305	o	|	|	|	|	2.60
79.333	0.00	0.00	0.305	o	|	|	|	|	2.60
79.417	0.00	0.00	0.305	o	|	|	|	|	2.60
79.500	0.00	0.00	0.305	o	|	|	|	|	2.60
79.583	0.00	0.00	0.305	o	|	|	|	|	2.60
79.667	0.00	0.00	0.305	o	|	|	|	|	2.60
79.750	0.00	0.00	0.305	o	|	|	|	|	2.60
79.833	0.00	0.00	0.305	o	|	|	|	|	2.60
79.917	0.00	0.00	0.305	o	|	|	|	|	2.60
80.000	0.00	0.00	0.305	o	|	|	|	|	2.60
80.083	0.00	0.00	0.305	o	|	|	|	|	2.60
80.167	0.00	0.00	0.305	o	|	|	|	|	2.60
80.250	0.00	0.00	0.305	o	|	|	|	|	2.60
80.333	0.00	0.00	0.305	o	|	|	|	|	2.60
80.417	0.00	0.00	0.304	o	|	|	|	|	2.60
80.500	0.00	0.00	0.304	o	|	|	|	|	2.60
80.583	0.00	0.00	0.304	o	|	|	|	|	2.60
80.667	0.00	0.00	0.304	o	|	|	|	|	2.60
80.750	0.00	0.00	0.304	o	|	|	|	|	2.60
80.833	0.00	0.00	0.304	o	|	|	|	|	2.60

80.917	0.00	0.00	0.304	o	|	|	|	|	2.60
81.000	0.00	0.00	0.304	o	|	|	|	|	2.60
81.083	0.00	0.00	0.304	o	|	|	|	|	2.60
81.167	0.00	0.00	0.304	o	|	|	|	|	2.60
81.250	0.00	0.00	0.304	o	|	|	|	|	2.60
81.333	0.00	0.00	0.304	o	|	|	|	|	2.60
81.417	0.00	0.00	0.304	o	|	|	|	|	2.60
81.500	0.00	0.00	0.304	o	|	|	|	|	2.60
81.583	0.00	0.00	0.304	o	|	|	|	|	2.60
81.667	0.00	0.00	0.304	o	|	|	|	|	2.60
81.750	0.00	0.00	0.304	o	|	|	|	|	2.60
81.833	0.00	0.00	0.304	o	|	|	|	|	2.60
81.917	0.00	0.00	0.304	o	|	|	|	|	2.60
82.000	0.00	0.00	0.304	o	|	|	|	|	2.60
82.083	0.00	0.00	0.304	o	|	|	|	|	2.60
82.167	0.00	0.00	0.304	o	|	|	|	|	2.60
82.250	0.00	0.00	0.304	o	|	|	|	|	2.60
82.333	0.00	0.00	0.304	o	|	|	|	|	2.60
82.417	0.00	0.00	0.304	o	|	|	|	|	2.60
82.500	0.00	0.00	0.304	o	|	|	|	|	2.60
82.583	0.00	0.00	0.304	o	|	|	|	|	2.60
82.667	0.00	0.00	0.304	o	|	|	|	|	2.60
82.750	0.00	0.00	0.304	o	|	|	|	|	2.60
82.833	0.00	0.00	0.304	o	|	|	|	|	2.60
82.917	0.00	0.00	0.304	o	|	|	|	|	2.60
83.000	0.00	0.00	0.304	o	|	|	|	|	2.60
83.083	0.00	0.00	0.304	o	|	|	|	|	2.60
83.167	0.00	0.00	0.304	o	|	|	|	|	2.60
83.250	0.00	0.00	0.304	o	|	|	|	|	2.60
83.333	0.00	0.00	0.304	o	|	|	|	|	2.60
83.417	0.00	0.00	0.304	o	|	|	|	|	2.60
83.500	0.00	0.00	0.304	o	|	|	|	|	2.60
83.583	0.00	0.00	0.304	o	|	|	|	|	2.60
83.667	0.00	0.00	0.304	o	|	|	|	|	2.60
83.750	0.00	0.00	0.304	o	|	|	|	|	2.60
83.833	0.00	0.00	0.304	o	|	|	|	|	2.60
83.917	0.00	0.00	0.304	o	|	|	|	|	2.60
84.000	0.00	0.00	0.304	o	|	|	|	|	2.60
84.083	0.00	0.00	0.304	o	|	|	|	|	2.60
84.167	0.00	0.00	0.304	o	|	|	|	|	2.60
84.250	0.00	0.00	0.304	o	|	|	|	|	2.60
84.333	0.00	0.00	0.304	o	|	|	|	|	2.60
84.417	0.00	0.00	0.304	o	|	|	|	|	2.60
84.500	0.00	0.00	0.303	o	|	|	|	|	2.60
84.583	0.00	0.00	0.303	o	|	|	|	|	2.60
84.667	0.00	0.00	0.303	o	|	|	|	|	2.60
84.750	0.00	0.00	0.303	o	|	|	|	|	2.60
84.833	0.00	0.00	0.303	o	|	|	|	|	2.60
84.917	0.00	0.00	0.303	o	|	|	|	|	2.60
85.000	0.00	0.00	0.303	o	|	|	|	|	2.60
85.083	0.00	0.00	0.303	o	|	|	|	|	2.60
85.167	0.00	0.00	0.303	o	|	|	|	|	2.60
85.250	0.00	0.00	0.303	o	|	|	|	|	2.60
85.333	0.00	0.00	0.303	o	|	|	|	|	2.60
85.417	0.00	0.00	0.303	o	|	|	|	|	2.60
85.500	0.00	0.00	0.303	o	|	|	|	|	2.60
85.583	0.00	0.00	0.303	o	|	|	|	|	2.60
85.667	0.00	0.00	0.303	o	|	|	|	|	2.60
85.750	0.00	0.00	0.303	o	|	|	|	|	2.60
85.833	0.00	0.00	0.303	o	|	|	|	|	2.60
85.917	0.00	0.00	0.303	o	|	|	|	|	2.60
86.000	0.00	0.00	0.303	o	|	|	|	|	2.60
86.083	0.00	0.00	0.303	o	|	|	|	|	2.60
86.167	0.00	0.00	0.303	o	|	|	|	|	2.60
86.250	0.00	0.00	0.303	o	|	|	|	|	2.60
86.333	0.00	0.00	0.303	o	|	|	|	|	2.60
86.417	0.00	0.00	0.303	o	|	|	|	|	2.60
86.500	0.00	0.00	0.303	o	|	|	|	|	2.60
86.583	0.00	0.00	0.303	o	|	|	|	|	2.60
86.667	0.00	0.00	0.303	o	|	|	|	|	2.60
86.750	0.00	0.00	0.303	o	|	|	|	|	2.60
86.833	0.00	0.00	0.303	o	|	|	|	|	2.60
86.917	0.00	0.00	0.303	o	|	|	|	|	2.60
87.000	0.00	0.00	0.303	o	|	|	|	|	2.60
87.083	0.00	0.00	0.303	o	|	|	|	|	2.60

87.167	0.00	0.00	0.303	o	|	|	|	2.60
87.250	0.00	0.00	0.303	o	|	|	|	2.60
87.333	0.00	0.00	0.303	o	|	|	|	2.60
87.417	0.00	0.00	0.303	o	|	|	|	2.60
87.500	0.00	0.00	0.303	o	|	|	|	2.60
87.583	0.00	0.00	0.303	o	|	|	|	2.60
87.667	0.00	0.00	0.303	o	|	|	|	2.60
87.750	0.00	0.00	0.303	o	|	|	|	2.60
87.833	0.00	0.00	0.303	o	|	|	|	2.60
87.917	0.00	0.00	0.303	o	|	|	|	2.60
88.000	0.00	0.00	0.303	o	|	|	|	2.60
88.083	0.00	0.00	0.303	o	|	|	|	2.60
88.167	0.00	0.00	0.303	o	|	|	|	2.60
88.250	0.00	0.00	0.303	o	|	|	|	2.60
88.333	0.00	0.00	0.303	o	|	|	|	2.60
88.417	0.00	0.00	0.303	o	|	|	|	2.60
88.500	0.00	0.00	0.303	o	|	|	|	2.60
88.583	0.00	0.00	0.303	o	|	|	|	2.60
88.667	0.00	0.00	0.303	o	|	|	|	2.60

Remaining water in basin = 0.30 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 1064
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 40.748 (CFS)
Total volume = 21.462 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

Results of Infiltration Study

August 13, 2021

Exeter Property Group
4602 East University Drive, Suite 185
Phoenix, Arizona 85034

Attention: Mr. Andrew Greybar
Senior Project Manager

Project No.: **21G133-2**

Subject: **Results of Infiltration Testing**
Proposed E-Commerce Development
Cherry Valley Avenue, West of Fabian Lane
Beaumont, California

Reference: Geotechnical Investigation, Proposed E-Commerce Development, Beaumont, California, prepared by Southern California Geotechnical, Inc. (SCG), prepared for Exeter Property Group, SCG Project No. 21G133-1.

Mr. Greybar:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Change Order No. 21G133-CO, dated July 14, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located on the south side of Cherry Valley Boulevard, 1,500± feet west of the intersection of Cherry Valley Boulevard and Fabian Lane in Beaumont, California. The site is bounded to the north by Cherry Valley Boulevard, to the east by single-family residences (SFRs) and vacant lots, to the south by Brookside Avenue, to the southwest by the Redlands Freeway (Interstate 10) and to the west by vacant land. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several irregular to rectangular-shaped parcels which total 178.4± acres in size. The site is presently developed with three (3) single-family residences and several small abandoned buildings located in the northeastern area of the site. Remnants of shade structures including Portland cement concrete panels and sawed-off poles are present

throughout the northeastern areas of the site. Several above-ground storage tanks are also present throughout the northeastern area of the site. One of the smaller abandoned structures possesses a below-grade room with what appears to be a turbine. The remaining areas of the site are presently vacant and undeveloped. Five (5) circular to oval-shaped leech ponds are located in the west-central area of the site. Two (2) additional leech ponds are located in the south-central area of the site. Ground surface cover consist of exposed soil and moderate to dense native grass and weed growth. Several large trees are located in the southern areas of the site. Limited areas of trash and debris are located throughout the site.

Detailed topographic information was obtained from the conceptual grading plan prepared by Albert A. Webb Associates (Webb). Based on the provided plan, the northeastern to northern two-thirds of the site slopes downward to the southwest at a gradient of 4± percent. The seven (7) circular leech ponds located in the west-central and south-central areas of the site are surrounded by a berm that is 5± feet higher than the surrounding topography. The northwestern area of the site possesses several east-west and southeast-northwest trending drainage courses. The drainage features possess gradual to steep side walls with elevation differences of up to 15± feet below the surrounding topography. To the south of the leech pits, the site slopes towards the south to southwest at a gradient of 10± percent. The topography descends by 50± feet in this area. Another significant east-west trending drainage is located at the base of the descending slope, located in the southern-most region of the site. The drainage possesses gradual to steep side walls with an elevation difference up 10± feet below the surrounding topography. A hill, located to the southeast of this drainage, is approximately 20 to 30 feet higher than the surrounding topography. The hill possesses slope gradients ranging from 14 to 40± percent. To the south of the hill, the site topography slopes gently to the west at a gradient of 3.5± percent, where it meets up with a tributary drainage to the previously mentioned bisecting drainage. The area to the southwest of the bisecting drainage slopes to the west a gradient of 2.5± percent. Another hill with a north-facing descending slope is located at the southwest corner of the site. The slope has a gradient of 20± percent. The maximum site elevation is 2581± feet mean sea level (msl), in the northeast corner of the site. The minimum site elevation is 2406± feet msl, located in drainage swale channel located in the southern-most region of the site.

Proposed Development

Based on the conceptual site plan prepared by Webb, the site will be developed with three (3) new E-Commerce buildings. Building 1 will be 985,860± ft^2 in size, located in the western area of the site. Building 2 will be 1,254,000± ft^2 in size, located in the east-central region of the site. Lastly, Building 3 will be 358,370± ft^2 in size, located in the north-central area of the site. A cross-dock configuration will be constructed on Building 1 and Building 2, along the east/west and north/south building walls, respectively. Dock-high doors will be constructed along a portion of the southern building wall of Building 3. The buildings will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete (PCC) pavements in the truck court, and areas of concrete flatwork and landscape planters. Several new fill and cut slopes will be constructed along all permitters, as well as within the site. The new fill slopes will range from 10 to 40± feet in height and will possess slope inclinations not to exceed 2h:1v (horizontal to vertical). New retaining walls will also be required to establish the

new site grades. The new retaining walls will possess maximum retained heights ranging from 10 to 50± feet.

The proposed development will include on-site stormwater infiltration. Based on our conversations with the project civil engineer and the proposed site plan, infiltration systems will consist of two (2) below-grade chambers and one (1) detention basin. One of the infiltration chamber systems will be located in the northern area of the site (south of Building 3). The bottom of the chambers are expected to range from 28 to 34± feet below the existing site grades. The second infiltration chamber system will be located in the southern area of the site (south of Building 2). The bottom of the chambers are expected to range from 24 to 36± feet below the existing site grades. The detention basin will be located in the south-central area of the site. The bottom of the basin will be at an elevation of, approximately 10 to 43± feet, below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site, also referenced above. The investigation conducted for this project consisted of forty-four (44) borings advanced to depths of 10 to 50± feet, and seven (7) trenches excavated to depths of 6½ to 10½± feet below the existing site grades. Artificial fill soils were encountered at the ground surface of several boring and trench locations. The fill soils generally consist of loose to medium dense silty fine sands and clayey fine to medium sands. The fill soils possess a disturbed and mottled appearance, resulting in their classification as artificial fill. Native alluvium was encountered beneath the artificial fill soils or at the ground surface at several of the borings and trench locations. The alluvial soils extend to depths of 2½ to 10± feet below ground surface in the northern areas of the site, and 25 to 50± feet below ground surface in the southern areas of the site. The alluvial soils generally consist of loose to very dense silty fine sands and silty fine to medium sands. Older alluvial soils were encountered at the ground surface, beneath the artificial fill, and/or beneath the alluvium of the boring and trench locations, extending to at least the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of medium dense to very dense silty fine sands, silty fine to medium sands, silty fine to coarse sands and silty fine sands to fine sandy silts.

Groundwater

Groundwater was not encountered at any of the boring or trench locations. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet below existing site grades at the time of the subsurface investigation.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level and recent groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring wells in this database are located in the northeast corner of the site. Water level readings within one of these monitoring wells indicates a historic high groundwater level of 317± feet below the ground surface in September 1990. Water level readings within another of these monitoring

wells indicates a recent high groundwater level of 412± feet below the ground surface in December 2020.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of sixteen (16) infiltration test borings, advanced to depths ranging from 10 to 43± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-1 through I-16) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Upon the completion of the infiltration borings, the bottom of each test boring was covered with 2± inches of clean ¾-inch gravel. A sufficient length of 3-inch-diameter perforated PVC casing was then placed into each test hole so that the PVC casing extended from the bottom of the test hole to the ground surface. Clean ¾-inch gravel was then installed in the annulus surrounding the PVC casing.

Geotechnical Conditions

Alluvial soils were encountered at the ground surface some of the infiltration borings, extending to depths of 4 to 32± feet below existing site grades. The alluvial soils in generally consist of loose to dense silty fine sands, silty fine to medium sands, clayey sands, fine to coarse sands, and fine to coarse sandy silts with variable gravel content. Older alluvium was encountered at the ground surface or beneath the alluvium at most of the boring locations. The older alluvium generally consists of medium dense to dense fine sands, fine to coarse sands, silty fine sands, silty fine to medium sands, and clayey fine to medium sands, extending to the maximum depth explored of 43± feet.

Infiltration Testing

As previously mentioned, the infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards all sixteen (16) of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak. Based on the results of the pre-soaking process, different infiltration procedures were used during the infiltration testing at the infiltration boring locations.

Infiltration Testing

Following the pre-soaking process of the infiltration test borings, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole, and less than or equal to the water level used during the pre-soaking process. In accordance with the Riverside County guidelines, since "sandy soils" and "non-sandy" conditions were encountered at the bottom of the infiltration borings tests were run for an additional hour with measurements taken at 10-minute intervals for "sandy" conditions and 30-minute intervals for six hours in "non-sandy" conditions. After each reading, the borings were refilled to the correct water level above the gravel at the bottom of each test hole. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Test Elevation (feet) MSL	Soil Description	Infiltration Rate (inches/hour)
I-1	22	2496	Red Brown fine to coarse Sandy Silt	4.0
I-2	25	2495	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-3	31	2494	Red Brown Clayey fine to coarse Sand, trace Silt	0.0
I-4	34	2496	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-5	24	2474½	Red Brown Silty fine to medium Sand, trace coarse Sand	4.4
I-6	25	2474	Red Brown Silty fine to medium Sand, trace coarse Sand	3.6
I-7	30	2474	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel	3.7
I-8	30	2474	Brown Gravelly fine to coarse Sand, little Silt	8.0
I-9	36	2475	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel	4.2
I-10	35	2475	Brown fine to coarse Sand, trace fine Gravel, trace Silt	8.7
I-11	10	2446	Brown Silty fine to medium Sand, trace fine Gravel	0.8

I-12	14	2443	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel	4.8
I-13	28	2445	Brown fine to coarse Sand, little fine Gravel, little Silt	19.4
I-14	16	2444	Gray Brown Gravelly fine to coarse Sand, little Silt	13.5
I-15	27	2449	Red Brown Silty fine to coarse Sand, trace fine Gravel	15.7
I-16	43	2445	Red Brown Silty fine to medium Sand, trace coarse Sand	14.6

Laboratory Testing

Moisture Content

The moisture contents for the recovered soil samples within the borings were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the bottom of each infiltration test boring have been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these tests are presented on Plates C-1 through C-17 of this report.

Design Recommendations

Sixteen (16) infiltration tests were performed at the subject site. As noted above, the infiltration rates at these locations range from 0 to 19.4 inches per hour.

Based on the results of the infiltration testing, we recommend the following infiltration rates for the proposed infiltration systems:

Infiltration System	Site Location	Infiltration Rate (Inches per Hour)
A	North-Central	0
B	South-Central	5.4
C	South-Central	11.5

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the chamber system. It should be confirmed that the soils at the base of the proposed

infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the proposed storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Beaumont and/or County of Riverside guidelines. However, it is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rate recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rates are based on infiltration testing at sixteen (16) discrete locations and the overall infiltration rate of the storm water infiltration system could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the City of Beaumont and/or County of Riverside guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the basins. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration systems

correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within basins. As such, the bottom 24 inches of the infiltration systems should be excavated with non-rubber-tired equipment, such as excavators.

Basin Maintenance

The proposed project may include infiltration basins. Water flowing into these basins will carry some level of sediment. Wind-blown sediments and erosion of the basin side walls will also contribute to sediment deposition at the bottom of the basin. This layer has the potential to significantly reduce the infiltration rate of the basin subgrade soils. Therefore, a formal basin maintenance program should be established to ensure that these silt and clay deposits are removed from the basin on a regular basis. Appropriate vegetation on the basin sidewalls and bottom may reduce erosion and sediment deposition.

Basin maintenance should also include measures to prevent animal burrows, and to repair any burrows or damage caused by such. Animal burrows in the basin sidewalls can significantly increase the risk of erosion and piping failures.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration systems may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and

preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

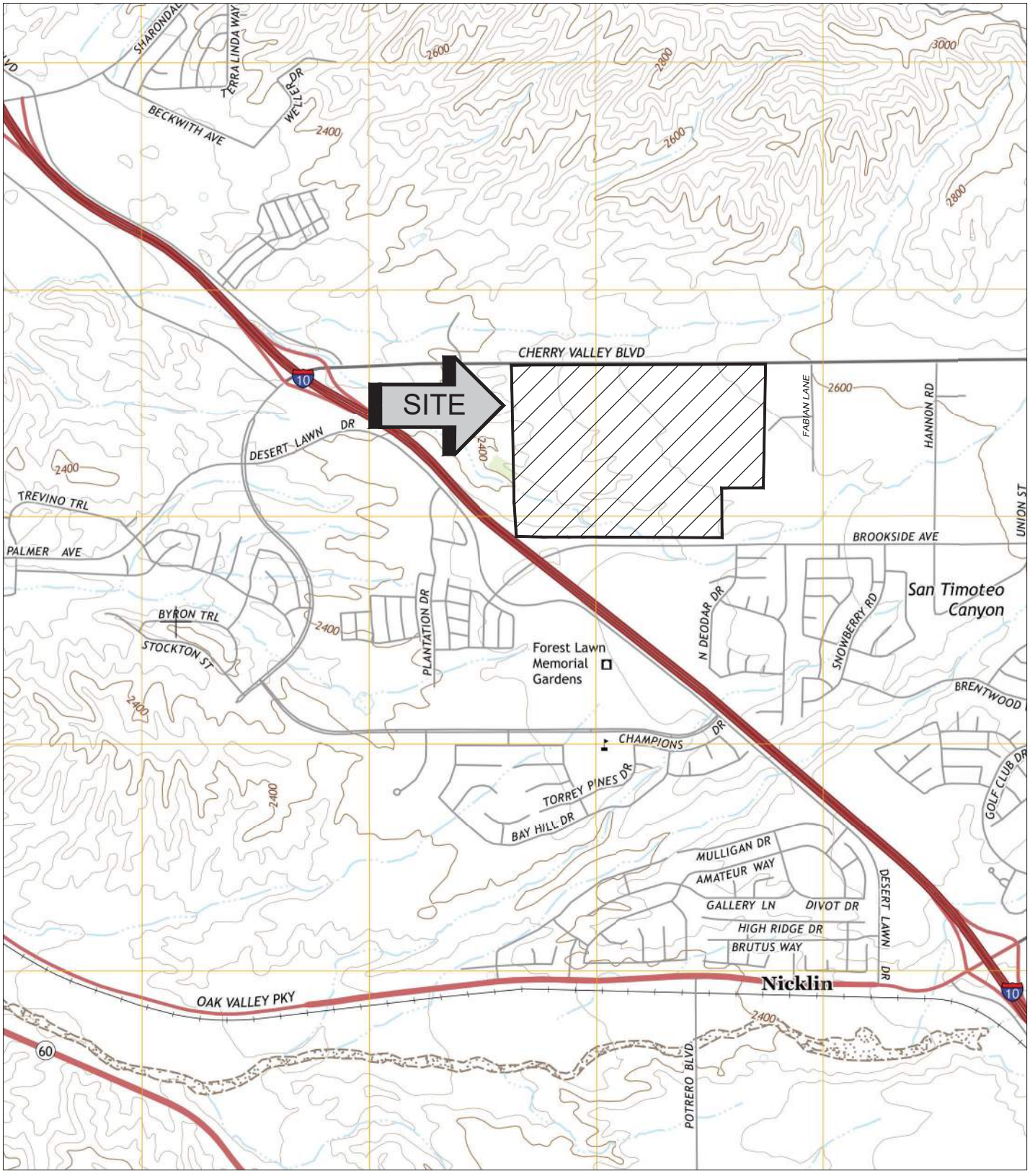
SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Jose A. Zuniga
Staff Engineer

Robert G. Trazo, GE 2655
Principal Engineer

Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Boring Log Legend and Logs (20 pages)
Infiltration Test Results Spreadsheets (16 pages)
Grain Size Distribution Graphs (17 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE EL CASCO QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2015.

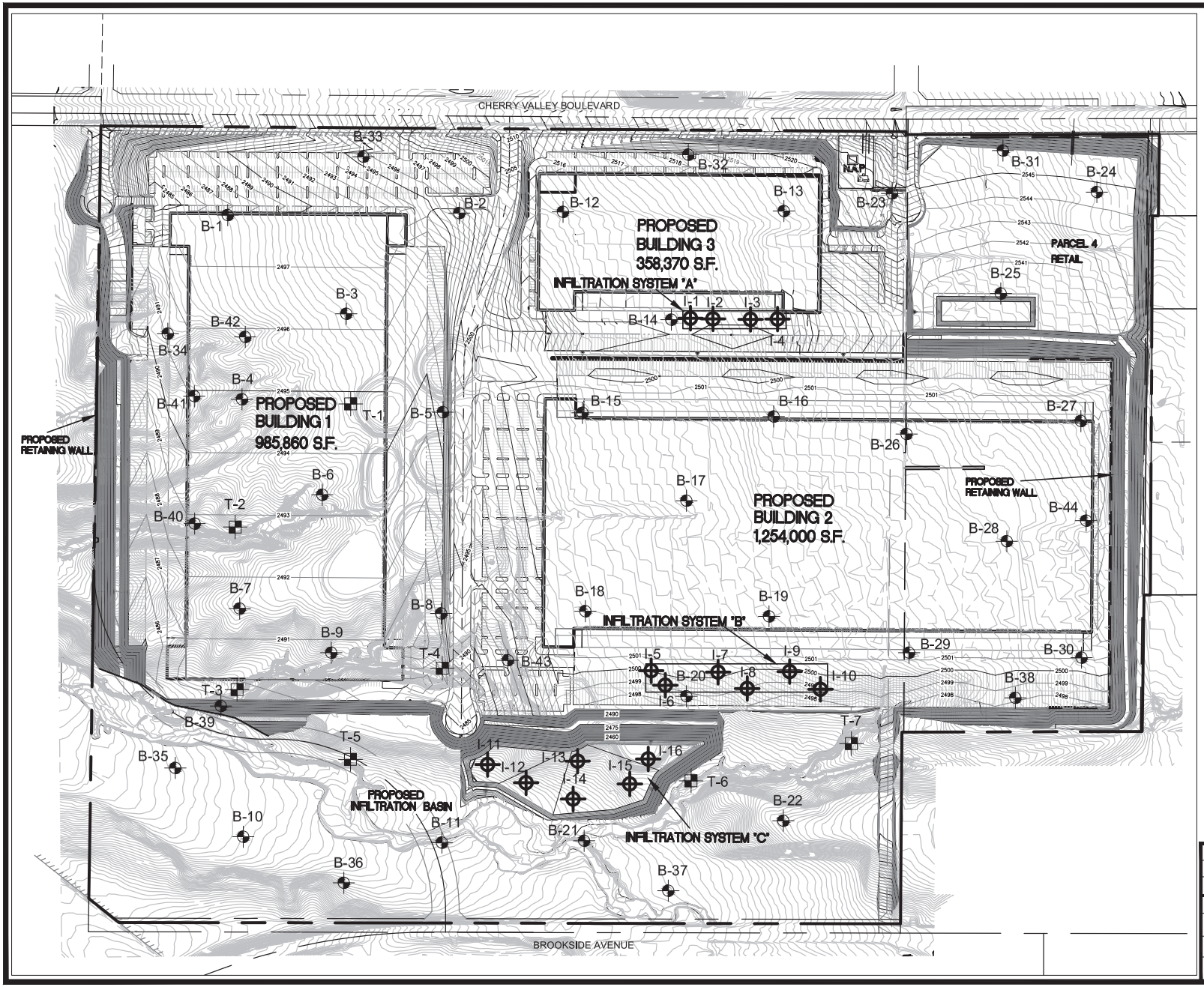
SITE LOCATION MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 1	

SOUTHERN CALIFORNIA GEOTECHNICAL



NORTH

SoCalGeo

GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 21G133-1)
- APPROXIMATE TRENCH LOCATION (SCG PROJECT NO. 21G133-1)

INFILTRATION TEST LOCATION PLAN

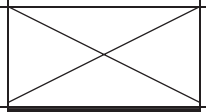
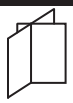
PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 300'	
DRAWN: JAZ CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 2	

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

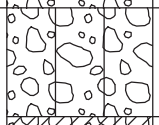
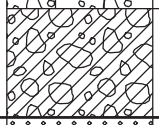
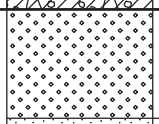
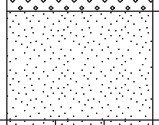
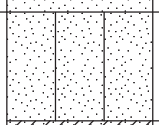
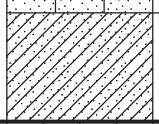
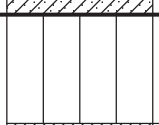
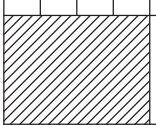
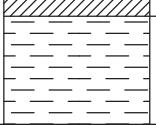
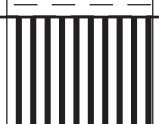
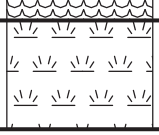
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-1

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2518 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, medium dense-damp to moist							
		12					9					
5												
		12					10					
10												
					Brown fine Sand, trace medium to coarse Sand, trace fine Gravel, trace Silt, medium dense-damp							
		17					7					
15												
					Brown Silty fine to medium Sand, medium dense-damp							
		14					6					
20												
		18			Red Brown Silty fine to coarse Sand, medium dense-damp		6			26		
					Red Brown fine to coarse Sandy Silt, medium dense-damp to moist		10			51		
					Boring Terminated at 22'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-2

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2520 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Gray Brown Clayey fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist							
		10					10					
5												
					Brown Silty fine Sand, trace medium Sand, medium dense-damp							
		16					7					
10												
		13					6					
15												
					Red Brown fine Sandy Silt to Silty fine Sand, loose to medium dense-moist							
		10					11					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-moist							
		16					11			48		
25					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-3

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2525 feet MSL							
					ALLUVIUM: Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, loose to medium dense-damp to moist							
5		8					12					
10		10					8					
15		13					10					
20		20					10					
					OLDER ALLUVIUM: Red Brown Clayey fine to medium Sand, medium dense-moist							
25		21					13					
					Red Brown Clayey fine to coarse Sand, trace Silt, medium dense-moist							
30		22					12			49		
					Boring Terminated at 31'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-4

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2530 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist							
		8					6					
5												
		19					11					
10												
		16					9					
15												
		10			Red Brown fine to coarse Sand, trace fine to coarse Gravel, trace Silt, loose to medium dense-damp to moist		8					
20												
		15			Gray Brown fine to coarse Sand, medium dense-damp		3					
25												
		10			Red Brown fine Sandy Silt, trace coarse Gravel, loose to medium dense-moist		15					
30												
		16			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, slightly cemented, medium dense-moist		12			39		
					Boring Terminated at 34'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-4**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-5

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2498.5 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		14					6					
5					OLDER ALLUVIUM: Brown fine to coarse Sandy Silt, trace fine to coarse Gravel, trace Clay, medium dense-damp		7					
					Brown Silty fine to coarse Sand, trace coarse Gravel, slightly cemented, medium dense-damp							
		27					8					
10												
					Brown fine Sand, little medium Sand, trace coarse Sand, medium dense-damp							
		26					5					
15												
					Brown fine to coarse Sand, trace fine Gravel, dense-damp							
		37					4					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
		26					7			28		
					Boring Terminated at 24'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-6

JOB NO.: 21G133-2 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2499 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown fine Sandy Clay, little medium Sand, slightly cemented, very stiff-damp							
5		19					9					
					Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		24					5					
10												
					Red Brown fine Sand, trace to little Silt, medium dense-damp							
		20					6					
15												
					Red Brown Silty fine Sand, trace calcareous veining, medium dense-moist							
		29					10					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
		29					7			35		
25					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-7

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		33			OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp		5					
10		16			Red Brown Clayey fine to medium Sand, slightly cemented, medium dense-moist		12					
15		24			Red Brown fine to coarse Sand, little Silt, medium dense to dense-damp		4					
20		48					3					
25		32			Gray Brown fine Sand, dense-damp		5					
30		25			Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp		7			36		
					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-7**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-8

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, medium dense-damp							
		24					3					
5					Red Brown fine Sandy Silt, trace medium Sand, trace fine Gravel, trace Clay, medium dense-damp		5					
					Brown fine to medium Sand, trace coarse Sand, little Silt, medium dense-damp							
		17					5					
10												
		28					7					
					Brown fine to medium Sandy Silt, trace coarse Sand, medium dense-damp		7					
15												
					Brown Silty fine Sand, little medium Sand, trace fine to coarse Gravel, medium dense-damp							
		22					5					
20												
		24					6					
25												
					Brown fine to coarse Sand, little Silt, very dense-damp							
		65					6					
					Brown Gravelly fine to coarse Sand, little Silt, very dense-damp		4			12		
30												
					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-8**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2511 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Clayey fine Sand, little Silt, slightly cemented, medium dense to dense-damp to moist							
5		30					8					
10		21					11					
15		36			Brown Clayey fine to medium Sand, slightly cemented, dense-damp		8					
20		38			Brown fine to medium Sand, little coarse Sand, trace Silt, dense-damp		4					
25		19			Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		8					
30		27					12					
					Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel, medium dense-damp							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG

PLATE B-9a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	27					7			34		
					Boring Terminated at 36'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-10

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2510 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, porous, trace fine root fibers, medium dense-damp							
5		20					4					
					Red Brown Clayey fine to medium Sand, trace coarse Gravel, slightly cemented, dense-moist							
10		33					11					
					Red Brown Silty fine to medium Sand, dense-damp							
15		31					6					
					Brown fine to coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					4					
					Red Brown fine to medium Sand, trace fine Gravel, dense-damp							
25		37					5					
					Red Brown Silty fine Sand, dense-moist							
30		36					11					
					Brown fine to coarse Sand, trace fine Gravel, trace Silt, dense-dry to damp							
35		43			Boring Terminated at 35'		3			9		

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-10**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-11

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2456 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine to medium Sand, trace fine root fibers, medium dense-dry to damp							
		14					2					
5												
					Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp							
		21					7			37		
10					Boring Terminated at 10'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-11**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-12

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2457 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Light Gray fine to coarse Sand, little fine to coarse Gravel, very dense-damp							
		69					4					
5												
					Gray Brown Silty fine Sand, medium dense- damp to moist							
		20					9					
10												
		41			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp		7			38		
					Boring Terminated at 14'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-12**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-13

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2473 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Light Gray fine to coarse Sand, little fine Gravel, trace fine root fibers, dense-dry to damp							
5		41			@ 5 to 6½ feet, slightly cemented		2					
					Brown Silty fine Sand, trace fine Gravel, medium dense-damp							
10		29					6					
15		25					8					
					Gray Brown fine to medium Sand, little coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					6					
					Brown fine to coarse Sand, little fine Gravel, little Silt, very dense-damp							
25		50/4"					4			14		
					Boring Terminated at 28'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-13**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-14

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2460 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown to Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, medium dense-damp							
5		22					4					
10		21			@ 10 to 11½ feet, trace fine Gravel		8					
					Gray Brown Gravelly fine to coarse Sand, little Silt, very dense-dry to damp							
15		50/5"					3			14		
					Boring Terminated at 16'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-14**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-15

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2476 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, trace coarse Gravel, trace fine root fibers, dense-damp							
5		49					6					
					Brown fine to medium Sand, little coarse Sand, dense-dry to damp							
10		37					3					
					Red Brown Silty fine Sand, trace medium Sand, dense-damp							
15		35					9					
					Gray Brown fine to coarse Sand, trace fine Gravel, very dense-damp							
20		50/5"					9					
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine Gravel, slightly cemented, very dense-damp							
25		70					4			27		
					Boring Terminated at 27'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-15**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2488 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine to medium Sand, medium dense-damp							
5		27					5					
					Red Brown Silty fine Sand, medium dense-damp							
10		23					8					
15		30			@ 15 to 16½ feet, trace medium Sand, dense-moist		11					
20		26					11					
					OLDER ALLUVIUM: Brown fine to coarse Sand, trace fine Gravel, trace Silt, very dense-dry to damp							
25		63					3					
30		59					4					
					Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		50/5"			Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist		3					
40												
		35					11					
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, dense-very moist		18			39		
					Boring Terminated at 43'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16b**

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	22.00	(ft)

Infiltration Test Hole: I-1

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:00 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	11:25 AM		20.92			
2	Initial	11:28 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	11:53 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:00 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:10 PM		19.90			
2	Initial	12:11 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:21 PM		19.91			
3	Initial	12:22 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:32 PM		19.90			
4	Initial	12:33 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:43 PM		19.91			
5	Initial	12:44 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:54 PM		19.90			
6	Initial	12:55 PM	10.00	19.00	0.90	2.55	3.98
	Final	1:05 PM		19.90			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-2

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	10:50 AM		22.47			
2	Initial	10:51 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	11:16 AM		22.47			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:18 AM	30.00	22.20	0.32	2.64	0.46
	Final	11:48 AM		22.52			
2	Initial	11:50 AM	30.00	22.20	0.30	2.65	0.43
	Final	12:20 PM		22.50			
3	Initial	12:22 PM	30.00	22.20	0.30	2.65	0.43
	Final	12:52 PM		22.50			
4	Initial	12:55 PM	30.00	22.20	0.30	2.65	0.43
	Final	1:25 PM		22.50			
5	Initial	1:28 PM	30.00	22.50	0.00	2.50	0.00
	Final	1:58 PM		22.50			
6	Initial	2:00 PM	30.00	22.50	0.00	2.50	0.00
	Final	2:30 PM		22.50			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	31.00	(ft)

Infiltration Test Hole: I-3

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:00 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		29.00			
2	Initial	9:28 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:53 AM		29.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	10:30 AM		29.00			
2	Initial	10:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:00 AM		29.00			
3	Initial	11:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:30 AM		29.00			
4	Initial	11:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	12:00 PM		29.00			
5	Initial	12:00 PM	30.00	29.00	0.00	2.00	0.00
	Final	12:30 PM		29.00			
6	Initial	12:30 PM	30.00	29.00	0.00	2.00	0.00
	Final	1:00 PM		29.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	34.00	(ft)

Infiltration Test Hole: I-4

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:30 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	8:55 AM		32.30			
2	Initial	9:00 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		32.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	10:00 AM		32.30			
2	Initial	10:00 AM	30.00	32.00	0.30	1.85	0.60
	Final	10:30 AM		32.30			
3	Initial	10:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:00 AM		32.30			
4	Initial	11:00 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:30 AM		32.30			
5	Initial	11:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	12:00 PM		32.30			
6	Initial	12:00 PM	30.00	32.30	0.00	1.70	0.00
	Final	12:30 PM		32.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	24.00	(ft)

Infiltration Test Hole: I-5

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:00 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:25 AM		24.00			
2	Initial	8:26 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:51 AM		24.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:52 AM	10.00	22.00	1.62	1.19	14.33
	Final	9:02 AM		23.62			
2	Initial	9:03 AM	10.00	22.00	1.00	1.50	7.20
	Final	9:13 AM		23.00			
3	Initial	9:14 AM	10.00	22.00	0.75	1.63	5.02
	Final	9:24 AM		22.75			
4	Initial	9:25 AM	10.00	22.00	0.64	1.68	4.16
	Final	9:35 AM		22.64			
5	Initial	9:36 AM	10.00	22.00	0.68	1.66	4.47
	Final	9:46 AM		22.68			
6	Initial	9:47 AM	10.00	22.00	0.67	1.67	4.39
	Final	9:57 AM		22.67			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-6

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:45 PM	25.00	21.00	43.80	YES	SANDY SOILS
	Final	4:10 PM		24.65			
2	Initial	4:12 PM	25.00	21.00	37.80	YES	SANDY SOILS
	Final	4:37 PM		24.15			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:38 PM	10.00	21.00	1.30	3.35	4.44
	Final	4:48 PM		22.30			
2	Initial	4:49 PM	10.00	21.00	1.10	3.45	3.65
	Final	4:59 PM		22.10			
3	Initial	5:00 PM	10.00	21.00	1.20	3.40	4.04
	Final	5:10 PM		22.20			
4	Initial	5:11 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:21 PM		22.10			
5	Initial	5:22 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:32 PM		22.10			
6	Initial	5:33 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:43 PM		22.10			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-7

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:30 AM	25.00	28.20	14.16	YES	SANDY SOILS
	Final	9:55 AM		29.38			
2	Initial	9:56 AM	25.00	28.20	14.40	YES	SANDY SOILS
	Final	10:21 AM		29.40			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:22 AM	10.00	28.20	0.60	1.50	4.32
	Final	10:32 AM		28.80			
2	Initial	10:33 AM	10.00	28.20	0.41	1.60	2.79
	Final	10:43 AM		28.61			
3	Initial	10:44 AM	10.00	28.00	0.71	1.65	4.70
	Final	10:54 AM		28.71			
4	Initial	10:55 AM	10.00	28.00	0.60	1.70	3.86
	Final	11:05 AM		28.60			
5	Initial	11:06 AM	10.00	28.00	0.66	1.67	4.31
	Final	11:16 AM		28.66			
6	Initial	11:17 AM	10.00	28.00	0.58	1.71	3.71
	Final	11:27 AM		28.58			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-8

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:25 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	9:50 AM		30.30			
2	Initial	9:51 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	10:16 AM		30.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:18 AM	10.00	28.30	1.35	1.03	13.59
	Final	10:28 AM		29.65			
2	Initial	10:29 AM	10.00	28.30	1.03	1.19	9.14
	Final	10:39 AM		29.33			
3	Initial	10:40 AM	10.00	28.30	0.97	1.22	8.42
	Final	10:50 AM		29.27			
4	Initial	10:51 AM	10.00	28.30	0.94	1.23	8.08
	Final	11:01 AM		29.24			
5	Initial	11:02 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:12 AM		29.23			
6	Initial	11:13 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:23 AM		29.23			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	36.00	(ft)

Infiltration Test Hole: I-9

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	1:10 PM	25.00	31.00	51.60	YES	SANDY SOILS
	Final	1:35 PM		35.30			
2	Initial	1:36 PM	25.00	31.00	45.60	YES	SANDY SOILS
	Final	2:01 PM		34.80			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	2:02 PM	10.00	31.00	1.70	4.15	4.73
	Final	2:12 PM		32.70			
2	Initial	2:13 PM	10.00	31.00	1.60	4.20	4.40
	Final	2:23 PM		32.60			
3	Initial	2:24 PM	10.00	31.00	1.57	4.22	4.30
	Final	2:34 PM		32.57			
4	Initial	2:25 PM	10.00	31.00	1.55	4.23	4.24
	Final	2:35 PM		32.55			
5	Initial	2:36 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:46 PM		32.54			
6	Initial	2:47 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:57 PM		32.54			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	35.00	(ft)

Infiltration Test Hole	I-10

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:10 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	11:35 AM		35.00			
2	Initial	11:36 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	12:01 PM		35.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:02 PM	10.00	33.00	1.43	1.29	11.82
	Final	12:12 PM		34.43			
2	Initial	12:13 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:23 PM		34.20			
3	Initial	12:24 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:34 PM		34.20			
4	Initial	12:35 PM	10.00	33.00	1.15	1.43	8.67
	Final	12:45 PM		34.15			
5	Initial	12:46 PM	10.00	33.00	1.14	1.43	8.57
	Final	12:56 PM		34.14			
6	Initial	12:57 PM	10.00	33.00	1.15	1.43	8.67
	Final	1:07 PM		34.15			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	10.00	(ft)

Infiltration Test Hole	I-11

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:20 AM	25.00	3.00	31.80	YES	SANDY SOILS
	Final	10:45 AM		5.65			
2	Initial	10:46 AM	25.00	3.00	12.60	YES	SANDY SOILS
	Final	11:11 AM		4.05			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:12 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:22 AM		3.50			
2	Initial	11:23 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:33 AM		3.50			
3	Initial	11:34 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:44 AM		3.50			
4	Initial	11:45 AM	10.00	3.00	0.45	6.78	0.78
	Final	11:55 AM		3.45			
5	Initial	11:56 AM	10.00	3.00	0.45	6.78	0.78
	Final	12:06 PM		3.45			
6	Initial	12:07 PM	10.00	3.00	0.45	6.78	0.78
	Final	12:17 PM		3.45			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	14.00	(ft)

Infiltration Test Hole	I-12

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:15 PM	25.00	10.00	33.60	YES	SANDY SOILS
	Final	3:40 PM		12.80			
2	Initial	3:41 PM	25.00	10.00	32.40	YES	SANDY SOILS
	Final	4:06 PM		12.70			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:07 PM	10.00	10.00	1.50	3.25	5.27
	Final	4:17 PM		11.50			
2	Initial	4:18 PM	10.00	10.00	1.47	3.27	5.14
	Final	4:28 PM		11.47			
3	Initial	4:38 PM	10.00	10.00	1.45	3.28	5.06
	Final	4:48 PM		11.45			
4	Initial	4:49 PM	10.00	10.00	1.44	3.28	5.01
	Final	4:59 PM		11.44			
5	Initial	5:00 PM	10.00	10.00	1.43	3.29	4.97
	Final	5:10 PM		11.43			
6	Initial	5:11 PM	10.00	10.00	1.40	3.30	4.85
	Final	5:21 PM		11.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where: Q = Infiltration Rate (in inches per hour)
ΔH = Change in Height (Water Level) over the time interval
r = Test Hole (Borehole) Radius
Δt = Time Interval
H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	28.00	(ft)

Infiltration Test Hole	I-13

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:35 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:00 PM		29.20			
2	Initial	1:01 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:26 PM		29.20			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:27 PM	10.00	26.20	2.15	0.73	28.93
	Final	1:37 PM		28.35			
2	Initial	1:38 PM	10.00	26.20	2.44	0.58	39.21
	Final	1:48 PM		28.64			
3	Initial	1:49 PM	10.00	26.20	1.77	0.92	19.64
	Final	1:59 PM		27.97			
4	Initial	2:00 PM	10.00	26.20	1.74	0.93	19.04
	Final	2:10 PM		27.94			
5	Initial	2:11 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:21 PM		27.96			
6	Initial	2:22 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:32 PM		27.96			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	16.00	(ft)

Infiltration Test Hole	I-14

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:15 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	8:40 AM		16.00			
2	Initial	8:41 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	9:06 AM		16.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:07 AM	10.00	12.00	3.20	2.40	14.96
	Final	9:17 AM		15.20			
2	Initial	9:18 AM	10.00	12.00	3.10	2.45	14.22
	Final	9:28 AM		15.10			
3	Initial	9:29 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:39 AM		15.00			
4	Initial	9:40 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:50 AM		15.00			
5	Initial	9:51 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:01 AM		15.00			
6	Initial	10:02 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:12 AM		15.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	27.00	(ft)

Infiltration Test Hole: I-15

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:54 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:19 PM		27.00			
2	Initial	1:20 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:45 PM		27.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:48 PM	10.00	23.00	3.60	2.20	18.25
	Final	1:58 PM		26.60			
2	Initial	1:59 PM	10.00	23.00	3.50	2.25	17.38
	Final	2:09 PM		26.50			
3	Initial	2:10 PM	10.00	23.00	3.45	2.28	16.96
	Final	2:20 PM		26.45			
4	Initial	2:21 PM	10.00	23.00	3.38	2.31	16.38
	Final	2:31 PM		26.38			
5	Initial	2:32 PM	10.00	23.00	3.35	2.33	16.13
	Final	2:42 PM		26.35			
6	Initial	2:43 PM	10.00	23.00	3.30	2.35	15.74
	Final	2:53 PM		26.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	43.00	(ft)

Infiltration Test Hole	I-16

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	40.00	33.84	YES	SANDY SOILS
	Final	10:50 AM		42.82			
2	Initial	10:51 AM	25.00	40.00	34.80	YES	SANDY SOILS
	Final	11:16 AM		42.90			

Test Data

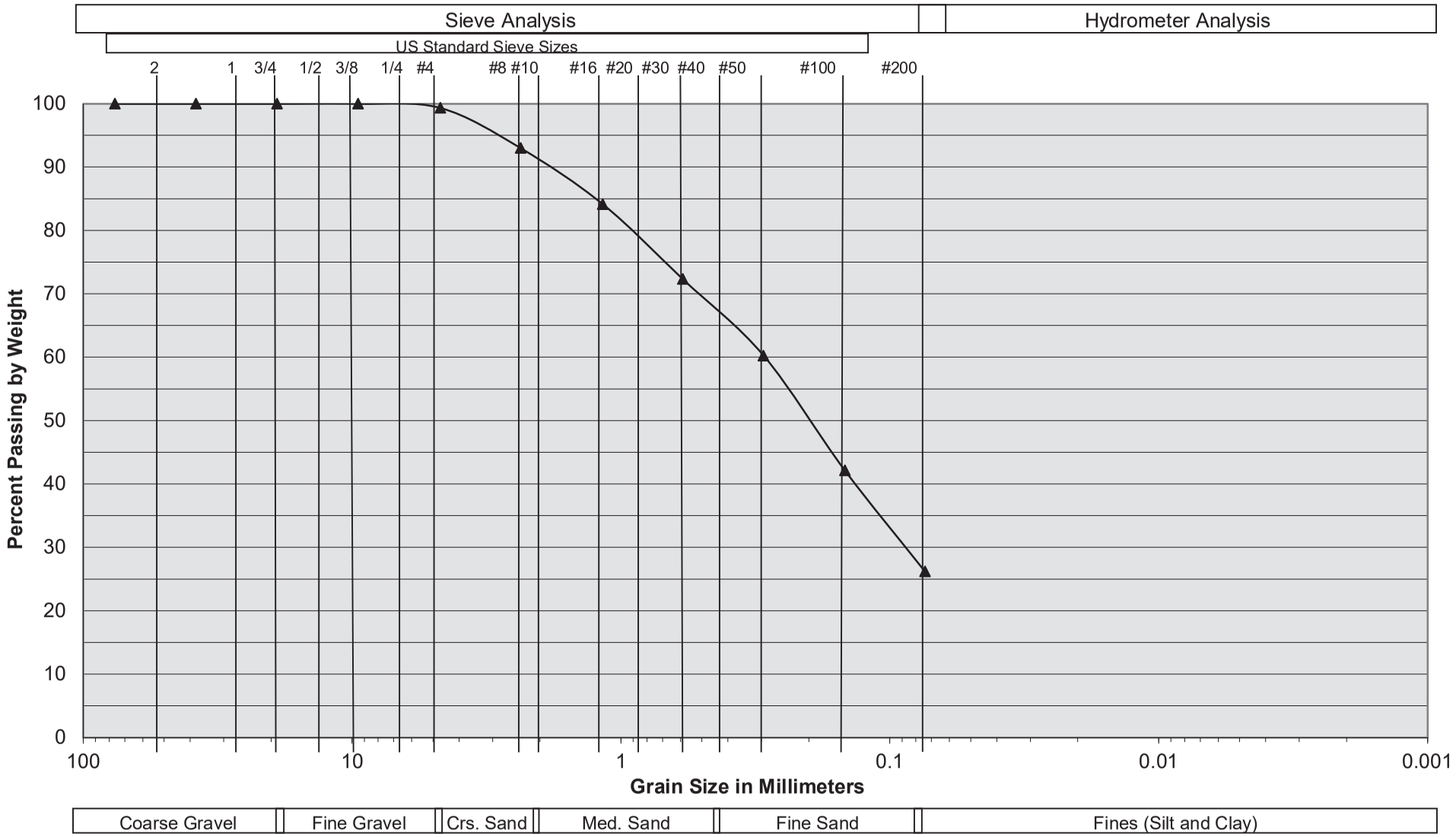
Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:17 AM	10.00	40.00	2.80	1.60	19.02
	Final	11:27 AM		42.80			
2	Initial	11:28 AM	10.00	40.00	2.90	1.55	20.27
	Final	11:38 AM		42.90			
3	Initial	11:39 AM	10.00	40.00	2.35	1.83	14.16
	Final	11:49 AM		42.35			
4	Initial	11:50 AM	10.00	40.00	2.20	1.90	12.77
	Final	12:00 PM		42.20			
5	Initial	12:01 PM	10.00	40.00	2.35	1.83	14.16
	Final	12:11 PM		42.35			
6	Initial	12:12 PM	10.00	40.00	2.40	1.80	14.64
	Final	12:22 PM		42.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where: Q = Infiltration Rate (in inches per hour)
ΔH = Change in Height (Water Level) over the time interval
r = Test Hole (Borehole) Radius
Δt = Time Interval
H_{avg} = Average Head Height over the time interval

Grain Size Distribution



Sample Description	I-1 @ 20½'
Soil Classification	Red Brown Silty fine to coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 1

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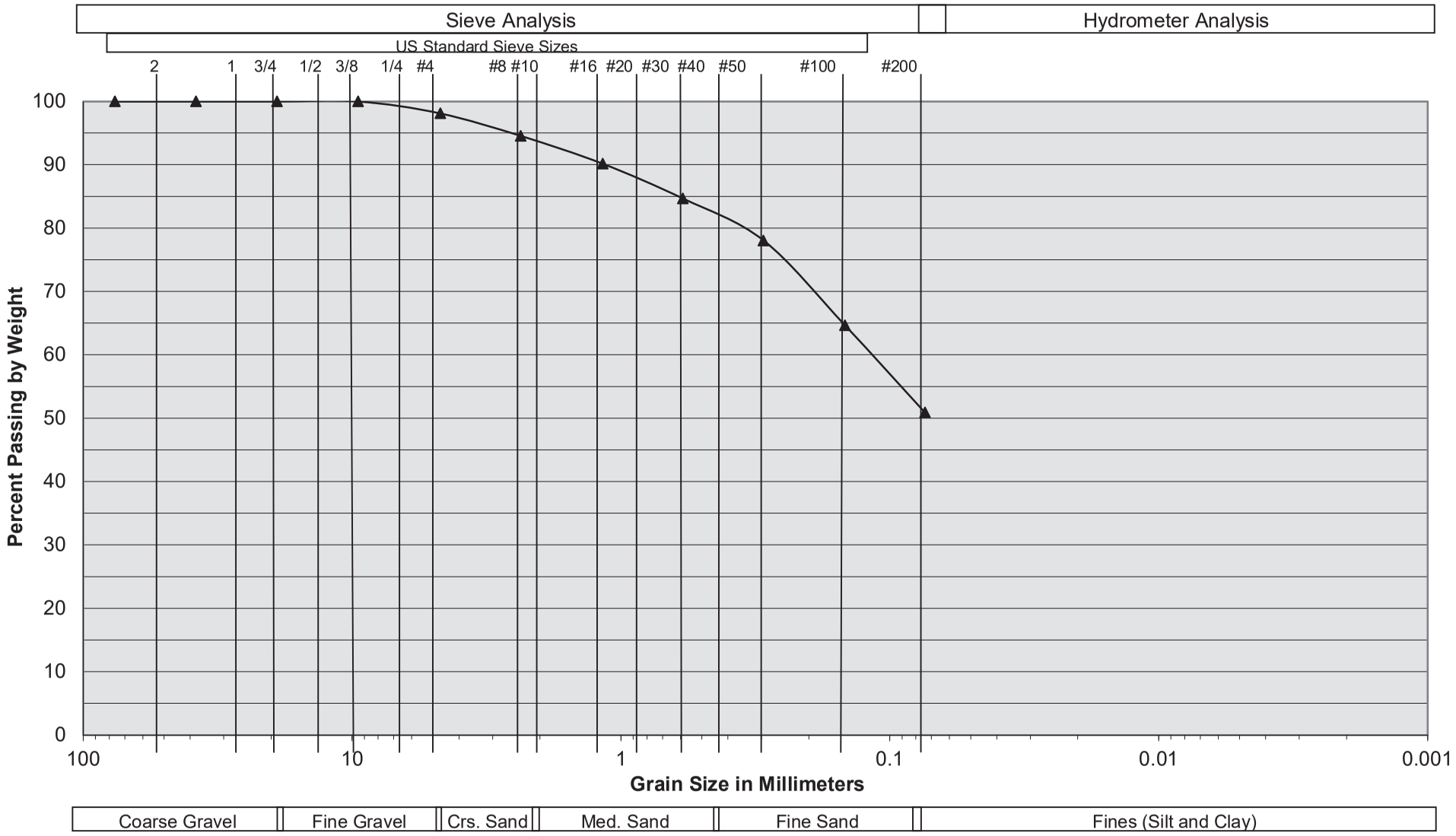
Grain Size Distribution



Sample Description	I-1 @ 21½'
Soil Classification	Red Brown fine to coarse Sandy Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 2

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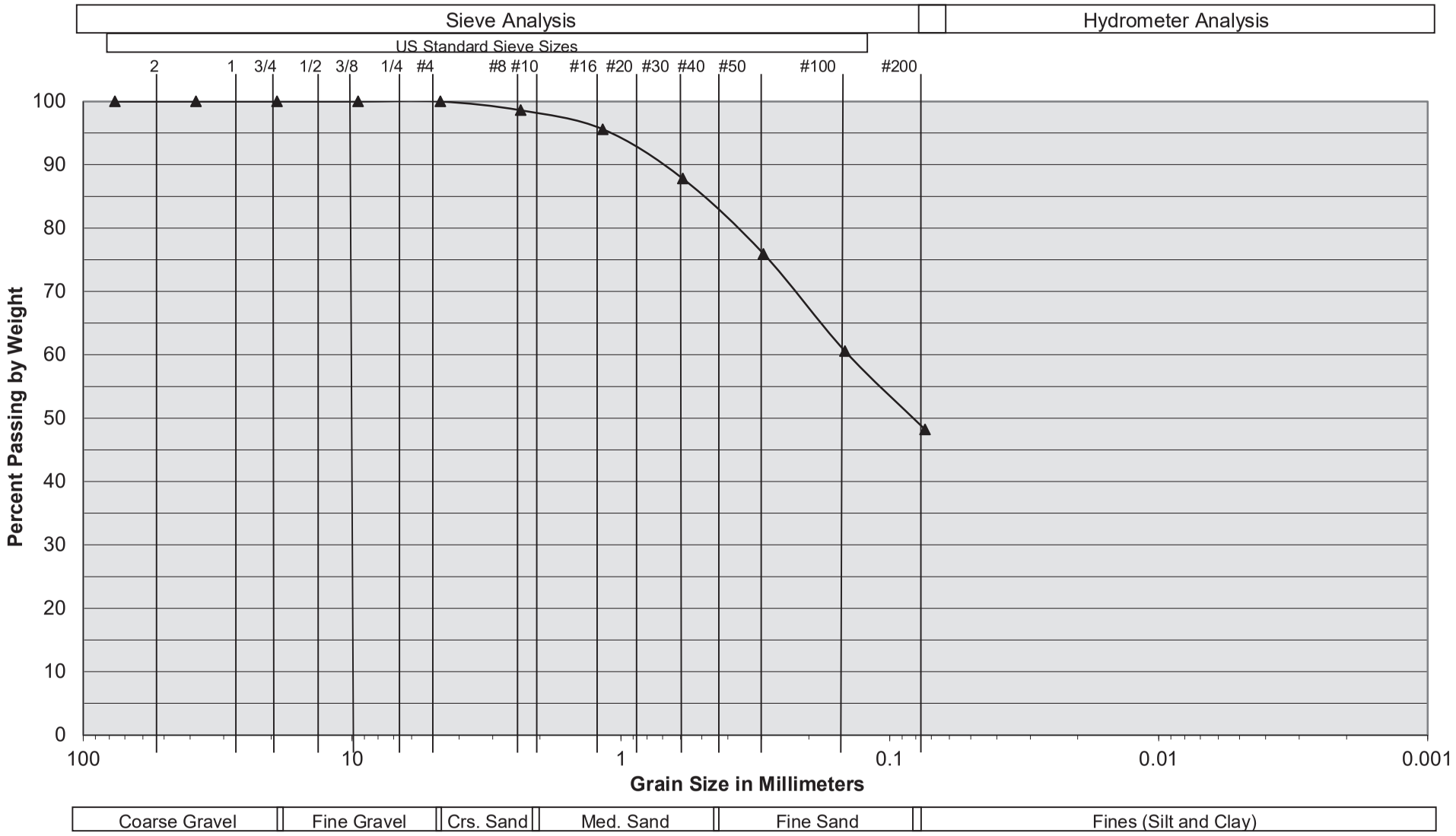

Sample Description	I-2 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 3

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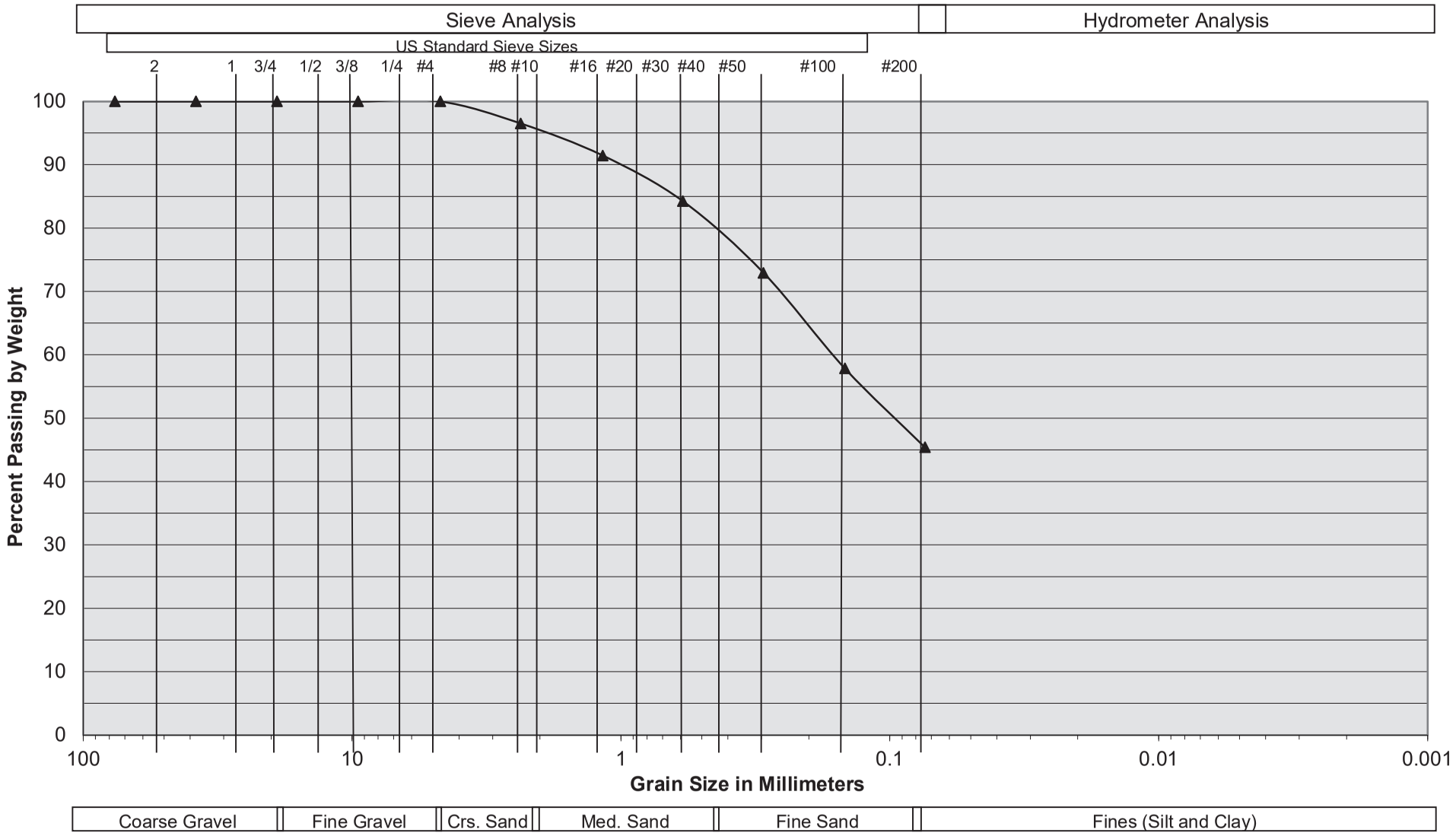

Sample Description	I-3 @ 29½'
Soil Classification	Red Brown Clayey fine to coarse Sand, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 4

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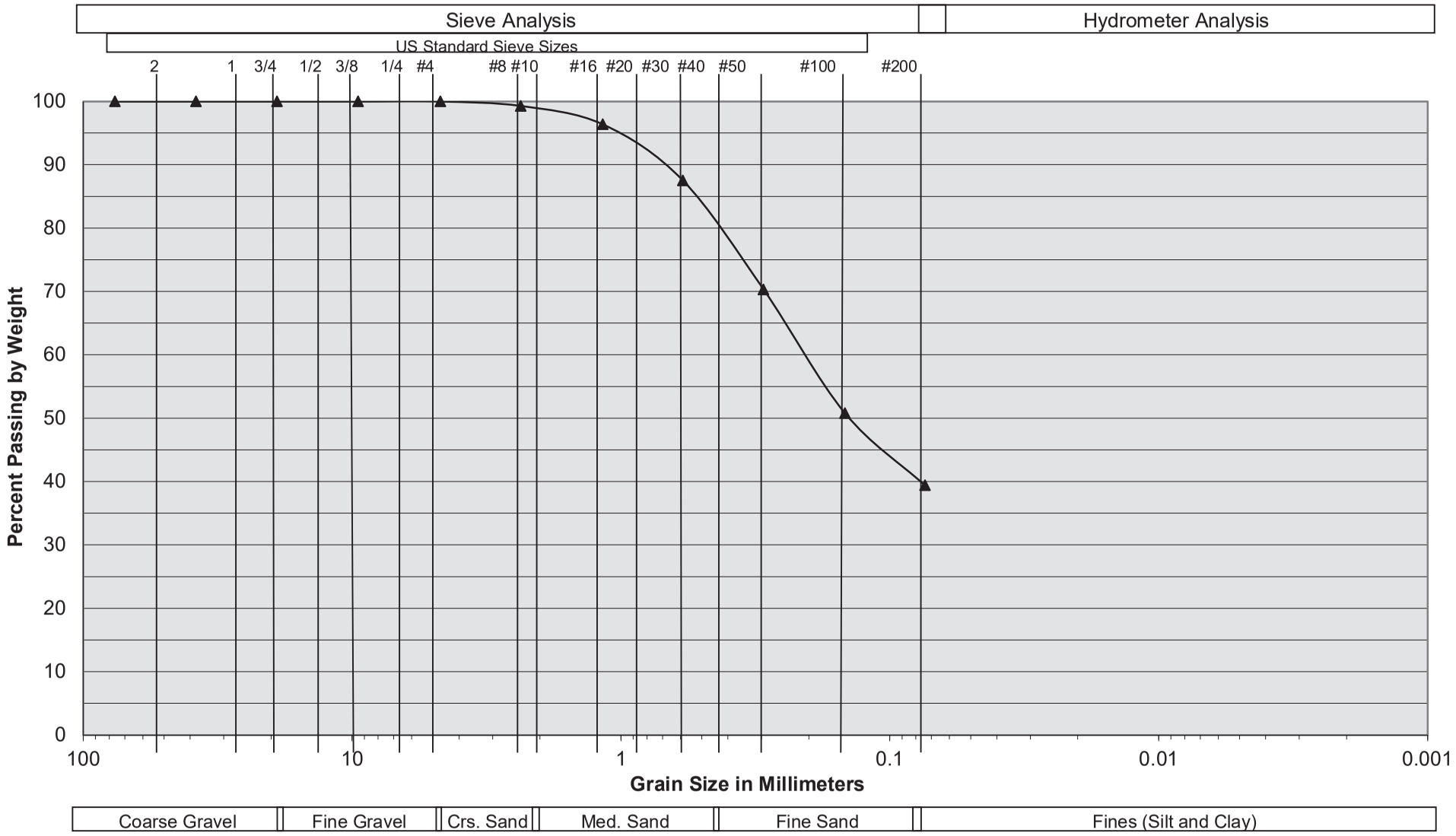

Sample Description	I-4 @ 32½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 5

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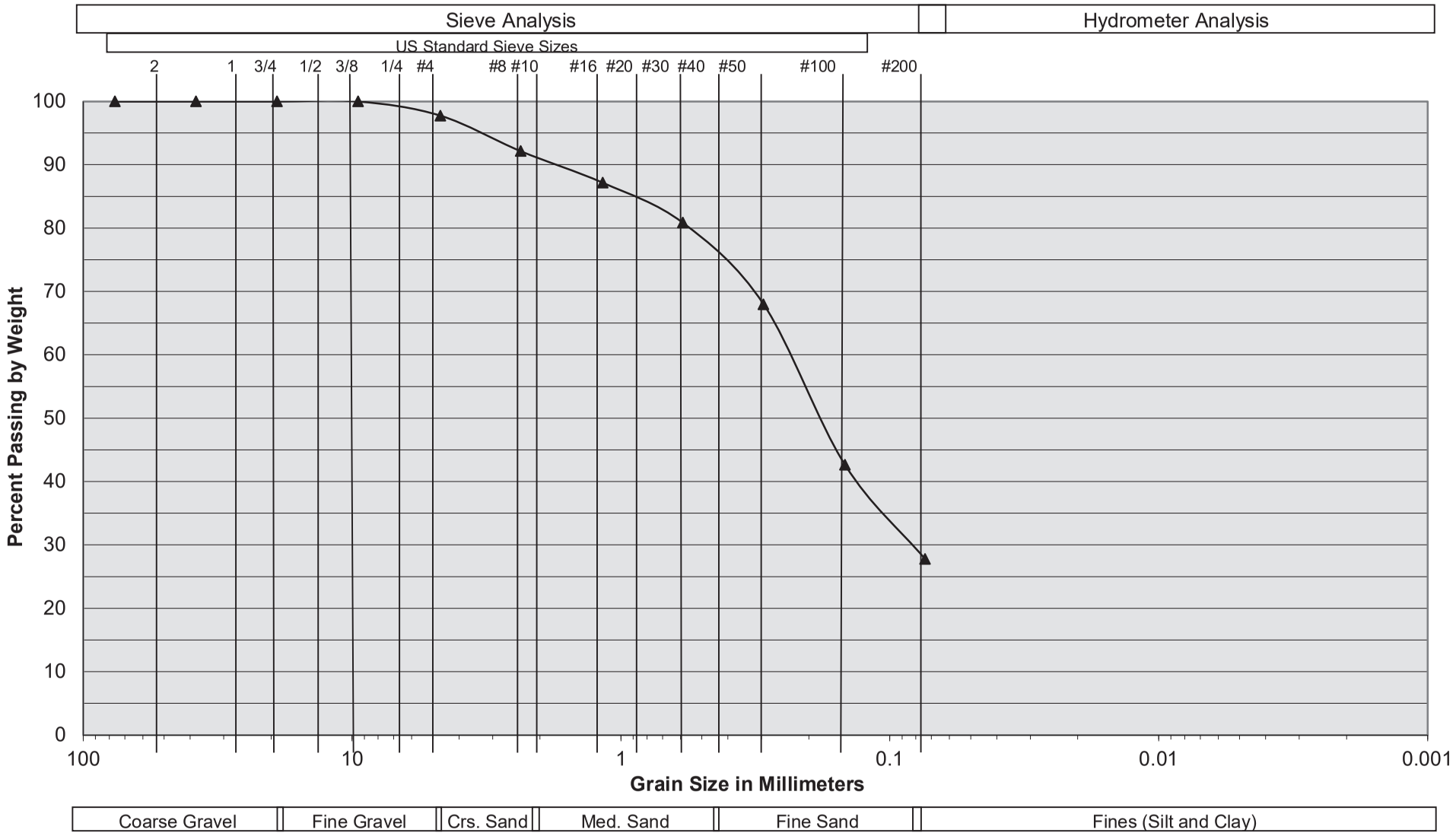

Sample Description	I-5 @ 22½'
Soil Classification	Red Brown Silty fine to medium Sand, little coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 6

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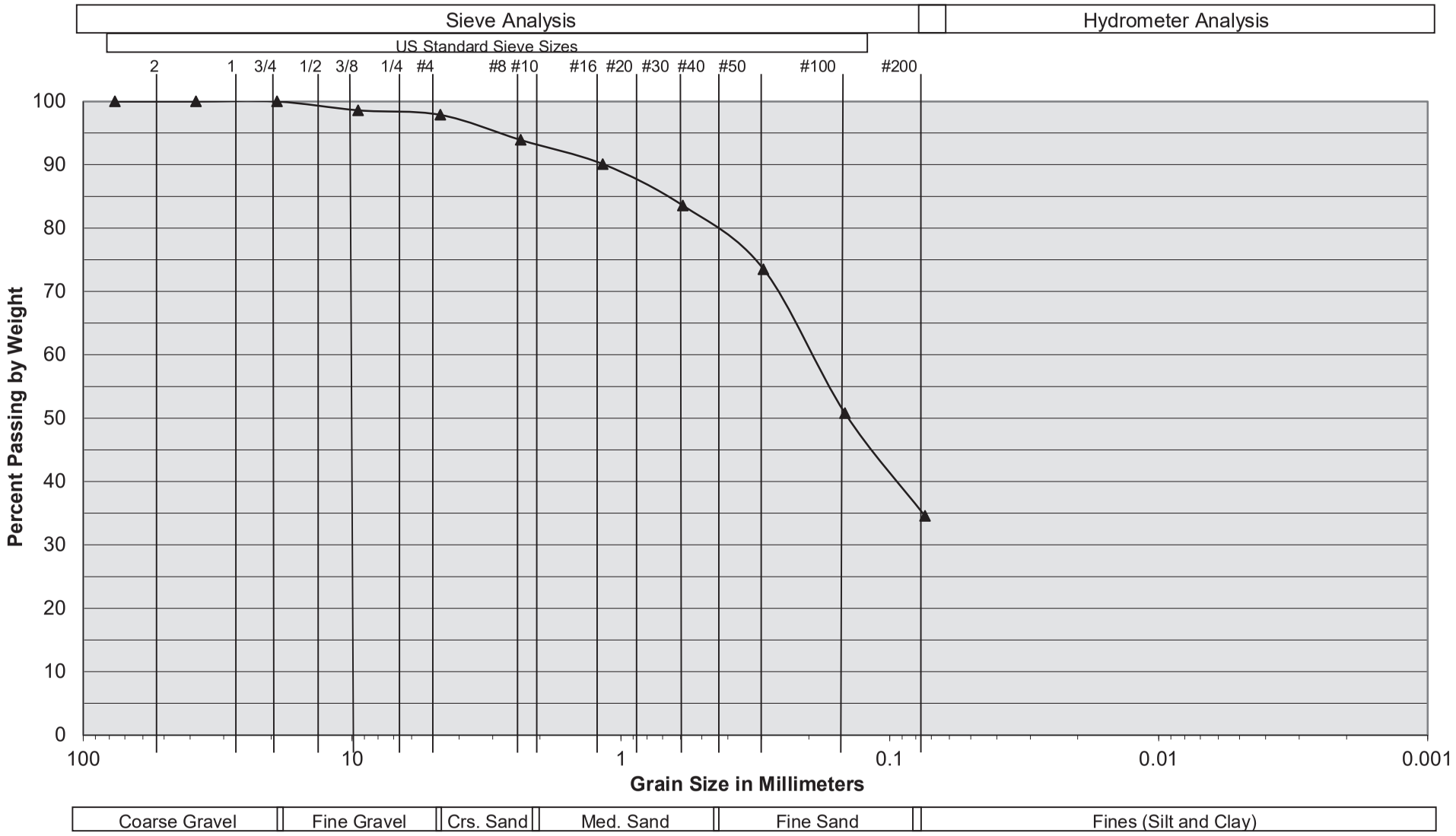

Sample Description	I-6 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
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PLATE C- 7

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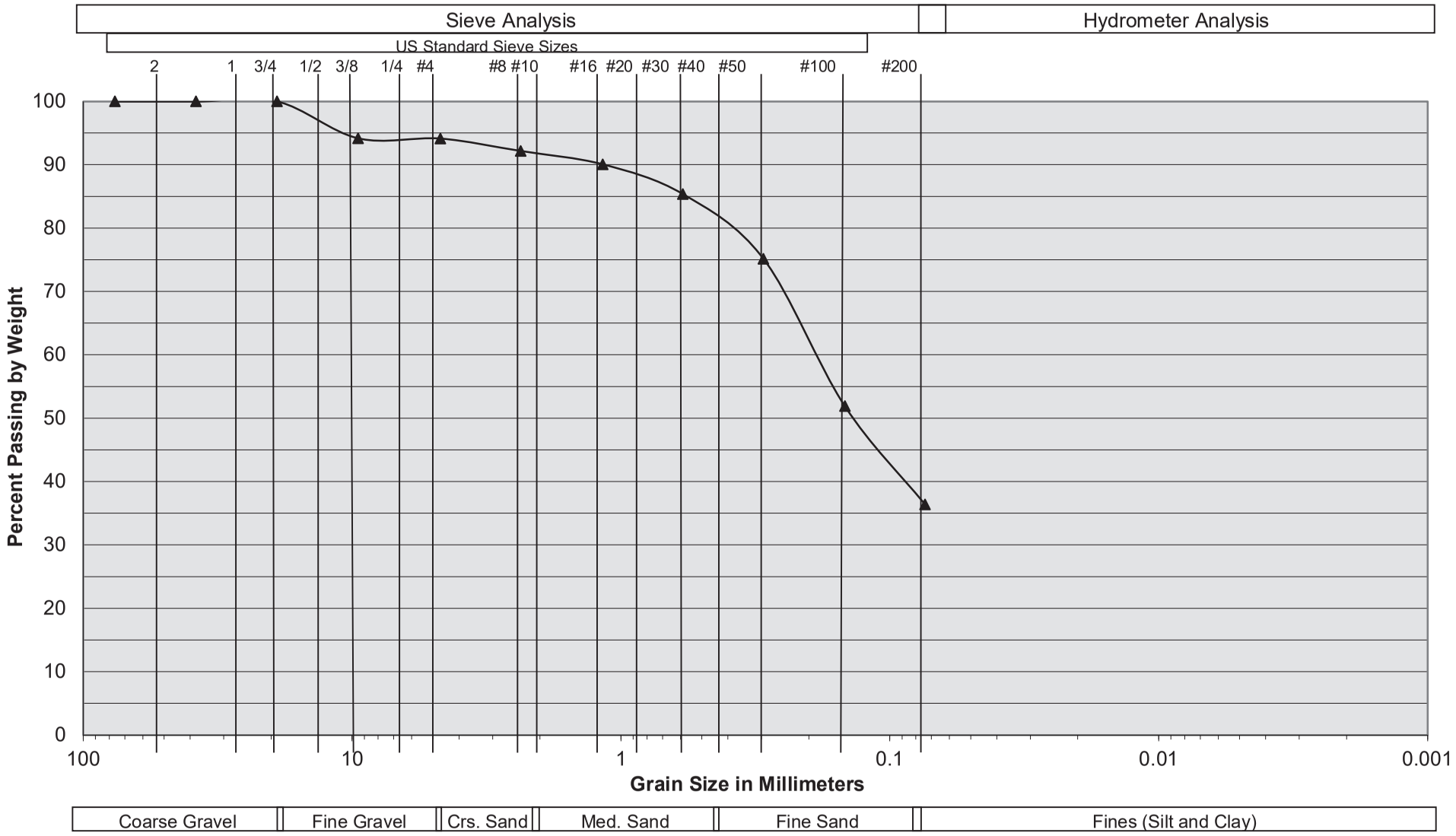

Sample Description	I-7 @ 28½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 8

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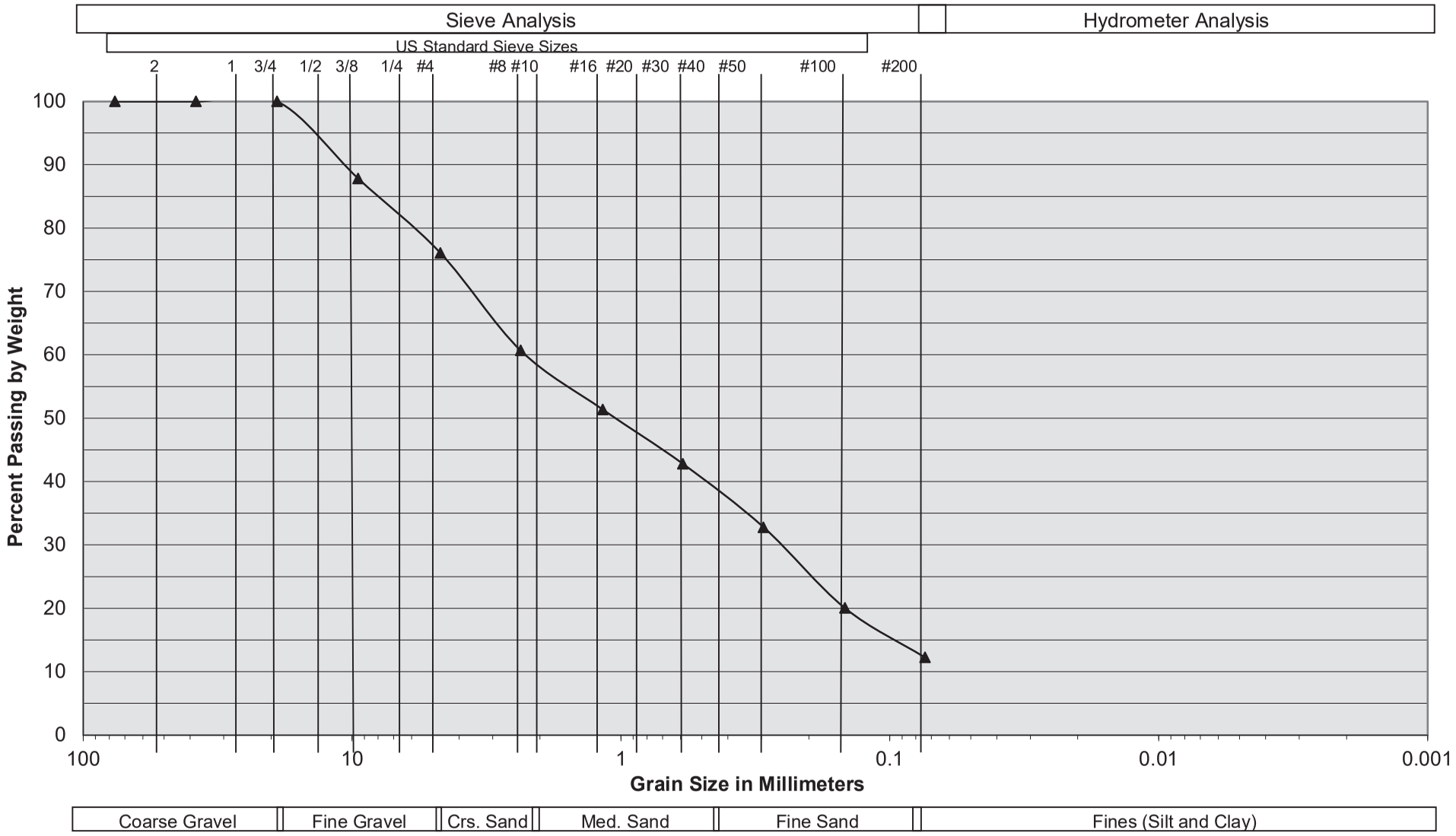
Grain Size Distribution



Sample Description	I-8 @ 29'
Soil Classification	Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 9

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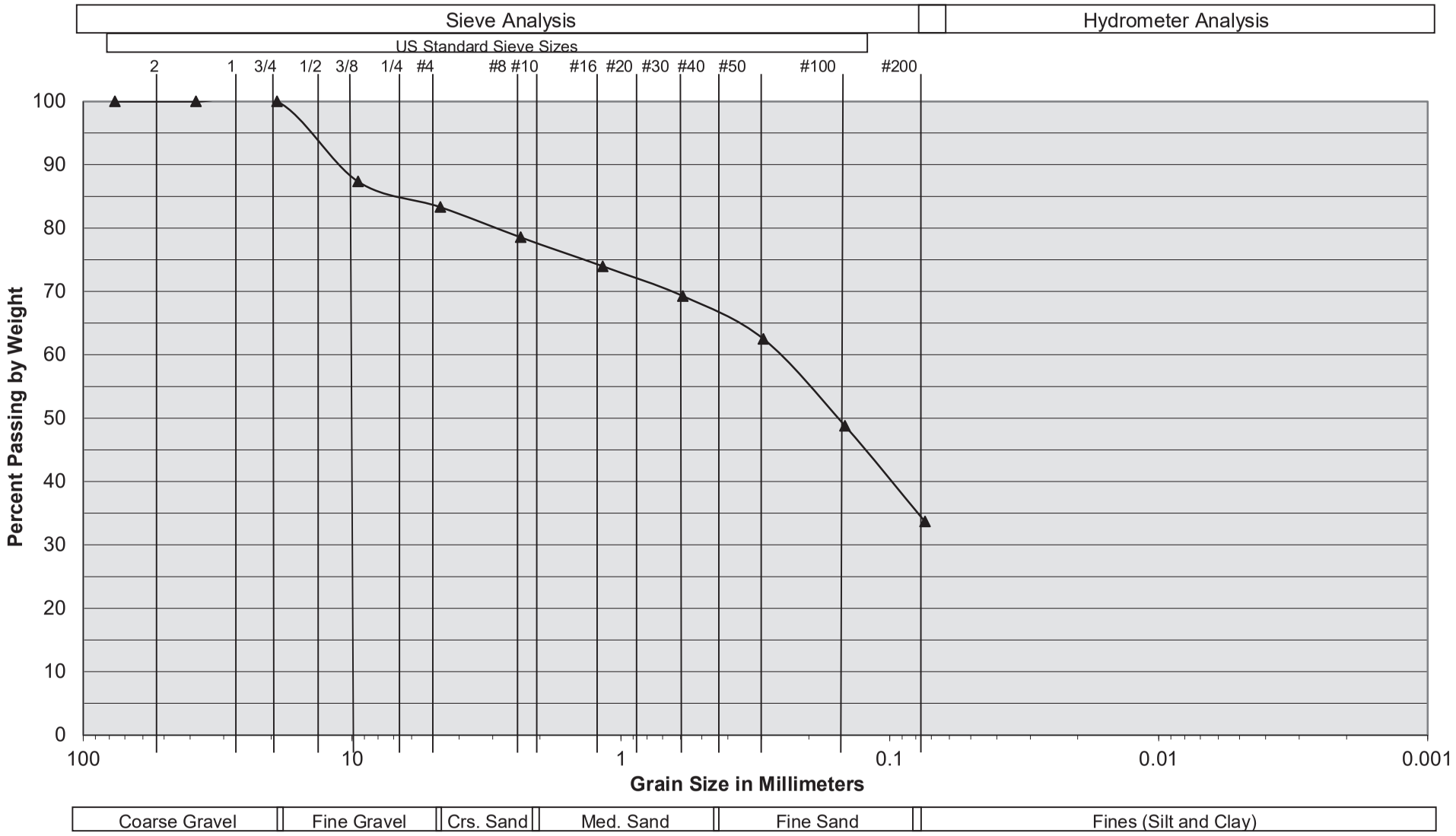
Grain Size Distribution



Sample Description	I-9 @ 34½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 10

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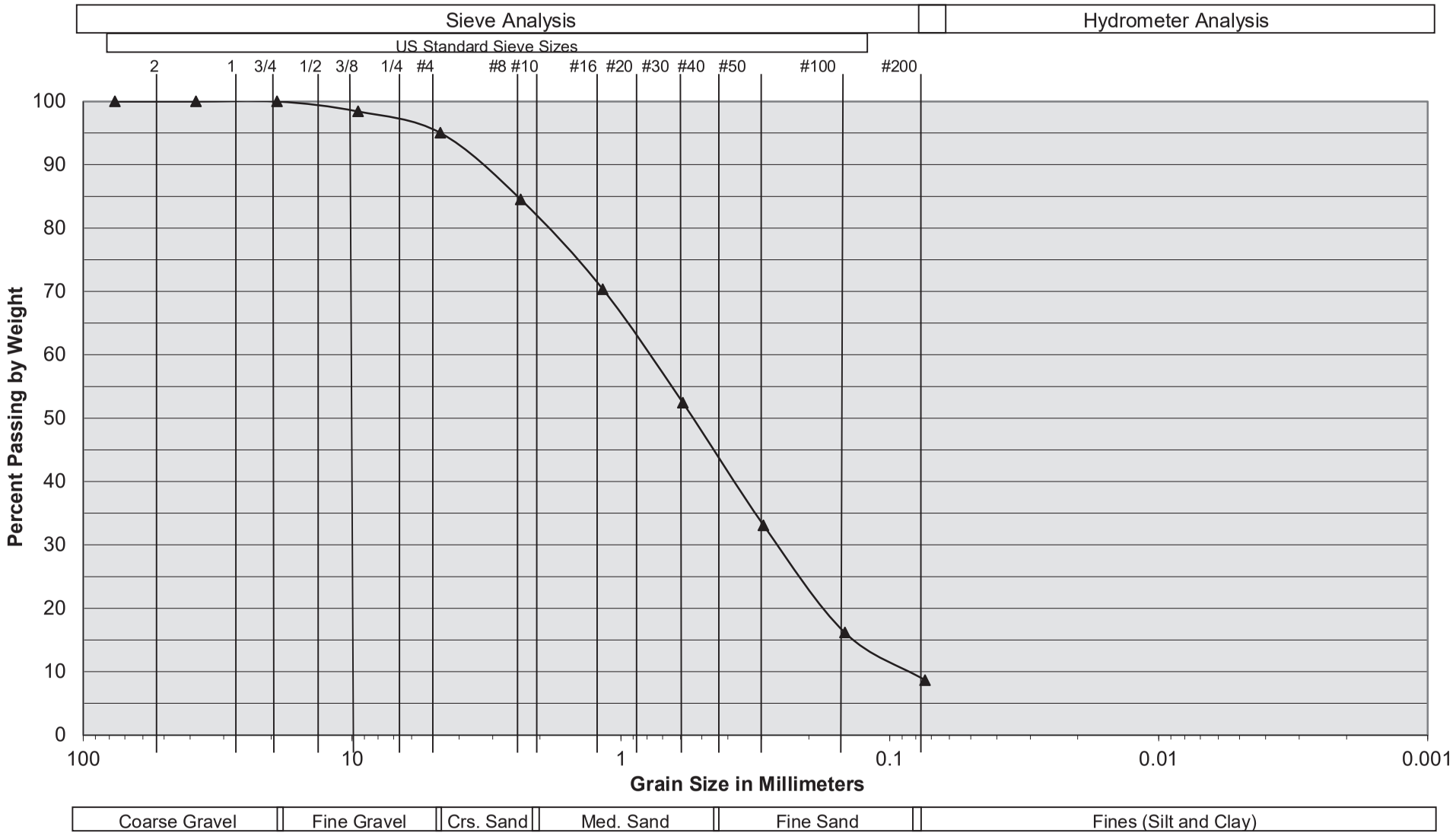
Grain Size Distribution



Sample Description	I-10 @ 33½'
Soil Classification	Brown fine to coarse Sand, trace fine Gravel, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 11

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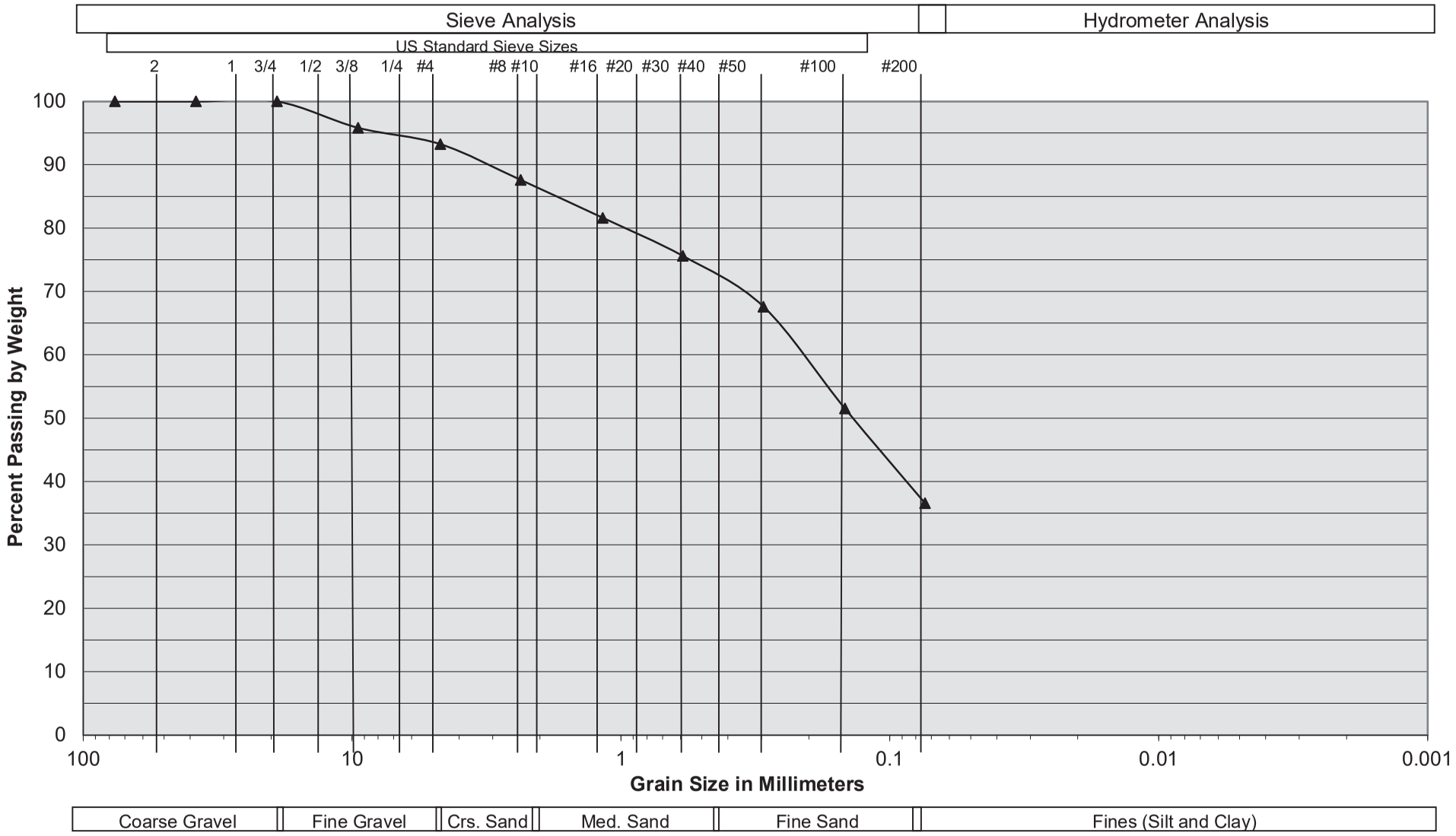
Grain Size Distribution



Sample Description	I-11 @ 8½'
Soil Classification	Brown Silty fine to medium Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 12

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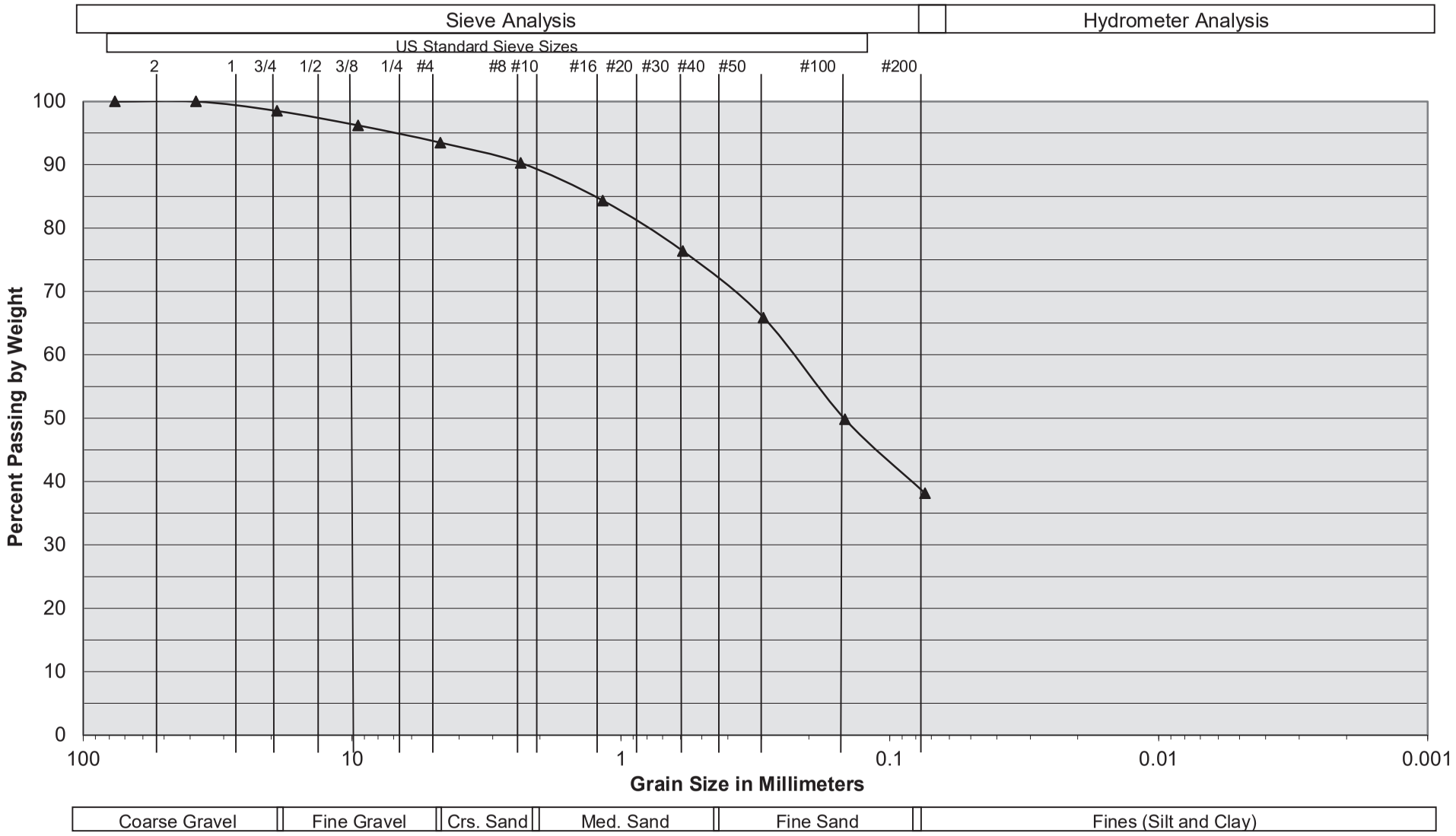
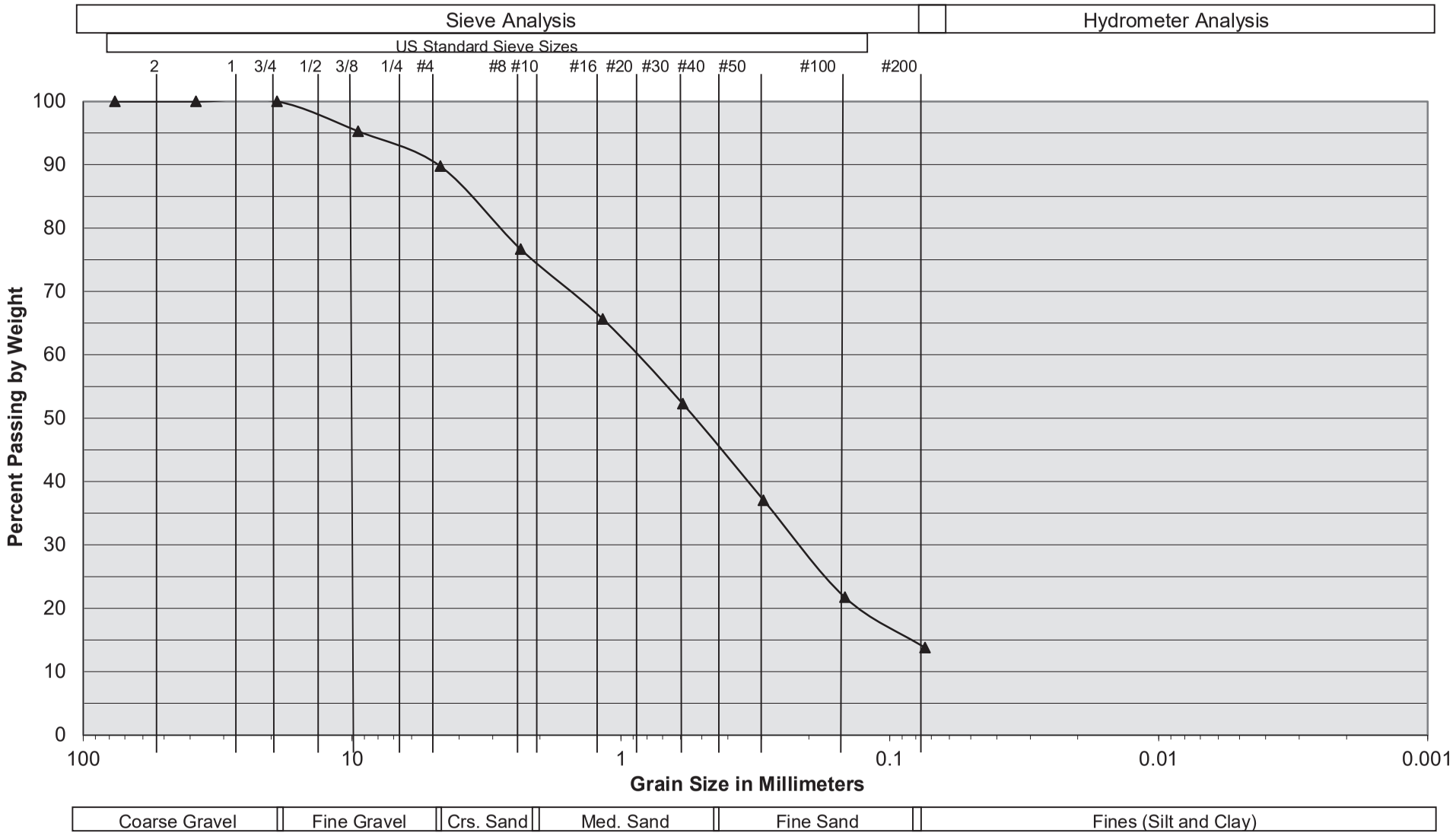


Sample Description	I-12 @12½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 13

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

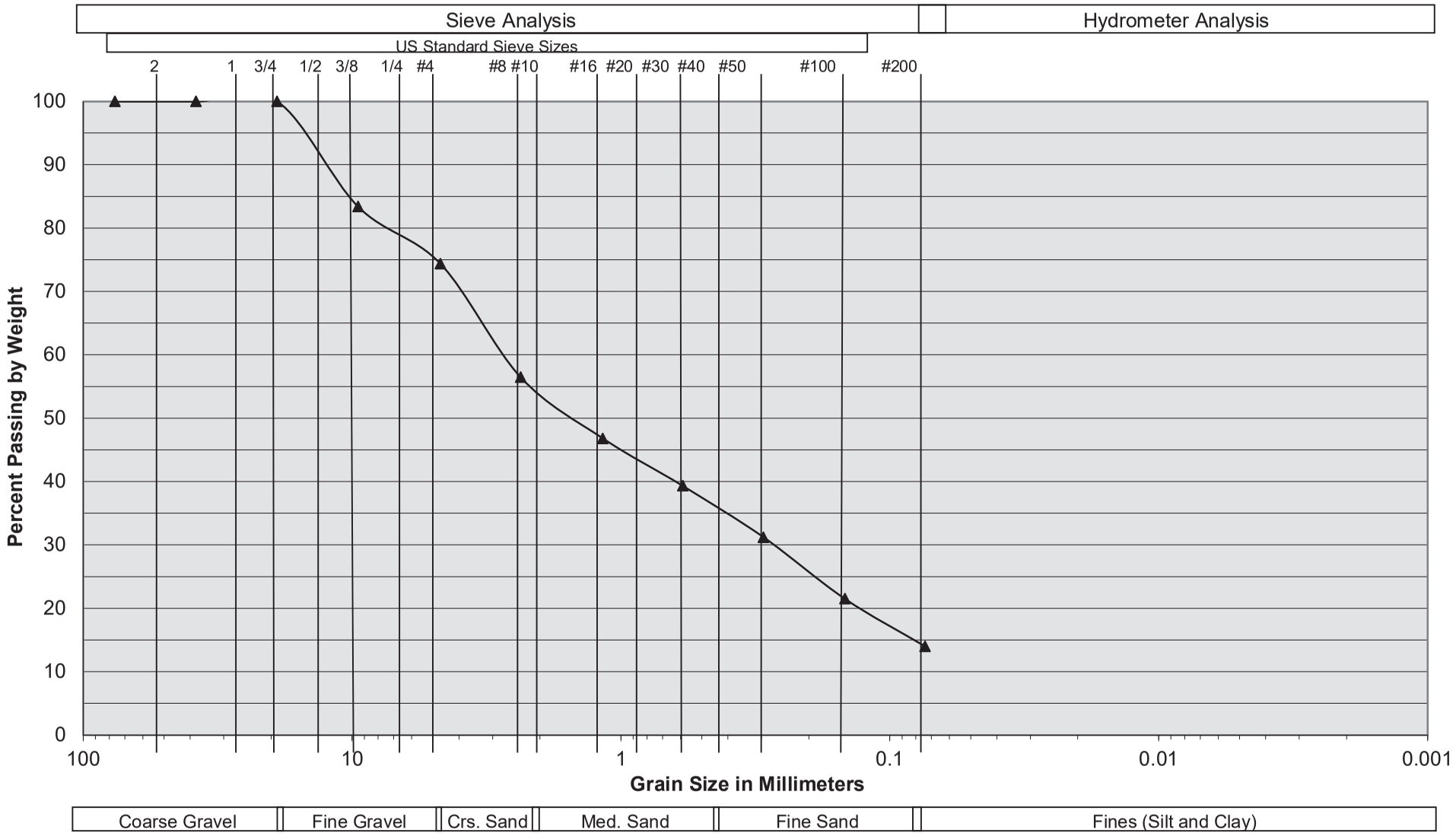


Sample Description	I-13 @ 26½'
Soil Classification	Brown fine to coarse Sand, little fine Gravel, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 14

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

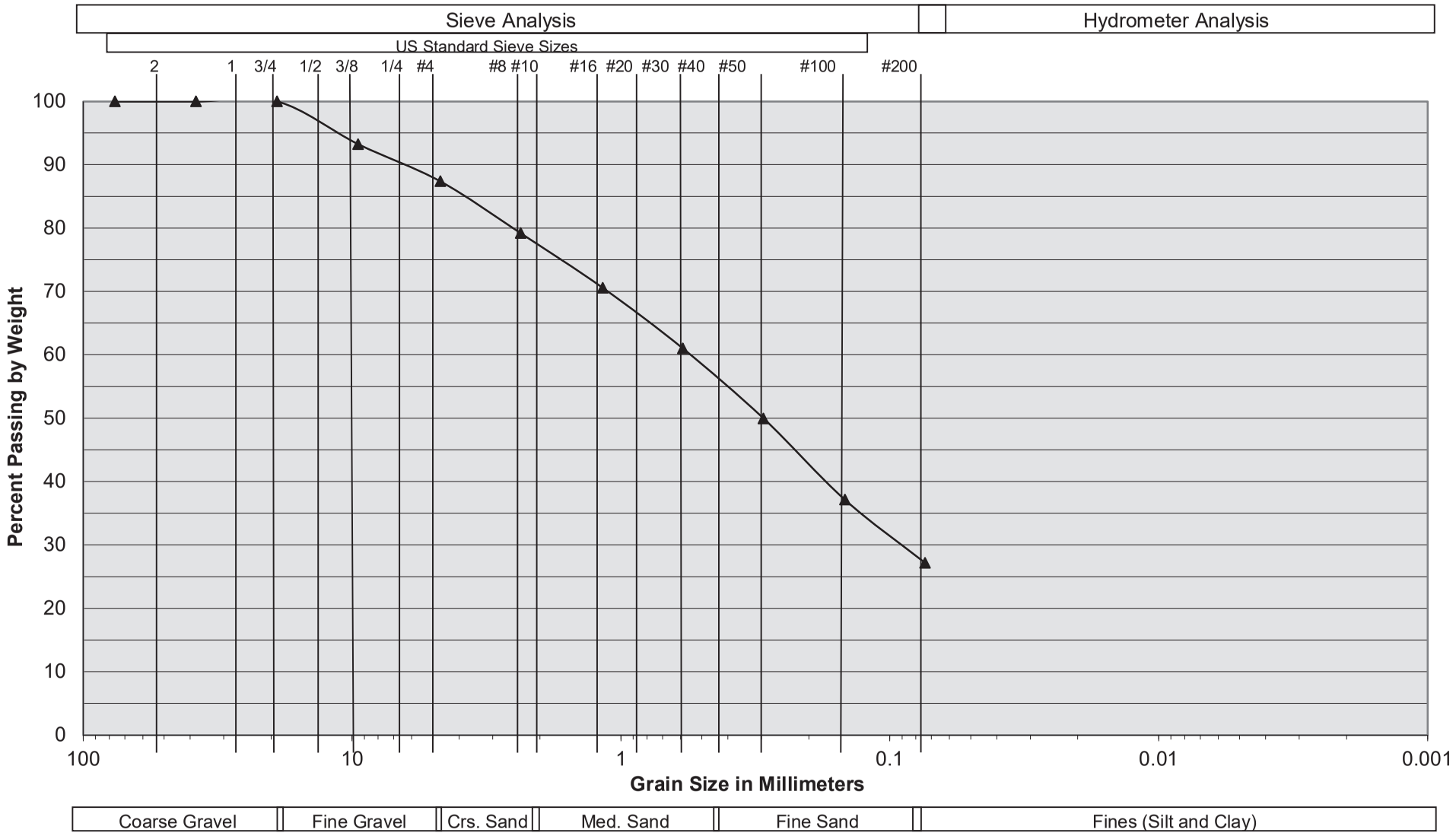


Sample Description	I-14 @ 14½'
Soil Classification	Gray Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 15

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

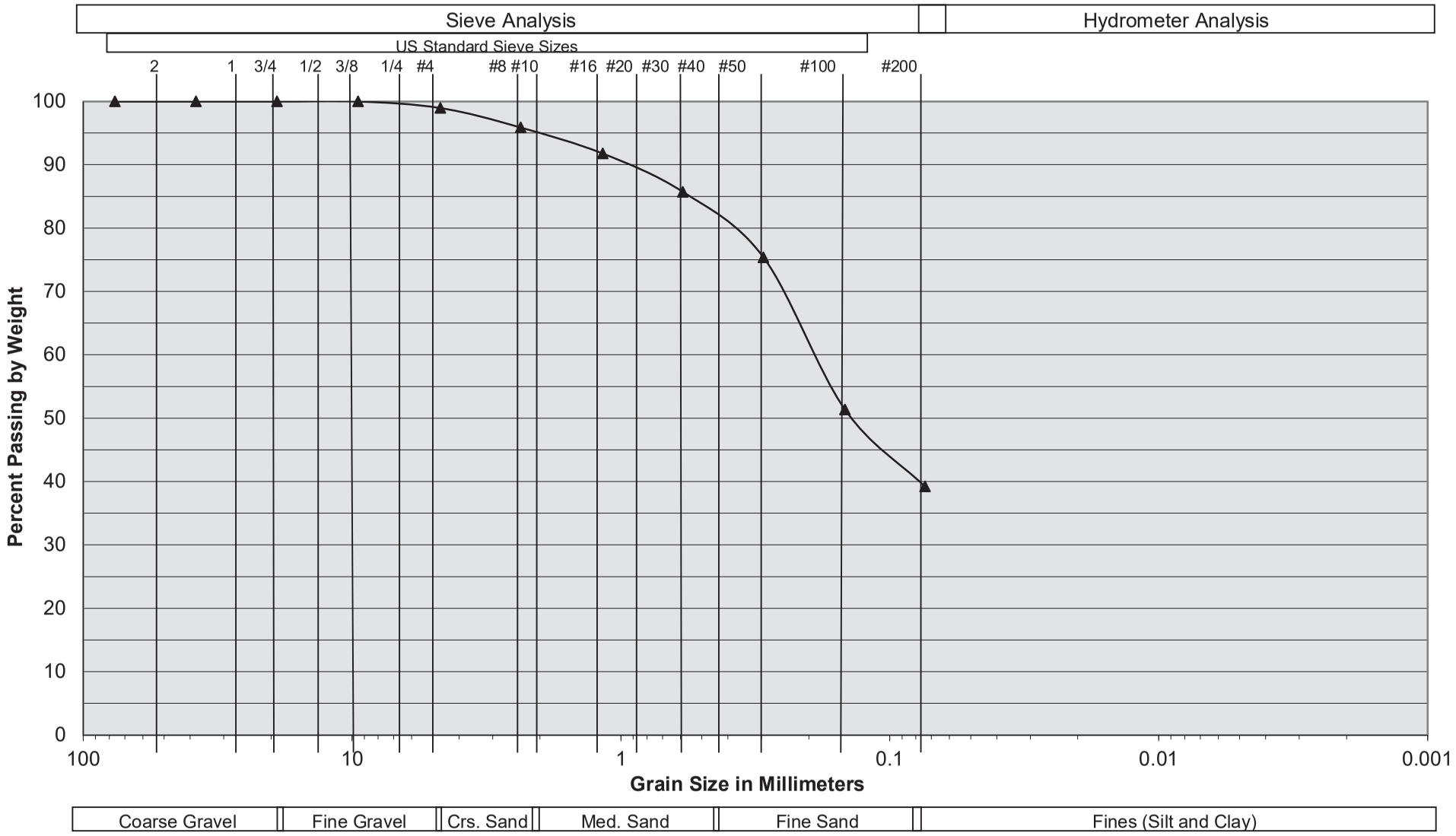


Sample Description	I-15 @ 25½'
Soil Classification	Red Brown Silty fine to coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 16

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-16 @ 41½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 17

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Project Specific Water Quality Management Plan – Building 1

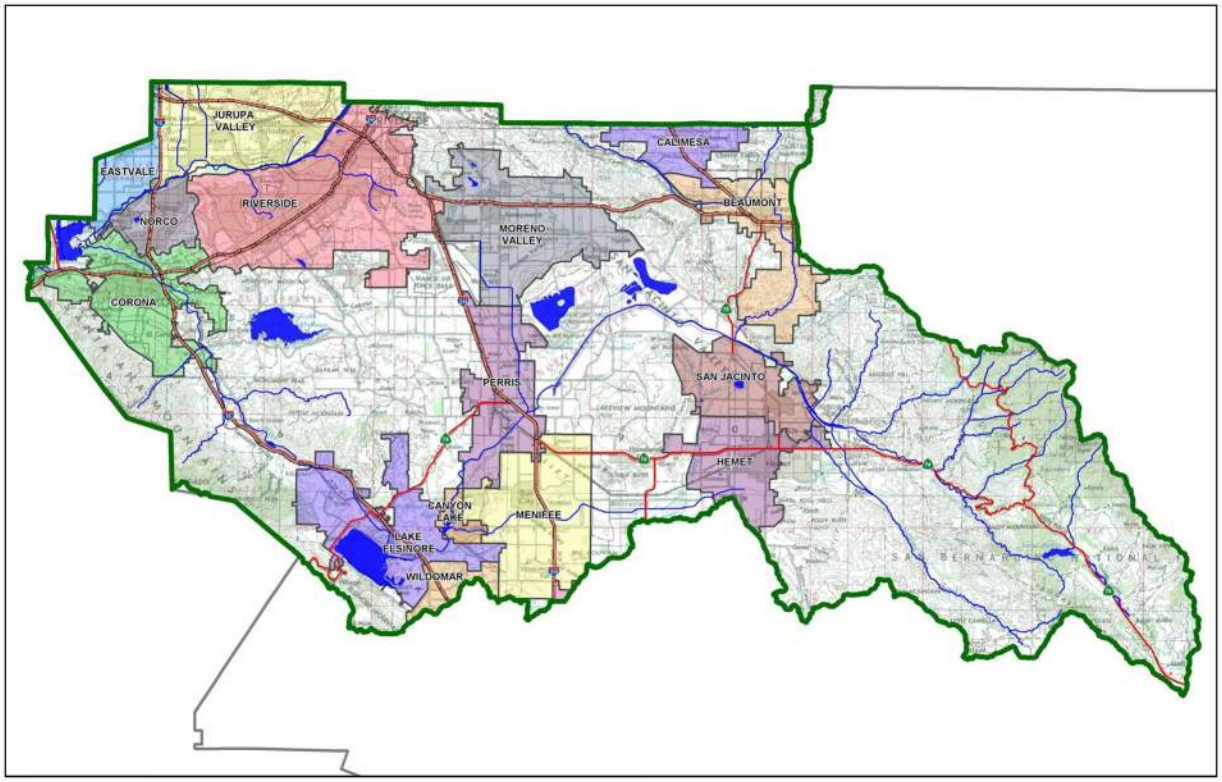
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Beaumont Summit Station – Building 1

Development No:

Design Review/Case No: PW2021-0769



☒ **Preliminary**
☐ **Final**

Original Date Prepared: August 2021

Revision Date(s): April 2022

Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**
Template revised June 30, 2016

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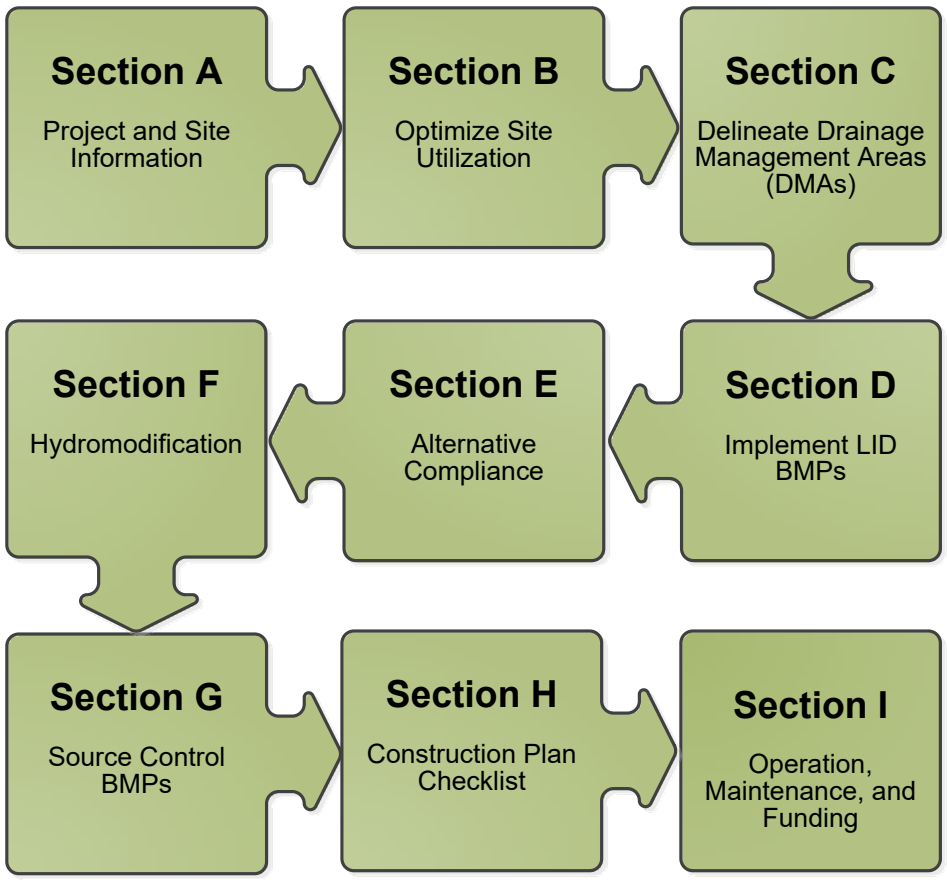
Attn: Byanka Velasco, Senior Engineer

A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Exeter Cherry Valley Land, LLC by Albert A. Webb Associates for the Beaumont Summit Station- Building 1 project.

This WQMP is intended to comply with the requirements of City of Beaumont, County of Riverside for County of Riverside Ordinance No. 754 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under Riverside County Water Quality Ordinance (Municipal Code Section 13.12 – Stormwater Drainage System Protection Regulations).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	Date
Byanka Velasco	Senior Engineer
Preparer's Printed Name	Preparer's Title/Position

Preparer's Licensure:

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Section A: Project and Site Information

PROJECT INFORMATION		
Type of Project:	E-commerce	
Planning Area:	Sunny Cal Specific Plan	
Community Name:	Beaumont Summit Station	
Development Name:	Beaumont Summit Station – Building 1	
PROJECT LOCATION		
Latitude & Longitude (DMS): 33˚ 57’ 56.55” N, 117˚ 1’ 23.75” W		
Project Watershed and Sub-Watershed: Santa Ana Watershed		
Gross Acres: 55.2 APN(s): 407-230-0(22-28), 407-190-016, 407-190-017		
Map Book and Page No.: Thomas Bros. Map Book Page: 690, Grids: C5, D5		
PROJECT CHARACTERISTICS		
Proposed or Potential Land Use(s)	E-commerce	
Proposed or Potential SIC Code(s)	1541 – General Contractors – Industrial Buildings and Warehouses	
Area of Impervious Project Footprint (SF)	1,737,943	
Total Area of proposed Impervious Surfaces within the Project Footprint (SF)/or Replacement	1,737,943	
Does the project consist of offsite road improvements?	☐ Y	☒ N
Does the project propose to construct unpaved roads?	☐ Y	☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y	☒ N
EXISTING SITE CHARACTERISTICS		
Total area of existing Impervious Surfaces within the Project limits Footprint (SF)	0	
Is the project located within any MSHCP Criteria Cell?	☐ Y	☒ N
If so, identify the Cell number:	N/A	
Are there any natural hydrologic features on the project site?	☐ Y	☒ N
Is a Geotechnical Report attached?	☒ Y	☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	B, D	
What is the Water Quality Design Storm Depth for the project?	0.79 in	

Project Description

The Beaumont Summit Station (BSS)– Building 1 project proposes an e-commerce development in the City of Beaumont on approximately 55.2 acres of mostly vacant land within the boundaries of the 188-acre TPM 38223 (overall BSS project site). The overall BSS project site consists of approximately 188 acres of TPM 38223 which currently contains mostly vacant land with some pavement and structures and is bounded by Cherry Valley Boulevard to the north, Brookside Avenue to the south, residential lots to the east and vacant land to the west. TPM 38223 consists of approximately 145.4 acres of e-commerce, 11.4 acres of commercial, and 31.2 acres of open space areas. The BSS – Building 1 project is bounded by Cherry Valley Boulevard to the north, vacant land to the west, vacant Parcel 5 of TPM 38223 to the south and the future BSS – Building 2 and 3 developments (Design Review No. PW2021-0770 and No. PW2021-0771, respectively) to the east.

The overall project site is currently mostly vacant with some buildings and paved areas in the eastern portion of the site. Runoff from the onsite area currently runs through the site to the southwest. The runoff is conveyed into a natural streambed area that runs along the south and western boundary of the project. This streambed ultimately discharges into a concrete ditch to the northwest of the project site.

For the proposed condition, runoff is captured through a series of inlets located throughout the site at low points. Proposed underground storm drain directs flows towards a proposed underground CMP detention system for increased runoff mitigation. Flows generated by the BSS – Building 1 project development will ultimately discharge to the existing natural streambed to the west of the site.

Based on site grading constraints, an infiltration-based BMP is not feasible. This is due to fill conditions being required for site grading of the BSS – Building 1 area. A bioretention basin is being proposed to treat a portion of the onsite runoff for water quality requirements. Due to site constraints, there is limited adequate landscaped area for the bioretention basin. Therefore, the basin has been sized to treat the Building 1 water quality runoff to the maximum extent practicable. With a bottom area of 5,064 sq. ft. and a minimum infiltration rate, the bioretention will treat approximately 32,410 cubic ft of runoff in the maximum drawdown time of 48 hrs (31.5% of the V_{BMP}). The remaining 70,590 cubic ft of the water quality volume (68.5%) is to be treated by the infiltration basin within the BSS – Building 2 site to the east. The basin has been sized to detain the Building 2 water quality volume and the increased runoff from the site to be mitigated. Since the Building 1 water quality volume is less than the Building 2 water quality volume, the basin will adequately detain the Building 1 volume as it is treated through infiltration. The proposed pump system will be designed in final engineering to ensure that Building 1 water quality flows will not be pumped to the infiltration basin until the Building 2 water quality volume has fully infiltrated. Therefore, the Building 2 CMP chambers were designed to hold the water quality volume as well as the increased runoff volume. As an LID measure, runoff will be pumped to irrigate approximately 20,150 sf of natural vegetation in the southern portion of the project site. Based on a 12-hour irrigation cycle and a minimum infiltration rate of 1.6 in/hr, this LID measure would treat 32,240 cubic ft of runoff per irrigation cycle (approximately 31% of the Building 2 $V_{BMP)}$. This volume was accounted for to be treated by the infiltration basin as a BMP measure.

Some paved access roads and landscaped areas on the northwest region of the site drain offsite to Cherry Valley Boulevard due to grading constraints. The concrete areas have been excluded from this preliminary analysis while the landscaped areas have been considered self-retaining areas.

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling
- BMP Locations (Lat/Long)

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Timoteo Creek Reach 3 (HUC 801.62)	N/A	GWR, REC1, REC2, WARM, WILD, RARE	N/A
Santa Ana River (Reach 5)	N/A	MUN, AGR, GWR,REC1, REC2, WARM, WILD, RARE	N/A
Santa Ana River (Reach 4)	Pathogens	GWR, REC1, REC2, WARM, WILD, RARE, SPWN	N/A
Santa Ana River (Reach 3)	Copper, Lead, Pathogens	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN	N/A
Prado Basin Management Zone	N/A	REC1, REC2, WARM, WILD, RARE	N/A

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☒ Y	☐ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* *City of Beaumont Grading Permit*	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, **constraints** might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. **Opportunities** might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Consideration of "highest and best use" of the discharge should also be considered. For example, Lake Elsinore is evaporating faster than runoff from natural precipitation can recharge it. Requiring infiltration of 85% of runoff events for projects tributary to Lake Elsinore would only exacerbate current water quality problems associated with Pollutant concentration due to lake water evaporation. In cases where rainfall events have low potential to recharge Lake Elsinore (i.e. no hydraulic connection between groundwater to Lake Elsinore, or other factors), requiring infiltration of Urban Runoff from projects is counterproductive to the overall watershed goals. Project proponents, in these cases, would be allowed to discharge Urban Runoff, provided they used equally effective filtration-based BMPs.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

The current site generally drains from northeast to southwest towards an existing natural streambed. In this existing condition, runoff generally sheet flows towards the streambed which runs northwest along the southwestern project boundary. In the developed condition, a network of inlets will capture flows generated onsite. Flows are conveyed towards a proposed CMP detention system for increased runoff mitigation. From the detention system, the water quality volume is pumped to various basins for treatment. All onsite flows ultimately discharge into the existing streambed area to the west of the project site, preserving the existing drainage pattern.

Did you identify and protect existing vegetation? If so, how? If not, why?

The existing project site has minimal vegetation, so no vegetation is proposed to be protected.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

The proposed site is in fill condition, therefore it is not feasible to preserve natural infiltration capacity within the Building 1 site. A portion of the water quality volume is proposed to be treated by infiltration within the Building 2 infiltration basin, which has a recommended infiltration rate of 11.5 in/hr based on a geotechnical investigation.

Did you identify and minimize impervious area? If so, how? If not, why?

The impervious areas will be minimized as much as possible while maintaining safe and usable facilities onsite. Landscaped areas have been provided throughout the projects site along concrete walkways, around the proposed building, adjacent to parking areas, and in other feasible locations throughout the site.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

Yes, however, based on the nature of the e-commerce development, not all runoff can feasibly be directed towards a pervious area before being captured. Pervious landscaped areas are proposed throughout the site where possible in order to maximize the chances of runoff dispersing into landscaped areas before being captured. As an LID measure, a portion of the water quality volume will be pumped to irrigate natural vegetation along the southern project boundary. Runoff that is captured onsite will be directed towards a CMP detention system to be pumped to a bioretention basin or an infiltration basin for treatment.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1][2]	Area (Sq. Ft.)	DMA Type
DMA 1 - Concrete	Concrete or Asphalt	750,724	D
DMA 1- L/S	Ornamental Landscaping	119,487	D
DMA 1- Roofs	Roofs	985,860	D
DMA 1- Basin	Ornamental Landscaping	5,060	D

[1]Reference Table 2-1 in the WQMP Guidance Document to populate this column
[2]If multi-surface provide back-up

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	**Area (Sq. Ft.)**	**Stabilization Type**	**Irrigation Type (if any)**
DMA 1	390,655	Grasses/shrubs	Reclaimed water

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet) [A]	Post-project surface type	Impervious fraction [B]	Product [C] = [A] x [B]	DMA name /ID	Area (square feet) [D]	Ratio [C]/[D]

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA 1	Bioretention Basin

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site; proceed to section D.3
If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.
Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?		X
If Yes, list affected DMAs:		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?	X*	
If Yes, list affected DMAs: DMA 1		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.
**Due to the fill conditions throughout the BSS – Building 1 site, infiltration was not feasible within the project site and therefore the proposed underground chambers for increased runoff mitigation will not be perforated. A bioretention basin is proposed to treat the water quality flows to the maximum extent practicable due to the sizing constraints within the Building 1 site. The remainder of the flows are proposed to be pumped to the BSS – Builiding 2 infiltration basin for treatment. Based on a geotechnical report, the proposed infiltration basin area has a recommended infiltration rate of 11.5 in/hr.*

D.2 Harvest and Use Assessment

Please check what applies*:*

☒ Reclaimed water will be used for the non-potable water demands for the project.

☐ Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐ The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If none of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: N/A

Type of Landscaping (Conservation Design or Active Turf): N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: N/A

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
N/A	N/A

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: N/A

Project Type: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-2 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: N/A

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	**Projected number of toilet users (Step 1)**
N/A	N/A

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-4 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-4: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the projected average daily use (Step 1) to the minimum required non-potable use (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**
N/A	N/A

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment per Section 3.4.2 of the WQMP Guidance Document.

Harvest and Use is proposed as an LID measure only for a portion of the runoff. Approximately 32,240 cf of runoff will be pumped to irrigate the natural vegetation along the southern boundary of the site. This volume was accounted for in the analysis of the 70,590 cf of runoff to be pumped to the BSS – Building 2 infiltration basin for treatment as a BMP measure.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☒ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA 1-A	☐	☐	☐	☒*	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

**Based on the LID BMP Hierarchy, the BSS – Building 1 project will utilize bioretention to treat for water quality requirements. Onsite infiltration-based BMPs are not feasible due to fill conditions throughout the Building 1 site. Harvest and use BMPs are not feasible as reclaimed water will be used for non-potable water demands. Bioretention BMPs will be proposed to treat for water quality to the maximum extent possible. All water quality flows in excess of the bioretention basin capacity will be pumped to be treated by the infiltration basin within the Building 2 site to the east.*

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*DMA 1*		
	[A]		[B]	[C]	[A] x [C]			
Roof	*985,860*	*Roofs*	*1*	*0.89*	*879,387.1*			
Concrete/Asphalt	*750,724*	*Concrete/Asphalt*	*1*	*0.89*	*669,645.8*			
Landscaping	*119,487*	*Ornamental Landscaping*	*0.1*	*0.11*	*13,198.3*			
Basin	*5,060*	*Ornamental Landscaping*	*0.1*	*0.11*	*558.9*	*Design Storm Depth (in)*	*Design Capture Value,* $\mathbf{V_{BMP}}$ *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	$A_T = \Sigma[A]$ **1,861,131**				Σ= [D] **1,562,790.1**	[E] **0.79**	$[F] = \frac{[D]x[E]}{12}$ **102,883.7**	[G] **103,000**

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

N/A

E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P[(2)]
☒ Commercial/Industrial Development	P[(3)]	P	P[(1)]	P[(1)]	P[(5)]	P[(1)]	P	P
☐ Automotive Repair Shops	N	P	N	N	P[(4, 5)]	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☐ Parking Lots (>5,000 ft^2)	P[(6)]	P	P[(1)]	P[(1)]	P[(4)]	P[(1)]	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☒	☒	☒	☒	☒	☒	☒

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	N/A
Total Credit Percentage[1]	

[1]*Cannot Exceed 50%*

[2]*Obtain corresponding data from Table 3-8 in the WQMP Guidance Document*

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
N/A						*Design Storm Depth (in)*	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document

[E] is for Flow-Based Treatment Control BMPs [E] = .2, for Volume-Based Control Treatment BMPs, [E] obtained from Exhibit A in the WQMP Guidance Document

[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12

[H] is from the Total Credit Percentage as Calculated from Table E.2 above

[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.

[2] Cross Reference Table E.1 above to populate this column.

[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	N/A	N/A	N/A
Volume (Cubic Feet)	N/A	N/A	N/A

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Susceptibility Maps.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

The site does not meet the HCOC exemption criteria listed in Section F.1, therefore the site has been designed to mitigate the proposed flows to be no more than 10% of the pre-development 2-year peak flow rate generated by the BSS – Building 1 site, as allowed by option C listed above. Unit hydrograph and routing analyses were performed for the 2-year storm event. A CMP chamber detention system is proposed along with an orifice outlet to mitigate the proposed condition flows. In the existing condition, approximately 106.4 acres were analyzed as Area A and include the BSS – Building 1 site. In the proposed condition, approximately 55.3 acres of Area A are referred to as the West Area and correspond to the BSS - Building 1 site. The unit hydrograph results show that Area A generates a 24-hour, 2-year peak flow of 4.33 cfs. The proposed condition analyses resulted in the West Area generating a 24-hour, 2-year peak flow of 12.7 cfs. The West Area accounts for approximately 83.4% of Area A, therefore the proposed condition flow generated by the West Area was routed to be within 10% of 3.6 cfs, which is 83.4% of the existing condition peak flow of Area A. A CMP chamber system sized to detain 300,000 cf of runoff and a 4-inch orifice were proposed for the routing and resulted in a peak flow of 3.3 cfs for the West Area (BSS-Building 1) site. Each of the Beaumont Summit Station building sites were analyzed along with the overall site to ensure that while some building sites are over mitigating or under mitigating due to the breakdown of the site based on grading constraints, overall the project will be fully mitigated once developed. The results for the 2-year storm event of BSS – Building 1 have been included in Appendix 7 and detailed information regarding the analyses can be found in the "Beaumont Summit Station – Building 1 Preliminary Drainage Study".

	EXISTING CONDITION 2-YEAR, 24-HOUR STORM		
		VOL (AC-FT)	PEAK FLOW (CFS)
	AREA A	2.7	4.3
X	83.4% AREA A (PROP. WEST AREA)	-	3.6
	16.6% AREA A (PROP. NORTH AREA)	-	0.7
	AREA B (PROP. SOUTH AREA)	3.9	6.4

	PROPOSED CONDITION 2-YEAR, 24-HOUR STORM			
		VOL (AC-FT)	PEAK FLOW (CFS)	ROUTING PEAK FLOW (CFS)
X	WEST AREA	7.7	12.7	3.3
	NORTH AREA	5.0	8.2	0.7
	EX. AREA A COMBINED	12.7	20.9	4.0
	SOUTH AREA (EX. AREA B)	9.7	16.0	0*

**South Area is tributary to a proposed infiltration basin with a factored infiltration rate of 9.4 cfs. The South Area 2-yr, 24-hour runoff is fully infiltrated by the basin at the factored rate. The effective runoff leaving the South Area tributary is 0 cfs.*

*Note: **X** signals area for Building-1. Matching colors from existing and proposed conditions are the same site outlet; the contributory tributaries are different and can span multiple building areas.*

*The entire site is shown for continuity, but only those areas with **X** will have Unit Hydrograph and Routing output included in Appendix 7.*

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	*Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.*	*Maintain and periodically repaint or replace inlet markings.* *Provide stormwater pollution prevention information to new site owners, lessees, or operators.* *See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*

Interior floor drains and elevator shaft sump	*The interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer*	*Inspect and maintain drains to prevent blockages and overflow.*
Landscape/Outdoor Pesticide Use	*Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.* *Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.* *Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.* *Consider using pest-resistant plants, especially adjacent to hardscape.* *To ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.*	*Maintain landscaping using minimum or no pesticides.* *See applicable operational BMPs in "What you should know for…..Landscape and Gardening" at http://rcflood.org/stormwater/* *Provide IPM information to new owners, lessees and operators.* *Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*
Refuse Areas	*Trash container storage areas shall be paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements from the surrounding area, and screened or walled to prevent off-site transport of trash.* *Trash dumpsters (containers) shall be leak proof and have attached covers or lids.* *Trash enclosures shall be roofed per City standards.* *Trash compactors shall be roofed and set on a concrete pad per City standards. The pad shall be a minimum of one foot larger all around than the trash compactor and sloped to drain to a sanitary sewer line. Connection of trash area drains to the MS4 is prohibited.* *See CASQA SD-32 BMP Fact Sheets in Appendix 10 for additional information.*	*Adequate number of receptacles shall be provided. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, in Appendix 10, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbook at www.cabmphandbooks.com*

	Signs shall be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	
Plazas, Sidewalks and parking lots.		*Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*
Loading Docks	*Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.* *Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.* *Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.*	*Move loaded and unloaded items indoors as soon as possible.* *See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*
Fire Sprinkler Test Water	*Water discharged from the fire sprinkler systems shall not enter the storm drain system. Discharged water from fire sprinkler testing shall be collected and used for onsite landscape or disposed of at a local waste water treatment plant.*	*See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	BMP Location (Lat/Long)
DMA 1	Bioretention Basin	Appendix 6	

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section H will be completed and addressed during Final WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: WQMP Covenant and Agreement

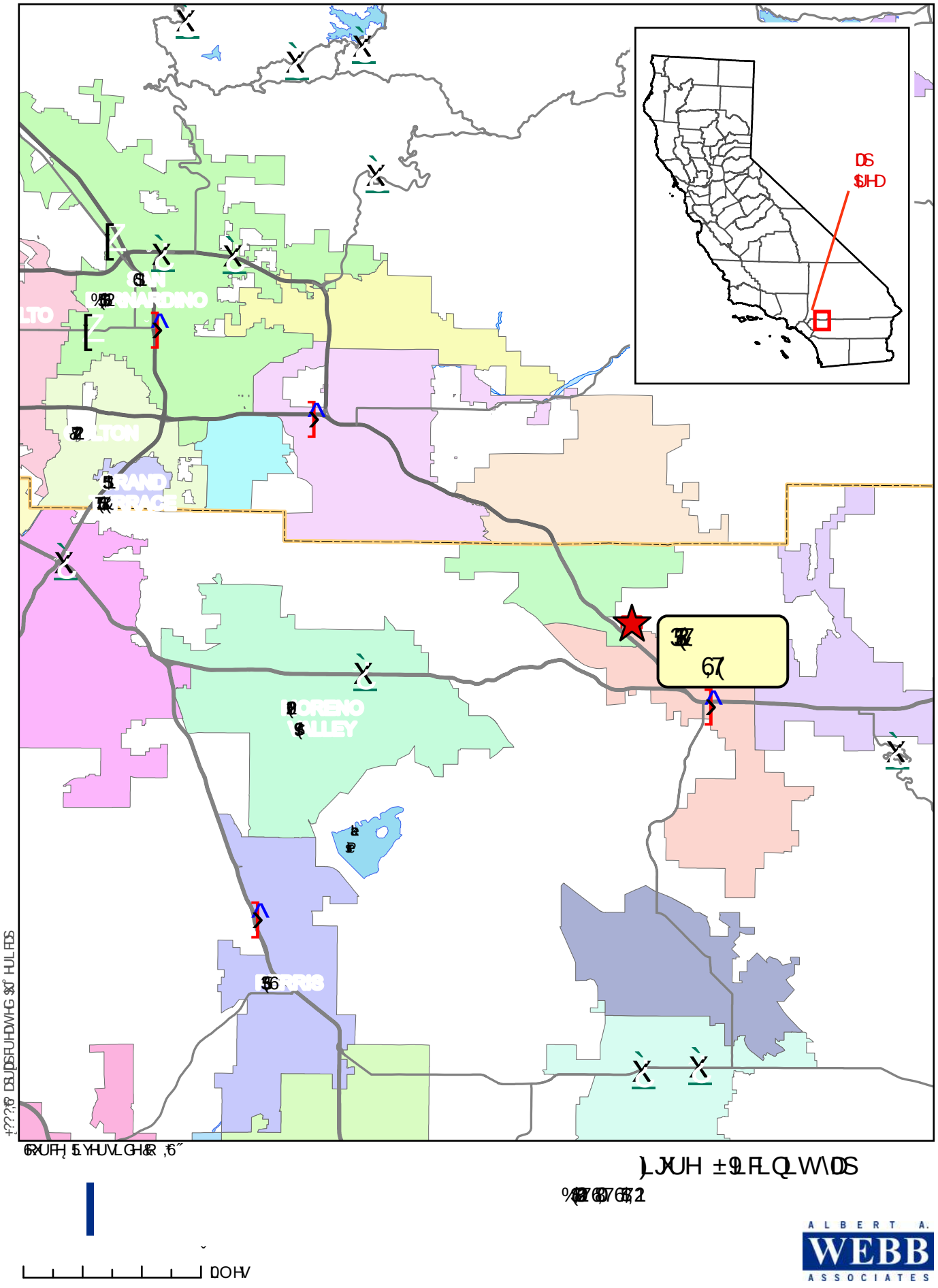
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☒ Y ☐ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map


SAN BERNARDINO
COLTON
GRAND TERRACE
MORENO VALLEY
HIGHLAND
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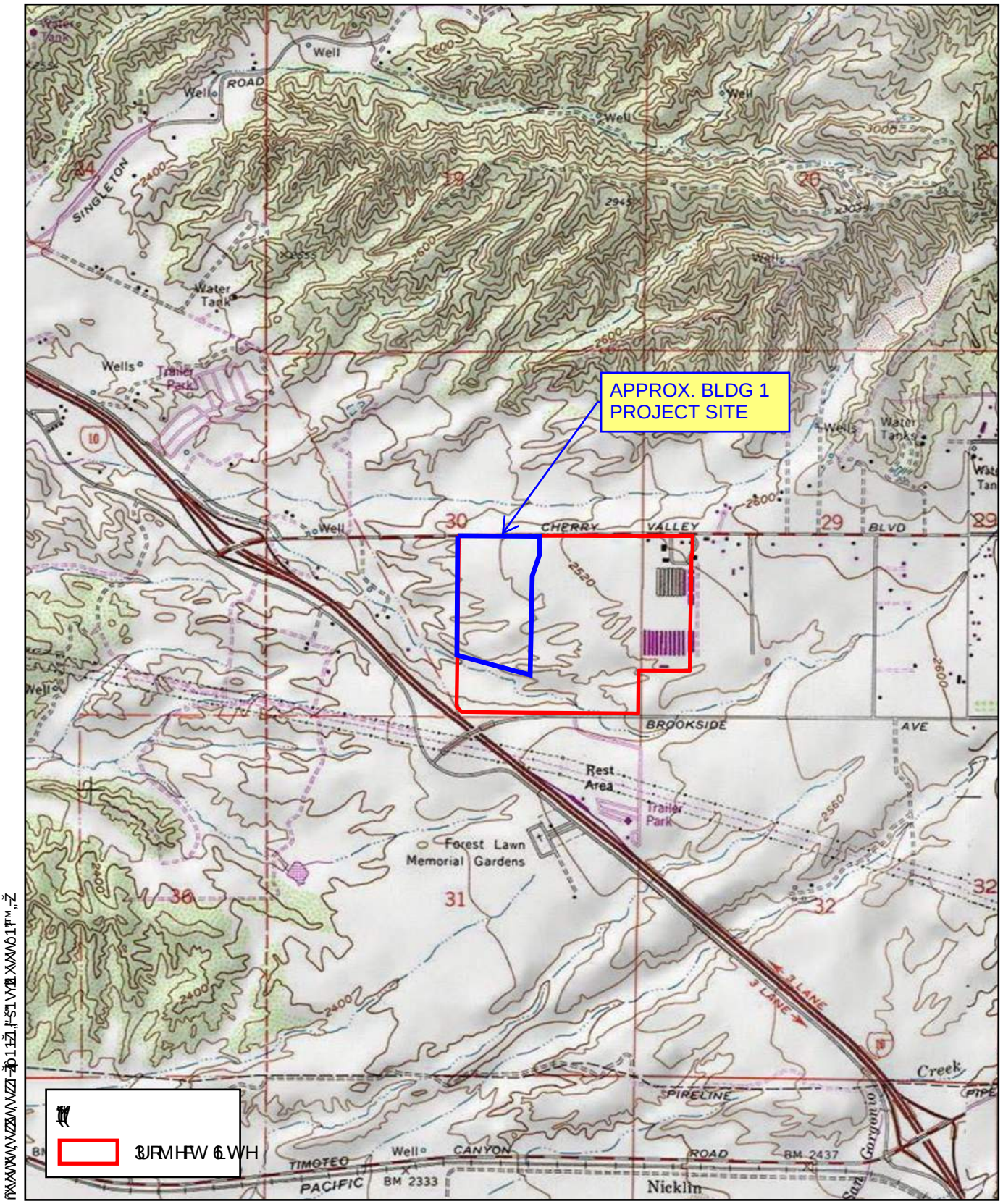
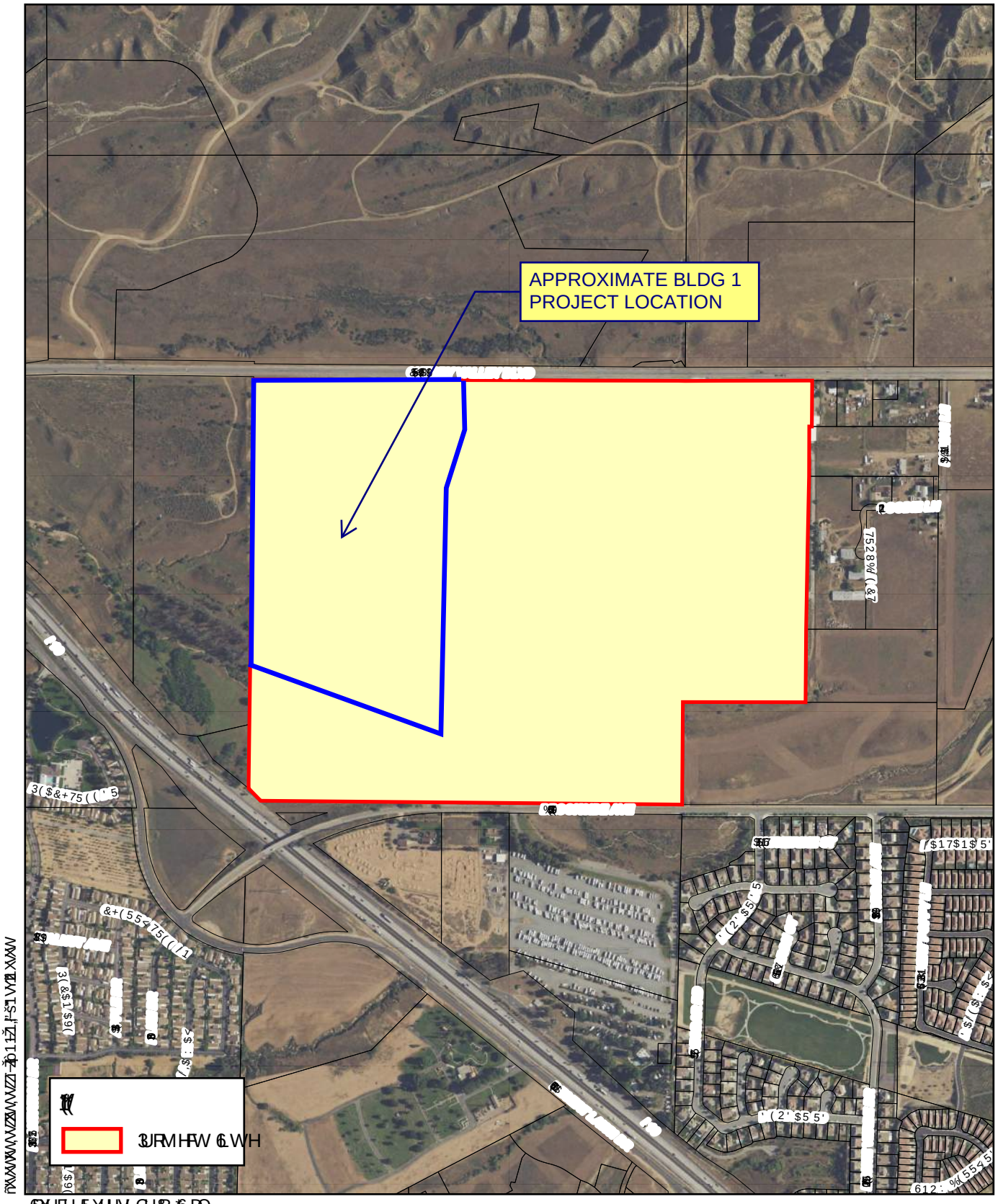
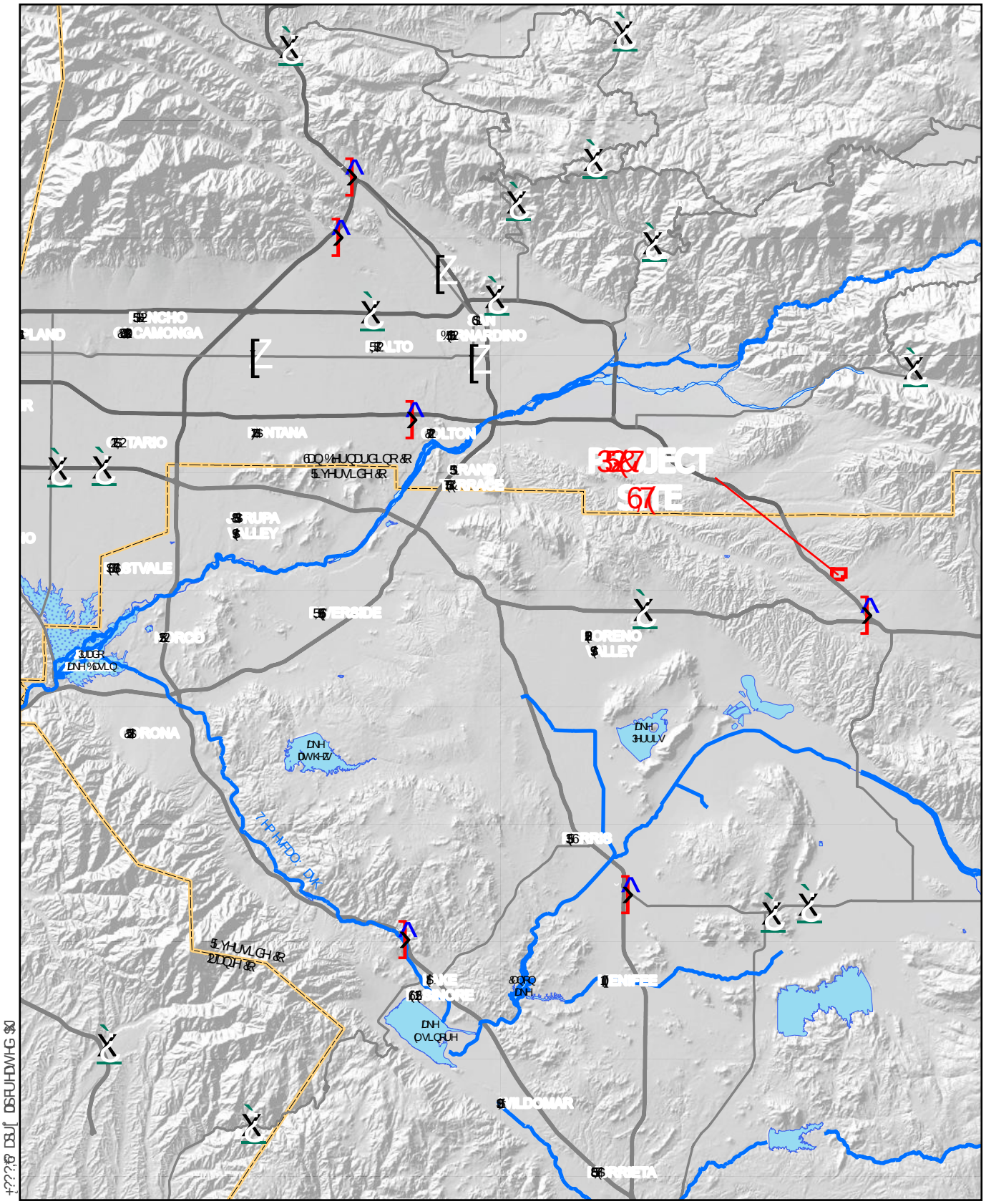


ALBERT A. WEBB ASSOCIATES



ALBERT A. WEBB ASSOCIATES



6RXUFH6 8 6 (3

)LJXUH ±5HFHLYLQJZDWHUERGLHV

%6 6 7 6 2

DOHV

ALBERT A. WEBB ASSOCIATES

CHERRY VALLEY BLVD

CHERRY VALLEY BLVD

"A" STREET

"B" STREET

"C" STREET

BUILDING 1

BUILDING 2

BUILDING 3

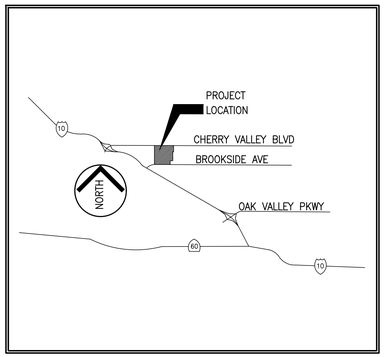
PARCEL 4

BROOKSIDE AVE

1" = 150'

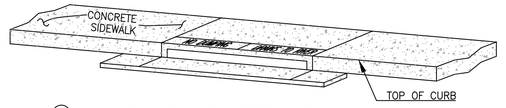
150 0 150 300 450

N W WEBB E S

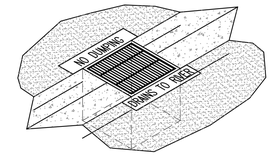


VICINITY MAP

NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30



1. STENCILS TO HAVE 2" LETTERS AS FOLLOWS: "NO DUMPING – DRAINS TO RIVER"
2. PLACE BOTH STENCILS CENTERED WITHIN THE CATCHBASIN OPENINGS AND WITHIN THE TOP OF THE CURB.
3. SPRAY BOTH STENCILS WITH WHITE PAINT.
4. REMOVE STENCILS WHEN PAINT IS DRY.



CATCH BASIN STENCILING DETAIL

NTS

LEGEND

- ROOF
- CONCRETE/ASPHALT
- LANDSCAPE
- BASIN
- SELF-TREATING
- DMA BOUNDARY
- PROJECT BOUNDARY
- FLOWLINE
- PROPOSED ONSITE STORM DRAIN
- NRCS SOIL BOUNDARY
- PROPOSED INLET

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
PRELIMINARY WQMP EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/3/2021			SHEET 1
DESIGNED: EP			OF 2 SHEETS
CHECKED: BJV			
PLN CK REF:			DWG. NO.
F.B.			

H:\2021\21-0044\DRAINAGE\WQMP\DWG FOLDER\21-0044 WQMP EXHIBIT.DWG 4/12/2022 1:39:31 PM

CHERRY VALLEY BLVD

SEE BUILDING 2 PWQMP

INFILTRATION BASIN FORCE MAIN (NO BLDG 1 RUNOFF IS TO BE PUMPED INTO BASIN UNTIL BLDG 2 VBMP HAS FULLY INFILTRATED INTO BASIN BOTTOM)

PROPOSED BIORETENTION BASIN
BOTTOM AREA= 5,064 SF
V_{BMP}= 32,410 CF

INFILTRATION BASIN PROPOSED TO TREAT BLDG 1 V_{BMP}=70,590 CF

BASIN DRAIN LINE

N33.962793
W117.019944

N33.963744
W117.021479

MAINTAIN AND PERIODICALLY REPAINT INLET MARKINGS. NO DISCHARGE SHALL BE DUMPED INTO THE CATCH BASIN (TYP.)

POTENTIAL FOR LANDSCAPING/OUTDOOR PESTICIDE USE AT LANDSCAPED AREAS (TYP). MAINTAIN LANDSCAPING USING MINIMUM OR NO PESTICIDES.

LID HARVEST AND REUSE
APPROX. 20,150 SF NATURAL VEGETATION TO BE IRRIGATED
V_{LID}=32,240 CF/12 HR IRR. CYCLE

SWEEP ROADWAYS REGULARLY TO PREVENT ACCUMULATION OF LITTER AND DEBRIS

DMA 1

PROPOSED DETENTION CHAMBERS

CHAMBER DRAIN LINE TO PUMP STATION

PROPOSED PUMP STATION

INSPECT TRASH ENCLOSURE AND CLEAN AS NEEDED (TYP).

DISCHARGE POINT TO EXISTING CONDITIONS

2502.53 HP
2501.00 HP
2492.04 HP
2493.77 HP
2488.30 HP
2484.56 LP
2484.28 LP
2486.45 FL
2482.13 LP
2481.01 LP

DMA 1 AREA TABLE	
ROOFS (SF)	985,860
CONCRETE (SF)	750,724
LANDSCAPE (SF)	119,487
BASIN (SF)	5,060
SELF-TREAT (SF)	390,655
VBMP (CF)	103000

E
N WEBB S
W

1" = 80'
80 0 80 160 240

LEGEND

- ROOF
- CONCRETE/ASPHALT
- LANDSCAPE
- SELF-TREATING
- BIORETENTION BASIN
- DMA BOUNDARY
- PROJECT BOUNDARY
- FLOWLINE
- PROPOSED ONSITE STORM DRAIN
- NRCS SOIL BOUNDARY
- PROPOSED INLET
- ROOF DRAIN DOWNSPOUT
- PROPOSED TRASH ENCLOSURE
- OVERFLOW DIRECTION

PRELIMINARY

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CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 1
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
PRELIMINARY WQMP EXHIBIT

SCALE:	1" = 80'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/3/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 2
DESIGNED:	EP		OF 2 SHEETS
CHECKED:	BJV		
PLN CK REF:			DWG. NO.
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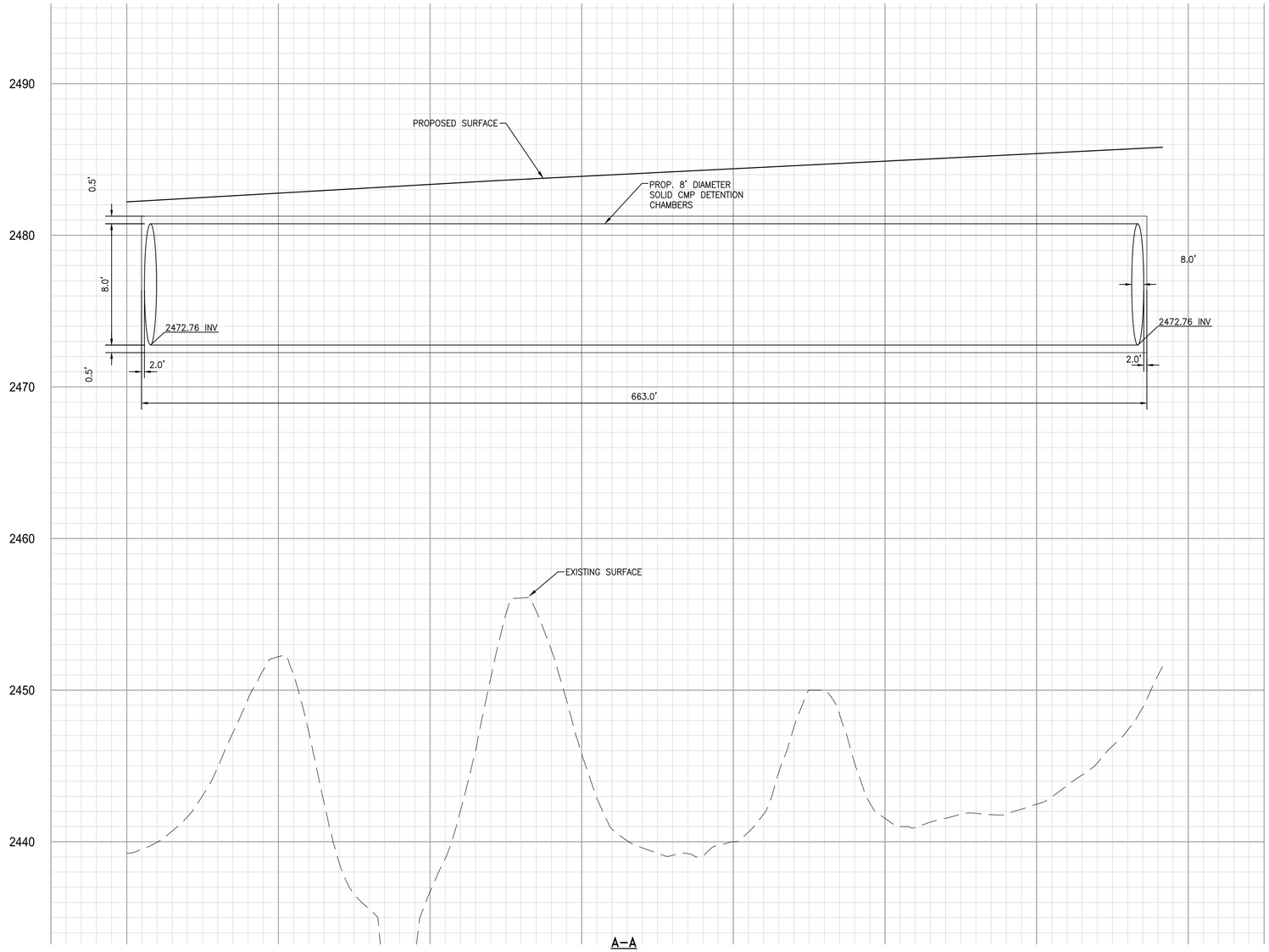
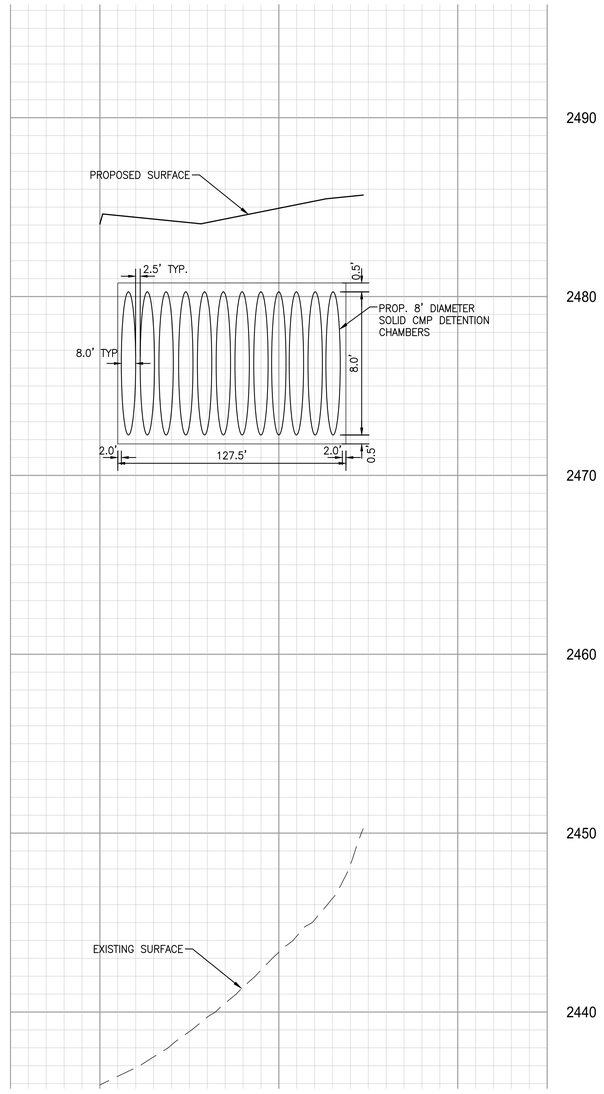


A–A
HORIZ: 1"=40'
VERT: 1"=4'



B–B
HORIZ: 1"=40'
VERT: 1"=4'

BUILDING 1– UNDERGROUND CHAMBERS

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 1 DETAILS
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
CMP CHAMBER DETAILS

SCALE: 1"=40'	ALBERT A. WEBB ASSOCIATES ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686–1070 FAX (951) 788–1256	W.O. 21–0044
DATE: 8/2/2021		SHEET 3
DESIGNED: EP		OF 3 SHEETS
CHECKED: BJV		
PLN CK REF:		DWG. NO.
F.B.		

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Appendix 2: Construction Plans

Grading and Drainage Plans

Construction plans to be completed during Final Engineering.
This report is for preliminary approval.

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

August 13, 2021

Exeter Property Group
4602 East University Drive, Suite 185
Phoenix, Arizona 85034

Attention: Mr. Andrew Greybar
Senior Project Manager

Project No.: **21G133-2**

Subject: **Results of Infiltration Testing**
Proposed E-Commerce Development
Cherry Valley Avenue, West of Fabian Lane
Beaumont, California

Reference: Geotechnical Investigation, Proposed E-Commerce Development, Beaumont, California, prepared by Southern California Geotechnical, Inc. (SCG), prepared for Exeter Property Group, SCG Project No. 21G133-1.

Mr. Greybar:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Change Order No. 21G133-CO, dated July 14, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located on the south side of Cherry Valley Boulevard, 1,500± feet west of the intersection of Cherry Valley Boulevard and Fabian Lane in Beaumont, California. The site is bounded to the north by Cherry Valley Boulevard, to the east by single-family residences (SFRs) and vacant lots, to the south by Brookside Avenue, to the southwest by the Redlands Freeway (Interstate 10) and to the west by vacant land. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several irregular to rectangular-shaped parcels which total 178.4± acres in size. The site is presently developed with three (3) single-family residences and several small abandoned buildings located in the northeastern area of the site. Remnants of shade structures including Portland cement concrete panels and sawed-off poles are present

throughout the northeastern areas of the site. Several above-ground storage tanks are also present throughout the northeastern area of the site. One of the smaller abandoned structures possesses a below-grade room with what appears to be a turbine. The remaining areas of the site are presently vacant and undeveloped. Five (5) circular to oval-shaped leech ponds are located in the west-central area of the site. Two (2) additional leech ponds are located in the south-central area of the site. Ground surface cover consist of exposed soil and moderate to dense native grass and weed growth. Several large trees are located in the southern areas of the site. Limited areas of trash and debris are located throughout the site.

Detailed topographic information was obtained from the conceptual grading plan prepared by Albert A. Webb Associates (Webb). Based on the provided plan, the northeastern to northern two-thirds of the site slopes downward to the southwest at a gradient of 4± percent. The seven (7) circular leech ponds located in the west-central and south-central areas of the site are surrounded by a berm that is 5± feet higher than the surrounding topography. The northwestern area of the site possesses several east-west and southeast-northwest trending drainage courses. The drainage features possess gradual to steep side walls with elevation differences of up to 15± feet below the surrounding topography. To the south of the leech pits, the site slopes towards the south to southwest at a gradient of 10± percent. The topography descends by 50± feet in this area. Another significant east-west trending drainage is located at the base of the descending slope, located in the southern-most region of the site. The drainage possesses gradual to steep side walls with an elevation difference up 10± feet below the surrounding topography. A hill, located to the southeast of this drainage, is approximately 20 to 30 feet higher than the surrounding topography. The hill possesses slope gradients ranging from 14 to 40± percent. To the south of the hill, the site topography slopes gently to the west at a gradient of 3.5± percent, where it meets up with a tributary drainage to the previously mentioned bisecting drainage. The area to the southwest of the bisecting drainage slopes to the west a gradient of 2.5± percent. Another hill with a north-facing descending slope is located at the southwest corner of the site. The slope has a gradient of 20± percent. The maximum site elevation is 2581± feet mean sea level (msl), in the northeast corner of the site. The minimum site elevation is 2406± feet msl, located in drainage swale channel located in the southern-most region of the site.

Proposed Development

Based on the conceptual site plan prepared by Webb, the site will be developed with three (3) new E-Commerce buildings. Building 1 will be 985,860± ft^2 in size, located in the western area of the site. Building 2 will be 1,254,000± ft^2 in size, located in the east-central region of the site. Lastly, Building 3 will be 358,370± ft^2 in size, located in the north-central area of the site. A cross-dock configuration will be constructed on Building 1 and Building 2, along the east/west and north/south building walls, respectively. Dock-high doors will be constructed along a portion of the southern building wall of Building 3. The buildings will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete (PCC) pavements in the truck court, and areas of concrete flatwork and landscape planters. Several new fill and cut slopes will be constructed along all permitters, as well as within the site. The new fill slopes will range from 10 to 40± feet in height and will possess slope inclinations not to exceed 2h:1v (horizontal to vertical). New retaining walls will also be required to establish the

new site grades. The new retaining walls will possess maximum retained heights ranging from 10 to 50± feet.

The proposed development will include on-site stormwater infiltration. Based on our conversations with the project civil engineer and the proposed site plan, infiltration systems will consist of two (2) below-grade chambers and one (1) detention basin. One of the infiltration chamber systems will be located in the northern area of the site (south of Building 3). The bottom of the chambers are expected to range from 28 to 34± feet below the existing site grades. The second infiltration chamber system will be located in the southern area of the site (south of Building 2). The bottom of the chambers are expected to range from 24 to 36± feet below the existing site grades. The detention basin will be located in the south-central area of the site. The bottom of the basin will be at an elevation of, approximately 10 to 43± feet, below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site, also referenced above. The investigation conducted for this project consisted of forty-four (44) borings advanced to depths of 10 to 50± feet, and seven (7) trenches excavated to depths of 6½ to 10½± feet below the existing site grades. Artificial fill soils were encountered at the ground surface of several boring and trench locations. The fill soils generally consist of loose to medium dense silty fine sands and clayey fine to medium sands. The fill soils possess a disturbed and mottled appearance, resulting in their classification as artificial fill. Native alluvium was encountered beneath the artificial fill soils or at the ground surface at several of the borings and trench locations. The alluvial soils extend to depths of 2½ to 10± feet below ground surface in the northern areas of the site, and 25 to 50± feet below ground surface in the southern areas of the site. The alluvial soils generally consist of loose to very dense silty fine sands and silty fine to medium sands. Older alluvial soils were encountered at the ground surface, beneath the artificial fill, and/or beneath the alluvium of the boring and trench locations, extending to at least the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of medium dense to very dense silty fine sands, silty fine to medium sands, silty fine to coarse sands and silty fine sands to fine sandy silts.

Groundwater

Groundwater was not encountered at any of the boring or trench locations. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet below existing site grades at the time of the subsurface investigation.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level and recent groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring wells in this database are located in the northeast corner of the site. Water level readings within one of these monitoring wells indicates a historic high groundwater level of 317± feet below the ground surface in September 1990. Water level readings within another of these monitoring

wells indicates a recent high groundwater level of 412± feet below the ground surface in December 2020.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of sixteen (16) infiltration test borings, advanced to depths ranging from 10 to 43± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-1 through I-16) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Upon the completion of the infiltration borings, the bottom of each test boring was covered with 2± inches of clean ¾-inch gravel. A sufficient length of 3-inch-diameter perforated PVC casing was then placed into each test hole so that the PVC casing extended from the bottom of the test hole to the ground surface. Clean ¾-inch gravel was then installed in the annulus surrounding the PVC casing.

Geotechnical Conditions

Alluvial soils were encountered at the ground surface some of the infiltration borings, extending to depths of 4 to 32± feet below existing site grades. The alluvial soils in generally consist of loose to dense silty fine sands, silty fine to medium sands, clayey sands, fine to coarse sands, and fine to coarse sandy silts with variable gravel content. Older alluvium was encountered at the ground surface or beneath the alluvium at most of the boring locations. The older alluvium generally consists of medium dense to dense fine sands, fine to coarse sands, silty fine sands, silty fine to medium sands, and clayey fine to medium sands, extending to the maximum depth explored of 43± feet.

Infiltration Testing

As previously mentioned, the infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards all sixteen (16) of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak. Based on the results of the pre-soaking process, different infiltration procedures were used during the infiltration testing at the infiltration boring locations.

Infiltration Testing

Following the pre-soaking process of the infiltration test borings, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole, and less than or equal to the water level used during the pre-soaking process. In accordance with the Riverside County guidelines, since "sandy soils" and "non-sandy" conditions were encountered at the bottom of the infiltration borings tests were run for an additional hour with measurements taken at 10-minute intervals for "sandy" conditions and 30-minute intervals for six hours in "non-sandy" conditions. After each reading, the borings were refilled to the correct water level above the gravel at the bottom of each test hole. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Test Elevation (feet) MSL	Soil Description	Infiltration Rate (inches/hour)
I-1	22	2496	Red Brown fine to coarse Sandy Silt	4.0
I-2	25	2495	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-3	31	2494	Red Brown Clayey fine to coarse Sand, trace Silt	0.0
I-4	34	2496	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-5	24	2474½	Red Brown Silty fine to medium Sand, trace coarse Sand	4.4
I-6	25	2474	Red Brown Silty fine to medium Sand, trace coarse Sand	3.6
I-7	30	2474	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel	3.7
I-8	30	2474	Brown Gravelly fine to coarse Sand, little Silt	8.0
I-9	36	2475	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel	4.2
I-10	35	2475	Brown fine to coarse Sand, trace fine Gravel, trace Silt	8.7
I-11	10	2446	Brown Silty fine to medium Sand, trace fine Gravel	0.8

I-12	14	2443	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel	4.8
I-13	28	2445	Brown fine to coarse Sand, little fine Gravel, little Silt	19.4
I-14	16	2444	Gray Brown Gravelly fine to coarse Sand, little Silt	13.5
I-15	27	2449	Red Brown Silty fine to coarse Sand, trace fine Gravel	15.7
I-16	43	2445	Red Brown Silty fine to medium Sand, trace coarse Sand	14.6

Laboratory Testing

Moisture Content

The moisture contents for the recovered soil samples within the borings were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the bottom of each infiltration test boring have been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these tests are presented on Plates C-1 through C-17 of this report.

Design Recommendations

Sixteen (16) infiltration tests were performed at the subject site. As noted above, the infiltration rates at these locations range from 0 to 19.4 inches per hour.

Based on the results of the infiltration testing, we recommend the following infiltration rates for the proposed infiltration systems:

Infiltration System	Site Location	Infiltration Rate (Inches per Hour)
A	North-Central	0
B	South-Central	5.4
C	South-Central	11.5

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the chamber system. It should be confirmed that the soils at the base of the proposed

infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the proposed storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Beaumont and/or County of Riverside guidelines. However, it is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rate recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rates are based on infiltration testing at sixteen (16) discrete locations and the overall infiltration rate of the storm water infiltration system could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the City of Beaumont and/or County of Riverside guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the basins. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration systems

correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within basins. As such, the bottom 24 inches of the infiltration systems should be excavated with non-rubber-tired equipment, such as excavators.

Basin Maintenance

The proposed project may include infiltration basins. Water flowing into these basins will carry some level of sediment. Wind-blown sediments and erosion of the basin side walls will also contribute to sediment deposition at the bottom of the basin. This layer has the potential to significantly reduce the infiltration rate of the basin subgrade soils. Therefore, a formal basin maintenance program should be established to ensure that these silt and clay deposits are removed from the basin on a regular basis. Appropriate vegetation on the basin sidewalls and bottom may reduce erosion and sediment deposition.

Basin maintenance should also include measures to prevent animal burrows, and to repair any burrows or damage caused by such. Animal burrows in the basin sidewalls can significantly increase the risk of erosion and piping failures.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration systems may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and

preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

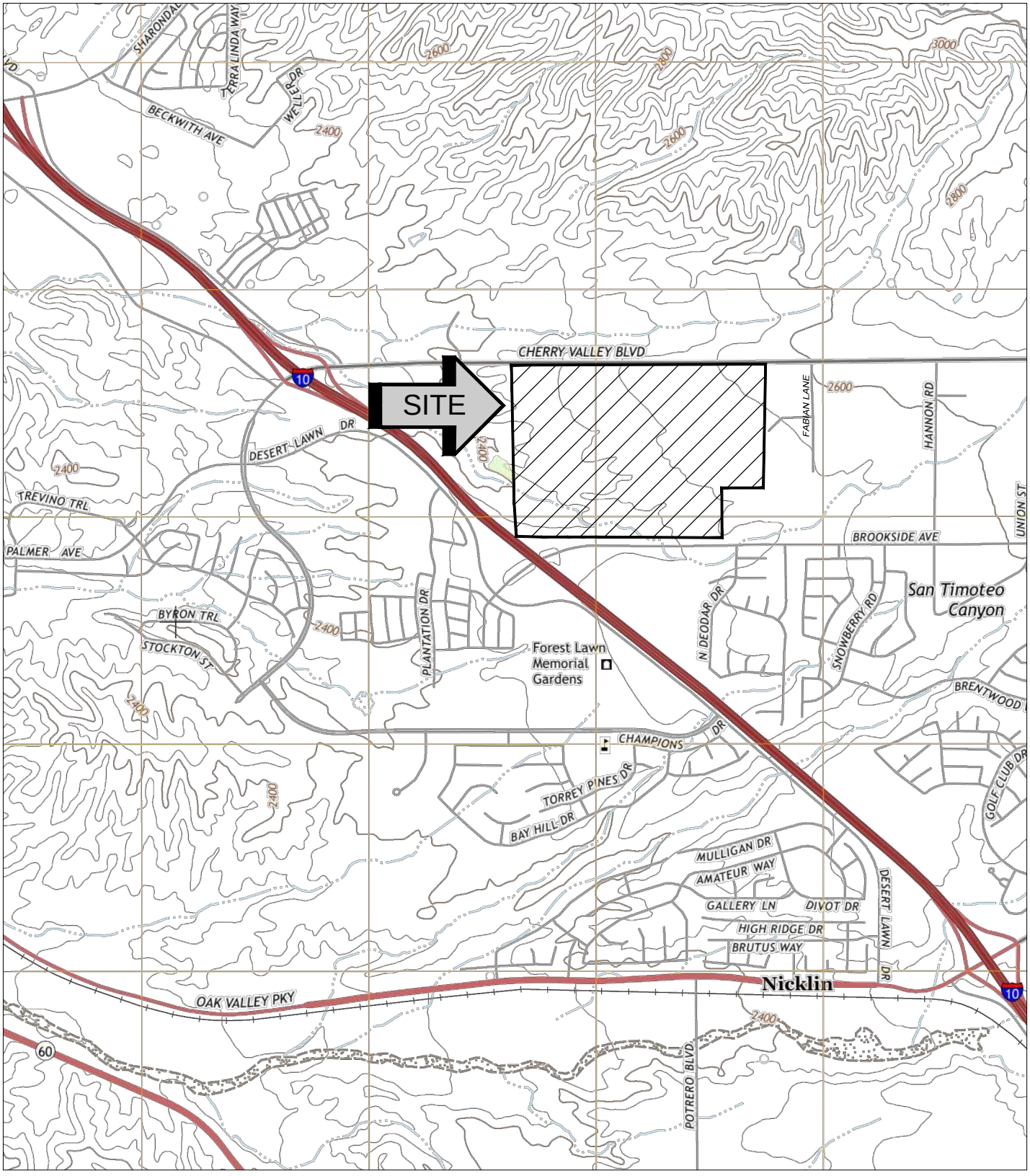
SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Jose A. Zuniga
Staff Engineer

Robert G. Trazo, GE 2655
Principal Engineer

Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Boring Log Legend and Logs (20 pages)
Infiltration Test Results Spreadsheets (16 pages)
Grain Size Distribution Graphs (17 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE EL CASCO QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2015.

SITE LOCATION MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

CHERRY VALLEY BOULEVARD

BROOKSIDE AVENUE

PROPOSED BUILDING 3
358,370 S.F.

INFILTRATION SYSTEM "A"

PROPOSED BUILDING 1
985,860 S.F.

PROPOSED BUILDING 2
1,254,000 S.F.

INFILTRATION SYSTEM "B"

INFILTRATION SYSTEM "C"

PROPOSED INFILTRATION BASIN

PROPOSED RETAINING WALL

PROPOSED RETAINING WALL

PARCEL 4
RETAIL

NAP

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-33 B-34 B-35 B-36 B-37 B-38 B-39 B-40 B-41 B-42 B-43 B-44

T-1 T-2 T-3 T-4 T-5 T-6 T-7

I-1 I-2 I-3 I-4 I-5 I-6 I-7 I-8 I-9 I-10 I-11 I-12 I-13 I-14 I-15 I-16

NORTH

SoCalGeo

GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 21G133-1)
- APPROXIMATE TRENCH LOCATION (SCG PROJECT NO. 21G133-1)

INFILTRATION TEST LOCATION PLAN

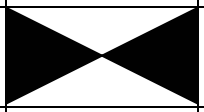
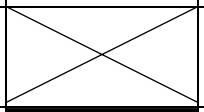
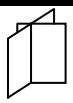
PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 300'	
DRAWN: JAZ CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 2	

SoCalGeo SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

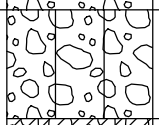
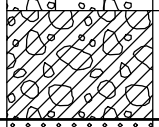
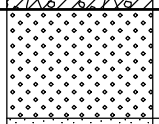
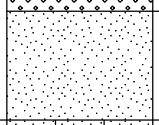
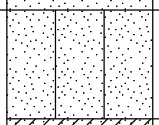
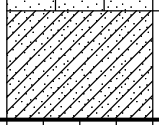
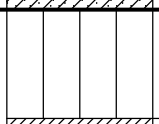
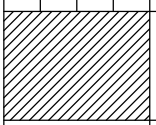
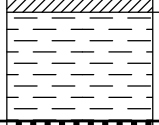
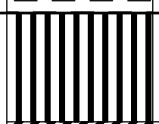
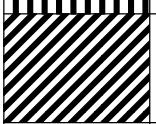
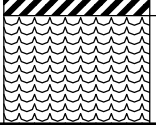
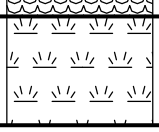
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-1

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2518 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, medium dense-damp to moist							
		12					9					
5												
		12					10					
10												
					Brown fine Sand, trace medium to coarse Sand, trace fine Gravel, trace Silt, medium dense-damp							
		17					7					
15												
					Brown Silty fine to medium Sand, medium dense-damp							
		14					6					
20												
		18			Red Brown Silty fine to coarse Sand, medium dense-damp		6			26		
					Red Brown fine to coarse Sandy Silt, medium dense-damp to moist		10			51		
					Boring Terminated at 22'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-2

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2520 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Gray Brown Clayey fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist							
		10					10					
5												
					Brown Silty fine Sand, trace medium Sand, medium dense-damp							
		16					7					
10												
		13					6					
15												
					Red Brown fine Sandy Silt to Silty fine Sand, loose to medium dense-moist							
		10					11					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-moist							
		16					11			48		
25												
					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-3

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2525 feet MSL							
					ALLUVIUM: Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, loose to medium dense-damp to moist							
5		8					12					
10		10					8					
15		13					10					
20		20					10					
					OLDER ALLUVIUM: Red Brown Clayey fine to medium Sand, medium dense-moist							
25		21					13					
					Red Brown Clayey fine to coarse Sand, trace Silt, medium dense-moist							
30		22					12			49		
					Boring Terminated at 31'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-4

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2530 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		8			ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist		6					
10		19					11					
15		16					9					
20		10			Red Brown fine to coarse Sand, trace fine to coarse Gravel, trace Silt, loose to medium dense-damp to moist		8					
25		15			Gray Brown fine to coarse Sand, medium dense-damp		3					
30		10			Red Brown fine Sandy Silt, trace coarse Gravel, loose to medium dense-moist		15					
		16			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, slightly cemented, medium dense-moist		12			39		
					Boring Terminated at 34'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-4**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-5

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2498.5 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		14					6					
5					OLDER ALLUVIUM: Brown fine to coarse Sandy Silt, trace fine to coarse Gravel, trace Clay, medium dense-damp		7					
					Brown Silty fine to coarse Sand, trace coarse Gravel, slightly cemented, medium dense-damp							
		27					8					
10												
					Brown fine Sand, little medium Sand, trace coarse Sand, medium dense-damp							
		26					5					
15												
					Brown fine to coarse Sand, trace fine Gravel, dense-damp							
		37					4					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
		26					7			28		
					Boring Terminated at 24'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-6

JOB NO.: 21G133-2 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2499 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown fine Sandy Clay, little medium Sand, slightly cemented, very stiff-damp							
5		19					9					
					Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
10		24					5					
					Red Brown fine Sand, trace to little Silt, medium dense-damp							
15		20					6					
					Red Brown Silty fine Sand, trace calcareous veining, medium dense-moist							
20		29					10					
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
25		29					7			35		
					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-7

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp							
5		33					5					
					Red Brown Clayey fine to medium Sand, slightly cemented, medium dense-moist							
10		16					12					
					Red Brown fine to coarse Sand, little Silt, medium dense to dense-damp							
15		24					4					
		48					3					
20					Gray Brown fine Sand, dense-damp							
		32					5					
25					Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp							
		25					7			36		
30					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-7**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-8

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, medium dense-damp							
		24					3					
5					Red Brown fine Sandy Silt, trace medium Sand, trace fine Gravel, trace Clay, medium dense-damp		5					
					Brown fine to medium Sand, trace coarse Sand, little Silt, medium dense-damp							
		17					5					
10												
		28					7					
15					Brown fine to medium Sandy Silt, trace coarse Sand, medium dense-damp		7					
					Brown Silty fine Sand, little medium Sand, trace fine to coarse Gravel, medium dense-damp							
		22					5					
20												
		24					6					
25												
					Brown fine to coarse Sand, little Silt, very dense-damp							
		65					6					
					Brown Gravelly fine to coarse Sand, little Silt, very dense-damp		4			12		
30												
					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-8**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2511 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Clayey fine Sand, little Silt, slightly cemented, medium dense to dense-damp to moist							
5		30					8					
10		21					11					
15		36			Brown Clayey fine to medium Sand, slightly cemented, dense-damp		8					
20		38			Brown fine to medium Sand, little coarse Sand, trace Silt, dense-damp		4					
25		19			Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		8					
30		27					12					
					Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel, medium dense-damp							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	27					7			34		
					Boring Terminated at 36'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-10

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2510 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, porous, trace fine root fibers, medium dense-damp							
5		20					4					
					Red Brown Clayey fine to medium Sand, trace coarse Gravel, slightly cemented, dense-moist							
10		33					11					
					Red Brown Silty fine to medium Sand, dense-damp							
15		31					6					
					Brown fine to coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					4					
					Red Brown fine to medium Sand, trace fine Gravel, dense-damp							
25		37					5					
					Red Brown Silty fine Sand, dense-moist							
30		36					11					
					Brown fine to coarse Sand, trace fine Gravel, trace Silt, dense-dry to damp							
		43					3			9		
					Boring Terminated at 35'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-10**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-11

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2456 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine to medium Sand, trace fine root fibers, medium dense-dry to damp							
		14					2					
5												
					Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp							
		21					7			37		
10												
					Boring Terminated at 10'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-11**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-12

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2457 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		69			ALLUVIUM: Light Gray fine to coarse Sand, little fine to coarse Gravel, very dense-damp		4					
10		20			Gray Brown Silty fine Sand, medium dense- damp to moist		9					
		41			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp		7			38		
					Boring Terminated at 14'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-12**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-13

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2473 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Light Gray fine to coarse Sand, little fine Gravel, trace fine root fibers, dense-dry to damp							
5		41			@ 5 to 6½ feet, slightly cemented		2					
					Brown Silty fine Sand, trace fine Gravel, medium dense-damp							
10		29					6					
15		25					8					
					Gray Brown fine to medium Sand, little coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					6					
					Brown fine to coarse Sand, little fine Gravel, little Silt, very dense-damp							
25		50/4"					4			14		
					Boring Terminated at 28'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-13**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-14

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2460 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown to Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, medium dense-damp							
5		22					4					
10		21			@ 10 to 11½ feet, trace fine Gravel		8					
					Gray Brown Gravelly fine to coarse Sand, little Silt, very dense-dry to damp							
15		50/5"					3			14		
					Boring Terminated at 16'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-14**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-15

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2476 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, trace coarse Gravel, trace fine root fibers, dense-damp							
5		49					6					
					Brown fine to medium Sand, little coarse Sand, dense-dry to damp							
10		37					3					
					Red Brown Silty fine Sand, trace medium Sand, dense-damp							
15		35					9					
					Gray Brown fine to coarse Sand, trace fine Gravel, very dense-damp							
20		50/5"					9					
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine Gravel, slightly cemented, very dense-damp							
25		70					4			27		
					Boring Terminated at 27'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-15**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2488 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine to medium Sand, medium dense-damp							
5		27					5					
					Red Brown Silty fine Sand, medium dense-damp							
10		23					8					
15		30			@ 15 to 16½ feet, trace medium Sand, dense-moist		11					
20		26					11					
					OLDER ALLUVIUM: Brown fine to coarse Sand, trace fine Gravel, trace Silt, very dense-dry to damp							
25		63					3					
30		59					4					
					Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		50/5"			Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist		3					
40												
		35					11					
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, dense-very moist		18			39		
					Boring Terminated at 43'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16b**

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	22.00	(ft)

Infiltration Test Hole: I-1

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:00 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	11:25 AM		20.92			
2	Initial	11:28 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	11:53 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:00 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:10 PM		19.90			
2	Initial	12:11 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:21 PM		19.91			
3	Initial	12:22 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:32 PM		19.90			
4	Initial	12:33 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:43 PM		19.91			
5	Initial	12:44 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:54 PM		19.90			
6	Initial	12:55 PM	10.00	19.00	0.90	2.55	3.98
	Final	1:05 PM		19.90			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-2

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	10:50 AM		22.47			
2	Initial	10:51 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	11:16 AM		22.47			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:18 AM	30.00	22.20	0.32	2.64	0.46
	Final	11:48 AM		22.52			
2	Initial	11:50 AM	30.00	22.20	0.30	2.65	0.43
	Final	12:20 PM		22.50			
3	Initial	12:22 PM	30.00	22.20	0.30	2.65	0.43
	Final	12:52 PM		22.50			
4	Initial	12:55 PM	30.00	22.20	0.30	2.65	0.43
	Final	1:25 PM		22.50			
5	Initial	1:28 PM	30.00	22.50	0.00	2.50	0.00
	Final	1:58 PM		22.50			
6	Initial	2:00 PM	30.00	22.50	0.00	2.50	0.00
	Final	2:30 PM		22.50			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	31.00	(ft)

Infiltration Test Hole: I-3

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:00 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		29.00			
2	Initial	9:28 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:53 AM		29.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	10:30 AM		29.00			
2	Initial	10:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:00 AM		29.00			
3	Initial	11:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:30 AM		29.00			
4	Initial	11:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	12:00 PM		29.00			
5	Initial	12:00 PM	30.00	29.00	0.00	2.00	0.00
	Final	12:30 PM		29.00			
6	Initial	12:30 PM	30.00	29.00	0.00	2.00	0.00
	Final	1:00 PM		29.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	34.00	(ft)

Infiltration Test Hole: I-4

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:30 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	8:55 AM		32.30			
2	Initial	9:00 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		32.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	10:00 AM		32.30			
2	Initial	10:00 AM	30.00	32.00	0.30	1.85	0.60
	Final	10:30 AM		32.30			
3	Initial	10:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:00 AM		32.30			
4	Initial	11:00 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:30 AM		32.30			
5	Initial	11:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	12:00 PM		32.30			
6	Initial	12:00 PM	30.00	32.30	0.00	1.70	0.00
	Final	12:30 PM		32.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	24.00	(ft)

Infiltration Test Hole: I-5

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:00 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:25 AM		24.00			
2	Initial	8:26 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:51 AM		24.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:52 AM	10.00	22.00	1.62	1.19	14.33
	Final	9:02 AM		23.62			
2	Initial	9:03 AM	10.00	22.00	1.00	1.50	7.20
	Final	9:13 AM		23.00			
3	Initial	9:14 AM	10.00	22.00	0.75	1.63	5.02
	Final	9:24 AM		22.75			
4	Initial	9:25 AM	10.00	22.00	0.64	1.68	4.16
	Final	9:35 AM		22.64			
5	Initial	9:36 AM	10.00	22.00	0.68	1.66	4.47
	Final	9:46 AM		22.68			
6	Initial	9:47 AM	10.00	22.00	0.67	1.67	4.39
	Final	9:57 AM		22.67			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-6

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:45 PM	25.00	21.00	43.80	YES	SANDY SOILS
	Final	4:10 PM		24.65			
2	Initial	4:12 PM	25.00	21.00	37.80	YES	SANDY SOILS
	Final	4:37 PM		24.15			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:38 PM	10.00	21.00	1.30	3.35	4.44
	Final	4:48 PM		22.30			
2	Initial	4:49 PM	10.00	21.00	1.10	3.45	3.65
	Final	4:59 PM		22.10			
3	Initial	5:00 PM	10.00	21.00	1.20	3.40	4.04
	Final	5:10 PM		22.20			
4	Initial	5:11 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:21 PM		22.10			
5	Initial	5:22 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:32 PM		22.10			
6	Initial	5:33 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:43 PM		22.10			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-7

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:30 AM	25.00	28.20	14.16	YES	SANDY SOILS
	Final	9:55 AM		29.38			
2	Initial	9:56 AM	25.00	28.20	14.40	YES	SANDY SOILS
	Final	10:21 AM		29.40			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:22 AM	10.00	28.20	0.60	1.50	4.32
	Final	10:32 AM		28.80			
2	Initial	10:33 AM	10.00	28.20	0.41	1.60	2.79
	Final	10:43 AM		28.61			
3	Initial	10:44 AM	10.00	28.00	0.71	1.65	4.70
	Final	10:54 AM		28.71			
4	Initial	10:55 AM	10.00	28.00	0.60	1.70	3.86
	Final	11:05 AM		28.60			
5	Initial	11:06 AM	10.00	28.00	0.66	1.67	4.31
	Final	11:16 AM		28.66			
6	Initial	11:17 AM	10.00	28.00	0.58	1.71	3.71
	Final	11:27 AM		28.58			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-8

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:25 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	9:50 AM		30.30			
2	Initial	9:51 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	10:16 AM		30.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:18 AM	10.00	28.30	1.35	1.03	13.59
	Final	10:28 AM		29.65			
2	Initial	10:29 AM	10.00	28.30	1.03	1.19	9.14
	Final	10:39 AM		29.33			
3	Initial	10:40 AM	10.00	28.30	0.97	1.22	8.42
	Final	10:50 AM		29.27			
4	Initial	10:51 AM	10.00	28.30	0.94	1.23	8.08
	Final	11:01 AM		29.24			
5	Initial	11:02 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:12 AM		29.23			
6	Initial	11:13 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:23 AM		29.23			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	36.00	(ft)

Infiltration Test Hole: I-9

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	1:10 PM	25.00	31.00	51.60	YES	SANDY SOILS
	Final	1:35 PM		35.30			
2	Initial	1:36 PM	25.00	31.00	45.60	YES	SANDY SOILS
	Final	2:01 PM		34.80			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	2:02 PM	10.00	31.00	1.70	4.15	4.73
	Final	2:12 PM		32.70			
2	Initial	2:13 PM	10.00	31.00	1.60	4.20	4.40
	Final	2:23 PM		32.60			
3	Initial	2:24 PM	10.00	31.00	1.57	4.22	4.30
	Final	2:34 PM		32.57			
4	Initial	2:25 PM	10.00	31.00	1.55	4.23	4.24
	Final	2:35 PM		32.55			
5	Initial	2:36 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:46 PM		32.54			
6	Initial	2:47 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:57 PM		32.54			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	35.00	(ft)

Infiltration Test Hole: I-10

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:10 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	11:35 AM		35.00			
2	Initial	11:36 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	12:01 PM		35.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:02 PM	10.00	33.00	1.43	1.29	11.82
	Final	12:12 PM		34.43			
2	Initial	12:13 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:23 PM		34.20			
3	Initial	12:24 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:34 PM		34.20			
4	Initial	12:35 PM	10.00	33.00	1.15	1.43	8.67
	Final	12:45 PM		34.15			
5	Initial	12:46 PM	10.00	33.00	1.14	1.43	8.57
	Final	12:56 PM		34.14			
6	Initial	12:57 PM	10.00	33.00	1.15	1.43	8.67
	Final	1:07 PM		34.15			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	10.00	(ft)

Infiltration Test Hole	I-11

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:20 AM	25.00	3.00	31.80	YES	SANDY SOILS
	Final	10:45 AM		5.65			
2	Initial	10:46 AM	25.00	3.00	12.60	YES	SANDY SOILS
	Final	11:11 AM		4.05			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:12 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:22 AM		3.50			
2	Initial	11:23 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:33 AM		3.50			
3	Initial	11:34 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:44 AM		3.50			
4	Initial	11:45 AM	10.00	3.00	0.45	6.78	0.78
	Final	11:55 AM		3.45			
5	Initial	11:56 AM	10.00	3.00	0.45	6.78	0.78
	Final	12:06 PM		3.45			
6	Initial	12:07 PM	10.00	3.00	0.45	6.78	0.78
	Final	12:17 PM		3.45			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where: Q = Infiltration Rate (in inches per hour)

ΔH = Change in Height (Water Level) over the time interval

r = Test Hole (Borehole) Radius

Δt = Time Interval

H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	14.00	(ft)

Infiltration Test Hole: I-12

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:15 PM	25.00	10.00	33.60	YES	SANDY SOILS
	Final	3:40 PM		12.80			
2	Initial	3:41 PM	25.00	10.00	32.40	YES	SANDY SOILS
	Final	4:06 PM		12.70			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:07 PM	10.00	10.00	1.50	3.25	5.27
	Final	4:17 PM		11.50			
2	Initial	4:18 PM	10.00	10.00	1.47	3.27	5.14
	Final	4:28 PM		11.47			
3	Initial	4:38 PM	10.00	10.00	1.45	3.28	5.06
	Final	4:48 PM		11.45			
4	Initial	4:49 PM	10.00	10.00	1.44	3.28	5.01
	Final	4:59 PM		11.44			
5	Initial	5:00 PM	10.00	10.00	1.43	3.29	4.97
	Final	5:10 PM		11.43			
6	Initial	5:11 PM	10.00	10.00	1.40	3.30	4.85
	Final	5:21 PM		11.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	28.00	(ft)

Infiltration Test Hole	I-13

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:35 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:00 PM		29.20			
2	Initial	1:01 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:26 PM		29.20			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:27 PM	10.00	26.20	2.15	0.73	28.93
	Final	1:37 PM		28.35			
2	Initial	1:38 PM	10.00	26.20	2.44	0.58	39.21
	Final	1:48 PM		28.64			
3	Initial	1:49 PM	10.00	26.20	1.77	0.92	19.64
	Final	1:59 PM		27.97			
4	Initial	2:00 PM	10.00	26.20	1.74	0.93	19.04
	Final	2:10 PM		27.94			
5	Initial	2:11 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:21 PM		27.96			
6	Initial	2:22 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:32 PM		27.96			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	16.00	(ft)

Infiltration Test Hole: I-14

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:15 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	8:40 AM		16.00			
2	Initial	8:41 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	9:06 AM		16.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:07 AM	10.00	12.00	3.20	2.40	14.96
	Final	9:17 AM		15.20			
2	Initial	9:18 AM	10.00	12.00	3.10	2.45	14.22
	Final	9:28 AM		15.10			
3	Initial	9:29 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:39 AM		15.00			
4	Initial	9:40 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:50 AM		15.00			
5	Initial	9:51 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:01 AM		15.00			
6	Initial	10:02 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:12 AM		15.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	27.00	(ft)

Infiltration Test Hole: I-15

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:54 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:19 PM		27.00			
2	Initial	1:20 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:45 PM		27.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:48 PM	10.00	23.00	3.60	2.20	18.25
	Final	1:58 PM		26.60			
2	Initial	1:59 PM	10.00	23.00	3.50	2.25	17.38
	Final	2:09 PM		26.50			
3	Initial	2:10 PM	10.00	23.00	3.45	2.28	16.96
	Final	2:20 PM		26.45			
4	Initial	2:21 PM	10.00	23.00	3.38	2.31	16.38
	Final	2:31 PM		26.38			
5	Initial	2:32 PM	10.00	23.00	3.35	2.33	16.13
	Final	2:42 PM		26.35			
6	Initial	2:43 PM	10.00	23.00	3.30	2.35	15.74
	Final	2:53 PM		26.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	43.00	(ft)

Infiltration Test Hole: I-16

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	40.00	33.84	YES	SANDY SOILS
	Final	10:50 AM		42.82			
2	Initial	10:51 AM	25.00	40.00	34.80	YES	SANDY SOILS
	Final	11:16 AM		42.90			

Test Data

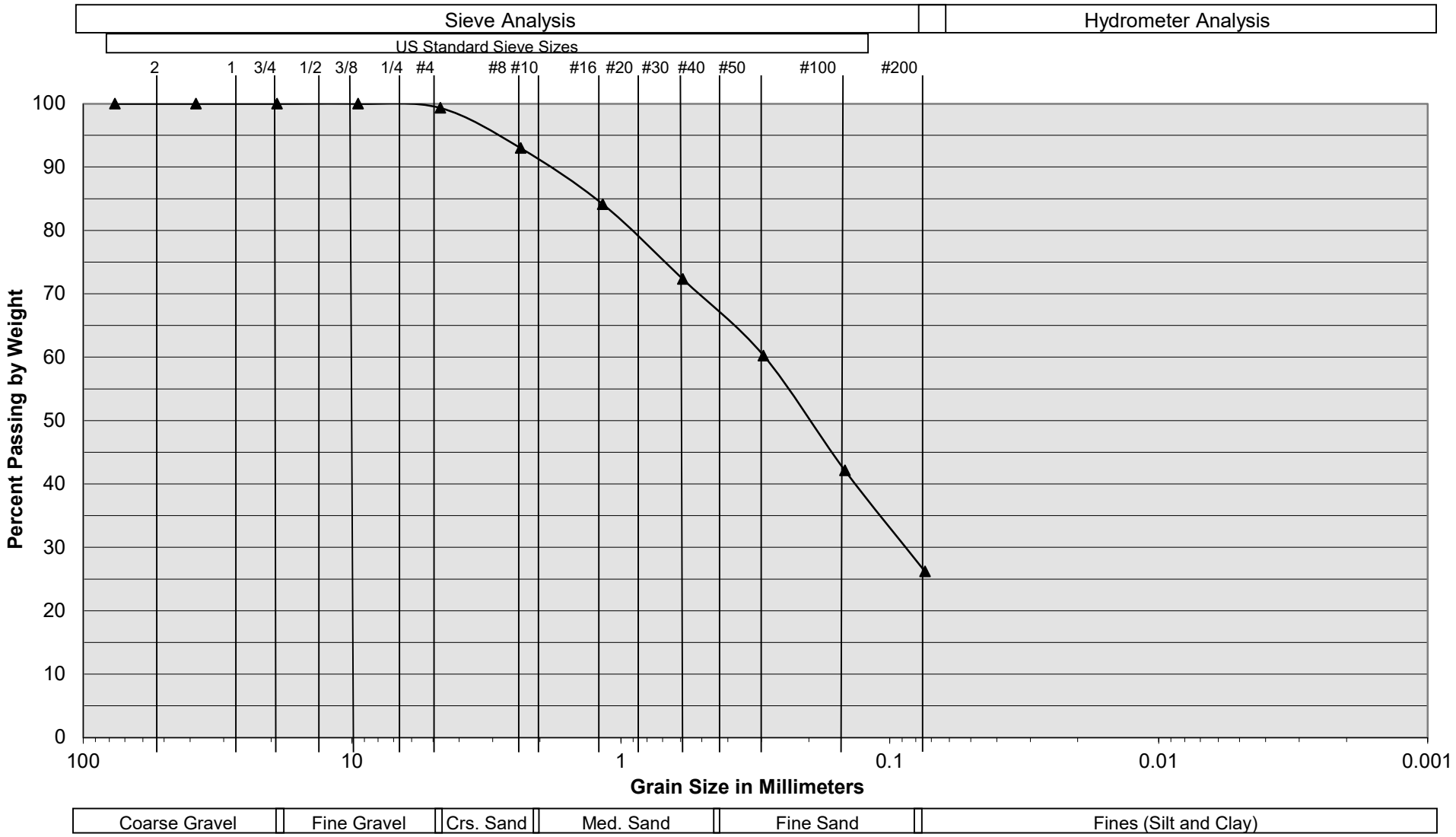
Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:17 AM	10.00	40.00	2.80	1.60	19.02
	Final	11:27 AM		42.80			
2	Initial	11:28 AM	10.00	40.00	2.90	1.55	20.27
	Final	11:38 AM		42.90			
3	Initial	11:39 AM	10.00	40.00	2.35	1.83	14.16
	Final	11:49 AM		42.35			
4	Initial	11:50 AM	10.00	40.00	2.20	1.90	12.77
	Final	12:00 PM		42.20			
5	Initial	12:01 PM	10.00	40.00	2.35	1.83	14.16
	Final	12:11 PM		42.35			
6	Initial	12:12 PM	10.00	40.00	2.40	1.80	14.64
	Final	12:22 PM		42.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

Grain Size Distribution



Sample Description	I-1 @ 20½'
Soil Classification	Red Brown Silty fine to coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 1

SoCalGeo
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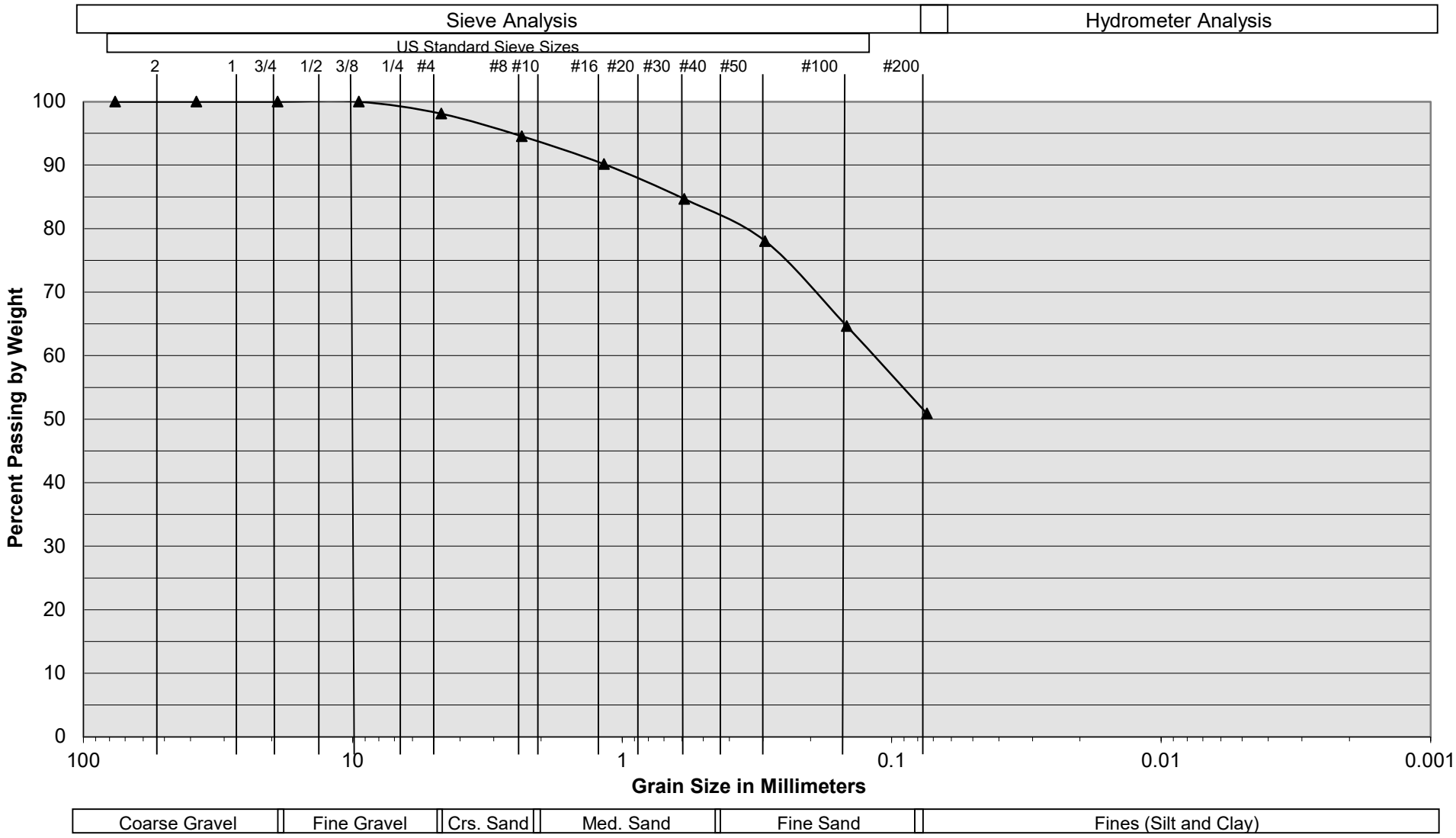
Grain Size Distribution

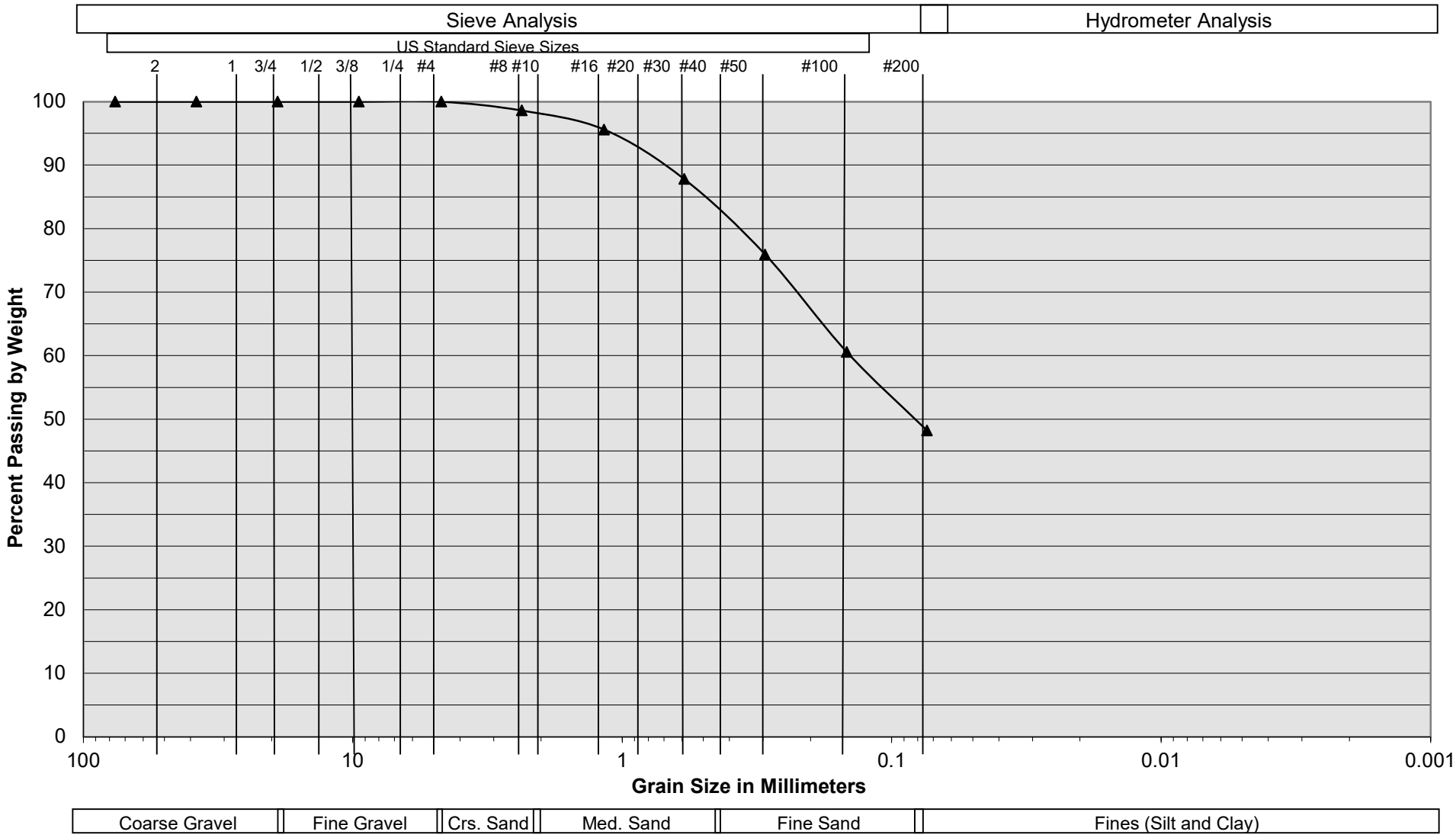


Sample Description	I-1 @ 21½'
Soil Classification	Red Brown fine to coarse Sandy Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

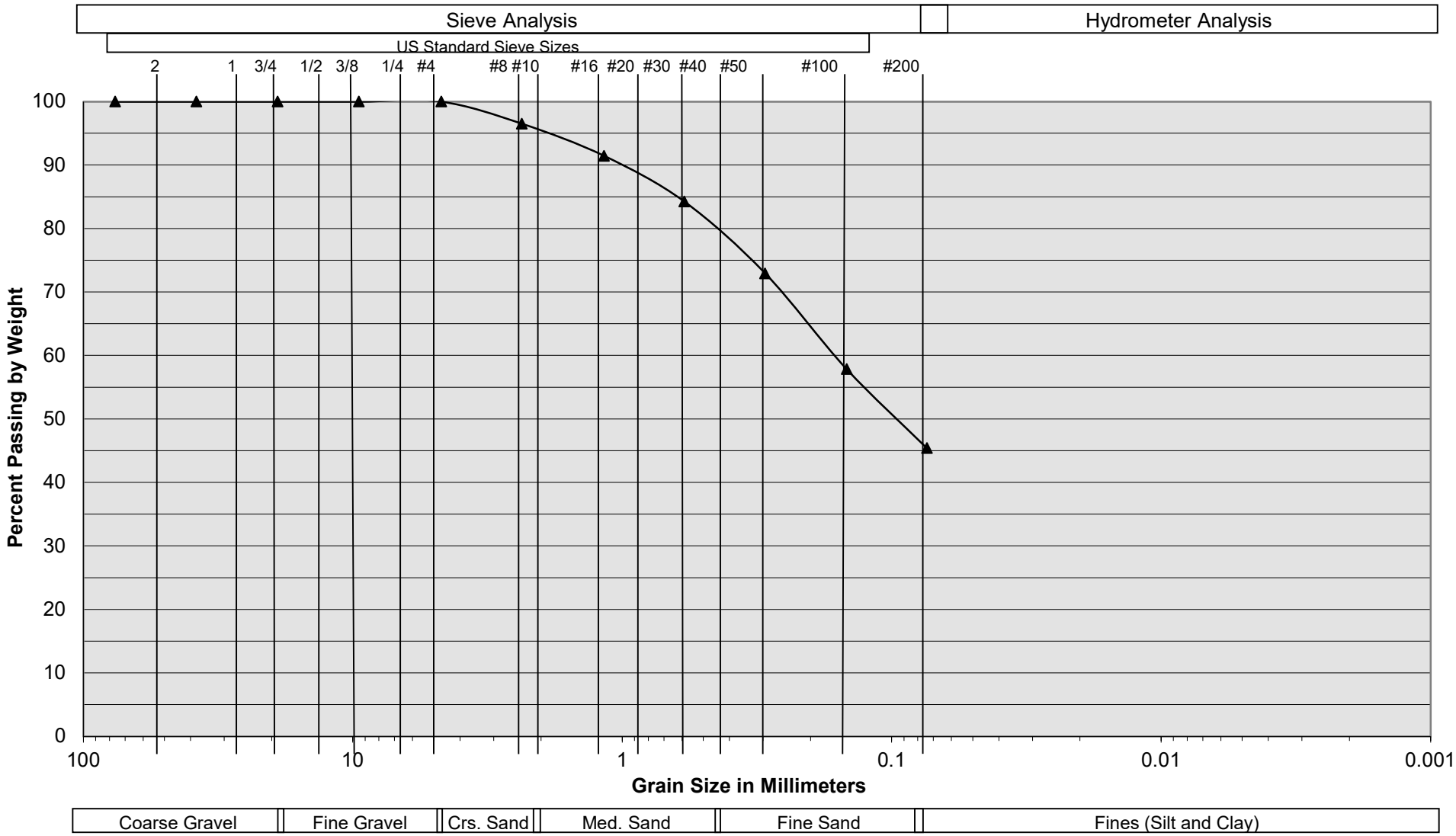


Sample Description	I-2 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

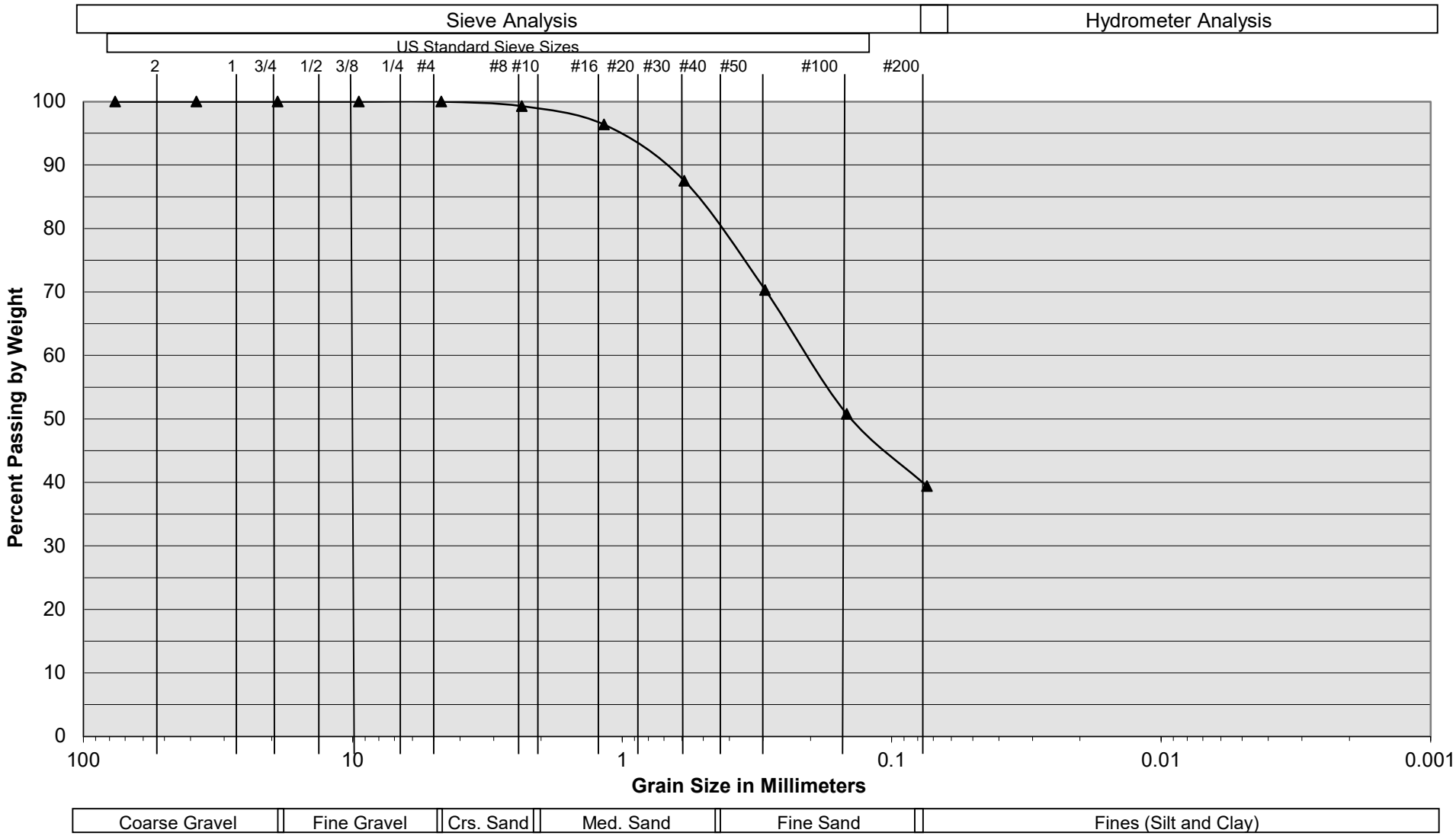


Sample Description	I-3 @ 29½'
Soil Classification	Red Brown Clayey fine to coarse Sand, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

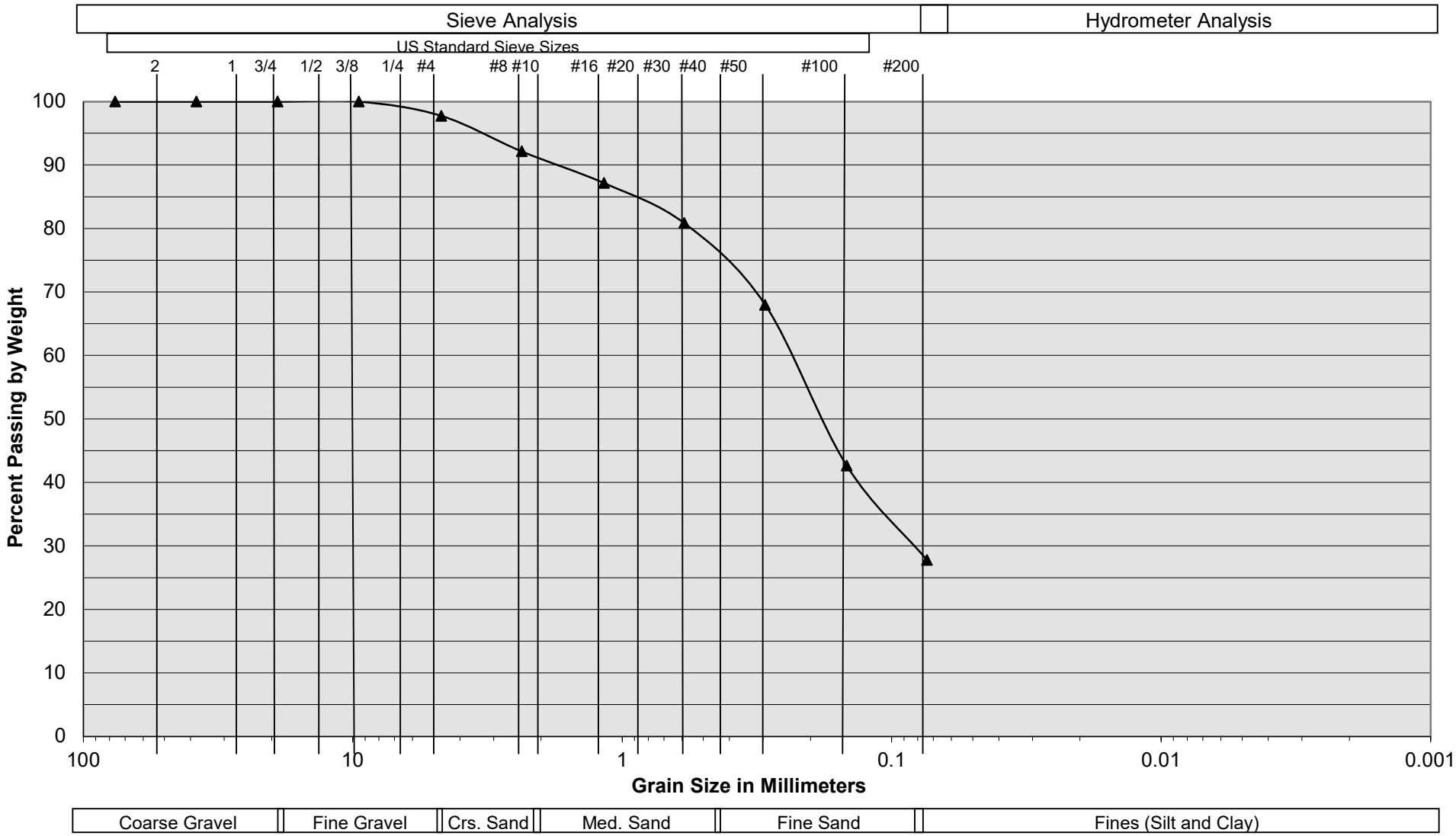


Sample Description	I-4 @ 32½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-5 @ 22½'
Soil Classification	Red Brown Silty fine to medium Sand, little coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

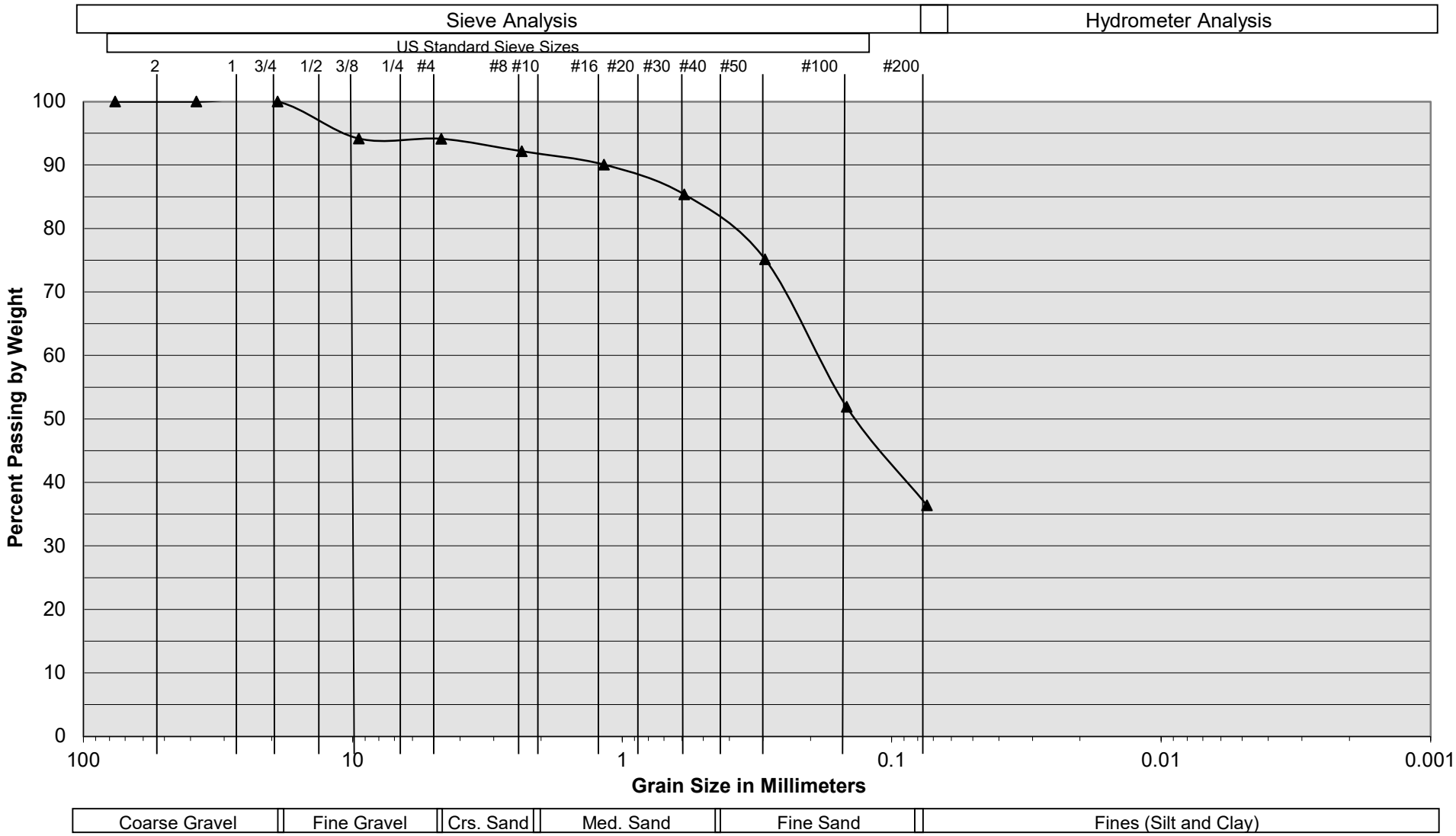
Grain Size Distribution

Sample Description	I-6 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

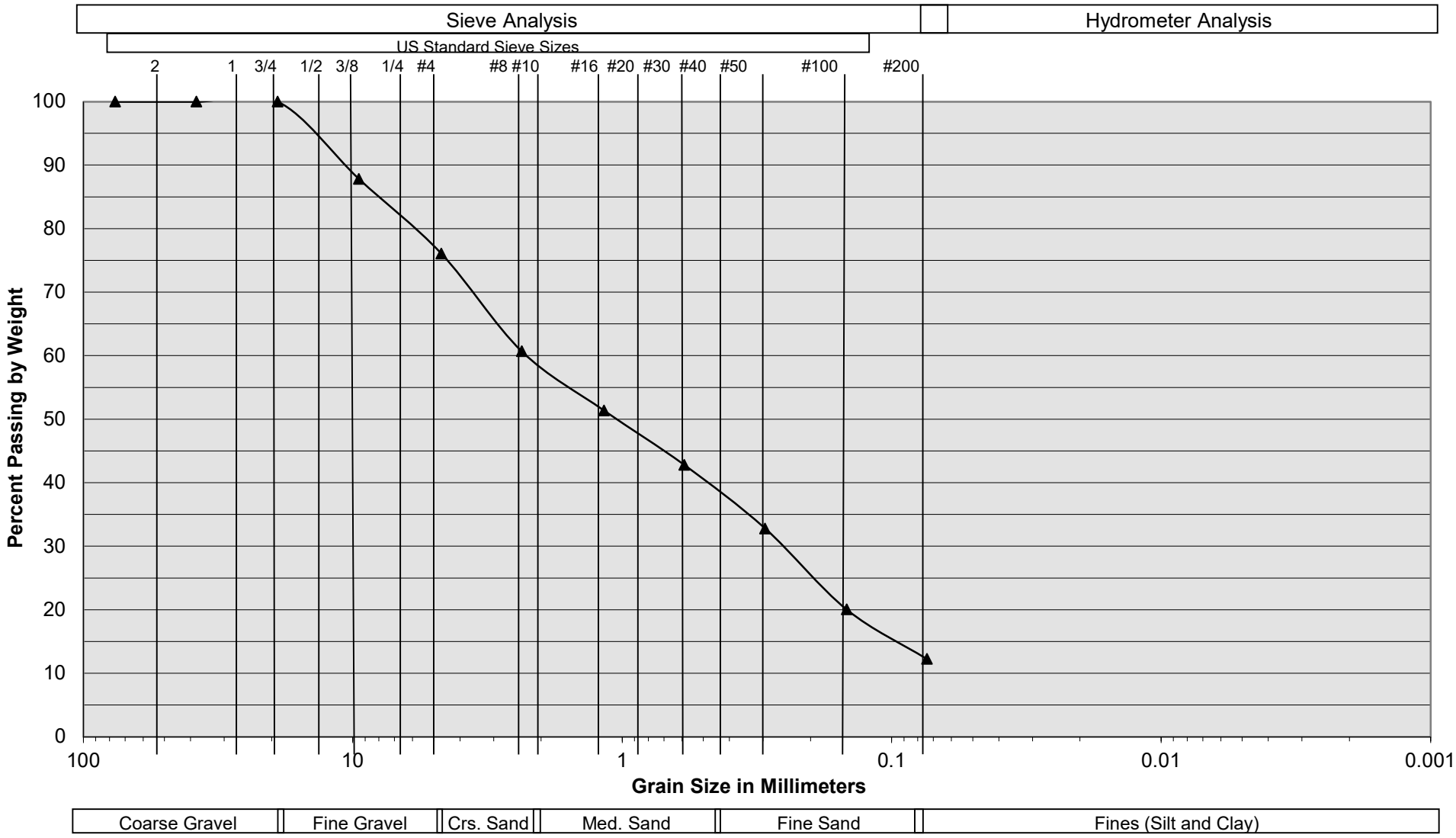


Sample Description	I-7 @ 28½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

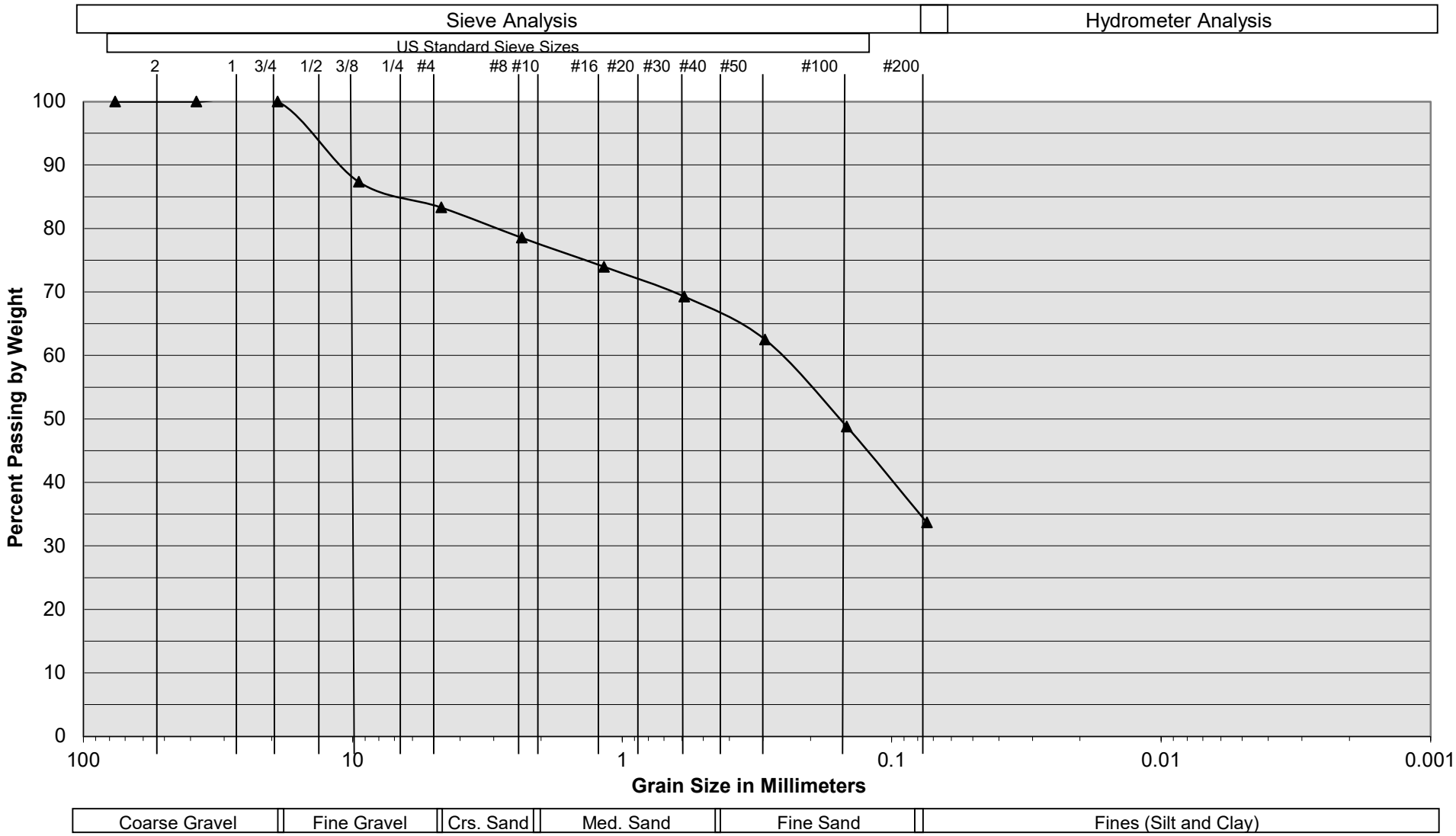


Sample Description	I-8 @ 29'
Soil Classification	Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 9

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

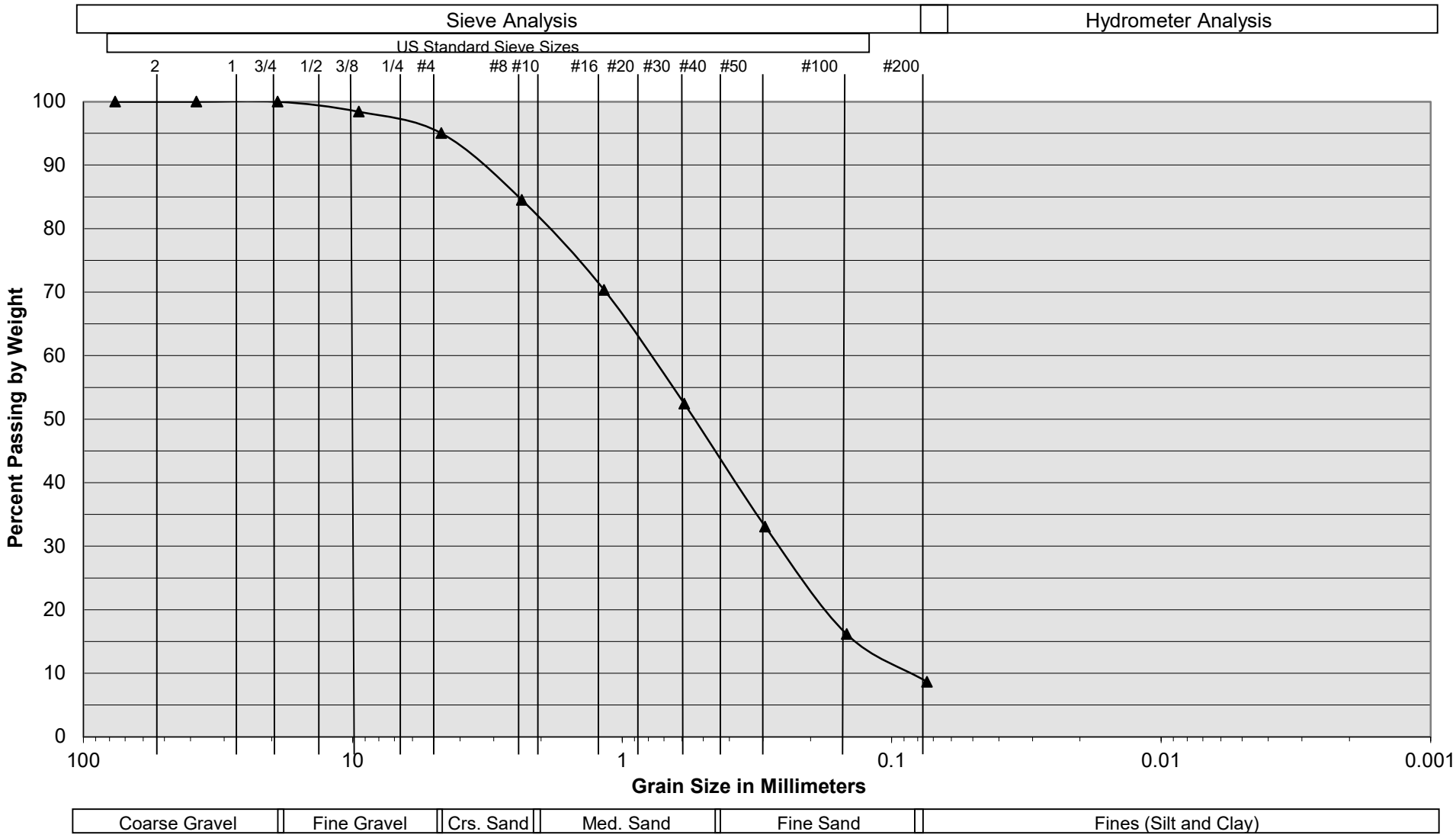


Sample Description	I-9 @ 34½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 10

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

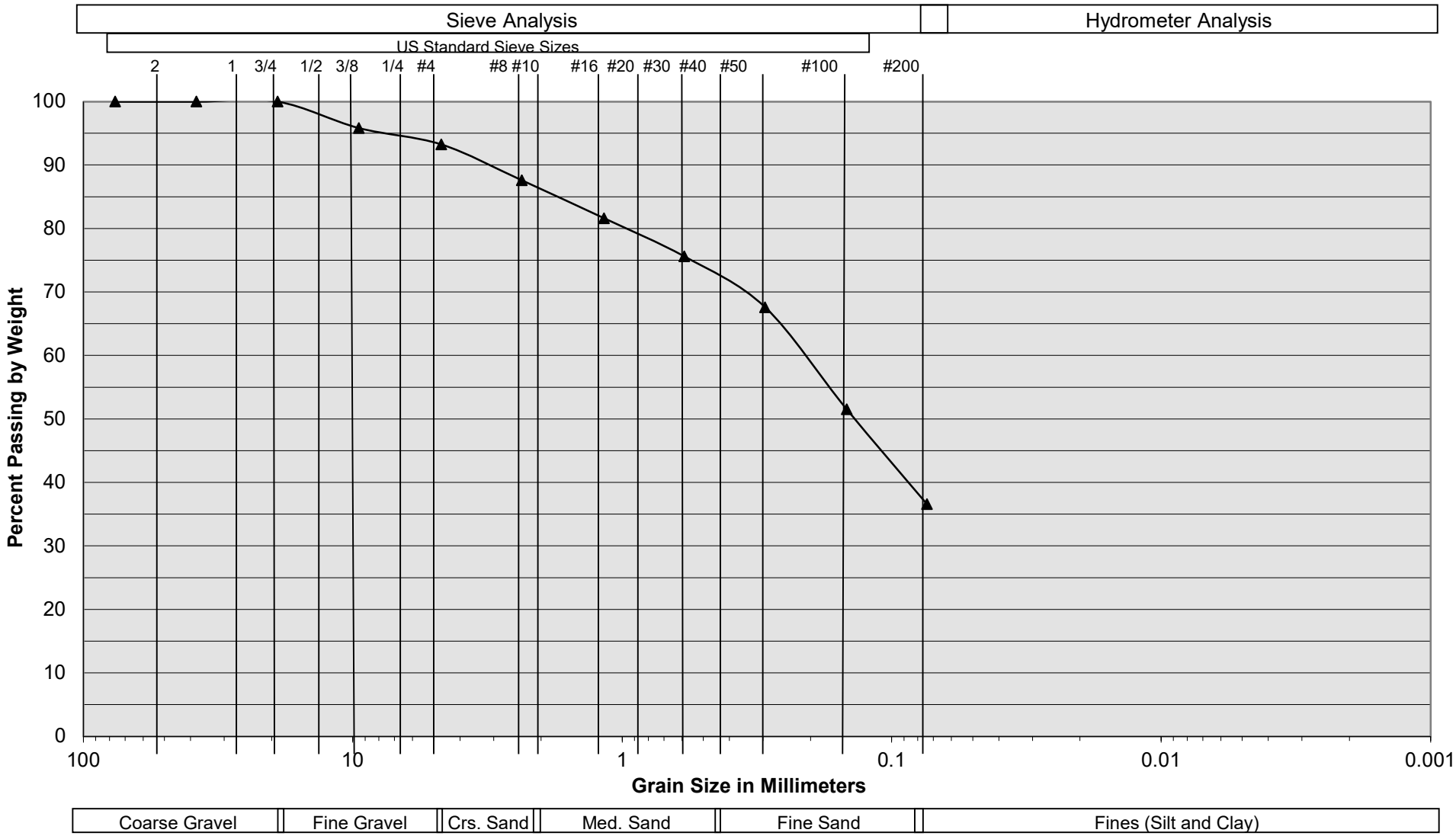


Sample Description	I-10 @ 33½'
Soil Classification	Brown fine to coarse Sand, trace fine Gravel, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 11

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

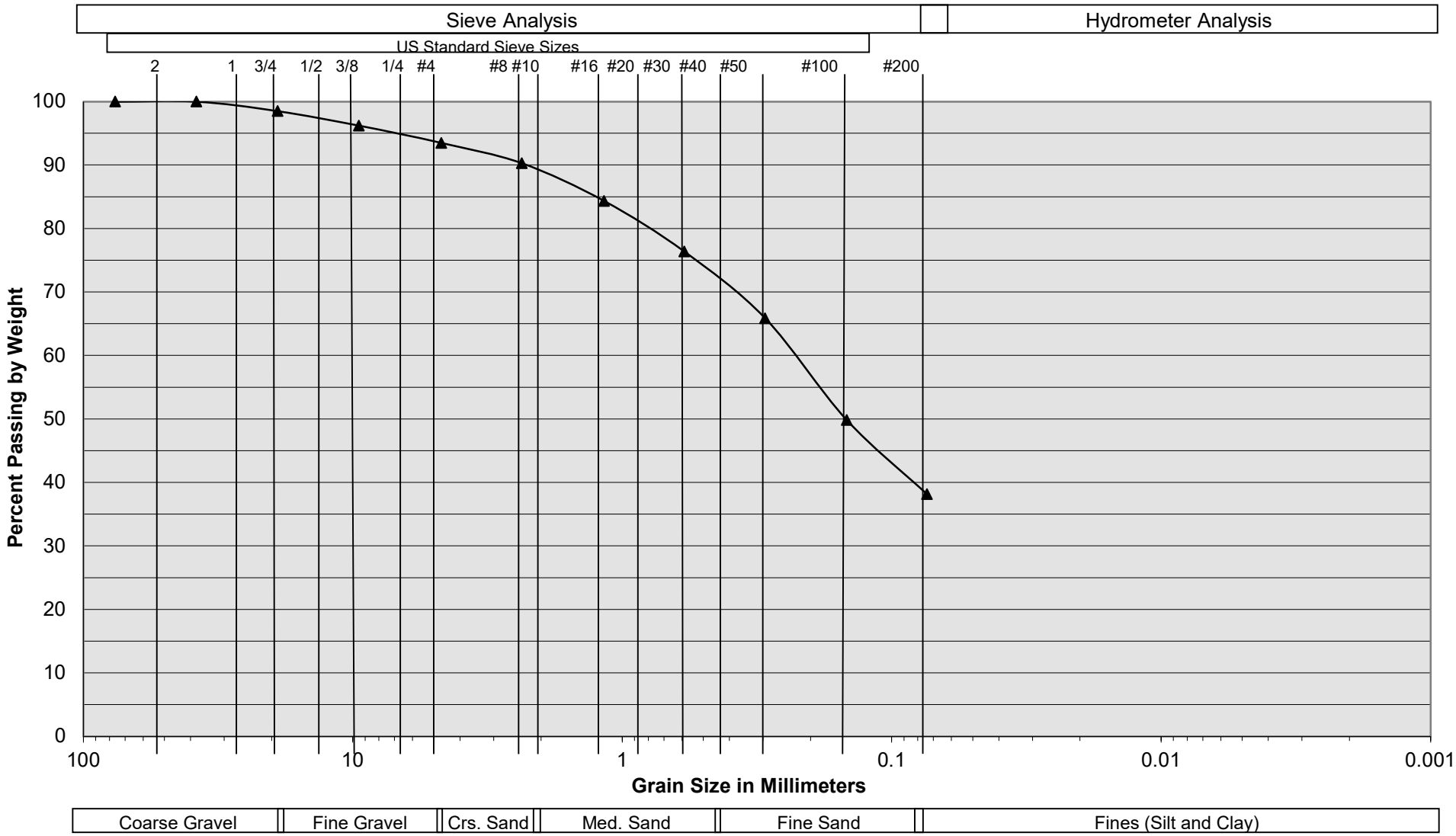


Sample Description	I-11 @ 8½'
Soil Classification	Brown Silty fine to medium Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 12

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

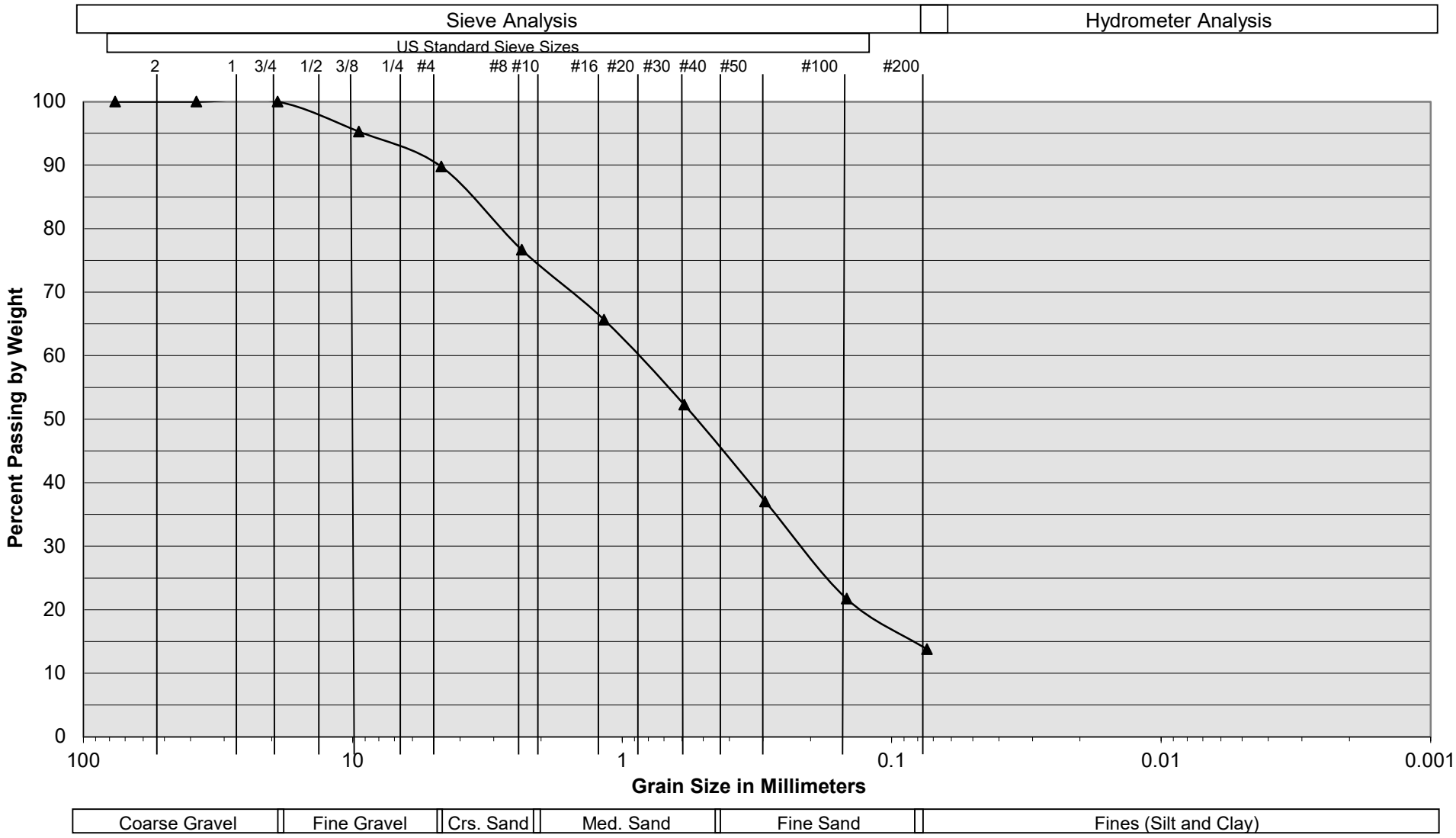


Sample Description	I-12 @12½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 13

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

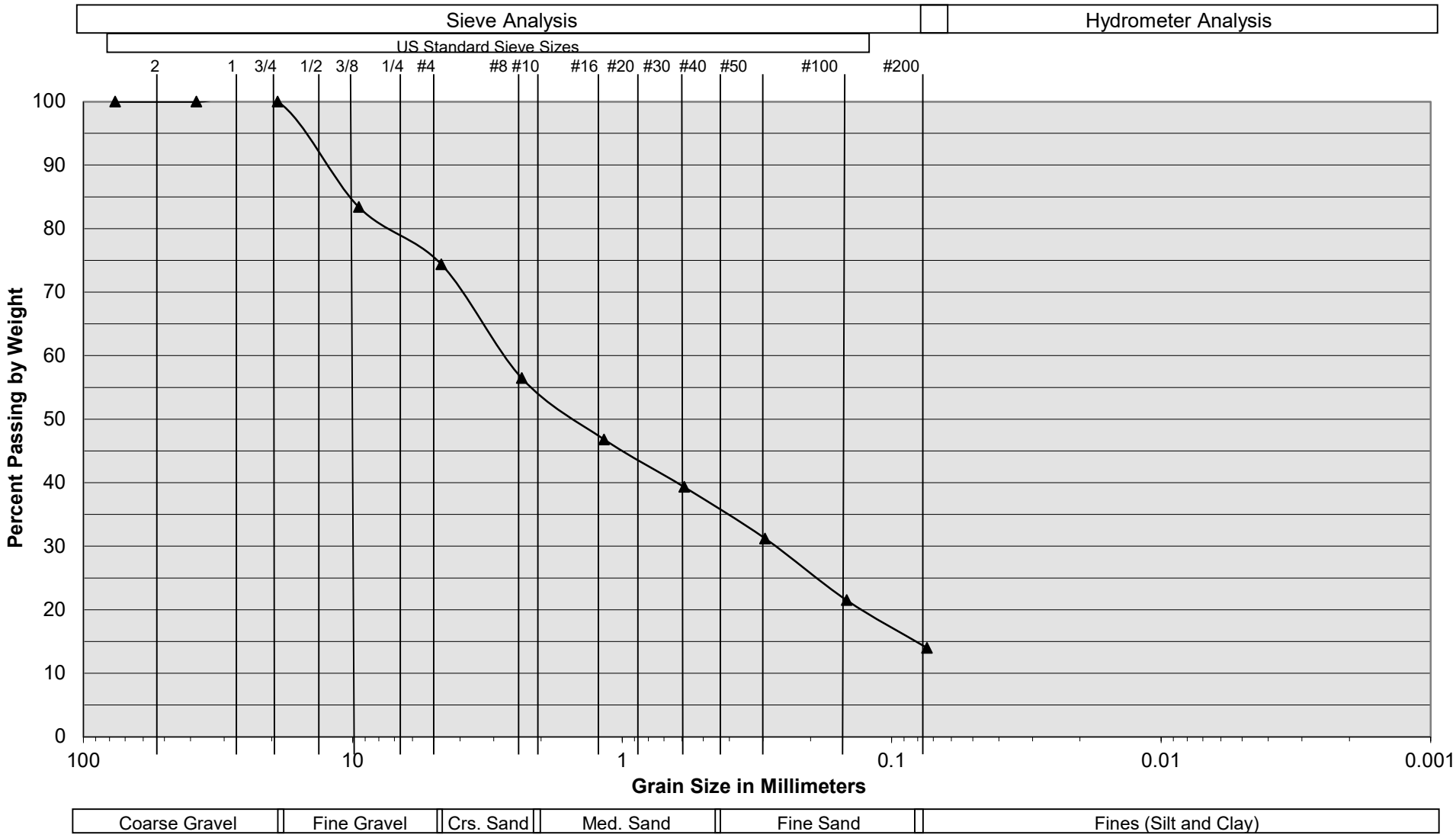


Sample Description	I-13 @ 26½'
Soil Classification	Brown fine to coarse Sand, little fine Gravel, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 14

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

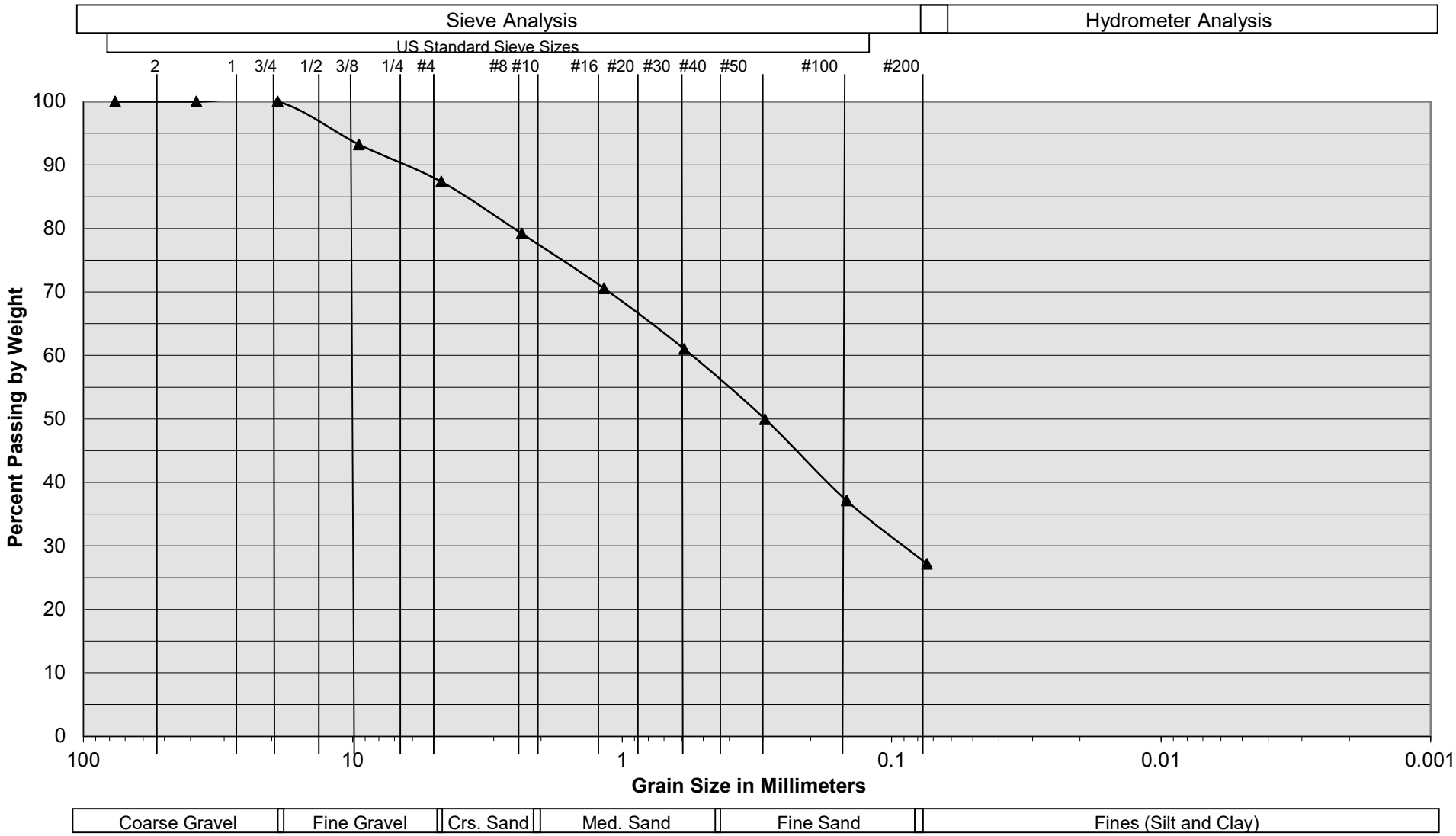


Sample Description	I-14 @ 14½'
Soil Classification	Gray Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 15

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-15 @ 25½'
Soil Classification	Red Brown Silty fine to coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 16

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

Sample Description	I-16 @ 41½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 17

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

GEOTECHNICAL INVESTIGATION
PROPOSED E-COMMERCE DEVELPOMENT

Cherry Avenue, West of Fabian Way
Beaumont, California
For
Exeter Property Group

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

August 12, 2021

Exeter Property Group
4602 East University Drive, Suite 185
Phoenix, Arizona 85034

Attention: Mr. Andrew Greybar
Senior Project Manager

Project No.: **21G133-1**

Subject: **Geotechnical Investigation**
Proposed E-Commerce Development
Cherry Valley Avenue, West of Fabian Lane
Beaumont, California

Mr. Greybar

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

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Staff Engineer

Daryl Kas, CEG 2467
Senior Geologist

PROFESSIONAL GEOLOGIST
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CERTIFIED ENGINEERING GEOLOGIST
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Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
ROBERT TRAZO
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GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (1) Addressee

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Plate 2: Geotechnical Map
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Plate 4: Recommended Depths of Overexcavation
B Boring and Trench Logs
C Laboratory Test Results
D Grading Guide Specifications
E Seismic Design Parameters

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Geotechnical Design Considerations.

- Portions of the western and southern areas of the subject site are located within mapped zones of moderate liquefaction hazard. However, based on the subsurface profile identified in this report, the proposed grading, and the available groundwater data, liquefaction is not considered a design concern for this project.
- Artificial fill soils were encountered at several of the boring and trench locations, extending to depths of 1½ to 12± feet. These soils are considered to consist of undocumented fill materials. One of the borings identified artificial fill soils, extending to a depth of 29½± feet. The deeper fill soils are located within a former drainage canyon which appears to have been filled-in to establish the currently existing site grades. The fill soils are underlain by native alluvium, extending at least to the maximum depth explored of 50± feet.
- The proposed buildings will require cuts of up to 45 feet and fills of up to 65 feet to achieve the new building pad elevations.
- Field and laboratory testing indicates that some of the younger alluvial soils are moderately compressible, especially when exposed to the loads that will be exerted by the relatively deep new fills.
- The alluvial soils located within the southwest draining canyons and the existing undocumented fill materials are not considered suitable for support of the proposed fills and structures.
- Remedial grading is recommended to consist of overexcavation of existing fill, and alluvial soils, due to collapse/consolidation potential. These soils should be replaced as compacted fill.

Site Preparation

- Initial site preparation should include stripping of any surficial vegetation. The surficial vegetation, trees, and any organic soils should be properly disposed of off-site.
- Remedial grading is recommended to be performed within the new building pad areas. The existing soils within the building pad areas should be overexcavated to a depth of 6 feet below proposed pad grade. All existing artificial fill materials should also be removed from the new building pad areas. The soils within the proposed foundation influence zones should be overexcavated to a depth of at least 6 feet below proposed foundation bearing grades.
- Additional remedial grading (10 to 30 feet below existing grade) should be performed in the proposed deep fill areas to remove compressible alluvial soils that could result in significant settlements if allowed to remain in place.
- The recommended areas and depths of overexcavation are illustrated on Plate 4 of this report.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.
- 3,000 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slabs

- Conventional Slab-on-Grade, 6 inches thick.
- Modulus of Subgrade Reaction: k = 100 psi/in.
- Reinforcement is not required for geotechnical conditions. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed slab loading.

Pavement Design Recommendations

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R=40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0 or less)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 21P157, dated February 11, 2021 and our Change Order No. 21G133-CO, dated July 14, 2021. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

Based on the grading plan prepared by Albert A. Webb Associates, the project will utilize new retaining walls ranging from 10 to 50± feet in height. These walls will be utilized in conjunction with new cut and fill slopes which will be required to establish the new site grades. It is recommended that an analysis be performed once grading and foundation plans become available to determine the stability of the proposed retaining wall and slope configurations. It may be necessary to perform an additional subsurface exploration in order to provide specific geotechnical design considerations for the new retaining wall systems.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located on the south side of Cherry Valley Boulevard, 1,500± feet west of the intersection of Cherry Valley Boulevard and Fabian Lane in Beaumont, California. The site is bounded to the north by Cherry Valley Boulevard, to the east by single-family residences (SFRs) and vacant lots, to the south by Brookside Avenue, to the southwest by the Redlands Freeway (Interstate 10) and to the west by vacant land. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several irregular to rectangular-shaped parcels which total 178.4± acres in size. The site is presently developed with three (3) single-family residences and several small abandoned buildings located in the northeastern area of the site. Remnants of shade structures including Portland cement concrete panels and sawed-off poles are present throughout the northeastern areas of the site. Several above-ground storage tanks are also present throughout the northeastern area of the site. One of the smaller abandoned structures possesses a below-grade room with what appears to be a turbine. The remaining areas of the site are presently vacant and undeveloped. Five (5) circular to oval-shaped leech ponds are located in the west-central area of the site. Two (2) additional leech ponds are located in the south-central area of the site. Ground surface cover consist of exposed soil and moderate to dense native grass and weed growth. Several large trees are located in the southern areas of the site. Limited areas of trash and debris are located throughout the site.

Detailed topographic information was obtained from the conceptual grading plan prepared by Albert A. Webb Associates (Webb). Based on the provided plan, the northeastern to northern two-thirds of the site slopes downward to the southwest at a gradient of 4± percent. The seven (7) circular leech ponds located in the west-central and south-central areas of the site are surrounded by a berm that is 5± feet higher than the surrounding topography. The northwestern area of the site possesses several east-west and southeast-northwest trending drainage courses. The drainage features possess gradual to steep side walls with elevation differences of up to 15± feet below the surrounding topography. To the south of the leech pits, the site slopes towards the south to southwest at a gradient of 10± percent. The topography descends by 50± feet in this area. Another significant east-west trending drainage is located at the base of the descending slope, located in the southern-most region of the site. The drainage possesses gradual to steep side walls with an elevation difference up 10± feet below the surrounding topography. A hill, located to the southeast of this drainage, is approximately 20 to 30 feet higher than the surrounding topography. The hill possesses slope gradients ranging from 14 to 40± percent. To the south of the hill, the site topography slopes gently to the west at a gradient of 3.5± percent, where it meets up with a tributary drainage to the previously mentioned bisecting drainage. The area to the southwest of the bisecting drainage slopes to the west a gradient of 2.5± percent. Another hill with a north-facing descending slope is located at the southwest corner of the site. The slope has a gradient of 20± percent. The maximum site elevation is 2581± feet mean sea level (msl), in the northeast corner of the site. The minimum site elevation is 2406± feet msl, located in drainage swale channel located in the southern-most region of the site.

3.2 Proposed Development

Based on the conceptual site plan prepared by Webb, the site will be developed with three (3) new E-Commerce buildings. Building 1 will be 985,860± ft^2 in size, located in the western area of the site. Building 2 will be 1,254,000± ft^2 in size, located in the east-central region of the site. Lastly, Building 3 will be 358,370± ft^2 in size, located in the north-central area of the site. A cross-dock configuration will be constructed on Building 1 and Building 2, along the east/west and north/south building walls, respectively. Dock-high doors will be constructed along a portion of the southern building wall of Building 3. The buildings will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete (PCC) pavements in the truck court, and areas of concrete flatwork and landscape planters. Several new fill and cut slopes will be constructed along all permitters, as well as within the site. The new fill slopes will range from 10 to 40± feet in height and will possess slope inclinations not to exceed 2h:1v (horizontal to vertical). New retaining walls will also be required to establish the new site grades. The new retaining walls will possess maximum retained heights ranging from 10 to 50± feet.

Detailed structural information has not been provided. We assume that the new buildings will be single-story structures of tilt-up concrete construction, typically supported on a conventional shallow foundation system with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 5 to 7 kips per linear foot, respectively.

No significant amounts of below-grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the assumed topography, cuts of 45± feet and fills of up to 65± feet are expected to be necessary to achieve the proposed site grades.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of forty-four (44) borings advanced to depths of 10 to 50± feet, and seven (7) trenches excavated to depths of 6½ to 10½± feet below the existing site grades. Four (4) of the borings were advanced to a depth of 50± feet, as a part of the liquefaction evaluation. All of the borings and trenches were logged during the drilling and excavation by members of our staff.

The borings were advanced with hollow-stem augers, by a truck-mounted drilling rig. The trenches were excavated using a backhoe with a 36-inch-wide bucket. Representative bulk and undisturbed soil samples were taken during drilling. Relatively undisturbed samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. Samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings (identified as Boring Nos. B-1 through B-44) and trenches (identified as Trench Nos. T-1 through T-7) are indicated on the Boring and Trench Location Plan, included as Plate 2 in Appendix A of this report. The Boring and Trench Logs, which illustrate the conditions encountered at the boring and trench locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Pavements

Portland Cement Concrete (PCC) was encountered at the ground surface of Boring Nos. B-14, B-19 and B-25. The pavement sections consist of 2± inches of PCC. Boring Nos. B-19 and B-25 encountered 2± inches of slurry beneath the existing PCC pavements.

Artificial Fill

Artificial fill soils were encountered at the ground surface of several boring locations and one trench location, extending to depths of 1½ to 29½± feet below ground surface. The fill soils generally consist of loose to medium dense silty fine sand and clayey fine to medium sand. Occasional layers of medium dense silty fine to coarse sand and soft to stiff fine sandy clays were encountered. Varying amounts of fine root fibers were encountered in the silty fine sand layers. The fill soil possesses a disturbed and mottled appearance, resulting in their classification as

artificial fill. The deepest fill soils were encountered within Boring No. B-43, in the area of a former drainage channel. At this locations, the artificial fill soils included rubber and concrete debris.

Alluvium

Native alluvium was encountered beneath the artificial fill soils or at the ground surface at all of the boring locations. The alluvial soils extend to depths of 1½ to 12± feet below ground surface in the northern areas of the site, and 25 to 50± feet below ground surface in the southern areas of the site. The alluvial soils generally consist of loose to very dense silty fine sands and silty fine to medium sands. These soils possess fine root fibers near the ground surface and occasional porosity. Occasional layers of medium dense silty fine sand to fine sandy silt, fine to coarse sand, clayey silt, fine sandy silt and medium stiff silty clay were encountered in the deeper borings located in the southern areas.

Older Alluvium

Older alluvial deposits were encountered at the ground surface, or beneath the artificial fill and alluvium at all of the boring locations, extending to at least the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of medium dense to very dense silty fine sands, silty fine to medium sands, silty fine to coarse sands and silty fine sands to fine sandy silts. Several layers of medium dense to dense clayey fine sands, clayey fine to coarse sands and very stiff to hard fine sandy clays were encountered. Occasional layers of medium dense to dense fine sandy silts, fine to coarse sands and stiff fine to medium sandy clay were encountered.

Groundwater

Groundwater was not encountered at any of the boring or trench locations. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet below existing site grades at the time of the subsurface investigation.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level and recent groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring wells in this database are located in the northeast corner of the site. Water level readings within one of these monitoring wells indicates a historic high groundwater level of 317± feet below the ground surface in September 1990. Water level readings within another of these monitoring wells indicates a recent high groundwater level of 412± feet below the ground surface in December 2020.

4.3 Regional Geology

The subject site is located within the Peninsular Ranges province. The Peninsular Ranges province consists of several northwesterly-trending ranges in the southwestern California. The province is truncated to the north by the east-west trending Transverse Ranges. Prior to the mid-Mesozoic, the region was covered by seas and thick marine sedimentary and volcanic sequences were deposited. The bedrock geology that dominates the elevated areas of the Peninsular Ranges

consists of high-grade metamorphic rocks intruded by Mesozoic plutons. During the Cretaceous, extensive mountain building occurred during the emplacement of the southern California batholith. The Peninsular Ranges have been significantly disrupted by Tertiary and Quaternary strike-slip faulting along the Elsinore and San Jacinto faults. This tectonic activity has resulted in the present terrain.

4.4 Geologic Conditions

Regional geologic conditions were obtained from the Geologic Map of the El Casco 7.5' Quadrangle, Riverside County, California, by Thomas W. Dibblee, Jr., 2003 (Plate 3a) and Geologic and Geophysical Map of the El Casco 7.5' Quadrangle, Riverside County, California, with Accompanying Geologic-Map Database, Geologic Map by Jonathan C. Matti and Pamela M. Cossette, Digital Database by Douglas M. Hirshchberg, Jordan G. Matti and Pamela M. Cossette, 2015 (Plate 3b). Plate 3a indicates that the site is underlain by alluvial deposits (Map Symbol Qa) in the southwestern area of the site and older alluvium (Map Symbol Qoa) in the northeastern area of the site. The alluvium is described as alluvial sand, gravel and clay, covered by residual soil. The older alluvium is described as light reddish brown alluvial gravel and sand, of granitic and gneissic detritus of San Bernardino Mountains in north areas, and brownish gray in south areas. Plate 3b indicates that the site is underlain by young axial-valley deposits and very young wash deposits (Map Symbols Qvywm and Qya5) in southwestern area of the site and old alluvial-fan deposits and very old alluvial-fan deposits (Map Symbols Qof2 and Qvof3) in the northwestern area of the site. The very young wash deposits are described as very slightly to slightly consolidated sandy and gravelly sediment in active channels. The remaining units were not described in detail.

Based on the materials encountered at the boring locations, the northeastern portion of the site is underlain by older alluvium and the southwestern portion of the site is underlain by alluvium. It is in our opinion that the material encountered throughout the site is consistent with the mapped geologic units.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. The field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring and Trench Logs.

Consolidation

Selected soil samples were tested to determine their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-42 in Appendix C of this report.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	Expansion Index	Expansive Potential
B-20 @ 0 to 5 feet	45	Low
B-22 @ 0 to 5 feet	28	Low

Maximum Dry Density and Optimum Moisture Content

Representative bulk samples have been tested for their maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557 and are presented on Plates C-43 through C-45 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Direct Shear

Direct shear testing was performed on one representative sample to determine its shear strength parameters. The test was performed in accordance with ASTM D-3080. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each of the three samples are then loaded with different normal loads and the resulting shear strength is determined for that particular normal load. The shearing of the samples is performed at a rate slow enough to permit the dissipation of excess pore water pressure. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The results of the direct shear test are presented on Plate C-46 in Appendix C of this report

Soluble Sulfates

Representative samples of the near-surface soil were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
B-4 @ 0 to 5 feet	0.001	Not Applicable (S0)
B-20 @ 0 to 5 feet	0.002	Not Applicable (S0)
B-25 @ 0 to 5 feet	0.002	Not Applicable (S0)

Corrosivity Testing

Representative bulk samples of the near-surface soils were submitted to a subcontracted corrosion engineering laboratory to identify potentially corrosive characteristics with respect to common construction materials. The corrosivity testing included a determination of the electrical resistivity, pH, and chloride and nitrate concentrations of the soils, as well as other tests. The results of some of these tests are presented below.

Sample Identification	Saturated Resistivity (ohm-cm)	pH	Chlorides (mg/kg)	Nitrates (mg/kg)
B-4 @ 0 to 5 feet	4,800	7.3	5.5	4.3
B-20 @ 0 to 5 feet	4,800	7.5	7.7	17
B-25 @ 0 to 5 feet	5,200	7.6	5.6	4.1

R-value Testing

R-value testing was conducted on one (1) representative soil sample recovered from the site. The R-(resistance) value was determined for representative soils samples in accordance with CA Test Method 301. This test provides a measure of the pavement support characteristics of the soils, and is used in the pavement thickness design procedure. The results of the R-value testing are as follows:

Sample Identification	**Soil Classification**	**R-Value**
B-4 @ 0 to 5 feet	Brown Silty Sand	60

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site-specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. In addition, our review of the Riverside County RCIT GIS website that the site is not located within a Riverside County fault zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

Based on standards in place at the time of this report, the proposed development is expected to be designed in accordance with the requirements of the 2019 edition of the California Building Code (CBC), which was adopted on January 1, 2020. The 2019 California Building Code (CBC) provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural

system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2019 CBC Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool, a web-based software application available at the website www.seismicmaps.org. This software application calculates seismic design parameters in accordance with several building code reference documents, including ASCE 7-16, upon which the 2019 CBC is based. The application utilizes a database of risk-targeted maximum considered earthquake (MCE_R) site accelerations at 0.01-degree intervals for each of the code documents. The table below was created using data obtained from the application. The output generated from this program is included as Plate E-1 in Appendix E of this report.

The 2019 CBC requires that a site-specific ground motion study be performed in accordance with Section 11.4.8 of ASCE 7-16 for Site Class D sites with a mapped S_1 value greater than 0.2. However, Section 11.4.8 of ASCE 7-16 also indicates an exception to the requirement for a site-specific ground motion hazard analysis for certain structures on Site Class D sites. The commentary for Section 11 of ASCE 7-16 (Page 534 of Section C11 of ASCE 7-16) indicates that "In general, this exception effectively limits the requirements for site-specific hazard analysis to very tall and or flexible structures at Site Class D sites." **Based on our understanding of the proposed development, the seismic design parameters presented below were calculated assuming that the exception in Section 11.4.8 applies to the proposed structure at this site. However, the structural engineer should verify that this exception is applicable to the proposed structure.** Based on the exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2019 CBC.

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	2.091
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.718
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	2.509
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.221
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.673
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.814

It should be noted that the site coefficient F_v and the parameters S_{M1} and S_{D1} were not included in the SEAOC/OSHPD Seismic Design Maps Tool output for the 2019 CBC. We calculated these parameters-based on Table 1613.2.3(2) in Section 16.4.4 of the 2019 CBC using the value of S_1 obtained from the Seismic Design Maps Tool, assuming that a site-specific ground motion hazards analysis is not required for the proposed building at this site.

Liquefaction

Liquefaction is the loss of the strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and grain size characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Clayey (cohesive) soils or soils which possess clay particles (d<0.005mm) in excess of 20 percent (Seed and Idriss, 1982) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The Riverside County GIS website indicates that an isolated portions of the western and southern-most regions of the site are located within a zone of moderate liquefaction susceptibility. However, based on underlying soil conditions (which include moderate strength older alluvium), the proposed grading which includes fills of up to 65± feet, and the groundwater research performed for this site which indicates that the long-term groundwater table is considered to exist at a depth in excess of 50± feet, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

The ground surface of the subject site is generally underlain by younger native alluvial soils, which are underlain at depth by moderate strength older alluvium. Some areas of the site are covered with a layer of undocumented fill soils extending to depths of 1½ to 12± feet. These soils are considered to consist of undocumented fill materials. One of the borings identified artificial fill soils, extending to a depth of 29½± feet. These deeper fill soils are located within a former drainage canyon which is expected to have been filled-in to establish the currently existing site grades. These undocumented fill soils are not suitable to support the foundations loads of the new structures, and should be removed in their entirety.

Based on the grading plan prepared by Webb, the proposed grading will require deep fill soils ranging from 15 to 65± feet in order to establish the new site grades in the western region of the site. The western region of the site includes several south-west drainage canyons which will require removal of the moderately compressible younger native alluvium, extending between the depths of 12 to 22± feet below the existing site grades. The existing older alluvium at greater depths possess moderate strengths and are expected to be encountered following removal of the younger alluvium. In addition, the deep cuts located in the eastern region of the site are expected to encounter the moderate strength alluvium. Some of the buildings, will be underlain by older alluvium on one side, and deep fill soils on the other side. This condition increases the possibility of excessive differential settlements. Remedial grading will be necessary to mitigate this condition.

Settlement

The recommended remedial grading will remove all of the existing undocumented fill soils and most of the near-surface compressible/collapsible younger alluvial soils, and replace these materials as compacted fill soils. The underlying moderate strength older alluvium which will remain in-place are note expected to be susceptible to settlement from the foundations of the proposed structures. Provided that the recommended remedial grading is completed, the post-construction static settlements of the proposed structures are expected to be within tolerable limits.

Deep Fill Areas

Based on the conceptual grading plan prepared by Webb, the proposed grading will include fills of up to 65± feet within the building pads. In order to reduce the settlement potential of the newly placed fill soils to acceptable levels and avoid excessive differential settlements, fill soils placed at depths greater than 20 feet below proposed pad grade within the building pads should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density.

Settlement of Deep Fill Soils

Subsequent to the proposed grading, the proposed development areas will be underlain by engineered fill soils (design plus remedial), extending to depths of 50 to 85± feet. The primary settlement associated with these fill soils is expected to occur relatively quickly due to the generally granular nature of the on-site soils. Minor amounts of additional settlement may occur due to secondary consolidation effects. The extent of secondary consolidation is difficult to assess precisely, and will be reduced by the proposed mitigation measures recommended herein, but may be in the range of 0.1 to 0.3 percent of the fill thickness. Based on the differential fill thickness that will exist across the building footprints, the structural design will need to consider the distortions that could be caused by the secondary consolidation of the fill soils. Provided that the grading and foundation design recommendations presented in this report are implemented, these settlements are expected to be within the structural tolerances of the proposed buildings.

This report includes recommendations to install settlement monuments within the deep fill areas of Buildings 1 and 2. These monuments will be used to verify that primary consolidation of the remaining alluvial soils is complete, prior to initiating construction of the new buildings.

Cut/Fill Transitions

The conceptual grading plan indicates that several cut/fill transitions will be created within the proposed building pads by the proposed grading. The differing support conditions of the native soils versus the newly compacted fill soils may result in excessive differential settlements if not mitigated. Remedial grading will be required to eliminate the cut/fill transitions which will occur at building pad and foundation bearing grade as well as to reduce the inclinations of the underlying cut/fill contacts.

Expansion

The near-surface soils consist of silty sands and sandy silts with no appreciable clay content. However, some isolated strata of sandy clays and clayey sands were encountered. Expansion

Index (EI) values at the site range from 28 to 45. Mass grading of the site is expected to blend the on-site soils, resulting in a very low to low expansive potential. We recommend that additional expansion index testing be performed at the time of rough grading in order to confirm the expansion potential of the near-surface soils at this site.

Slope Stability

The grading plan indicates that the new slopes (both cut and fill) will occur at inclinations of 2h:1v or flatter. Newly constructed fill slopes, comprised of properly compacted engineered fill, at inclinations of 2h:1v will possess adequate gross and surficial stability.

Cut slopes excavated within the existing granular alluvial soils may be subject to surficial instability due to the lack of cohesion within these materials. Therefore, stability fills may be required within these areas. This condition may affect the proposed cut slopes at the site. The need for stability fills should be determined by SCG as part of the future detailed grading plan review.

Based on the grading plan prepared by Webb, new retaining walls ranging from 10 to 50± feet in height will be utilized in conjunction with new cut and fill slopes at the site. An additional review of the proposed site configuration may be required once detailed grading and foundation plans become available in order to determine the stability of the new retaining wall systems. An additional subsurface exploration may also be required as part of the analysis of the new retaining wall structures.

Soluble Sulfates

The result of the soluble sulfate testing indicates that the selected samples of the on-site soils possess concentrations of sulfates that correspond to Class S0 with respect to the American Concrete Institute (ACI) Publication 318-05 Building Code Requirements for Structural Concrete and Commentary, Section 4.3. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building areas.

Corrosion Potential

The results of laboratory testing indicate that the tested samples of the on-site soils possess saturated resistivity values of 4,800 to 5,200 ohm-cm, and pH values of 7.3 to 7.6. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Sulfides, and redox potential are factors that are also used in the evaluation procedure. We have evaluated the corrosivity characteristics of the on-site soils using resistivity, pH, and moisture content. Based on these factors, and utilizing the DIPRA procedure, the on-site soils are not considered to be corrosive to ductile iron pipe.

Relatively low concentrations (5.5 to 7.7 mg/kg) of chlorides were detected in the samples submitted for corrosivity testing. In general, soils possessing chloride concentrations in excess of 500 parts per million (ppm) are considered to be corrosive with respect to steel reinforcement

within reinforced concrete. Based on the lack of any significant chlorides in the tested samples, the site is considered to have a C1 chloride exposure in accordance with the American Concrete Institute (ACI) Publication 318 Building Code Requirements for Structural Concrete and Commentary. Therefore, a specialized concrete mix design for reinforced concrete for protection against chloride exposure is not considered warranted.

Nitrates present in soil can be corrosive to copper tubing at concentrations greater than 50 mg/kg. The tested samples possess nitrate concentrations ranging from 4.1 to 17 mg/kg. Based on this test result, the on-site soils are not considered to be corrosive to copper pipe.

It should be noted that SCG does not practice in the area of corrosion engineering. Therefore, the client may also wish to contact a corrosion engineer to provide a more thorough evaluation of these conditions.

Shrinkage/Subsidence

Removal and recompaction of the near-surface fill and younger alluvial soils (located in the southwestern region of the site) is estimated to result in an average shrinkage of 6 to 14 percent. This assumes average compaction of 92 percent within the new engineered fill soils. Removal and recompaction of the existing older alluvial soils located in the south and west regions of the site is estimated to result in an average shrinkage of 0 to 8 percent. Engineering fills more than 20 feet below finished grade, where 95 percent compaction is recommended, should be assumed to result in shrinkage of 13 to 20 percent. It should be noted that these shrinkage estimates are based on dry density testing performed on small-diameter samples taken at the boring locations. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test pits where in-place densities are determined using in-situ testing methods instead of laboratory density testing on small-diameter samples. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

These estimates are based on previous experience with nearby projects and the subsurface conditions encountered at the boring and trench locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Foundation and Grading Plan Review

Based on our review of the preliminary grading plans prepared by Webb, new retaining walls with maximum heights of up to 50± feet will be constructed as part of the new development. It is recommended that additional review of the global stability of the proposed site grading be performed by SCG once more detailed rough grading plans become available. An additional subsurface exploration may be required to evaluate the geotechnical design considerations of the retaining wall and new slope configurations.

It is recommended that we be provided with copies of all future foundation and grading plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring and trench locations, and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site stripping should include removal of any surficial vegetation and topsoil. This should include any weeds, grasses, shrubs, and trees. Removal of trees should also include any associated root masses. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered. The scattered trash and debris that is present on the site should be collected and disposed of off-site.

Demolition of minor existing improvements such as buildings, retaining walls, concrete slabs and foundations will be required. Demolition debris should be disposed of off-site. Concrete may also be crushed to a maximum 2-inch particle size and incorporated into new structural fills.

Treatment of Existing Soils: Building Pads

Remedial grading should be performed within the proposed development area in order to remove all of the existing undocumented fill soils. Based on conditions encountered at the boring and trench locations, the undocumented fill soils extend to depths of up to 12± feet. At one of the boring locations, the existing undocumented fill soils extend to a depth of 29½± feet. It is possible that undocumented fill soils may extend to greater depths in unexplored areas of the site. Additional remedial grading should be performed in the deep proposed fill areas (the west and southwest areas of Buildings 1 and 2) to remove the compressible younger alluvial soils that could result in significant settlements if allowed to remain in place. These recommended overexcavations generally range from 12 to 22± feet below existing grade.

Within the influence zones of the new foundations, the overexcavation should extend to a depth of at least 6 feet below proposed foundation bearing grades. The overexcavation area should extend at least 5 feet beyond the building and foundation perimeters, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Additional remedial grading is also recommended to mitigate the native/fill transitions that will be created by the proposed grading. There for the proposed buildings within the cut portion of the site are recommended to be overexcavated to a depth of 10 feet below proposed pad grade and 6 feet below footing grade.

The recommended areas and depths of overexcavation are illustrated on Plate 4 of this report.

To mitigate the relatively steep inclination of the underlying cut/fill contact in the areas of the southwest draining canyons, benching of the sidewalls will be required during fill placement. The horizontal extent of the benching should be sufficient to reduce the inclination of the native fill contact to 3h:1v or flatter. This additional benching is not required outside the areas of the proposed building foundation influence zones.

Following completion of the overexcavations, the subgrade should be evaluated by the geotechnical engineer to verify its suitability to serve as the structural fill subgrade. Some localized areas of deeper excavation may be required if loose, porous, or low-density materials are encountered at the base of the overexcavation. Materials suitable to serve as the structural fill subgrade within the building area should consist of moderate strength alluvial soils which possess an in-situ density equal to at least 85 percent of the ASTM D-1557 maximum dry density. These materials should be moisture conditioned to 0 to 4 percent above optimum moisture content prior to placement of any new fill soils. The previously excavated soils may then be replaced as compacted structural fill.

Deep Fill Areas

In order to reduce the settlement potential of the newly placed fill soils to acceptable levels and avoid excessive differential settlements, fill soils placed at depths greater than 20 feet below proposed building pad grades should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density.

Treatment of Existing Soils: Cut and Fill Slopes

New cut and fill slopes will be constructed within and around the perimeter of the project. All slopes should be at an inclination of 2h:1v or flatter. A keyway should be excavated at the toe of new fill slopes which are not located in fill areas. The keyway should be at least 15 feet wide and 3 feet deep. The recommended width of the keyway is based on 1.5 times the width of typical grading equipment. If smaller equipment is utilized, a smaller keyway may be suitable, at the discretion of the geotechnical engineer. The base of the keyway should slope at least 1 foot downward into the slope. Following completion of the keyway cut, the subgrade soils should be evaluated by the geotechnical engineer to verify that the keyway is founded into competent materials. The resulting subgrade soils should then be scarified to a depth of 10 to 12 inches, moisture conditioned to 0 to 4 percent above optimum moisture content and recompacted. During construction of the new fill slopes, any existing slopes should be benched in accordance with the detail presented on Plate D-4. Benches less than 4 feet in height may be used at the discretion of the geotechnical engineer.

Stability fills for cut slopes will provide a more uniform appearance and allow landscaping on the slope. Should a stability fill for cut slope be necessary, the recommendations for the stability fill will be the same as the recommendations for the fill slopes, mentioned above.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining walls and site walls should be overexcavated to a depth of 3 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. Any undocumented fill soils or disturbed native alluvium within any of these foundation areas should be removed in their

entirety. Retaining wall footings may also be supported directly within bedrock materials, with no overexcavation required. The overexcavation areas should extend at least 5 feet beyond the foundation perimeters, and to an extent equal to the depth of fill below the new foundations. Any erection pads for tilt-up concrete walls are considered to be part of the foundation system. Therefore, these overexcavation recommendations are applicable to erection pads. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning to within 0 to 4 percent above the optimum moisture content, and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

If the full lateral recommended remedial grading cannot be completed for the proposed retaining walls and site walls located along property lines, the foundations for those walls should be designed using a reduced allowable bearing pressure. Furthermore, the contractor should take necessary precautions to protect the adjacent structures during rough grading. Specialized grading techniques, such as A-B-C slot cuts, will likely be required during remedial grading. The geotechnical engineer of record should be contacted if additional recommendations, such as shoring design recommendations, are required during grading.

Treatment of Existing Soils: Flatwork, Parking and Drive Areas

Based on economic considerations, overexcavation of the existing near-surface existing soils in the new flatwork, parking and drive areas is not considered warranted, with the exception of areas where lower strength or unstable soils are identified by the geotechnical engineer during grading. Subgrade preparation in the new flatwork, parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations.

The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. Any such materials should be removed to a level of firm and unyielding soil. The exposed subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 0 to 4 percent above the optimum moisture content, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength surficial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed flatwork, parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within these areas. The grading recommendations presented above do not mitigate the extent of undocumented fill or compressible/collapsible native alluvium in the flatwork, parking and drive areas. As such, some settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the flatwork, parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 0 to 4 percent of the optimum moisture content, and compacted.

- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the current CBC and the grading code of the city of Beaumont.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density, unless noted otherwise. Fill soils placed at depths greater than 20 feet below proposed rough grade should be compacted to at least 95 percent of the ASTM d-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low to non-expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the city of Beaumont. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches. Any soils used to backfill voids around subsurface utility structures, such as manholes or vaults, should be placed as compacted structural fill. If it is not practical to place compacted fill in these areas, then such void spaces may be backfilled with lean concrete slurry. Uncompacted pea gravel or sand is not recommended for backfilling these voids since these materials have a potential to settle and thereby cause distress of pavements placed around these subterranean structures.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of silty sands and clayey sands. These materials will be subject to caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, temporary excavation slopes should be made no steeper than 2h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate

moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

The static groundwater table is considered to exist at a depth greater than 50± feet or more below the existing grades. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

Slopes

Cut slopes within the native alluvium, and manufactured fill slopes will be prone to erosion. Provisions for surface drainage, terrace drains, slope planting and other measures in accordance with CBC requirements should be provided to improve long-term protection of the new slopes. These measures may include installation and maintenance of Hydro seed, polymers or other erosion control measures to provide slope protection until healthy plant grown is established.

Subdrains

Subdrains may be required at the site, particularly in the canyon/drainage areas where deep removals will be required. Specific subdrain recommendations can be provided based on a review of the final development plans, and based on conditions encountered during grading.

Settlement Monitoring

Based upon our understanding of proposed grading, fills on the order of about 80± feet deep (design plus remedial grading will be required. Engineered fills deeper than 20 feet should incorporate a minimum relative compaction of 95 percent, and a moisture content of at least two percentage points above optimum moisture content. A settlement monitoring program should be implemented, consisting of the surveying of surface monuments to monitor settlement of alluvial soils left in-place and/or proposed fills deeper than 30 feet (design plus remedial grading). Survey monument readings for both deep fill areas and for fill over compressible natural ground (Qal) should be conducted following the completion of fill placement. Survey monument locations should be selected by the geotechnical consultant. Survey readings should be taken weekly for the first month and on a weekly basis thereafter until vertical movement of the fill mass achieve 90 percent of primary compression, begin secondary compression or the estimated remaining settlement is less than one inch. Construction of proposed structures should not commence until approved by the geotechnical consultant based on the results of the settlement monitoring. The survey bench marks used for the monitoring should be confirmed with the geotechnical consultant prior to initial readings being performed.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pads will be underlain by newly placed structural fill soils, extending to a depth of at least 6 feet below foundation bearing grade, which are underlain by native alluvial soils. Based on this subsurface profile, the proposed structures may be supported on shallow foundations.

Conventional Spread Footing Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 3,000 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom), due to the differential fill depths.
- Minimum foundation embedment: 12 inches into newly placed structural fill soils, and at least 24 inches below adjacent exterior grade.
- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressure presented above may be increased by one-third when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill or suitable native alluvium (where reduced bearing pressures are utilized), with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 0 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 60-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch (1/500 deflection ratio).

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 2,500 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floors of the proposed structures may be constructed as a conventional slabs-on-grade supported on newly placed structural fill, which is underlain by moderate strength alluvium. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of Subgrade Reaction: k = 100 psi/in.

- Minimum slab reinforcement: Reinforcement is not required for geotechnical conditions. However, slab reinforcement may be required for structural design considerations. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading, and the settlement estimates provided previously.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire slab area where such moisture sensitive floor coverings are expected. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as 15 mil Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 0 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

- The floor slabs should be structurally connected to the foundations as detailed by the structural engineer.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

The grading plan prepared by Webb indicates that the site will utilize several retaining walls along the perimeters of the site. Retaining walls are also expected within the truck dock areas of the proposed buildings. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the trench and boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. These near-surface soils generally consist of sands and silty sands and occasional clayey sands. These materials are expected to possess friction angles of at least 30 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		Soil Type
		On-Site Silty Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		132 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	44 lbs/ft^3
	At-Rest Condition (level backfill)	66 lbs/ft^3
	Active Condition (2h:1v backfill)	71 lbs/ft^3

The walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2019 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. The recommended seismic pressure distribution is triangular in shape, assumed to occur at the top of the wall, decreasing to 0 at the base of the wall. For a level backfill condition behind the top of the wall, the seismic lateral earth pressure is 44H lbs/ft^2, where H is the overall height of the wall. Where the ground surface above the wall consists of a 2h:1v sloping condition, the seismic lateral earth pressure is 71H lbs/ft^2. The seismic pressure distribution is based on the Mononobe-Okabe equation, utilizing the PGA_M ground acceleration of 1.024g. The 2019 CBC does not provide definitive guidance on determination of the design acceleration to be used in generating the seismic lateral earth pressure. In accordance with standard geotechnical practice, we have calculated the design acceleration as $^2/_3$ of the PGA_M. However, for combinations of high ground motion and steep slopes above the wall, the Mononobe-Okabe equation gives unrealistic high estimates of active earth pressures. Therefore, the seismic earth pressure for the sloping condition presented above was calculated using a design acceleration equal to 50% of the PGA_M.

Retaining Wall Foundation Design

The retaining wall foundations should be underlain by at least 3 feet of newly placed structural fill. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site sands and silty sands may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a minimum 1-foot thick layer of free-draining granular material (less than 5 percent passing the No. 200 sieve) be placed against the face of the retaining walls. This material should extend from the top of the retaining wall footing to within 1 foot of the ground surface on the back side of the retaining wall. This material should be approved by the geotechnical engineer. In lieu of the 1-foot thick layer of free-draining material, a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls, may be used. If the layer of free-draining material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The layer of free draining granular material should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557-91). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 20-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The near-surface soils generally consist of silty sands and clayey sands. Based on their classification, these materials are expected to possess good pavement support characteristics. The results of the R-value testing indicate that a sample of these soils possesses an R-value of 60. In order to allow for areas of lower strength soils, the subsequent pavement design is based upon an assumed R-value of 40. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering-controlled conditions. It is recommended that R-value testing be performed after completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R=40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0 or less)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. Any reinforcement within the PCC pavements should be determined by the project structural engineer. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

7.0 GENERAL COMMENTS

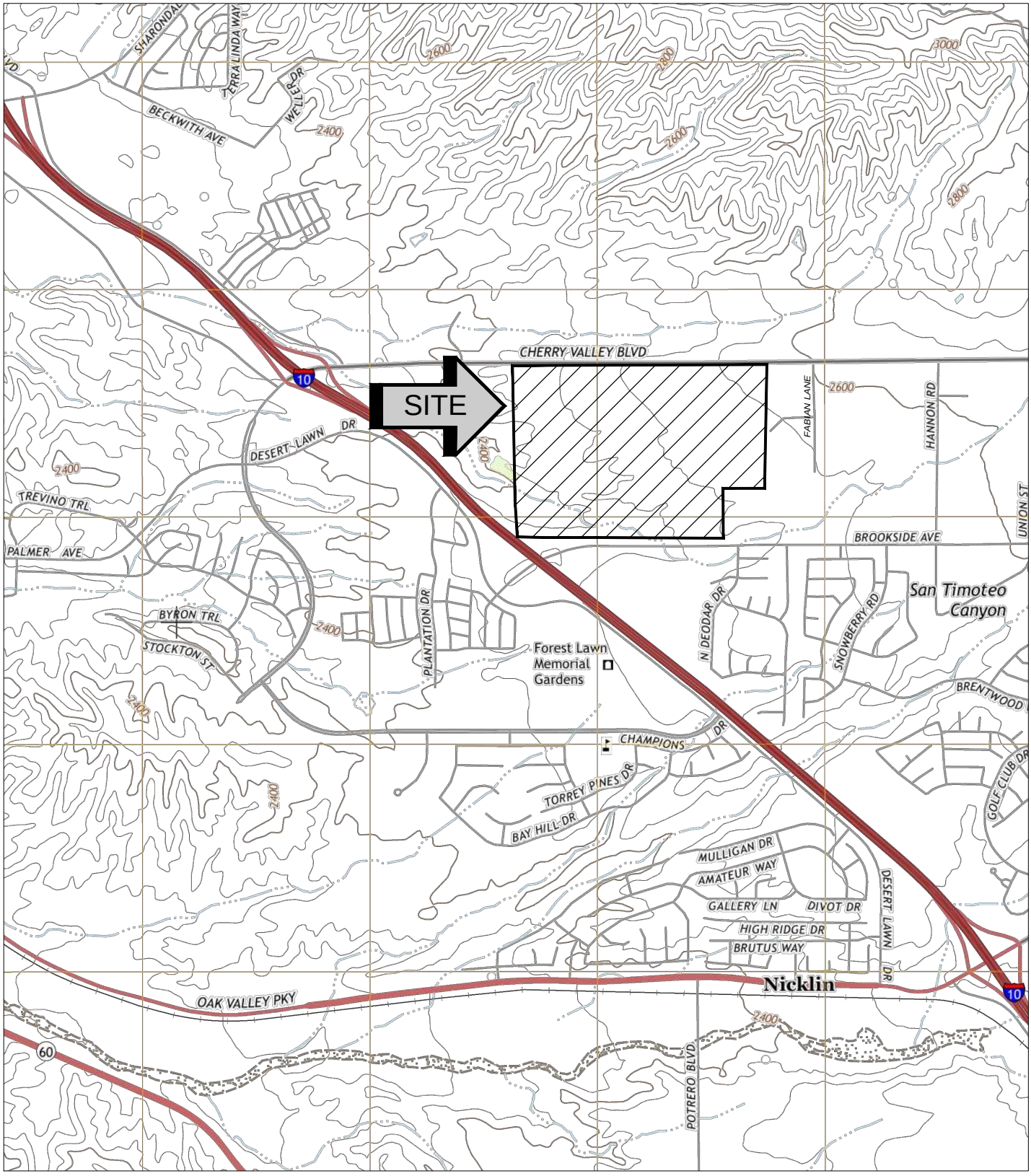
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: USGS TOPOGRAPHIC MAP OF THE EL CASCO QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2015.

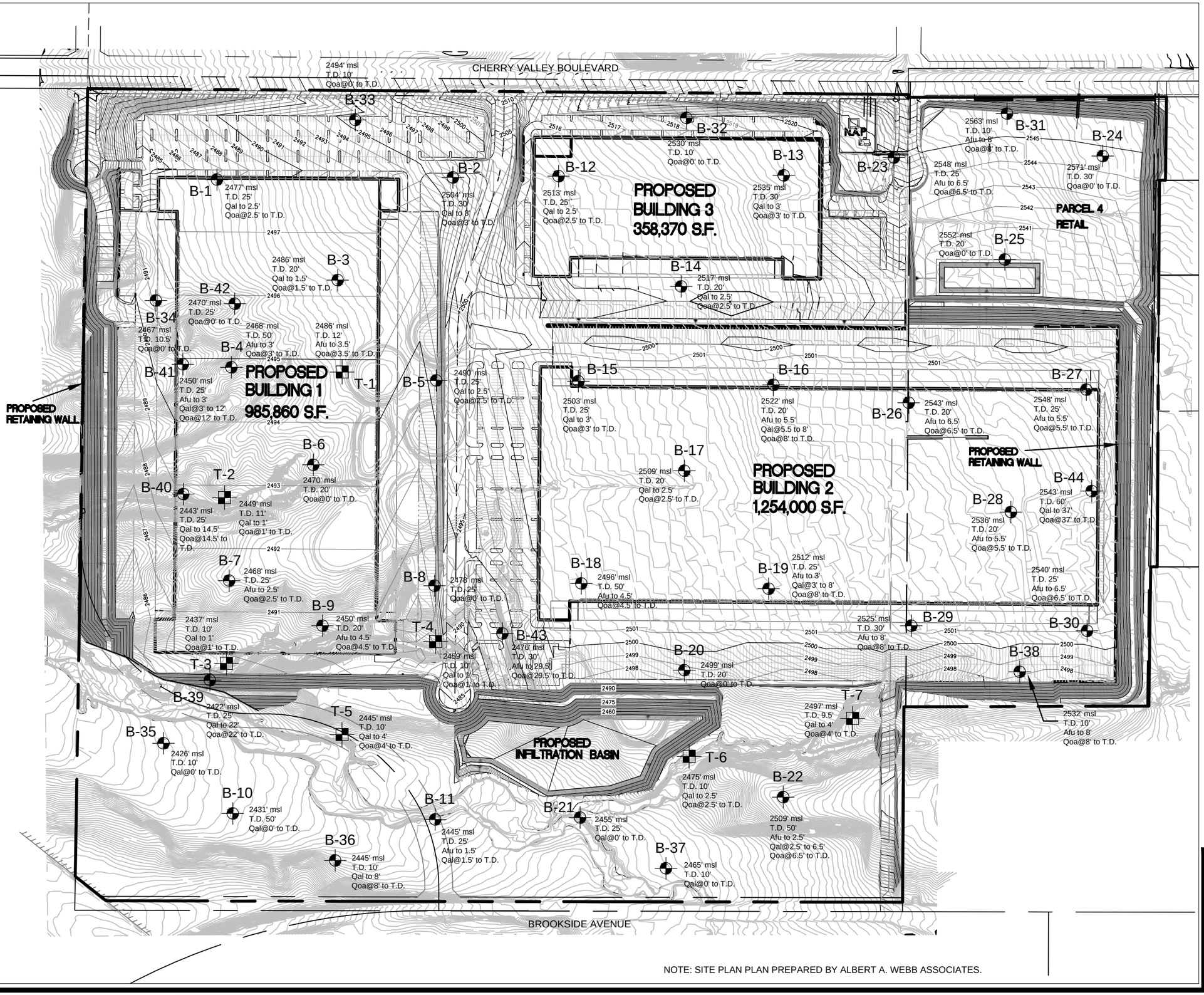
SITE LOCATION MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 1	

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

BORING LOCATION

TRENCH LOCATION

Afu - ARTIFICIAL FILL
Qal - ALLUVIUM
Qoa - OLDER ALLUVIUM

NOTE: SITE PLAN PLAN PREPARED BY ALBERT A. WEBB ASSOCIATES.

BORING AND TRENCH LOCATION PLAN

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

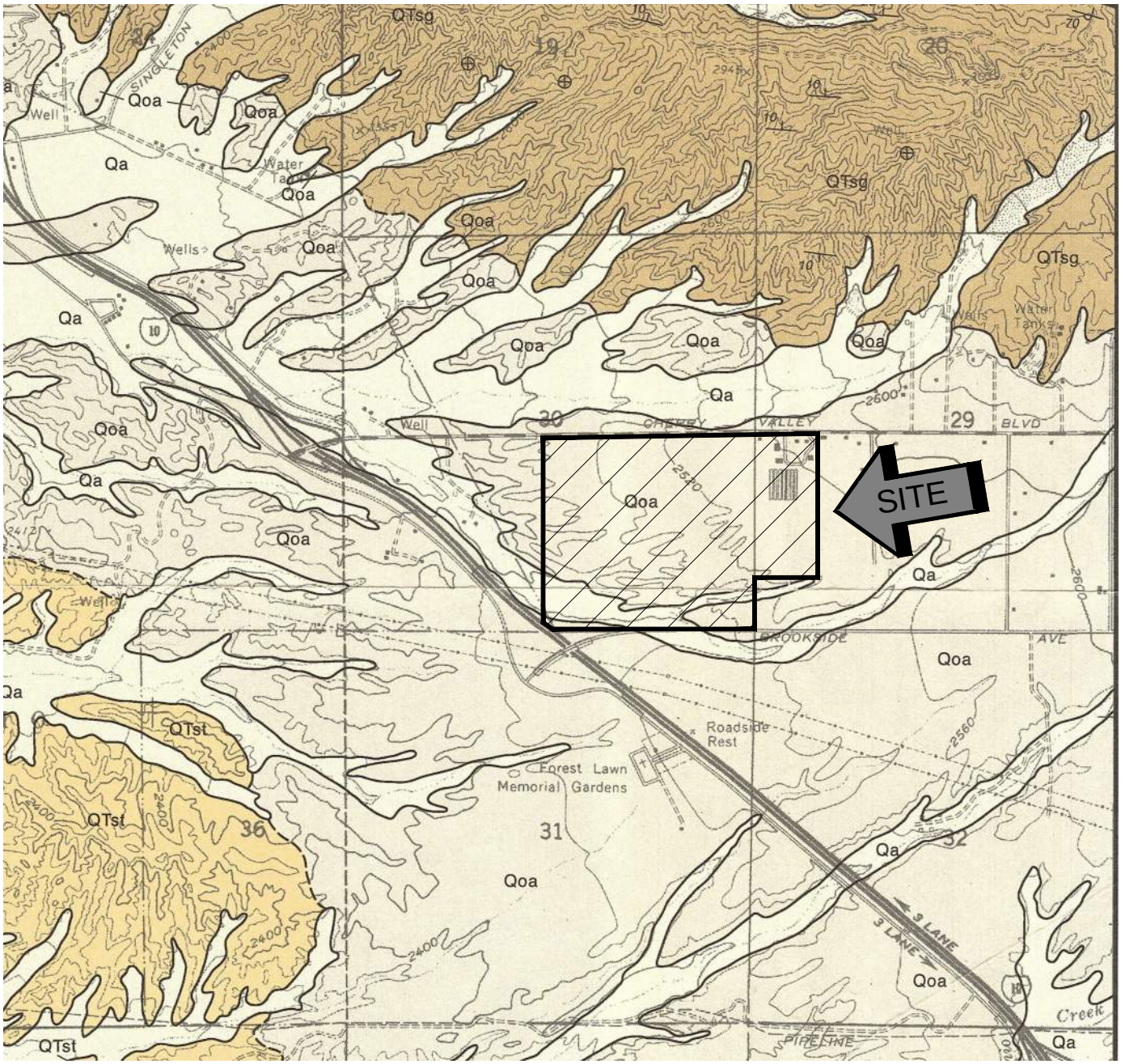
SCALE: 1" = 300'

DRAWN: JAH
CHKD: RGT

SCG PROJECT
21G133-1

PLATE 2

SOUTHERN CALIFORNIA GEOTECHNICAL



LEGEND

Qa / Qg

SURFICIAL SEDIMENTS
Unindurated, undissected

Qg *Alluvial gravel and sand of stream channels*
Qa *Alluvial sand, gravel and clay of level areas, covered by residual soil*

Qoa

OLDER SURFICIAL SEDIMENTS
Weakly indurated alluvial fan deposits derived from local terrains

Qoa *Alluvial gravel and sand, light reddish brown and of granitic and gneissic detritus of San Bernardino Mountains in north areas, brownish gray in south area; top surface slopes slightly from source terrains*

SOURCE: "GEOLOGIC MAP OF THE EL CASCO 7.5' QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA" BY THOMAS W. DIBBLE, JR., 2003.

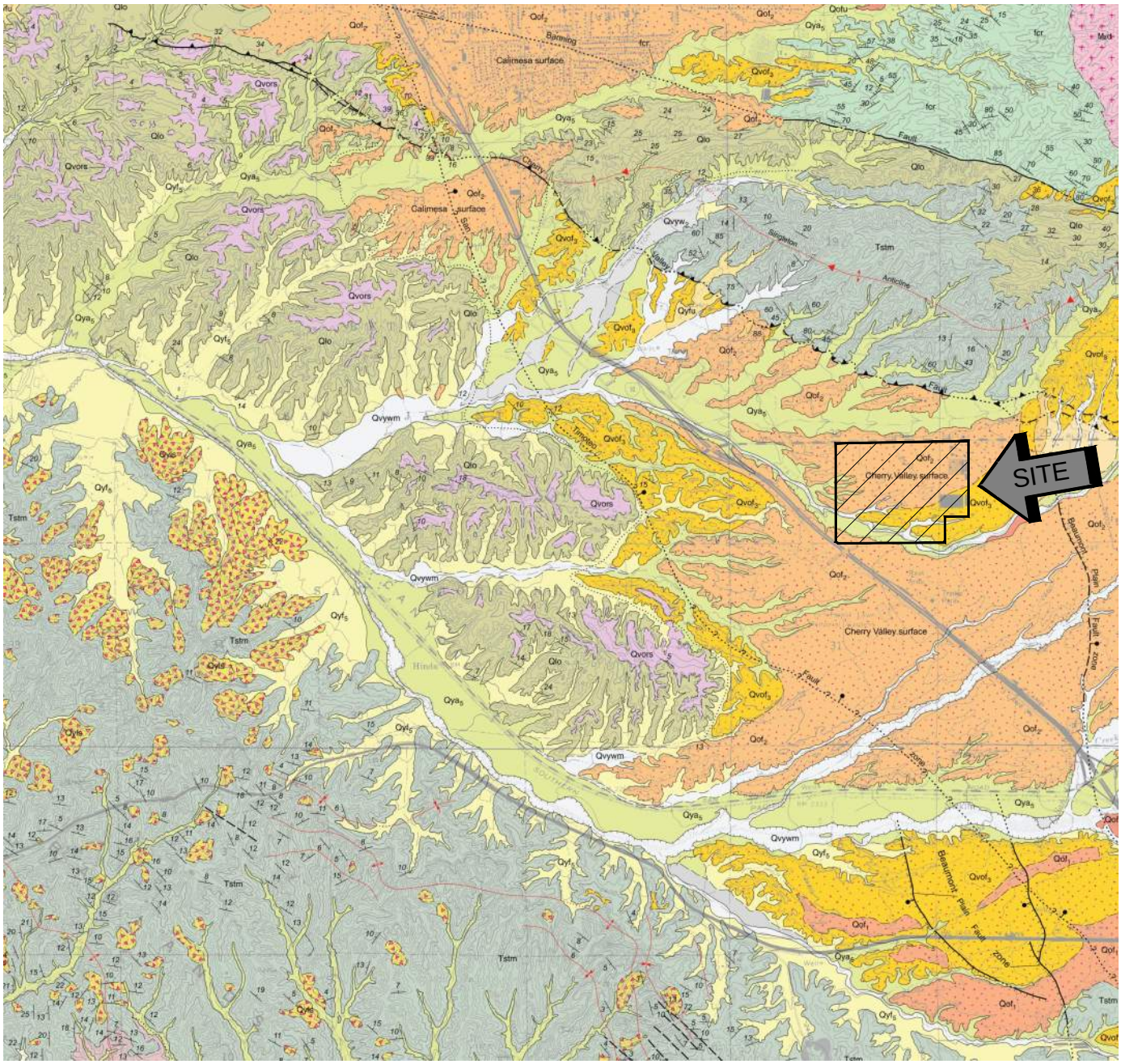
GEOLOGIC MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: JAH CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 3a	

SOUTHERN CALIFORNIA GEOTECHNICAL



CORRELATION OF MAP UNITS

Qvywm	**Very young wash deposits, modern**—Very slightly to slightly consolidated sandy and gravelly sediment in active channels
Qya5	**Young axial-valley deposits, unit 5 (uppermost Holocene)**
Qof2	**Old alluvial-fan deposits, unit 2 (upper to middle Pleistocene)**
Qvof3	**Very old alluvial-fan deposits, unit 3 (middle Pleistocene)**

SOURCE: "GEOLOGIC AND GEOPHYSICAL MAP OF THE EL CASCO 7.5' QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, WITH ACCOMPANYING GEOLOGIC-MAP DATABASE" GEOLOGIC MAP BY JONATHAN C. MATTI, AND PAMELA M. COSSETTE, DIGITAL DATABASE BY DOUGLAS M. HIRSHCHBERG, JORDAN G. MATTI, AND PAMELA M. COSSETTE, 2015.

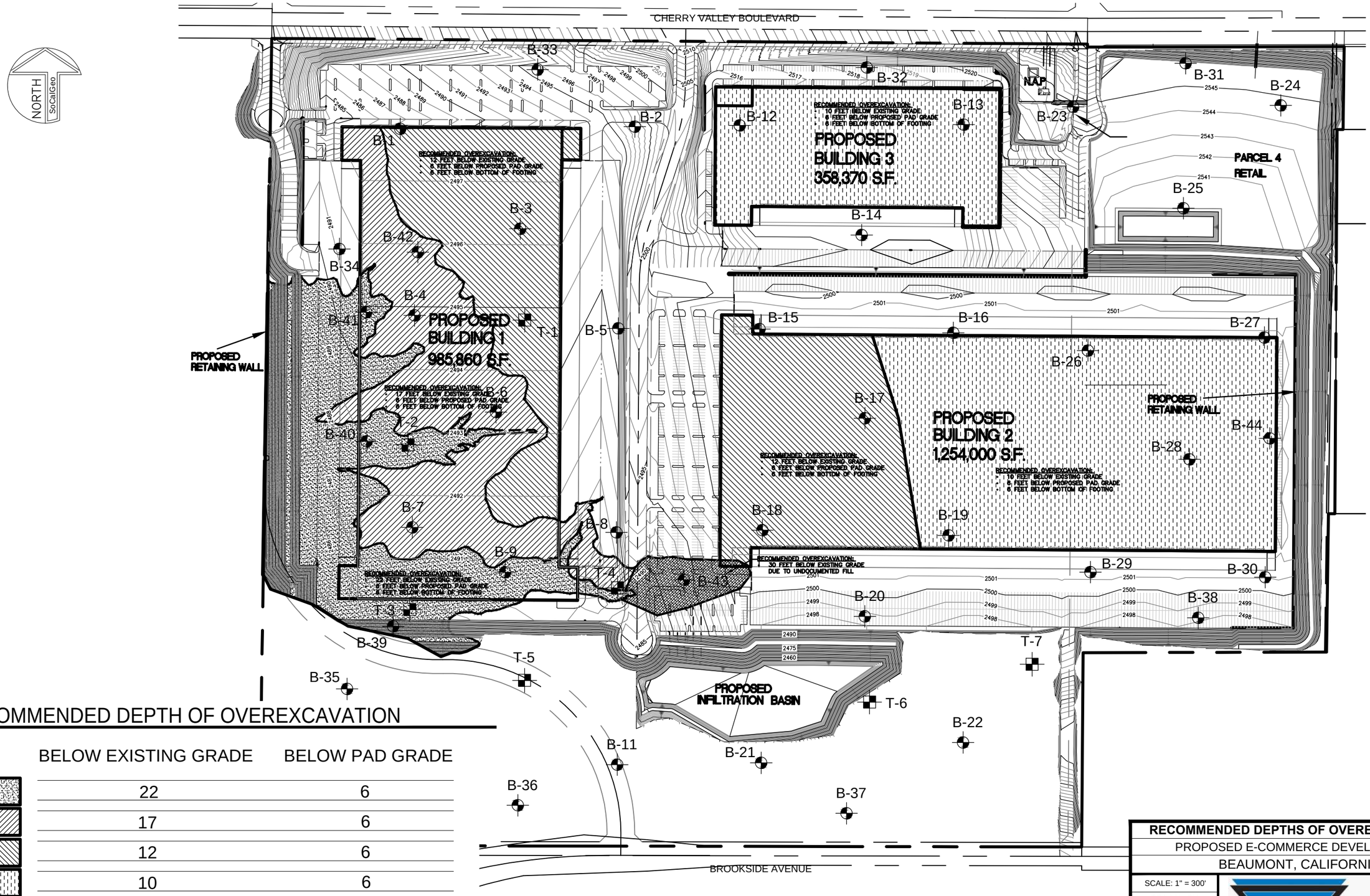
GEOLOGIC MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: JAH CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 3b	

SOUTHERN CALIFORNIA GEOTECHNICAL



RECOMMENDED DEPTH OF OVEREXCAVATION

BELOW EXISTING GRADE	BELOW PAD GRADE
22	6
17	6
12	6
10	6
30	6

NOTE: SITE PLAN PLAN PREPARED BY ALBERT A. WEBB ASSOCIATES.

RECOMMENDED DEPTHS OF OVEREXCAVATION

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 300'

DRAWN: PM
CHKD: RGT

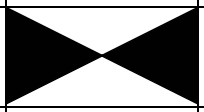
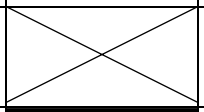
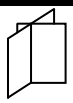
SCG PROJECT
21G133-1

PLATE 4

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

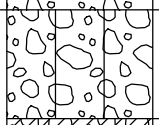
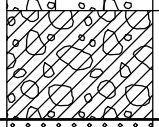
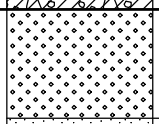
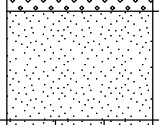
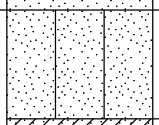
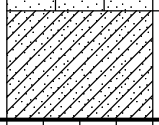
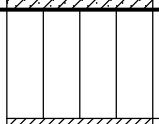
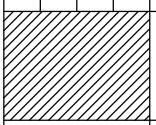
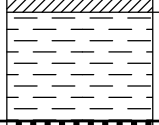
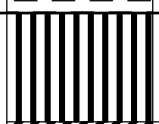
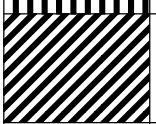
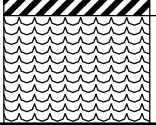
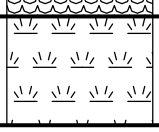
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 17 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2477 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		28			ALLUVIUM: Brown Silty fine Sand, trace clay, little fine root fibers, porous, medium dense-damp	108	8					
		64			OLDER ALLUVIUM: Red Brown Clayey fine Sand, little Silt, trace medium Sand, dense-damp	114	7					
5		76/11"			Red Brown Silty fine Sand, trace medium Sand, medium dense to very dense-damp	116	8					
		76				108	5					
		64					5					
10												
		22					6					
15												
		18			Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp to moist		10					
20												
		19					3					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Brown Silty fine Sand, trace to little Clay, little fine root fibers, medium dense-damp to moist		8					EI = 41 @ 0 to 5 feet
		28			OLDER ALLUVIUM: Brown Clayey fine Sand, little Silt, trace medium Sand, medium dense to dense-damp to moist		10					
5		36					8					
		19			Brown to Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		4					
10												
		27			@13½ feet, trace Clay, trace, trace fine to coarse Gravel		10					
15												
		22					6					
20												
		26					6					
25												
		21	4.5		Red Brown fine Sandy Clay, little medium Sand, trace coarse Sand, medium dense-moist		11					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 17 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2486 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Dark Brown Silty fine Sand, slightly porous, little fine root fibers, medium dense-damp to moist							
		21				104	8					
					OLDER ALLUVIUM: Red Brown Silty fine Sand, trace Clay, trace medium Sand, medium dense-moist							
		42				112	10					
5					Red Brown Clayey fine Sand, little Silt, slightly cemented, medium dense-moist							
		44				115	9					
					Red Brown, Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		42				108	7					
		44				119	6					
10												
		10			@ 13½ feet, little medium to coarse Sand, trace fine Gravel		5					
15												
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist							
		14					9					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2468 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		26			FILL: Red Brown Silty fine Sand, little Clay, trace fine root fibers, mottled, medium dense-moist		10					
					FILL: Red Brown fine to medium Sandy Clay, cemented, very stiff-moist							
		50/5"	1.5		OLDER ALLUVIUM: Red Brown fine to medium Sand, cemented, very dense-dry		11					
5		78	4.5		Red Brown fine to medium Sandy Clay, cemented, very dense-damp		6 7					
		32			Red Brown Silty fine to medium Sand, trace to little Clay, dense-damp		7					
10		37			@ 9 feet, little fine to coarse Gravel		6					
					Red Brown Silty fine to coarse Sand, little fine to coarse Gravel, dense-damp							
15		43					5					
					Red Brown Silty fine Sand, medium dense-moist to very moist							
		20					10					
20												
		36					15					
25												
		34					14					
30					Gray Brown fine to coarse Sand, little to fine Gravel, dense-dry							
					Red Brown fine Sandy Silt, medium dense-moist							
		22					15					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-4a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown fine Sandy Silt, medium dense-moist to very moist							
					Gray Brown Silty fine to coarse Sand, trace fine Gravel, very dense-damp							
40		58					6					
					Red Brown to Gray Brown fine to coarse Sand, very dense-dry to damp							
45		57					4					
		50/5"					6					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-4b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2489 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		32			ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, slightly porous, trace fine root fibers, medium dense-moist	95	11					
		38	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay, medium dense-moist	107	10					
5		34			Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist	104	10					
		42				115	10					
		37			@ 9 feet, little Clay, trace fine Gravel	105	16					
10												
					Red Brown Silty fine Sand, trace to little Clay, dense to very dense-moist							
		50					12					
15												
					Gray Brown fine to coarse Sand, little fine to coarse Gravel, trace Clay, medium dense-dry to damp							
		20					3					
20												
					Gray Brown Silty fine Sand, dense-damp							
		32					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2470 feet MSL							
		61	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay to Clayey fine Sand, trace fine root fibers, slightly cemented, hard to dense-damp to moist	100	8					
		67	4.5			124	10					
5		50	4.5			107	9					
		49	4.5			112	9					
		41			Red Brown Silty fine to medium Sand, trace coarse Gravel, medium dense-moist	94	12					
10												
					Red Brown Silty fine to coarse Sand, trace coarse Gravel, medium dense to dense-damp							
		28					8					
15												
					Red Brown Clayey fine Sand, 2" Clay lense, dense-moist							
		38					13					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-7

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2468 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		32			FILL: Red Brown Clayey fine to medium Sand, little Silt, medium dense-moist	115	14					
		72/10"			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, dense to very dense-damp to moist	116	7					
5		49				113	8					
		58			Gray Brown Silty fine to medium Sand, little Clay , trace coarse Sand, dense-damp	113	6					
		23			Light Brown Silty fine Sand, trace to little medium to coarse Sand, medium dense-damp	105	5					
10												
		38			Red Brown Silty fine Sand to fine Sandy Silt, trace Calcareous nodules, dense-moist		10					
15												
		74/11"			Light Brown Silty fine to coarse Sand, trace fine to coarse Gravel, very dense-damp		4					
20												
		73/11"			@23½ feet, trace fine Gravel		6					
25												
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-7**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-8

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 11 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2478 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		16			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace to little Silt, medium dense to dense-moist		13					
		42					13					
5		23			Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist		9					
		36			Brown Silty fine to coarse Sand, trace fine Gravel, dense-damp		6					
10												
					Red Brown Silty fine Sand, trace medium Sand, trace fine root fibers, medium dense-moist							
		24					12					
15												
		27			@18½ feet, trace Clay nodules		10					
20												
					Gray Brown Silty fine to coarse Sand, trace fine Gravel, dense-damp							
		36					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-8**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-9

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 12 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2450 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			FILL: Dark Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, trace Clay, medium dense-moist	114	11					
		40			FILL: Brown Clayey fine to coarse Sand, little Silt, medium dense-damp	114	6					
5		27			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace Calcareous nodules, medium dense-damp	100	6					
		51			Red Brown Silty fine to coarse Sand, trace Calcareous nodules, dense-damp	96	5					
		48				111	5					
10												
		46			Red Brown Silty fine Sand, trace to little medium to coarse Sand, trace Calcareous nodules, dense-moist		9					
15												
		53			Gray Brown Silty fine to coarse Sand, trace Calcareous nodules, very dense-damp		5					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-9**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-10

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2431 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		10			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, trace fine root fibers, loose to medium dense-damp to moist		10					
		12			@3½ feet, trace fine Gravel, little to medium Sand		3					
5		13					5					
		16					5					
10												
		10			Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, trace fine Gravel, medium dense-damp		7					
15												
		14			Red Brown to Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-damp		7					
20												
		15			Gray Brown fine to coarse Sand, trace Silt, trace fine Gravel, medium dense-damp		3					
25												
		11			Dark Red Brown Silty fine to medium Sand, trace to little Clay, trace coarse Sand, little fine Gravel, medium dense-moist		9					
30												
		20			Gray Brown fine to coarse Sand, little to some fine to coarse Gravel, medium dense-damp		5					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-10a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-10

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Gray Brown fine to coarse Sand, little to some fine to coarse Gravel, medium dense-damp							
		74/10"			@ 38½ feet, very dense		6					
40												
		24	2.0		Brown Clayey Silt, very stiff to hard-moist to very moist		20					
45												
		46					13					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-10b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-11

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2445 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		10			FILL: Dark Brown Silty fine Sand, some fine root fibers, loose-very moist	112	17					
		26			ALLUVIUM: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace coarse Gravel, trace fine root fibers, loose to medium dense-moist	113	14					
5		23			Red Brown Silty fine Sand, trace Clay, slightly porous, medium dense-damp to moist	100	6					
		15				108	5					
		26			@ 9 feet, little medium Sand	98	11					
10												
		18			Gray Brown fine to coarse Sand, trace Silt, trace fine Gravel, medium dense-damp	118	5					
15												
		21			@ 18½ feet, little Silt		8					
20												
		19					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-11**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-12

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 19 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2513 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		5			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, little Clay, very loose-very moist	112	17					
		58	4.5		OLDER ALLUVIUM: Dark Red Brown fine Sandy Clay, trace medium Sand, little Silt, hard-moist	113	14					
5		42			Red Brown Silty fine Sand, trace medium Sand, slightly porous, trace fine root fibers, medium dense-damp	100	6					
		28			Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp	108	5					
10		20			Red Brown Silty fine Sand, medium dense-moist	98	11					
					Gray Brown Silty fine to coarse Sand, medium dense-damp							
15		36				118	5					
		18					8					
20												
		30			Light Brown Silty fine to medium Sand, little Clay, dense-damp		7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-12**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-13

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 23 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2534 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		13			ALLUVIUM: Brown Silty fine Sand, trace Clay, little fine root fibers, medium dense-moist		11					
		21			OLDER ALLUVIUM: Red Brown Clayey fine Sand, trace medium Sand, medium dense-moist		11					
5		15			Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		7					
		15					10					
10					Brown Silty fine to medium Sand, trace fine to coarse Gravel, medium dense-damp							
		20					7					
15												
		19					7					
20					Red Brown Silty fine Sand to fine Sandy Silt, medium dense to dense-damp to moist							
		19					10					
25												
		34					8					
30					Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, dense-very moist		43					
					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-13**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-14

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 13 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2516 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete							
		26	3.5		ALLUVIUM: Brown fine Sandy Clay, trace medium to coarse Sand, little Silt, very stiff-very moist	115	16					
		31			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-very moist	96	15					
5		25			@ 5 feet, trace Clay, no fine Gravel	117	13					
		29			Brown Silty fine Sand, trace medium Sand, medium dense-moist	113	10					
		45				119	11					
10												
		16					9					
15												
		28			@ 18½ feet, little medium to coarse Sand		6					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-14**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-15

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2503 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Brown Silty fine Sand, medium dense-damp		7					
		15			OLDER ALLUVIUM: Red Brown Silty fine Sand, little Clay, medium dense-moist		13					
5		17					11					
		28			Red Brown Silty fine Sand to fine Sandy Silt, trace Clay, medium dense-damp		14					
10					Red Brown fine Sandy Silt, little to some Clay, medium dense-moist to very moist							
		26					17					
15					Red Brown Silty fine Sand to fine Sandy Silt, medium dense to dense-moist							
		31					11					
20												
		23					10					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-15**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-16

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2522 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		7			FILL: Dark Brown Silty fine Sand, little Clay, trace medium to coarse Sand, occasional Cobbles, loose-very moist		17					
		24			FILL: Dark Brown Silty fine Sand, trace Clay, trace fine to coarse Gravel, medium dense-moist		12					
5		16			ALLUVIUM: Brown Silty fine to medium Sand, little Clay, trace coarse Sand, medium dense-moist		11					
		43			OLDER ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, little Clay, dense-moist		13					
10												
		16			Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp		7					
15												
		20			Red Brown Silty fine Sand, trace to little medium to coarse Sand, medium dense-damp to moist		8					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-16**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-17

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2509 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		17			ALLUVIUM: Dark Brown Silty fine Sand, trace medium to coarse sand, trace fine Gravel, medium dense-moist	106	11					
		42			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp to moist	111	14					
5		25				116	6					
		31			Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, trace Clay, medium dense-moist	119	11					
		31			Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, medium dense to dense-moist to very moist	99	24					
10												
		24					11					
15												
		48			@ 18½ feet, little medium to coarse Sand		12					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-17**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-18

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2496 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		6	3.0		FILL: Red Brown fine to medium Sandy Clay, trace fine root fibers, medium stiff to stiff-very moist	101	15					
		15	3.0			116	14					
5		14			OLDER ALLUVIUM: Red Brown SIlty fine to coarse Sand, little Clay, trace fine to coarse Gravel, loose to medium dense-damp to moist	114	12					
		24				95	8					
		13			Red Brown fine to medium Sandy Clay, medium stiff to stiff-very moist	109	16					
10												
		10	1.5				15					
15												
		20					17					
20												
		24			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-damp		5					
25												
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist							
		15					13					
30												
					Red Brown Silty fine Sand, dense-damp							
		36					7					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-18a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-18

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown Silty fine Sand, dense-damp							
					Red Brown Silty fine Sand to fine Sandy Silt, dense-damp							
		41					7					
40												
		24			@ 43½ feet, trace medium to coarse Sand, medium dense		6					
45												
					Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace to little coarse Sand, medium dense-damp to moist							
		19					9					
50												
					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-18b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-19

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2512 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete 2± inches Slurry							
		4			FILL: Brown Silty fine Sand, little medium Sand, very loose-very moist		31					Poor Recovery
		9			ALLUVIUM: Brown Silty fine to medium Sand, little Silt, trace coarse Sand, trace Calcareous nodules, loose to medium dense-very moist		14					
5		23					14					
		10			OLDER ALLUVIUM: Red Brown Silty fine Sand, little Clay, trace medium to coarse Sand, trace fine to coarse Gravel, loose to medium dense-moist		11					
10												
					Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, dense-damp							
		40					4					
15												
					Brown Silty fine Sand, trace Clay, little medium to coarse Sand, medium dense-moist							
		29					10					
20												
		21					12					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-19**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-20

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2498 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		52			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, little Silt, dense-moist	119	8					EI = 45 @ 0 to 5 feet
		38			Red Brown Clayey fine Sand little Silt, trace fine root fibers, trace fine Gravel, medium dense-moist	118	12					
5		73			Red Brown Silty fine to coarse Sand, trace fine Gravel, dense-moist	119	12					
		42			Gray Brown Silty fine to coarse Sand, trace fine Gravel, medium dense to dense-damp	114	6					
10		67				121	4					
		25					4					
15												
		58					8					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-20**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-21

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2458 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		14			ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, medium dense-damp to moist		10					
		13			@ 3½ to 12 feet, little medium to coarse Sand		6					
5		17					7					
		10					7					
10												
					Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, loose to medium dense-damp to moist		9					
15		116					7					
		23				107	8					
20												
					Gray Brown Silty fine to coarse Sand, little fine to coarse Gravel, very dense-damp to moist							
		71					9					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-21**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-22

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2508 feet MSL							
		22	4.5		FILL: Brown fine Sandy Clay, trace medium Sand, little to some fine root fibers, stiff-very moist	112	14					EI = 28 @ 0 to 5 feet
		13			ALLUVIUM: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, slightly cemented, loose to medium dense-damp	102	5					
5		30				112	5					
		74	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay, trace fine root fibers, hard-moist	112	12					
		31/11"	4.5			119	9					
10												
		31			Gray Brown to Red Brown Silty fine to coarse Sand, little fine to Coarse Gravel, medium dense to dense-damp to moist		8					
15												
		23					7					
20												
		23			Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist		11					
25												
		18					12					
30												
		24					8					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-22a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-22

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-damp							
					Gray Brown fine Sandy Silt, trace medium Sand, dense-damp							
40		32					7					
					Gray Brown Silty fine Sand, trace medium Sand, medium dense-damp							
45		23					7					
					Gray Brown Silty fine Sand to fine Sandy Silt, medium dense-damp							
		18					15					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-22b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-23

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2547 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		15			FILL: Red Brown Silty fine Sand, trace medium to coarse Sand, slightly porous, loose to medium dense-damp	105	6					
		42				117	6					
5		20			@ 5 feet, trace to little Clay, trace fine Gravel	103	7					
		18			OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, medium dense-damp	112	4					
		24			Red Brown Silty fine Sand, trace medium Sand, medium dense-moist	108	9					
10												
		27			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-damp		5					
15												
		18					3					
20												
		16			Red Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, medium dense-damp		7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-23**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-24

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2570 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		13			ALLUVIUM: Red Brown Silty fine to medium Sand, trace medium to coarse Sand, loose-very moist		15					
		6			Red Brown Silty fine Sand, trace medium to coarse Sand, loose-moist		10					
5		13			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-moist		10					
		12			Brown Silty fine Sand, trace medium to coarse Sand, trace fine to coarse Gravel, medium dense-damp		10					
10												
		16			Red Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-damp to moist		6					
15												
		14					8					
20												
		15					7					
25												
		15					11					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-24**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-25

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2551 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete 2± inches slurry							
		9			ALLUVIUM: Red Brown Clayey fine Sand, trace medium Sand, little Silt, loose to medium dense-very moist	115	15					
		10			@ 3 feet, trace fine coarse Gravel	121	15					
5		22				116	10					
		17			Red Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist	117	9					
		28			Gray Brown Silty fine to coarse Sand, trace fine Gravel, loose to medium dense-moist	121	9					
10												
					Brown Silty fine Sand, trace medium to coarse Sand, loose to medium dense-moist							
		12					10					
15												
		9					12					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-25**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-26

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2533 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Red Brown Silty fine Sand, trace fine root fibers, trace medium Sand, loose-damp							
		9				107	7					
		9			FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand, loose to medium dense-moist	123	11					
5		40				121	12					
		22			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, trace Clay, medium dense-moist	117	13					
		22			@ 9 feet, little Clay	117	12					
10												
		11			@ 13½ to 20 feet, trace fine to coarse Gravel, medium dense-damp		8					
15												
		16					7					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-26**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-27

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2548 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		28			FILL: Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, trace fine root fibers, medium dense-moist		9					
		16			@ 3½ feet, little medium to coarse Sand		9					
5		12			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-moist		11					
		14			Red Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist		10					
10												
		13					9					
15												
		10					9					
20												
		46			Red Brown Clayey fine to coarse Sand, little Silt, little fine to coarse Gravel, dense-moist		11					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-27**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-28

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2536 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0		16			FILL: Red Brown Clayey fine to coarse Sand, little Silt to fine root fibers, medium dense-moist		13					
		22			@ 3½ feet, fine to little fine to coarse Gravel, medium dense-damp		13					
5		19			OLDER ALLUVIUM: Brown Silty fine Sand, little Clay, little medium to coarse Sand, trace fine Gravel, medium dense-moist		12					
		11					9					
10												
		14					7					
15												
		14					10					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-28**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-29

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2524 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		6			FILL: Dark Brown Silty fine Sand, trace medium to coarse Sand, loose-moist		12					
		11			@ 3½ feet. trace Clay		11					
5		12			FILL: Red Brown Silty fine Sand, trace to little medium to coarse Sand, trace fine Gravel, trace Clay nodules, medium dense-moist		14					
		20			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace fine Gravel, medium dense-moist to very moist		16					
10												
		35			Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, trace calcareous nodules, dense-moist		12					
15												
		63			Red Brown Silty fine to coarse Sand, little Clay, trace fine Gravel, very dense-moist		9					
20												
		21			Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense to dense-damp to moist		14					
25												
		32					8					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-29

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-30

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2540 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Brown Silty fine to coarse Sand, trace fine root fibers, dense-damp to moist							
		56				125	7					
		50			@ 3 feet, trace fine to coarse Gravel, trace rope	126	8					
5		49				118	11					
		39			OLDER ALLUVIUM: Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp	104	7					
		40			@ 9 feet, occasional Cobbles		5					Disturbed Sample
10												
					Brown Silty fine Sand, little Clay, trace to little medium to coarse Sand, trace fine to coarse Gravel, medium dense-moist							
		15					15					
15												
					Brown Silty fine Sand to fine Sandy Silt, trace Clay, medium dense-moist							
		17					17					
20												
					Red Brown Clayey fine to coarse Sand, little Silt, trace fine to coarse Gravel, dense-moist							
		38					14					
25												
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-30**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-31

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 9 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2562 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9			FILL: Red Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace fine root fibers, loose to dense-damp		7					
		19					7					
5		36					7					
		18			OLDER ALLUVIUM: Light Red Brown Silty fine to coarse Sand, medium dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-31**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-32

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 8 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2530 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		14			OLDER ALLUVIUM: Red Brown to Brown Silty fine Sand, trace medium to coarse Sand, medium dense to very dense-damp		7					
		57			@ 3½ feet little medium to coarse Sand		6					
5		25					6					
		36			@ 8½ feet, trace fine Gravel		6					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-32**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-33

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 9 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2494 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		20			OLDER ALLUVIUM: Red Brown, Silty fine Sand, trace medium Sand, trace Clay, trace fine root fibers, medium dense-damp		5					
		32	4.5		Red Brown Clayey fine Sand to fine Sandy Clay, trace fine Gravel, dense-dry to damp		3					
5		58	2.5				6					
		40			Red Brown Silty fine Sand, trace Clay, dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-33**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-34

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2467 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		34			OLDER ALLUVIUM: Red Brown Silty fine Sand, little fine root fibers, dense-damp		6					
		55	4.5		Red Brown Clayey fine Sand to fine Silty Clay, little Silt, trace medium to coarse Sand, dense to very dense-dry		8					
5		60	4.5				8					
		37	4.5				8					
		26			Red Brown Silty fine Sand, dense-damp		7					
10					Boring Terminated at 10½'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-34**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-35

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2425 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		8			ALLUVIUM: Brown Silty fine Sand, trace to little medium Sand, trace fine root fibers, loose to medium dense-dry		5					
		8					3					
5		13					4					
		7					7					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-35**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-36

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 8 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2445 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		4			ALLUVIUM: Dark Brown to Brown, Silty fine to medium Sand, trace to little coarse Sand, trace to little coarse Sand, trace fine root fibers, loose to medium dense-damp		8					
		12			@ 3½ feet, slightly porous		5					
5		12					6					
		16	2.0		OLDER ALLUVIUM: Red Brown fine Sandy Clay, slightly cemented, very stiff-damp		6					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-36**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-37

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2465 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Dark Brown to Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace fine root fibers, medium dense-moist		9					
		13			@ 3½ feet, trace Clay		10					
5		16					7					
		15			Brown fine Sandy Silt, trace medium to coarse Sand, medium dense-damp to moist		8					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-37**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-38

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2532 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9	1.5		FILL: Red Brown fine Sandy Clay, trace medium to coarse Sand, trace fine root fibers, trace fine Gravel, loose-very moist		19					
		20			FILL: Red Brown Silty fine to coarse Sand, little Clay, medium dense-moist		13					
5		20					10					
		18			OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-38**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-39

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2421 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, medium dense-dry to damp							
		17				105	2					
					Gray Brown fine Sand, medium dense-dry to damp							
					Brown Silty fine Sand, medium dense-dry to damp							
		20				108	2					
5					Gray Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-dry							
					Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp							
		19				104	6					
10												
					Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, loose to medium dense-damp to moist							
		14				104	7					
15												
		21				105	11					
20					Gray Brown fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-moist							
					OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, medium dense-very moist							
		39				99	21					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-39**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-40

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2443 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, medium dense-dry to damp							
		22				113	2					
					Brown Clayey fine Sand, trace medium Sand, medium stiff-dry to damp							
		20				103	2					
5												
					Brown Silty fine Sand, trace medium Sand, medium dense-damp							
		18				105	4					
10												
		25				107	4					
15					OLDER ALLUVIUM: Gray Brown fine to coarse Sand, medium dense to dense-damp							
		57				117	3					
20												
					Gray Brown Silty fine Sand, trace Silt, trace medium to coarse Sand, medium dense-damp to moist							
		37				115	8					
25					Red Brown fine Sandy Clay, little to some Silt, trace medium to coarse Sand, slightly cemented, very stiff-damp							
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-40

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-41

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2450 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		12			FILL: Brown Silty fine Sand, trace medium to coarse Sand, mottled, loose-moist	126	9					
5		14			ALLUVIUM: Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, loose to medium dense-damp	102	4					
		16				102	5					
10					Brown to Red Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp							
					OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, trace medium to coarse Sand, medium dense-dry to damp							
15		27				105	2					
		30				94	6					
20												
					Gray Brown Silty fine to coarse Sand, medium dense-damp							
		34				110	4					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-41**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-42

JOB NO.: 21G133-1 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2470 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine Sand, medium dense-damp							
		19			Red Brown fine Sandy Clay, little medium Sand, weakly cemented, slightly porous, very stiff-damp	100	5					
5		31				113	7					
10		34			@ 9 feet, little medium Sand	108	5					
					Brown Silty fine Sand, medium dense-damp							
15		24				109	6					
					Gray Brown fine Sand, trace Silt, medium dense-very moist							
20		40			Brown Silty fine Sand, medium dense-very moist	97	15					
25		62			@ 24 feet, trace coarse Sand, trace fine Gravel, dense-damp	113	6					
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-42**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-43

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 26 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2476 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		53	4.5		FILL: Brown to Red Brown fine Sandy Clay, trace medium Sand, trace fine Gravel, slightly cemented, mottled, medium stiff to hard-damp to very moist	114	6					
		47	4.5		@ 4 feet, little Portland cement concrete (PCC) fragments	92	7					
5												
		8	4.5			104	18					
10												
		26	4.5		@ 14 feet, little PCC fragments	118	5					
15												
		12	3.5			110	11					
20												
		54	4.5				10					Poor Recovery
25					@ 27 feet, trace tire tread							
		50/5"	4.5			121	11					
30					OLDER ALLUVIUM: Brown fine to medium Sand, little Silt, trace coarse Sand, trace coarse Gravel, slightly cemented, very dense-moist Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-43

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-44

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 53 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2543 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9			ALLUVIUM: Brown to Red Brown Silty fine Sand, trace fine root fibers, loose-damp		6					
		19			Brown fine Sandy Clay, trace medium Sand, slightly cemented, stiff to very stiff-damp to moist		8					
5												
		12					9					
10												
		12			Red Brown Silty fine Sand, little Clay, trace medium to coarse Sand, trace fine Gravel, medium dense-moist		9					
15												
		12			Red Brown fine Sandy Clay, little Silt, stiff-moist		10					
20												
		11			Red Brown Silty fine Sand, medium dense-moist		10					
25												
		19					12					
30												
		24			Brown fine to medium Sand, trace coarse Sand, medium dense-damp		3					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-44a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-44

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 53 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Brown fine to medium Sand, trace coarse Sand, medium dense-damp							
					OLDER ALLUVIUM: Gray Brown fine to coarse Sand, trace fine to coarse Gravel, dense-damp							
40		43					3					
		45					4					
45												
		56			Gray Brown fine Sand, trace Silt, dense-damp	107	6					
		67/12"			Brown Silty fine to coarse Sand, trace fine to coarse Gravel, slightly cemented, dense to very dense-damp	121	7					
50		97/11"				110	5					
		50/5"				113	4					
		50/4"				112	3					
55												
		32										No Sample Recovery
60					Boring Terminated at 60'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-44b**

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-1

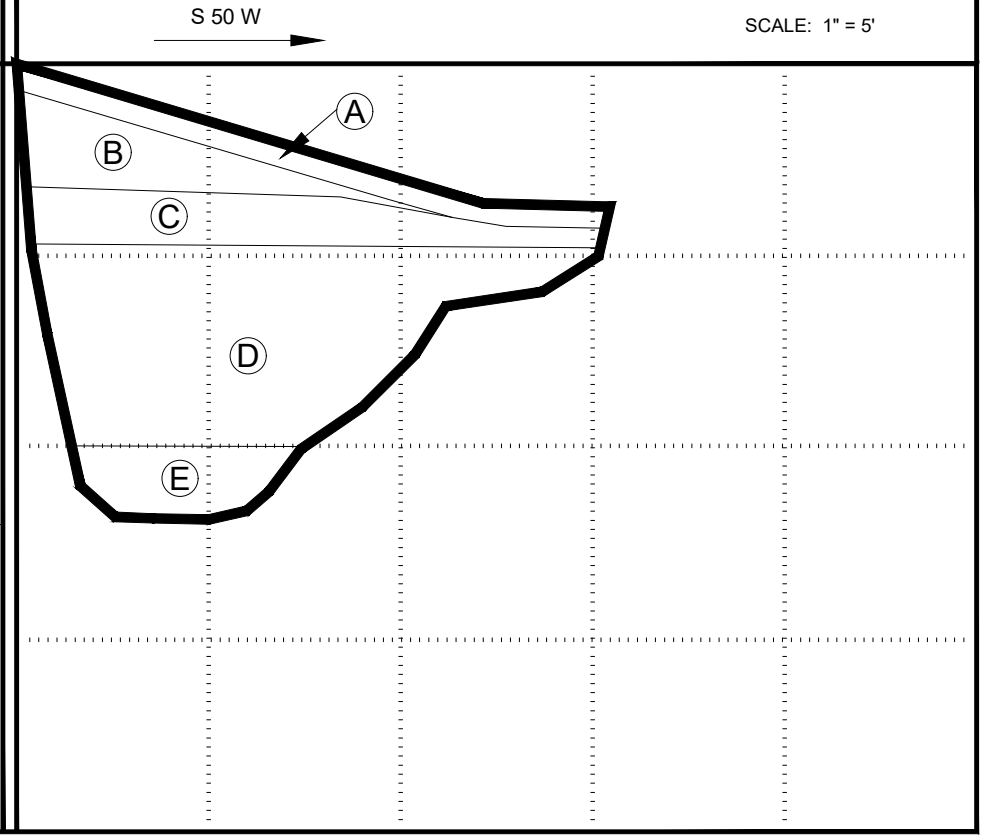
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 50 W
ELEVATION: 2485 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		6	A: FILL: Dark Brown Silty fine Sand, trace fine root fibers, abundantly porous, damp - loose
				B: FILL: Gray Brown fine Sandy Silt, damp - medium dense
	b		10	
				C: OLDER ALLUVIUM: Brown Clayey fine Sand, moist - medium dense
5	b		9	
				D: OLDER ALLUVIUM: Brown Silty fine Sand, damp - medium dense
	b		7	
10				E: OLDER ALLUVIUM: Brown Clayey fine Sand, moist - medium dense to dense
	b		12	
				Trench Terminated @ 12 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-45

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-2

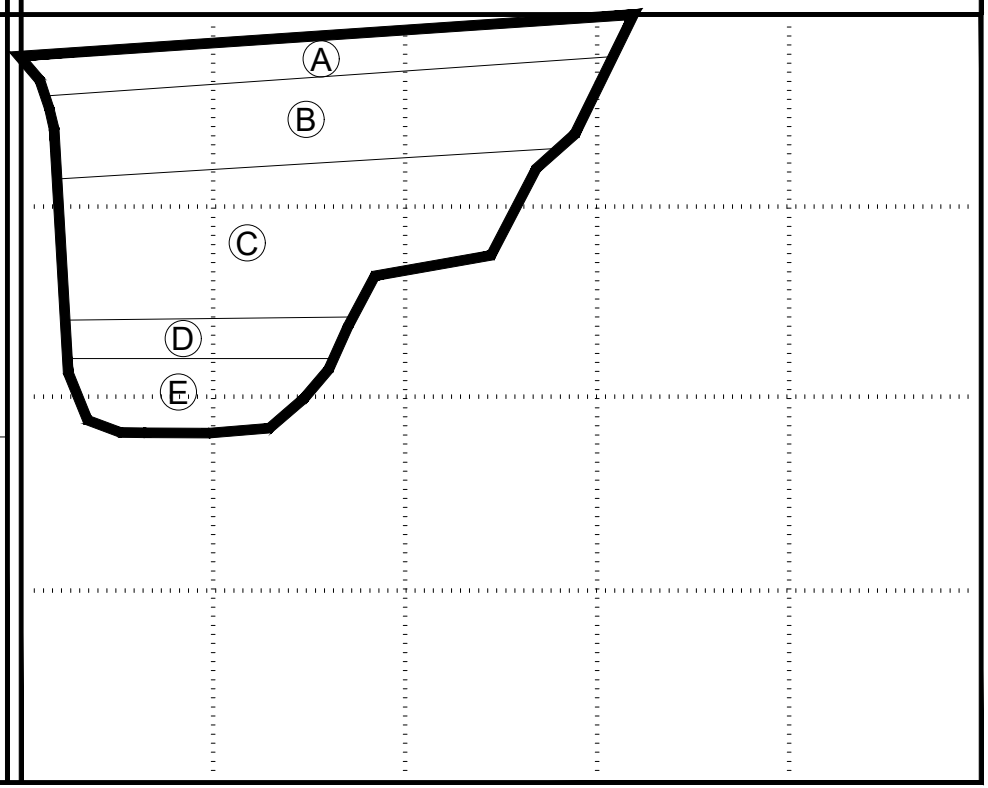
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: N 20 E
ELEVATION: 2448 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		6	
	b		5	A: ALLUVIUM: Gray Brown Silty fine Sand, abundant root fibers, abundantly porous, damp - loose B: OLDER ALLUVIUM: Red Brown Clayey fine Sand, little medium to coarse Sand, moist - medium dense
	b		10	
5	b		4	C: OLDER ALLUVIUM: Brown Silty fine Sand, little medium Sand, damp - medium dense
	b		3	D: OLDER ALLUVIUM: Brown fine to coarse Sand, trace Silt, dry to damp - medium dense
10	b		5	E: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, damp - medium dense
				Trench Terminated @ 11 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-46

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-3

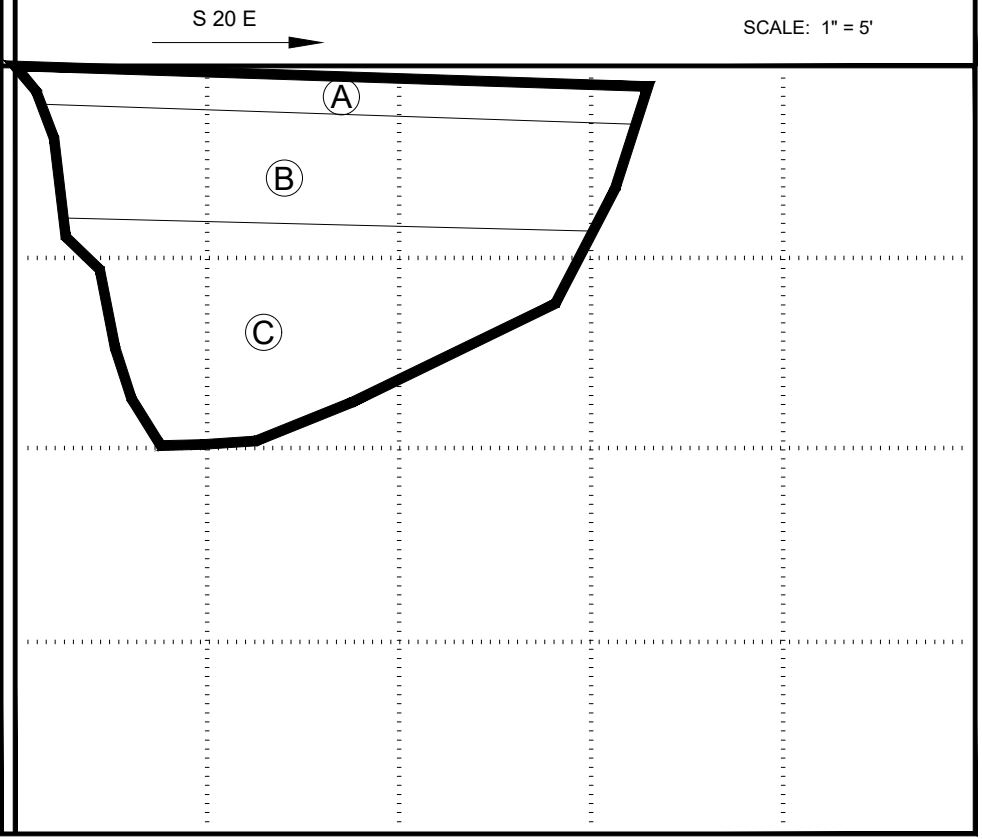
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 20 E
ELEVATION: 2435 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		4	A: ALLUVIUM: Gray Brown Silty fine Sand, abundant root fibers, porous, damp - loose
	b		10	B: OLDER ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, moist - moist
5	b		5	
				C: OLDER ALLUVIUM: Red Brown to Gray Brown Clayey fine to medium Sand, trace coarse Sand, slightly cemented, damp - dense
	b		5	
	b		5	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-47

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-4

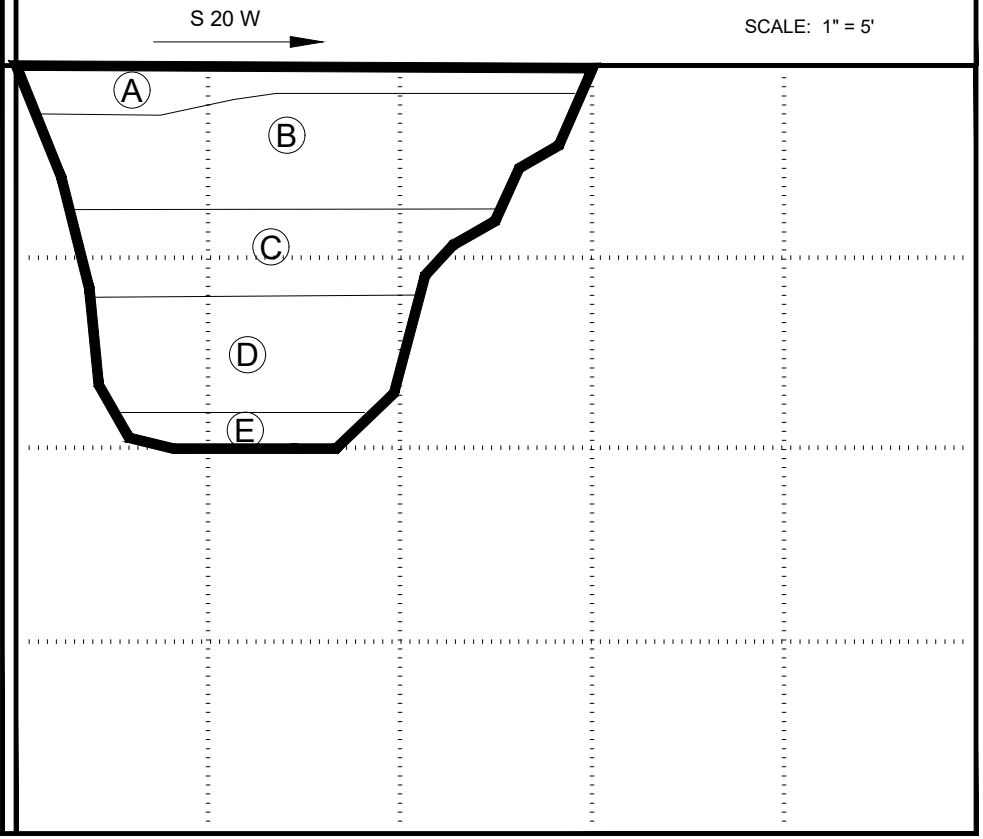
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION:Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 20 W
ELEVATION: 2470 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		17	A: ALLUVIUM: Dark Brown Clayey fine to medium Sand, trace fine root fibers, abundantly porous, moist to very moist - loose
	b		10	B: OLDER ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, moist - medium dense
5	b		5	C: OLDER ALLUVIUM: Red Brown Clayey fine to medium Sand, damp - dense
	b		3	D: OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, slightly cemented, damp - dense
				E: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, slightly cemented, damp - dense
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-48

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-5

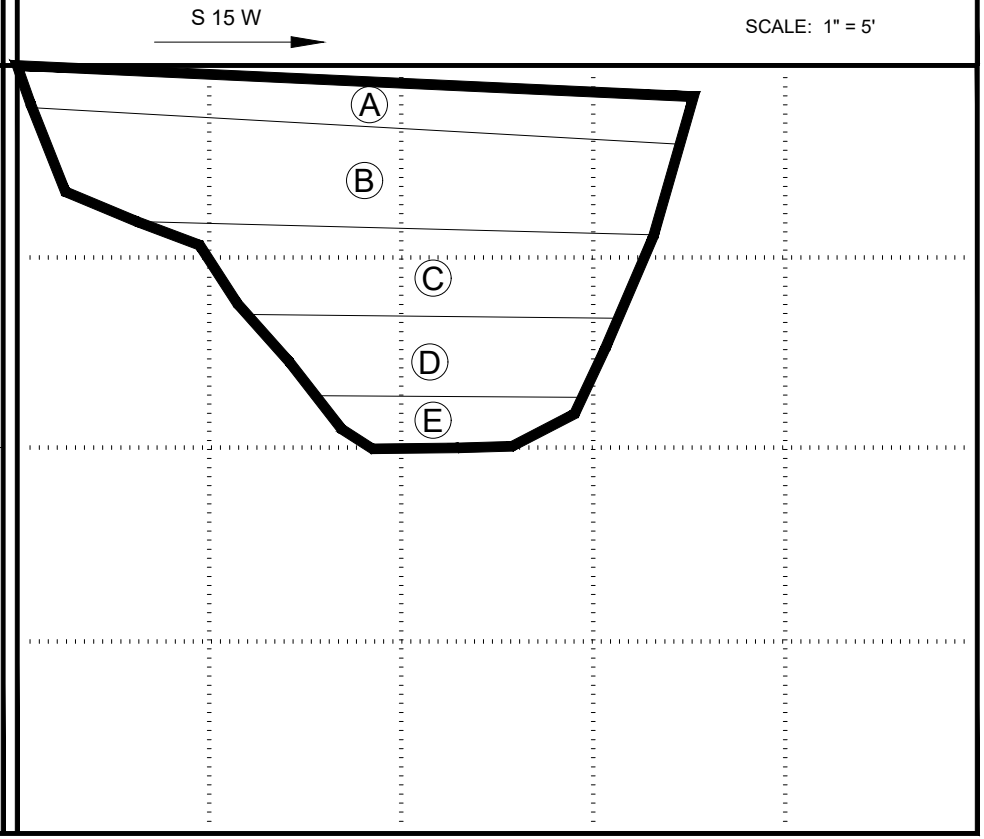
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 15 W
ELEVATION: 2444 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		11	A: ALLUVIUM: Dark Brown Silty fine to medium Sand, abundant fine root fibers, porous, moist - loose
	b		10	B: ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, trace fine root fibers, moist - loose to medium dense
5				C: OLDER ALLUVIUM: Red Brown to Gray Brown Clayey fine Sand, damp to moist - dense
	b		4	D: OLDER ALLUVIUM Brown Clayey fine to medium Sand, little coarse Sand, damp - dense
	b		2	E: OLDER ALLUVIUM: Brown fine to coarse Sand, little fine to coarse Gravel, trace Silt, dry to damp - dense
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-49

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-6

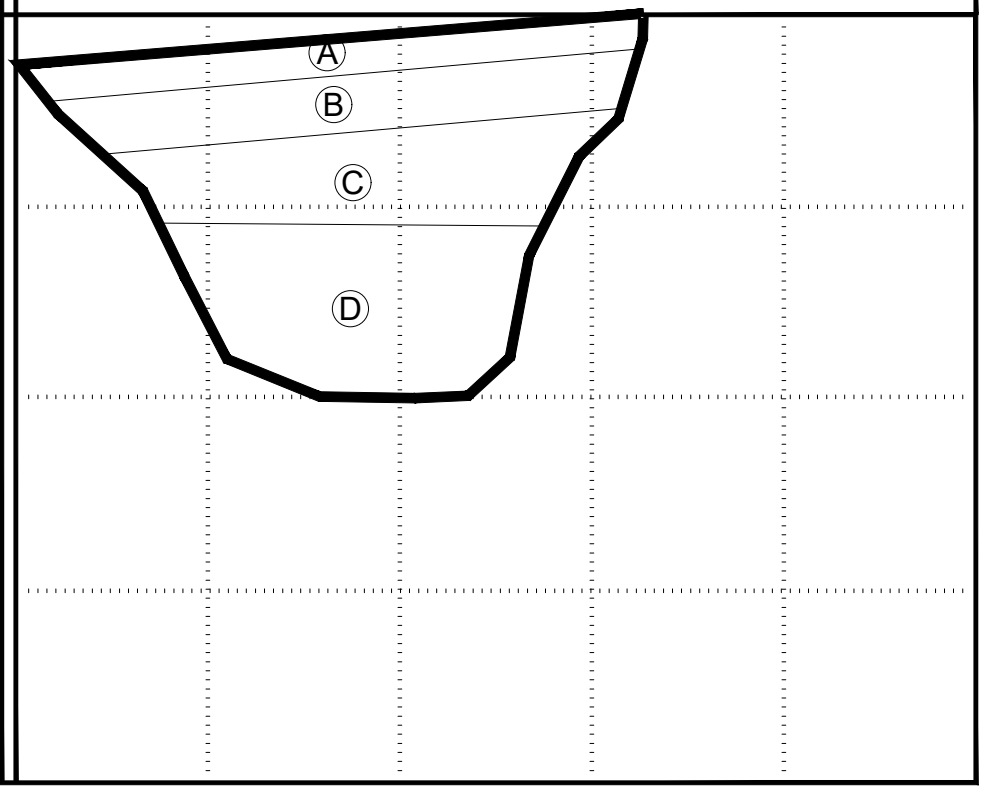
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: N 15 E
ELEVATION: 2475 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		12	A: ALLUVIUM: Brown Clayey fine Sand, trace medium to coarse Sand, trace fine root fibers, slightly porous, moist - loose
				B: ALLUVIUM: Brown Silty fine to medium Sand, moist - damp
	b		10	C: OLDER ALLUVIUM: Red Brown to Brown Clayey fine to medium sand, trace coarse Sand, slightly cemented, damp - dense
5	b		5	
	b		5	D: OLDER ALLUVIUM: Silty fine to medium Sand: Brown Silty fine to coarse Sand, damp - dense
10	b		5	Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-50

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-7

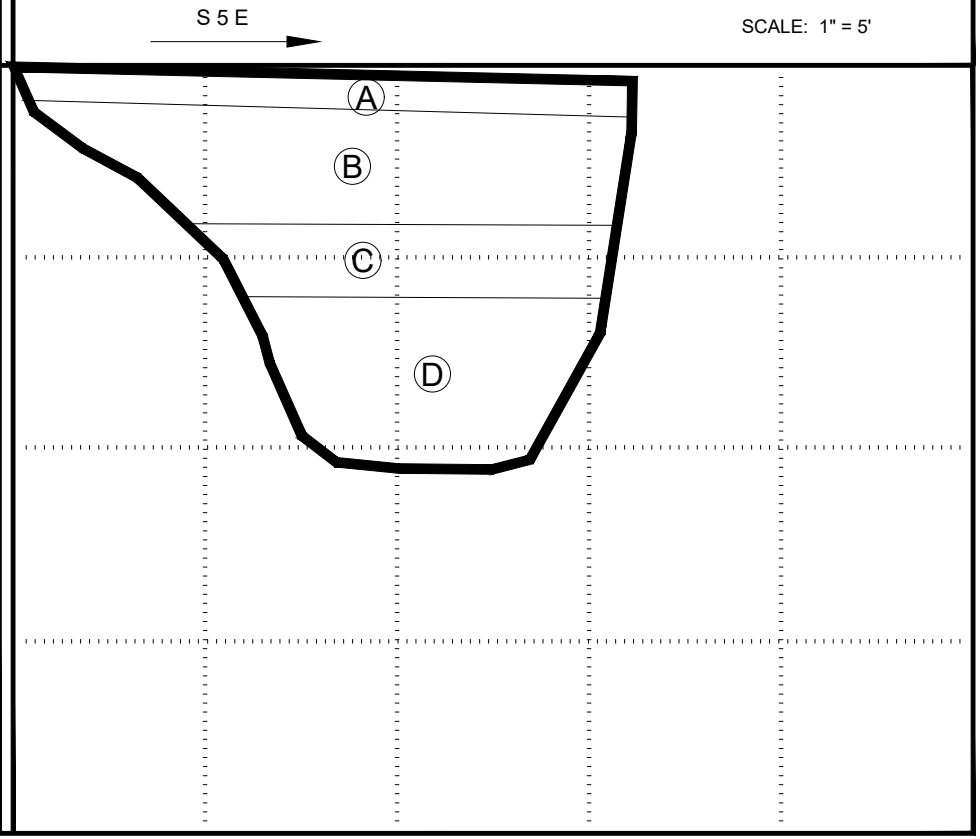
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 5 E
ELEVATION: 2497 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		10	A: ALLUVIUM: Dark Brown Clayey fine to medium Sand, abundant root fibers, porous, damp to moist - loose
	b		10	B: ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, slightly porous, damp to moist - loose to medium dense
5	b		7	C: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, damp - medium dense
	b		4	D: OLDER ALLUVIUM: Brown fine to coarse Sand, little fine to coarse Sand, trace Silt, damp - medium dense
	b		4	
10				Trench Terminated @ 9.5 feet
15				

GRAPHIC REPRESENTATION



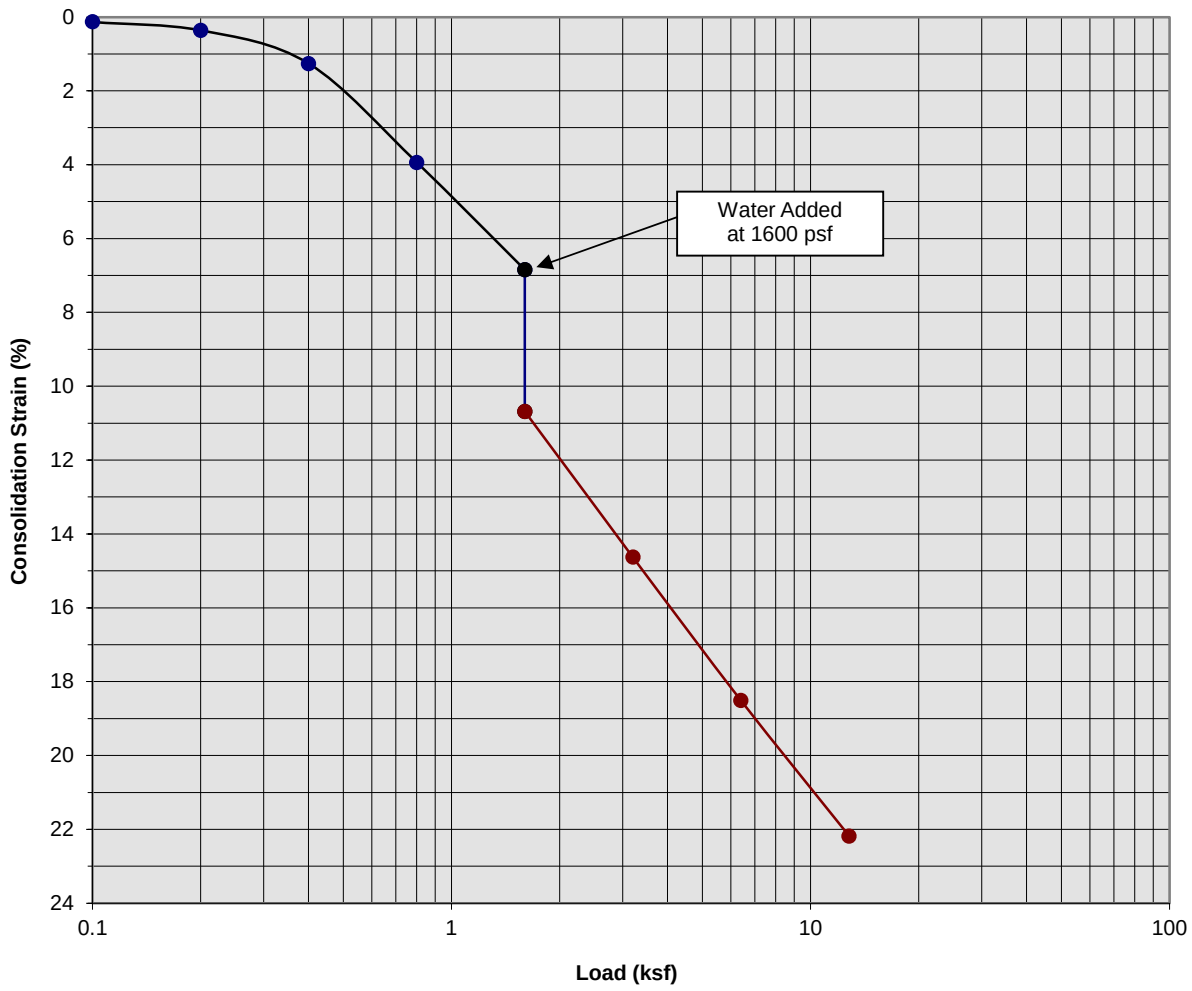
KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-51

APPENDIX C

Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay

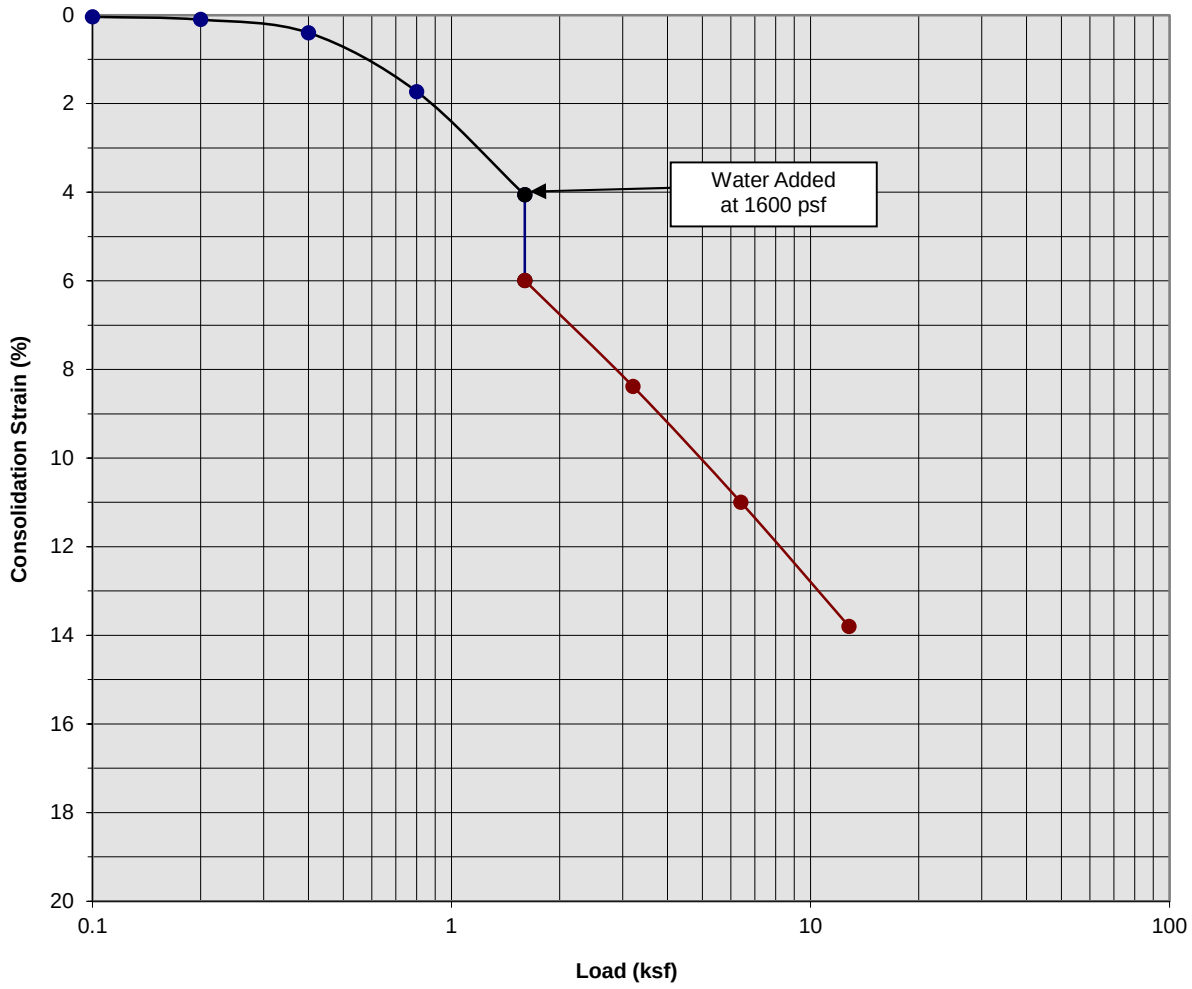
Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	3 to 4	Initial Dry Density (pcf)	107.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	137.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.84

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt

Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	5 to 6	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.93

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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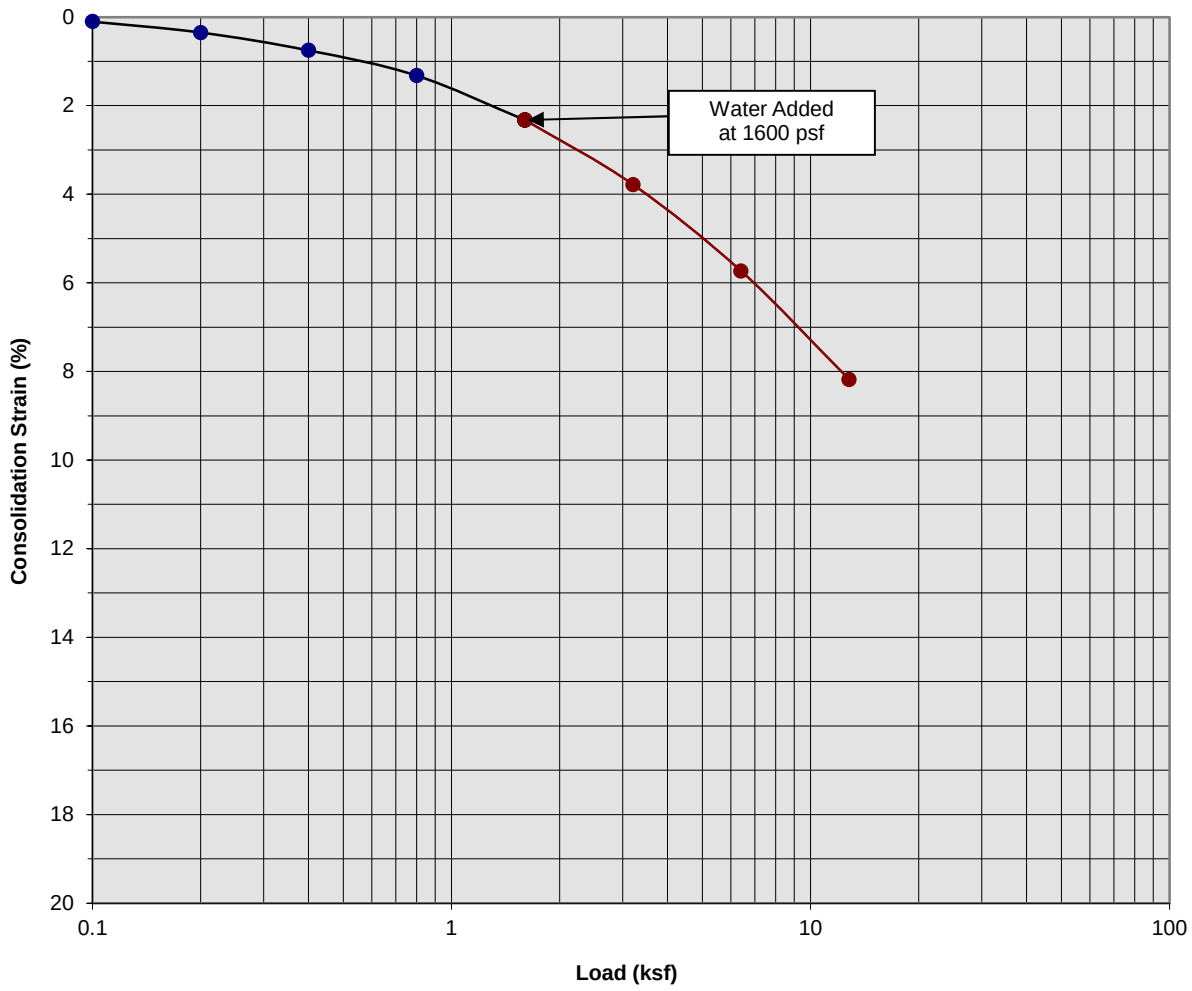
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt

Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	115.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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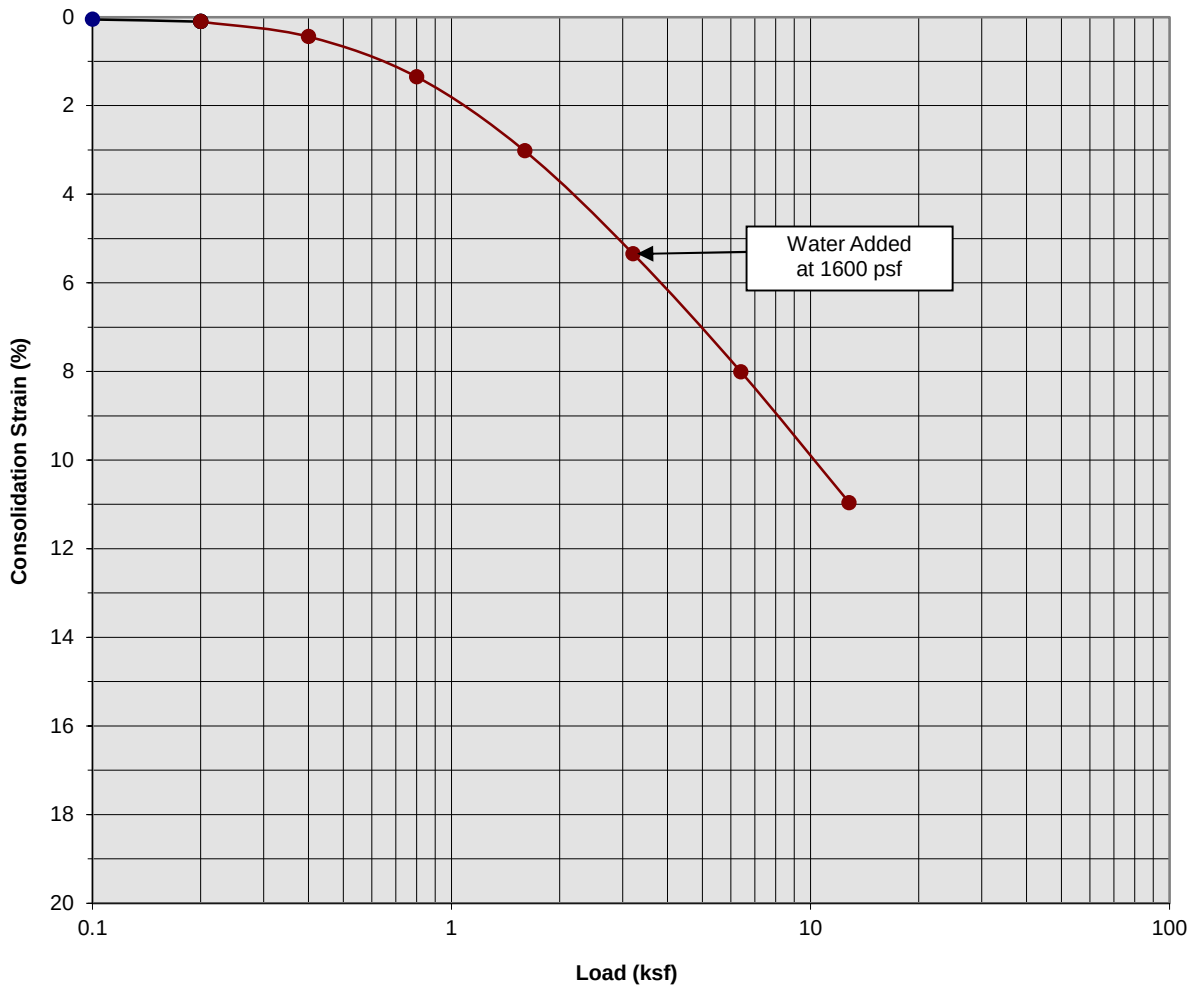
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt, little Clay, trace fine Gravel

Boring Number:	B-5	Initial Moisture Content (%)	16
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	9 to 10	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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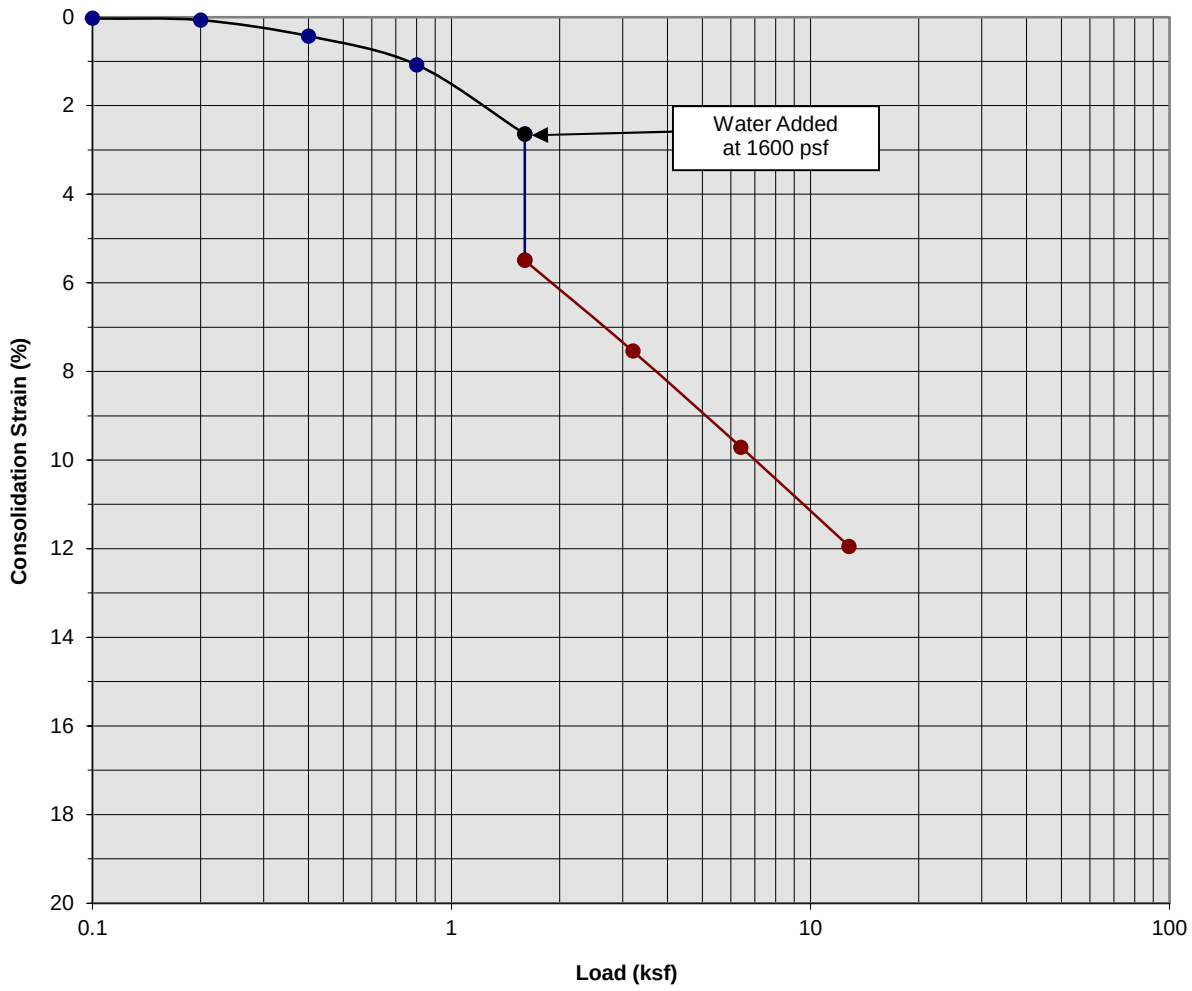
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace coarse Gravel

Boring Number:	B-11	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	3 to 4	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.85

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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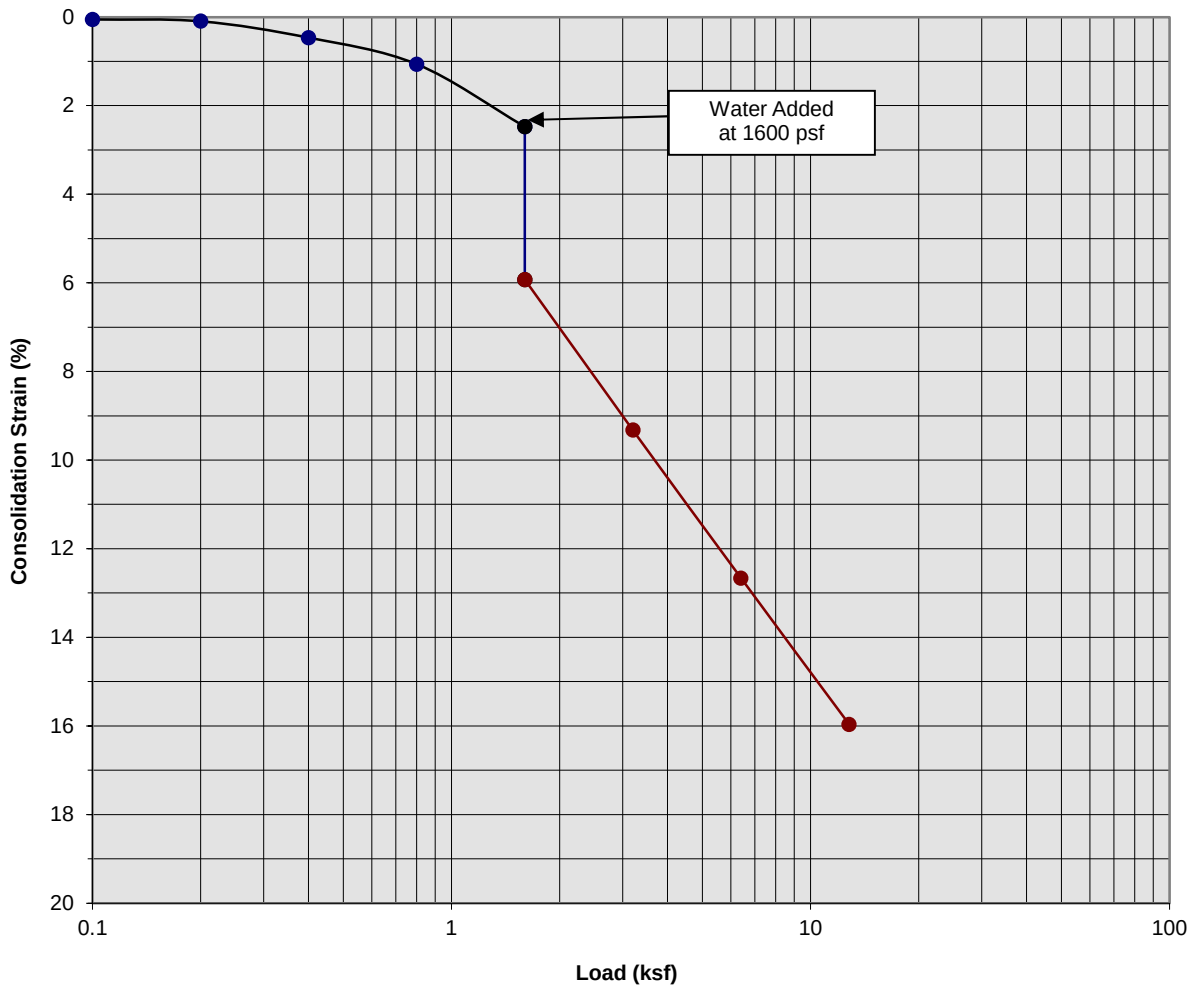
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

Boring Number:	B-11	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	5 to 6	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.45

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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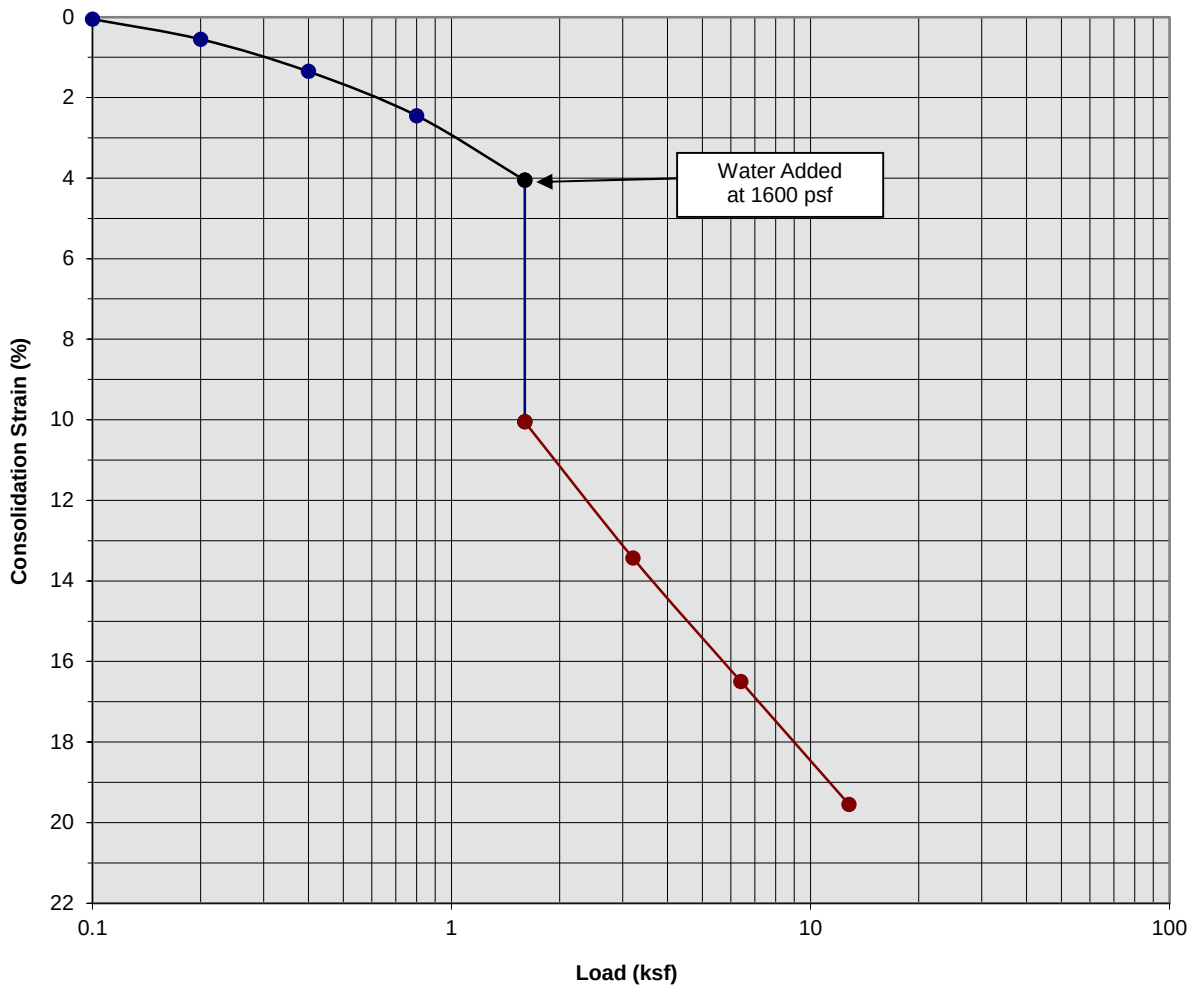
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

Boring Number:	B-11	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	7 to 8	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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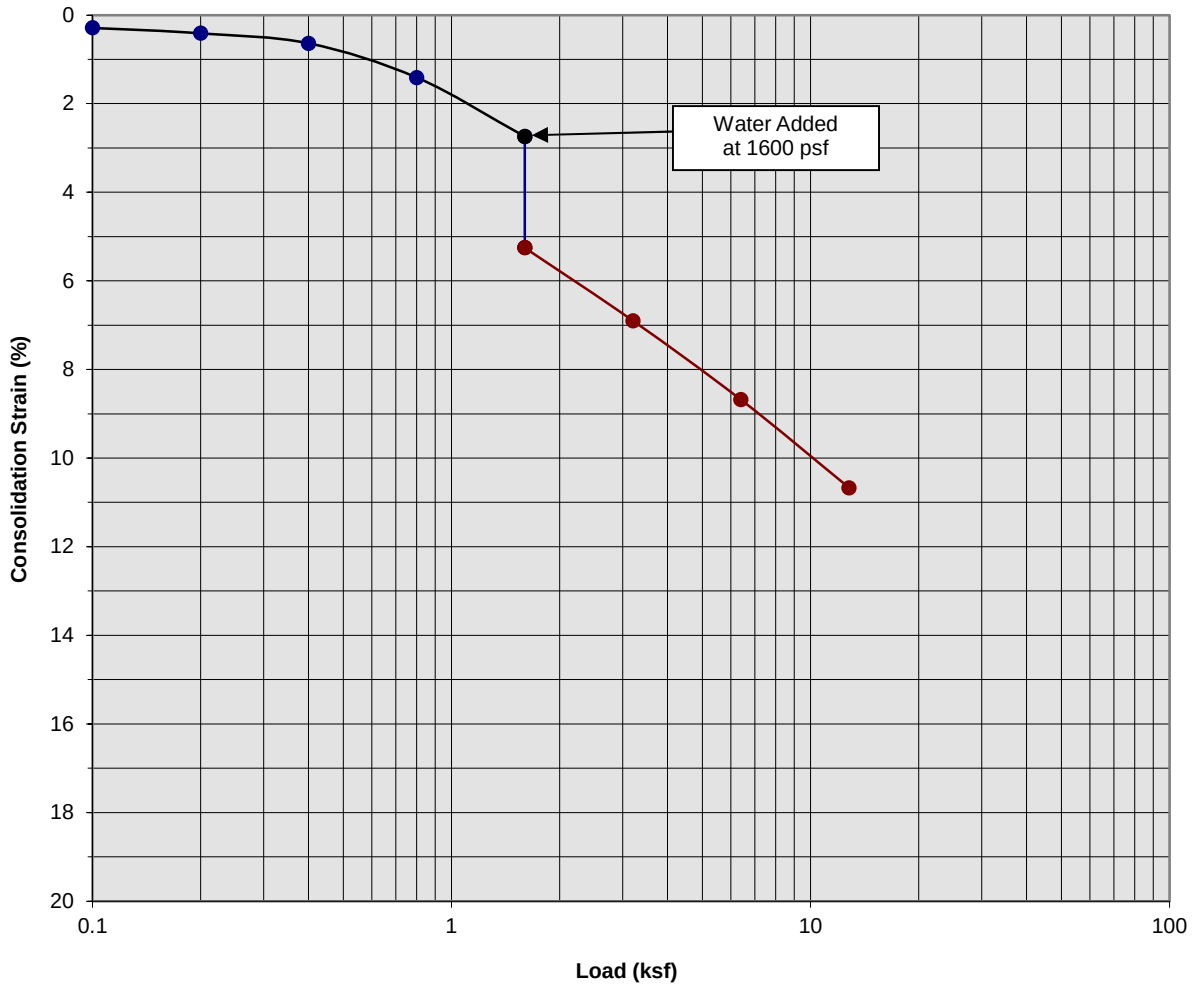
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

Boring Number:	B-11	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	98.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	109.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.51

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 8

SoCalGeo
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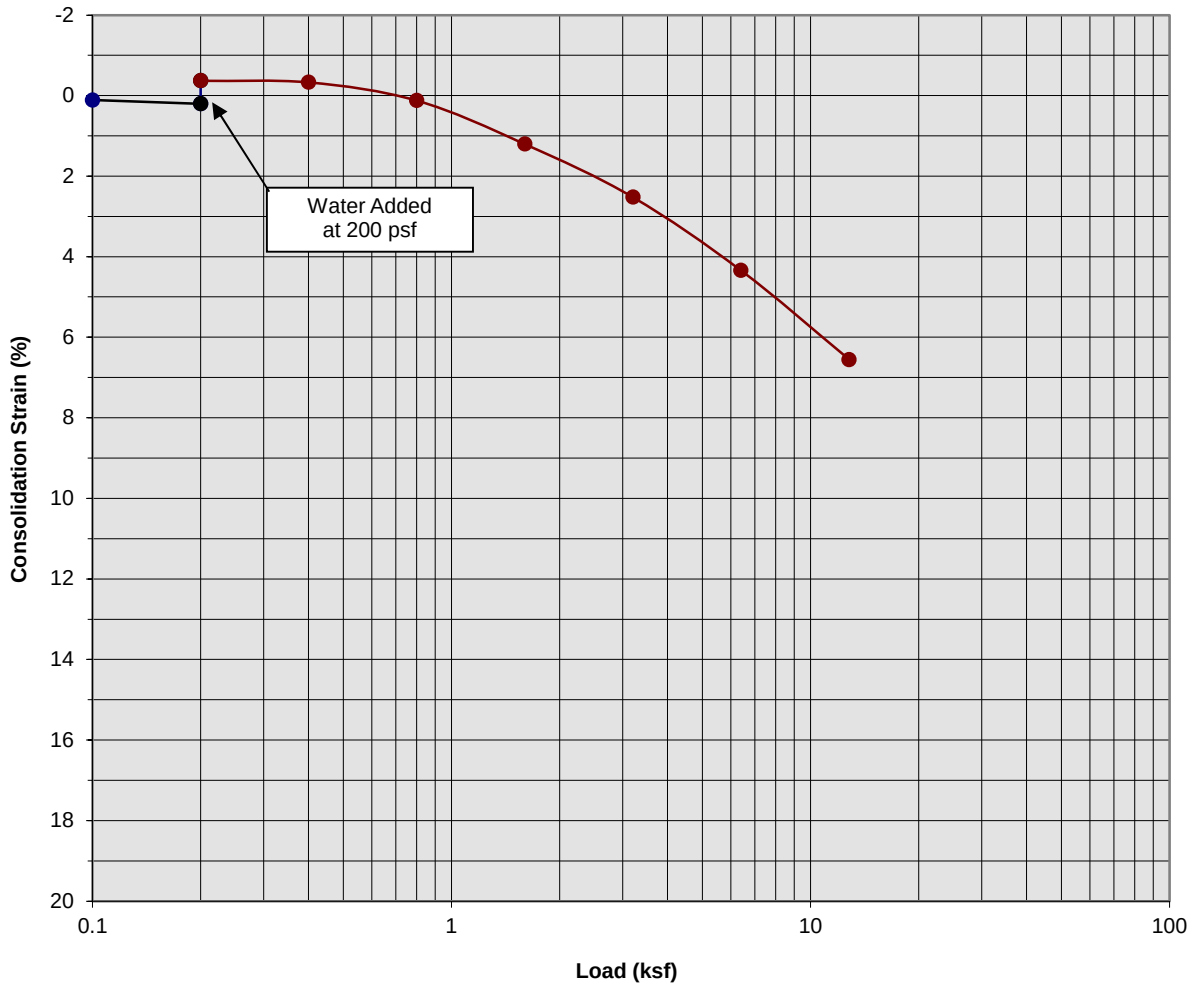
Consolidation/Collapse Test Results



Classification: Dark Red Brown fine Sandy Clay, trace medium Sand, trace Silt

Boring Number:	B-12	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	3 to 4	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	-0.57

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 9

SoCalGeo
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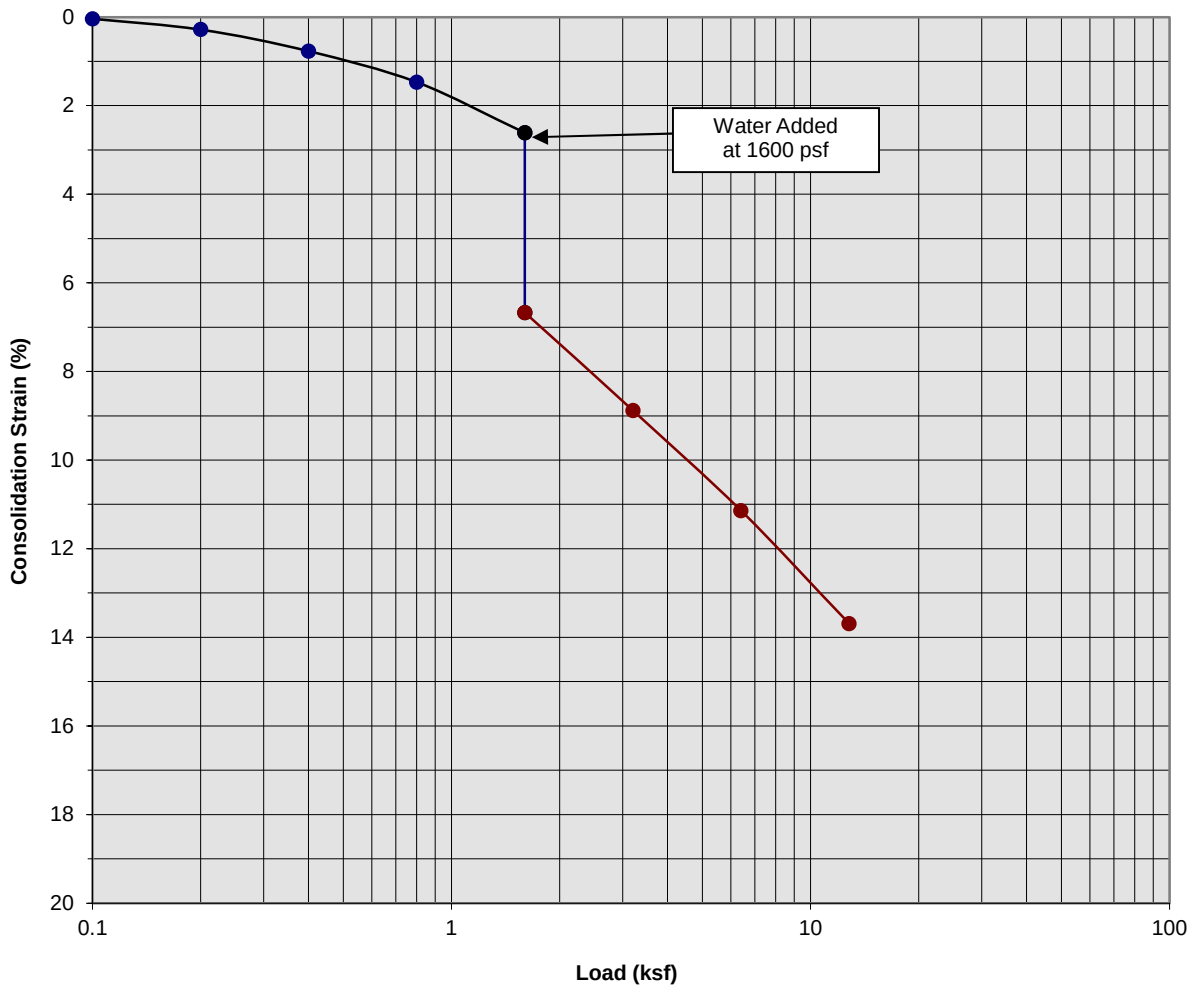
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace medium Sand

Boring Number:	B-12	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	5 to 6	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.06

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Beaumont, California
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PLATE C- 10

SoCalGeo
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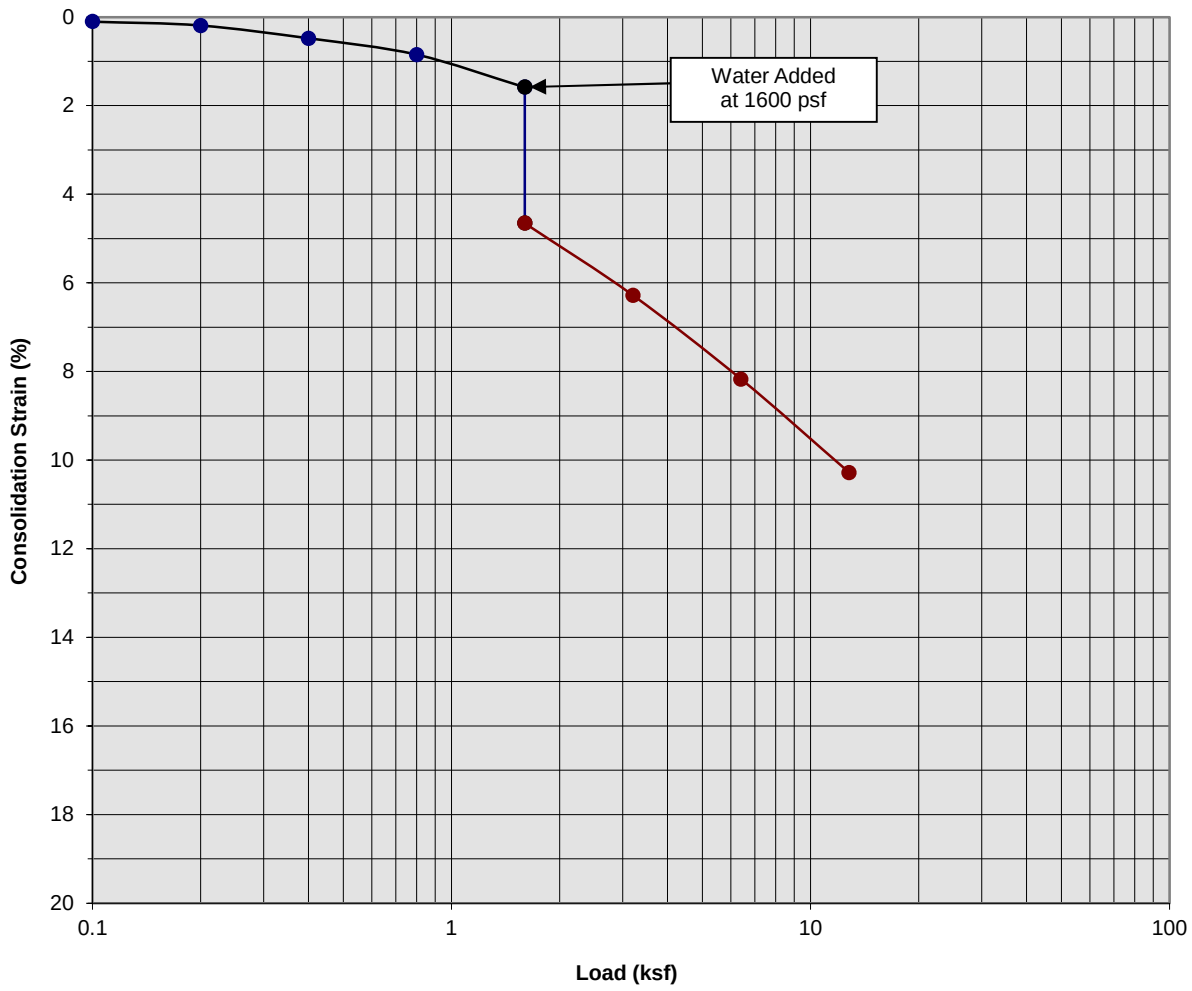
Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace coarse Sand

Boring Number:	B-12	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	108.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.07

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PLATE C- 11

SoCalGeo
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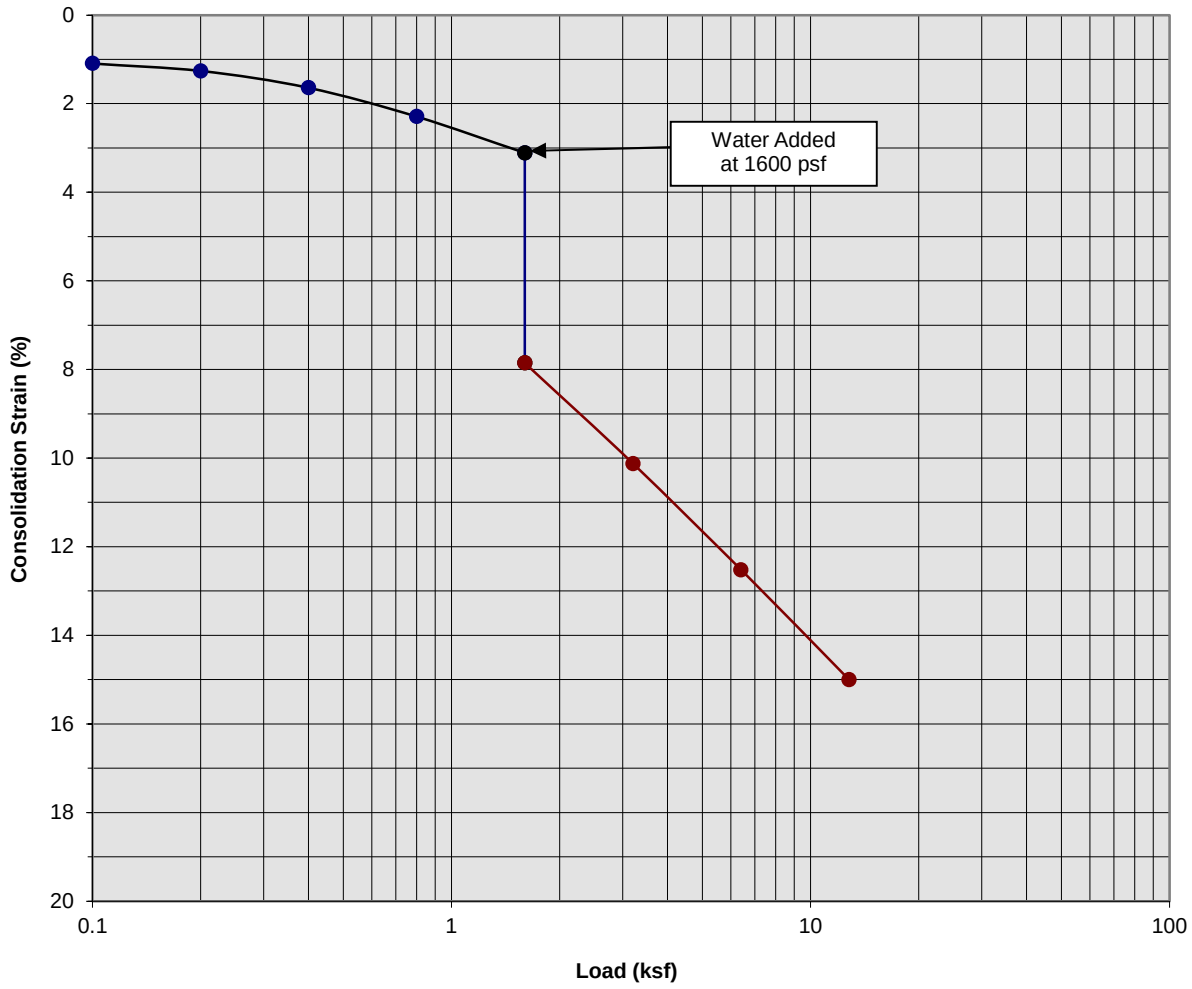
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand

Boring Number:	B-12	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	98.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.74

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Beaumont, California
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PLATE C- 12

SoCalGeo
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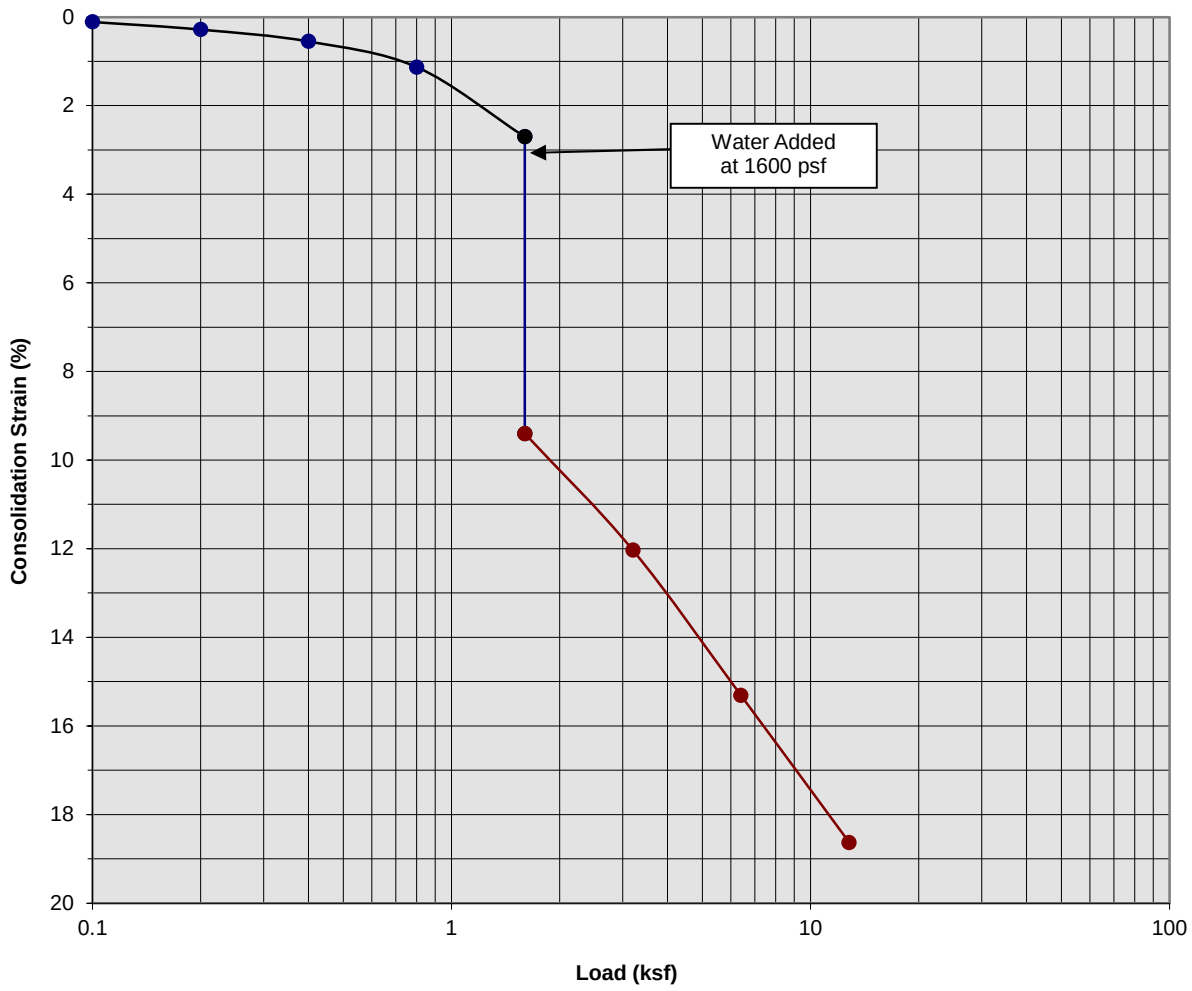
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to coarse Sand

Boring Number:	B-12	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	118.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.70

Proposed E-Commerce Development
Beaumont, California
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PLATE C- 13

SoCalGeo
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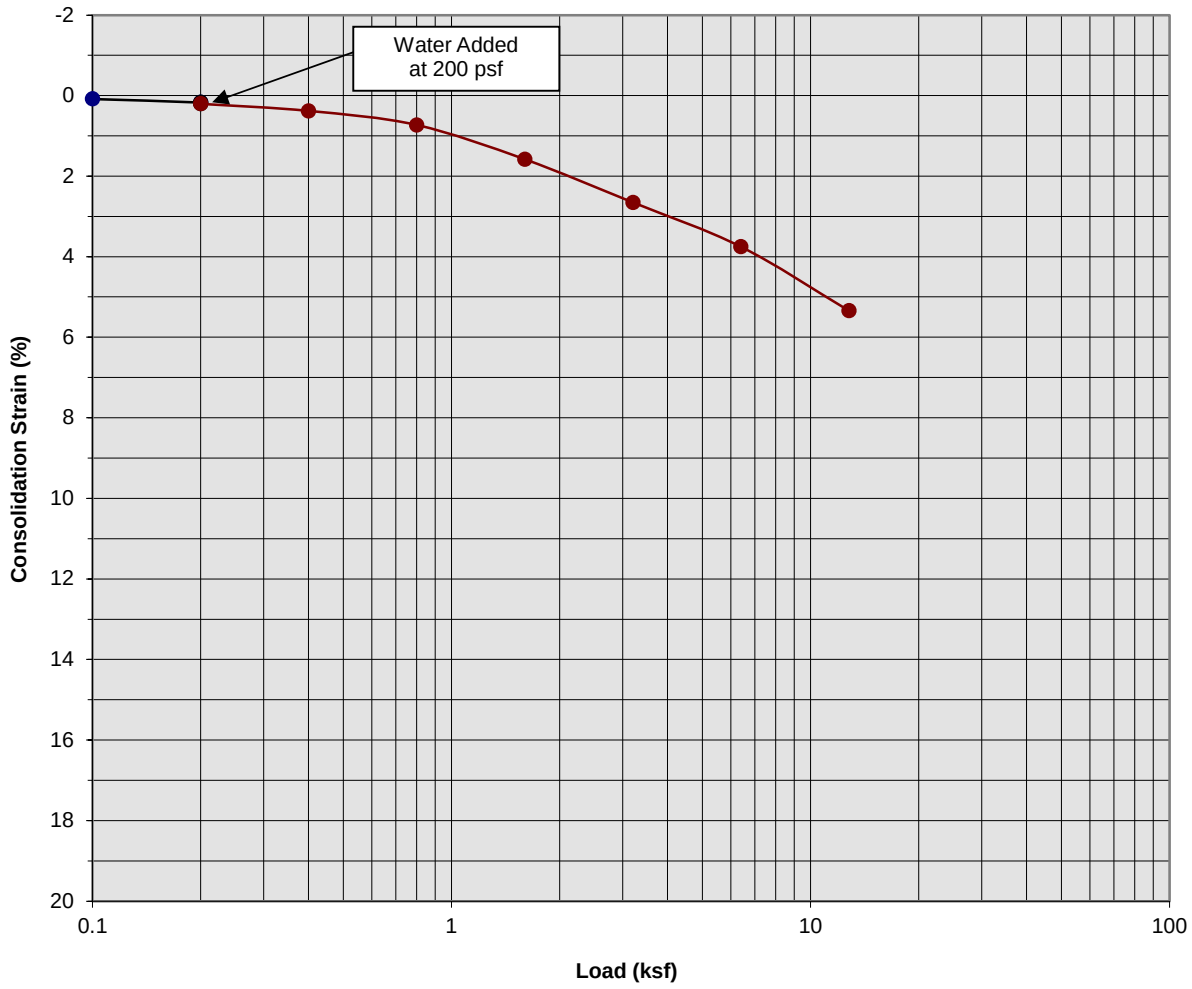
Consolidation/Collapse Test Results



Classification: FILL: Red Brown fine to medium Sandy Clay

Boring Number:	B-18	Initial Moisture Content (%)	15
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	3 to 4	Initial Dry Density (pcf)	114.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.03

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PLATE C- 14

SoCalGeo
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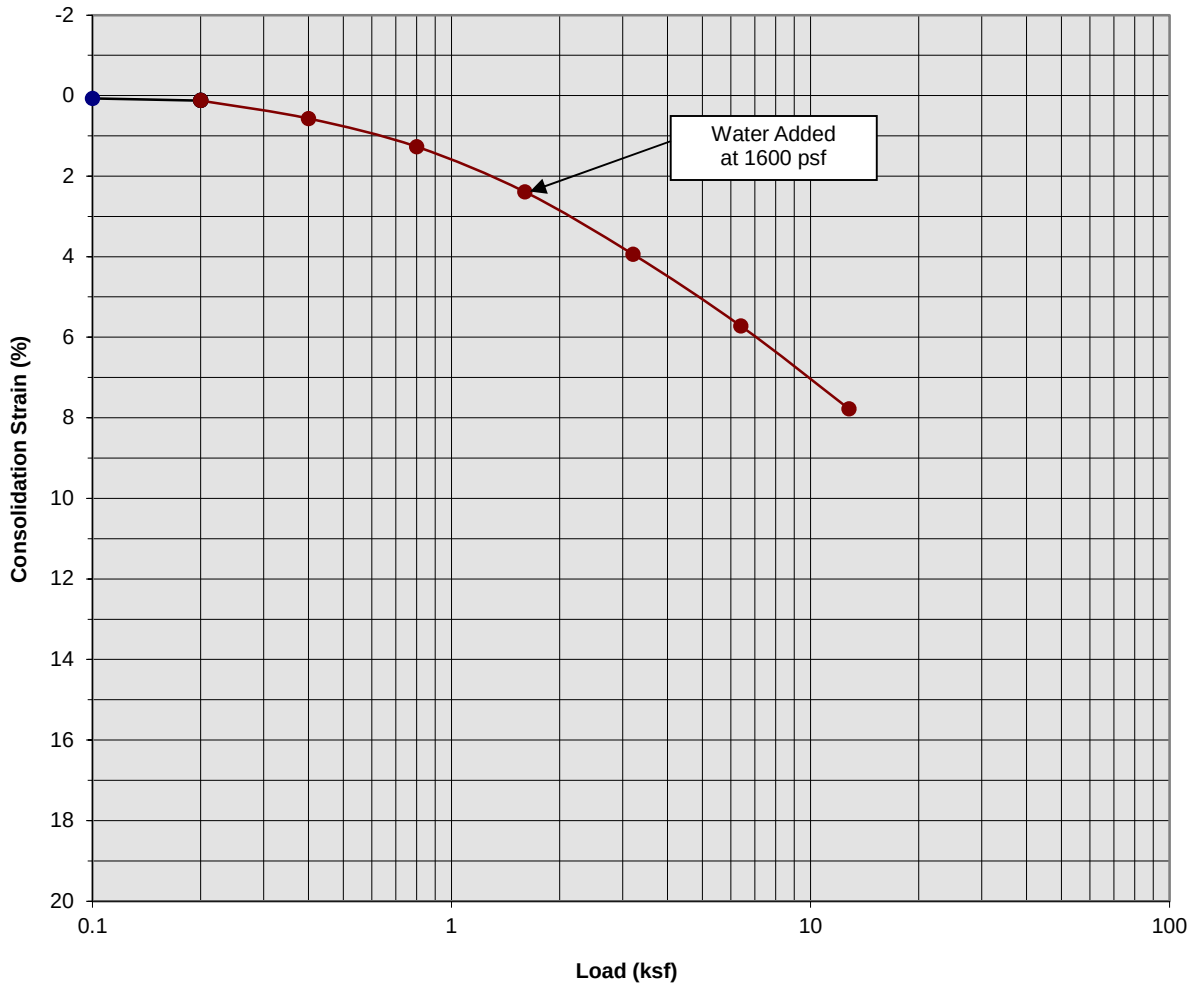
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine to coarse Sand, little Clay

Boring Number:	B-18	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	5 to 6	Initial Dry Density (pcf)	114.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

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PLATE C- 15

SoCalGeo
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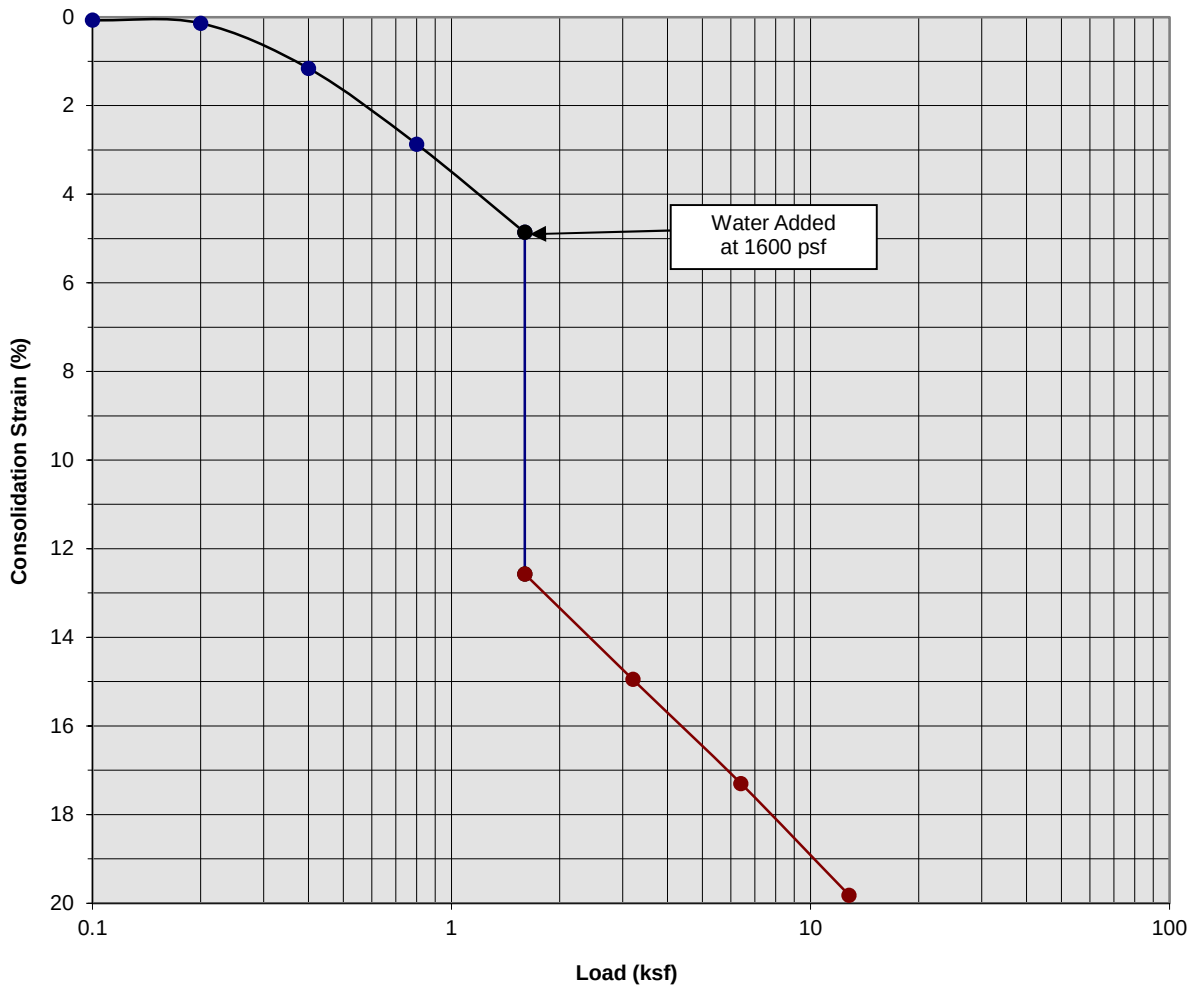
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine to coarse Sand, little Clay

Boring Number:	B-18	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	7 to 8	Initial Dry Density (pcf)	94.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.71

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PLATE C- 16

SoCalGeo
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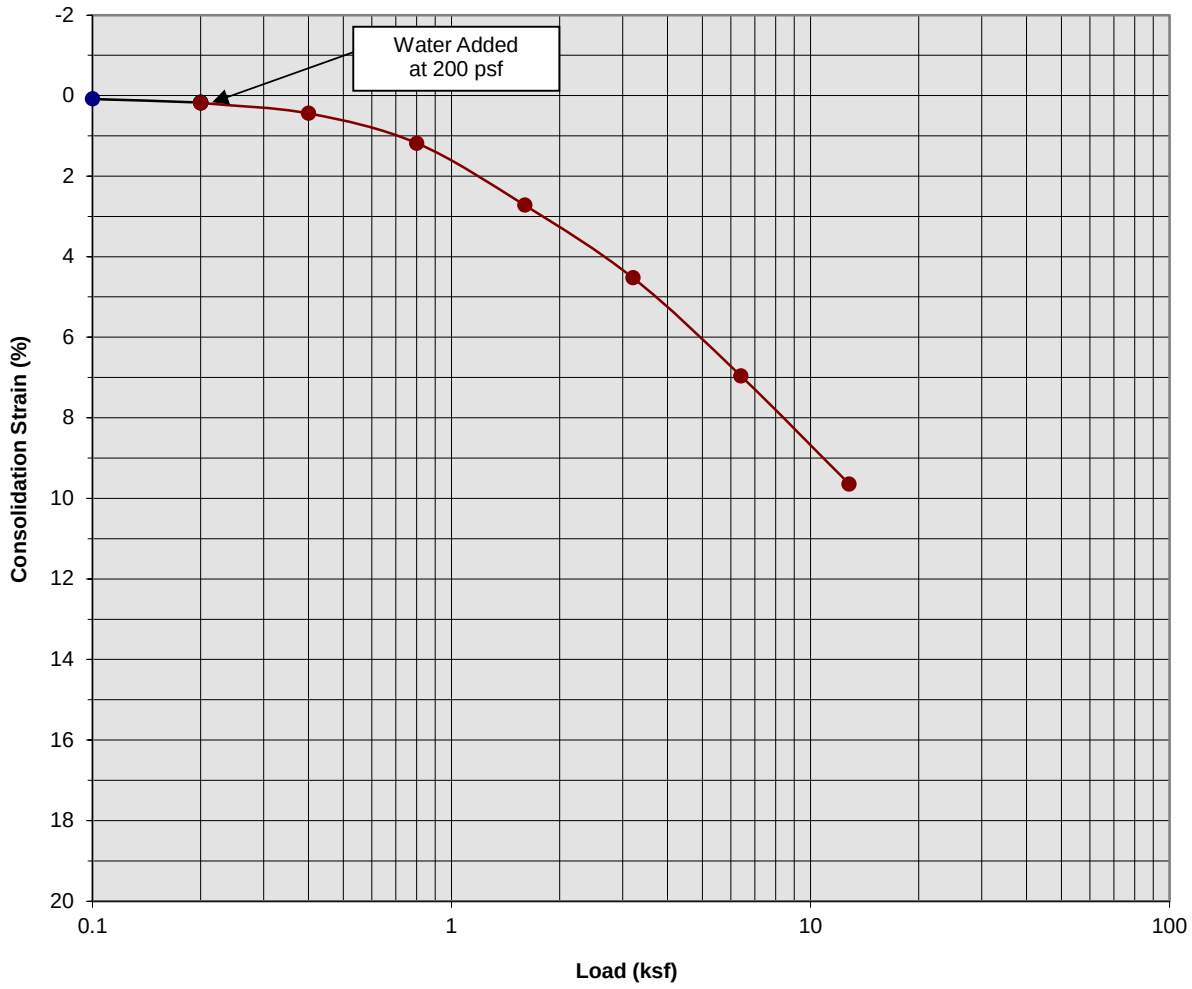
Consolidation/Collapse Test Results



Classification: Red Brown fine to medium Sandy Clay

Boring Number:	B-18	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	108.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.01

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Beaumont, California
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PLATE C- 17

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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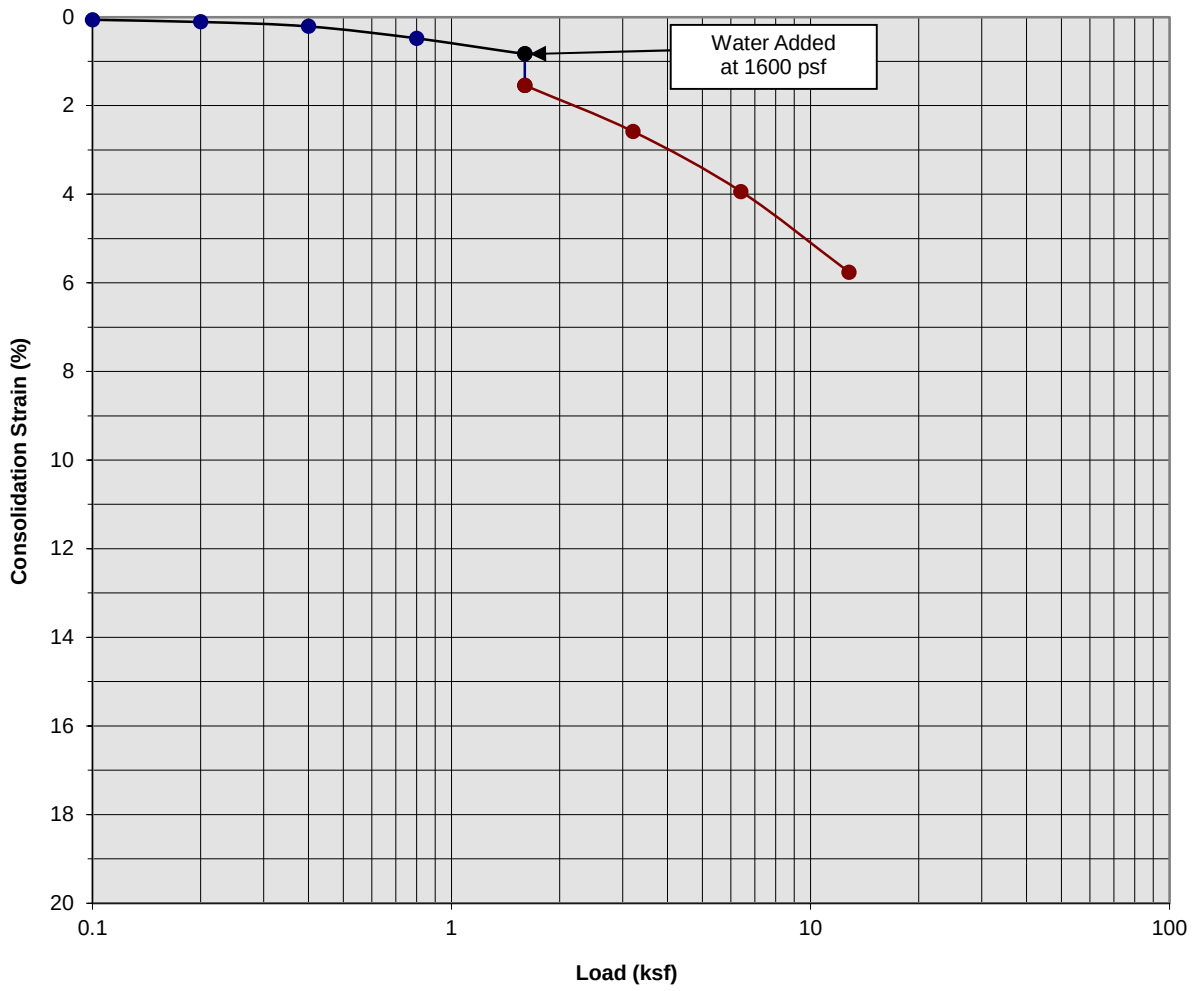
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand to fine Sandy Silt

Boring Number:	B-21	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	19 to 20	Initial Dry Density (pcf)	107.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.71

Proposed E-Commerce Development
Beaumont, California
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PLATE C- 18

SoCalGeo
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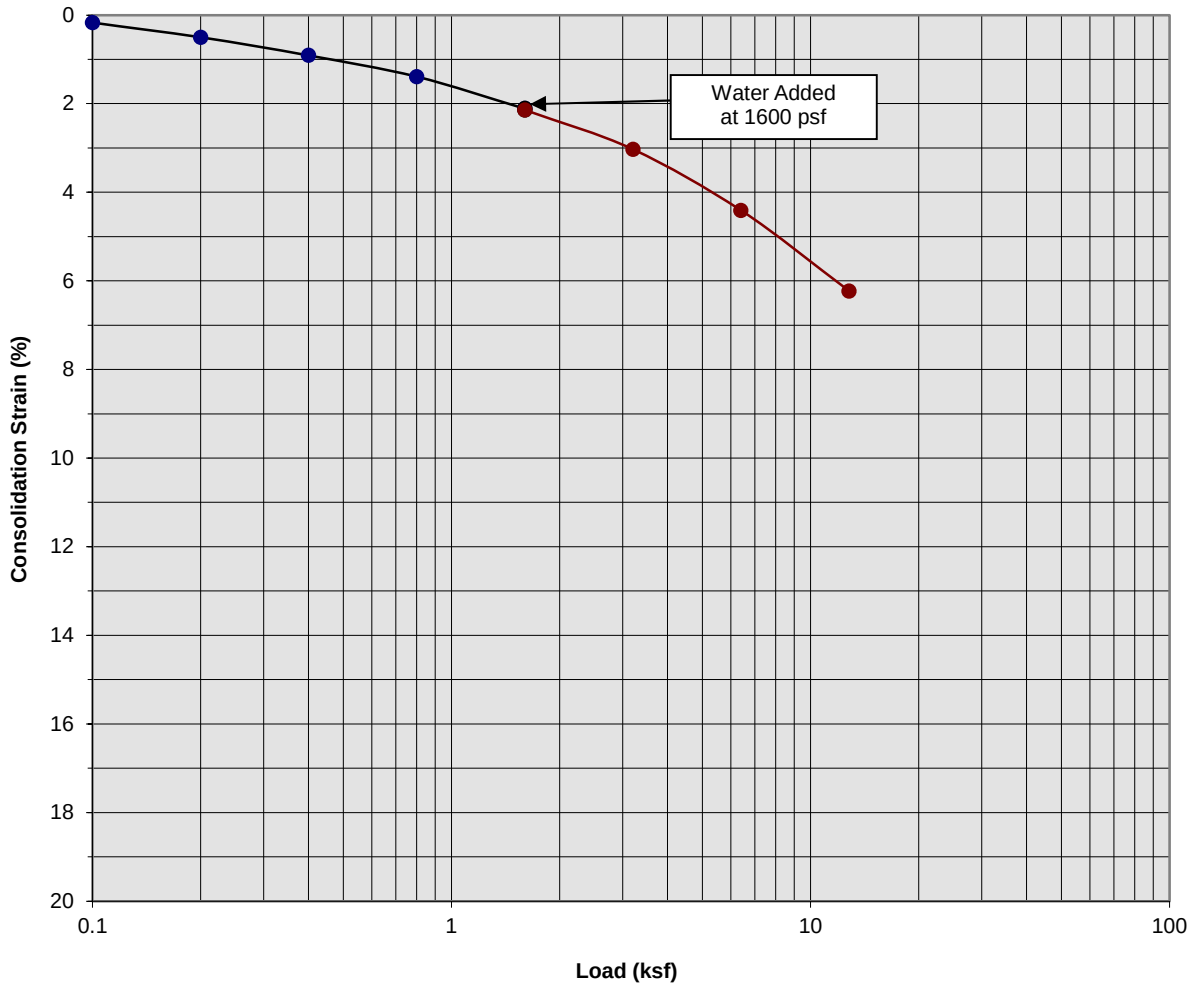
Consolidation/Collapse Test Results



Classification: Red Brown Clayey fine Sand, trace medium Sand, little Silt

Boring Number:	B-25	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	3 to 4	Initial Dry Density (pcf)	120.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.03

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PLATE C- 19

SoCalGeo
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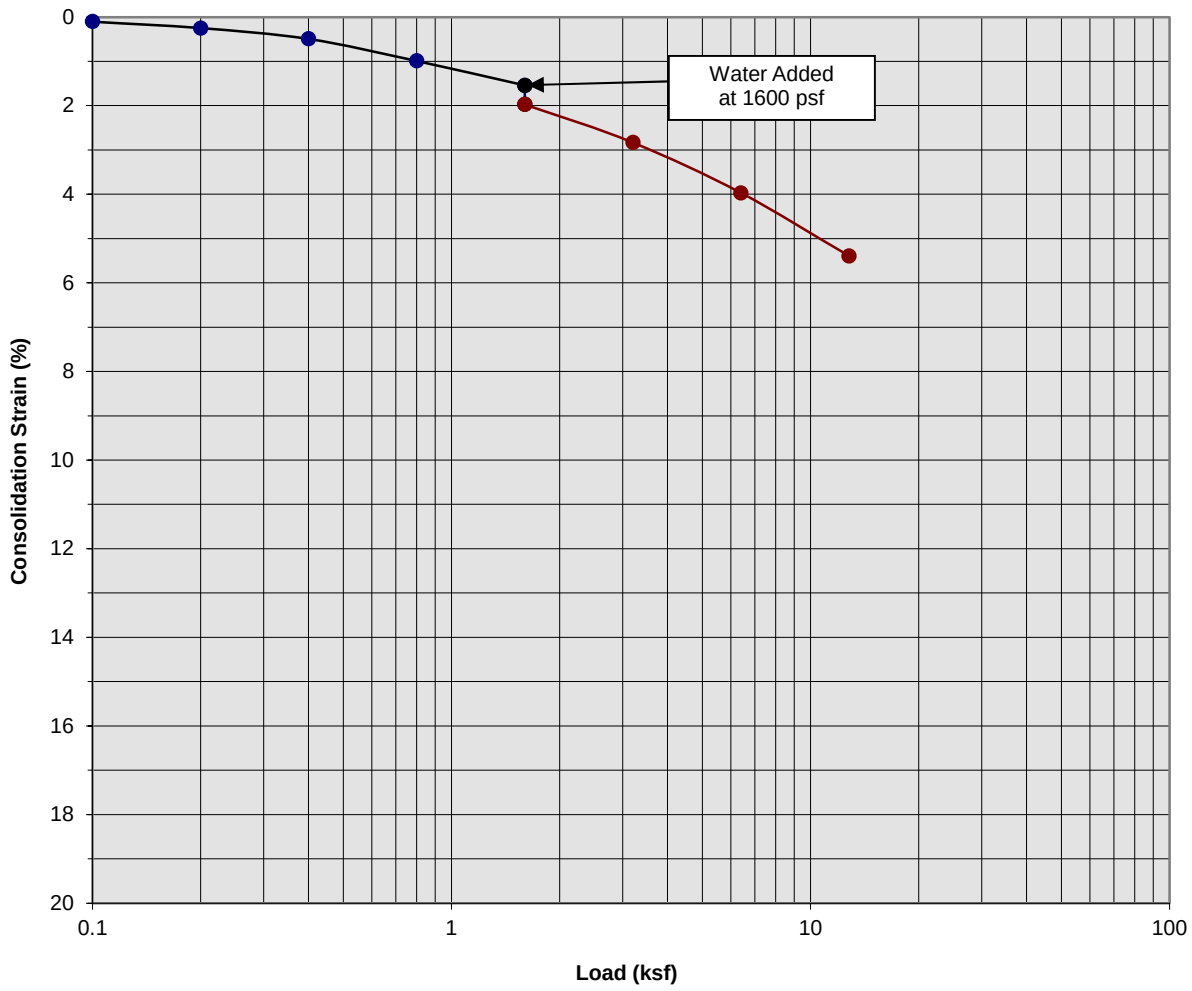
Consolidation/Collapse Test Results



Classification: Red Brown Clayey fine Sand, trace medium Sand

Boring Number:	B-25	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	5 to 6	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	122.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.43

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PLATE C- 20

SoCalGeo
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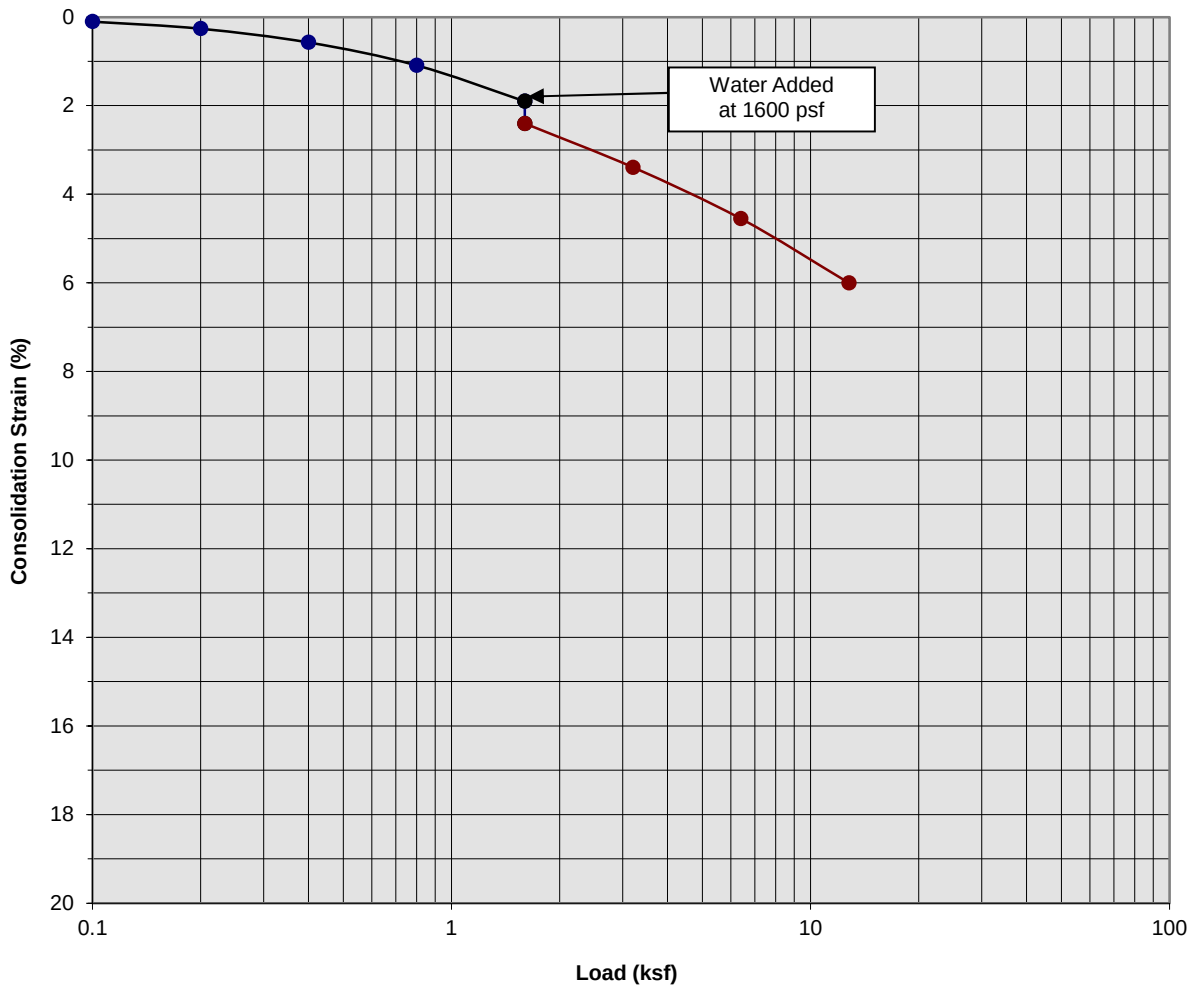
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace medium to coarse Sand

Boring Number:	B-25	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	7 to 8	Initial Dry Density (pcf)	117.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.50

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PLATE C- 21

SoCalGeo
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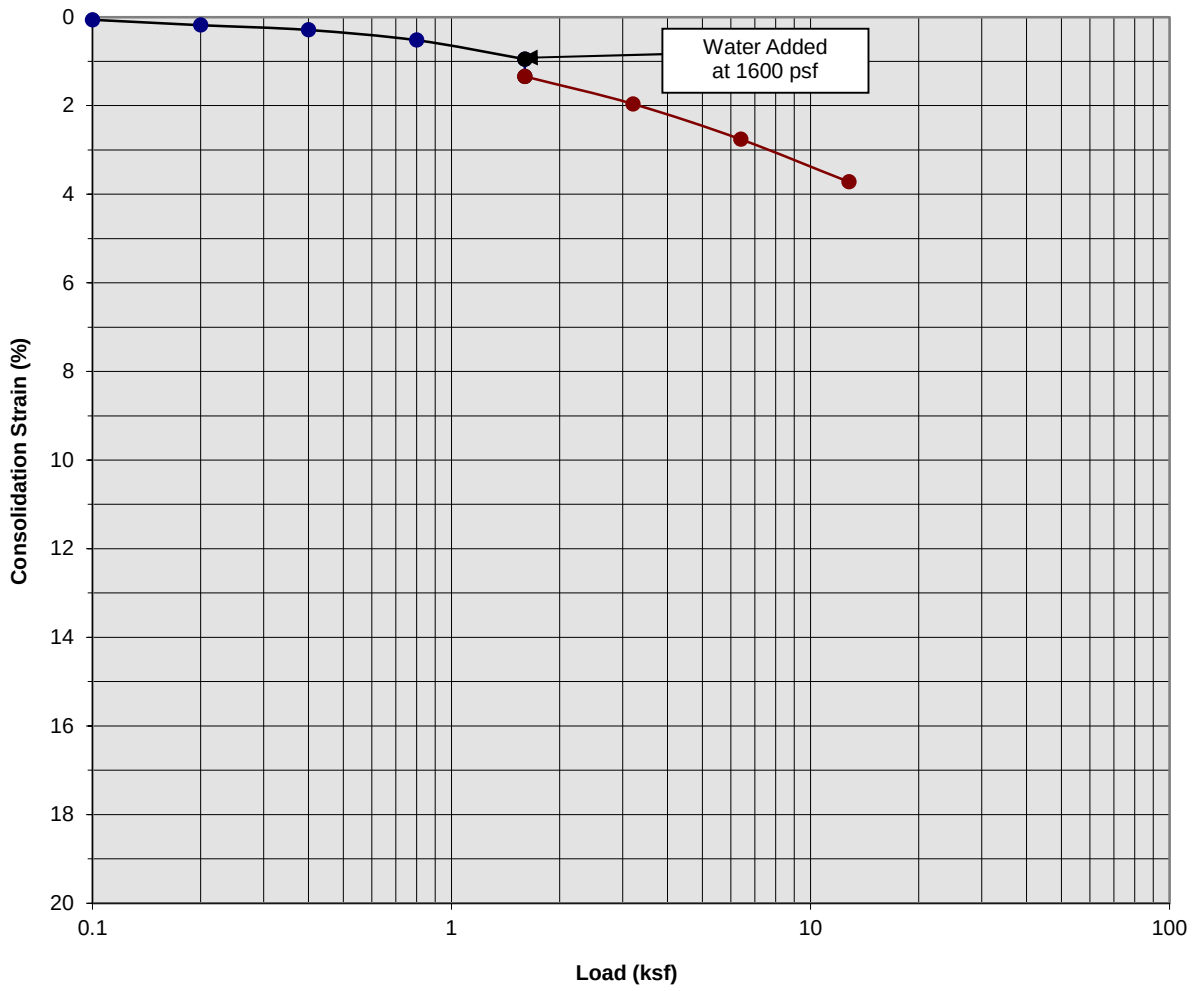
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to coarse Sand, trace fine Gravel

Boring Number:	B-25	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	121.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.39

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PLATE C- 22

SoCalGeo
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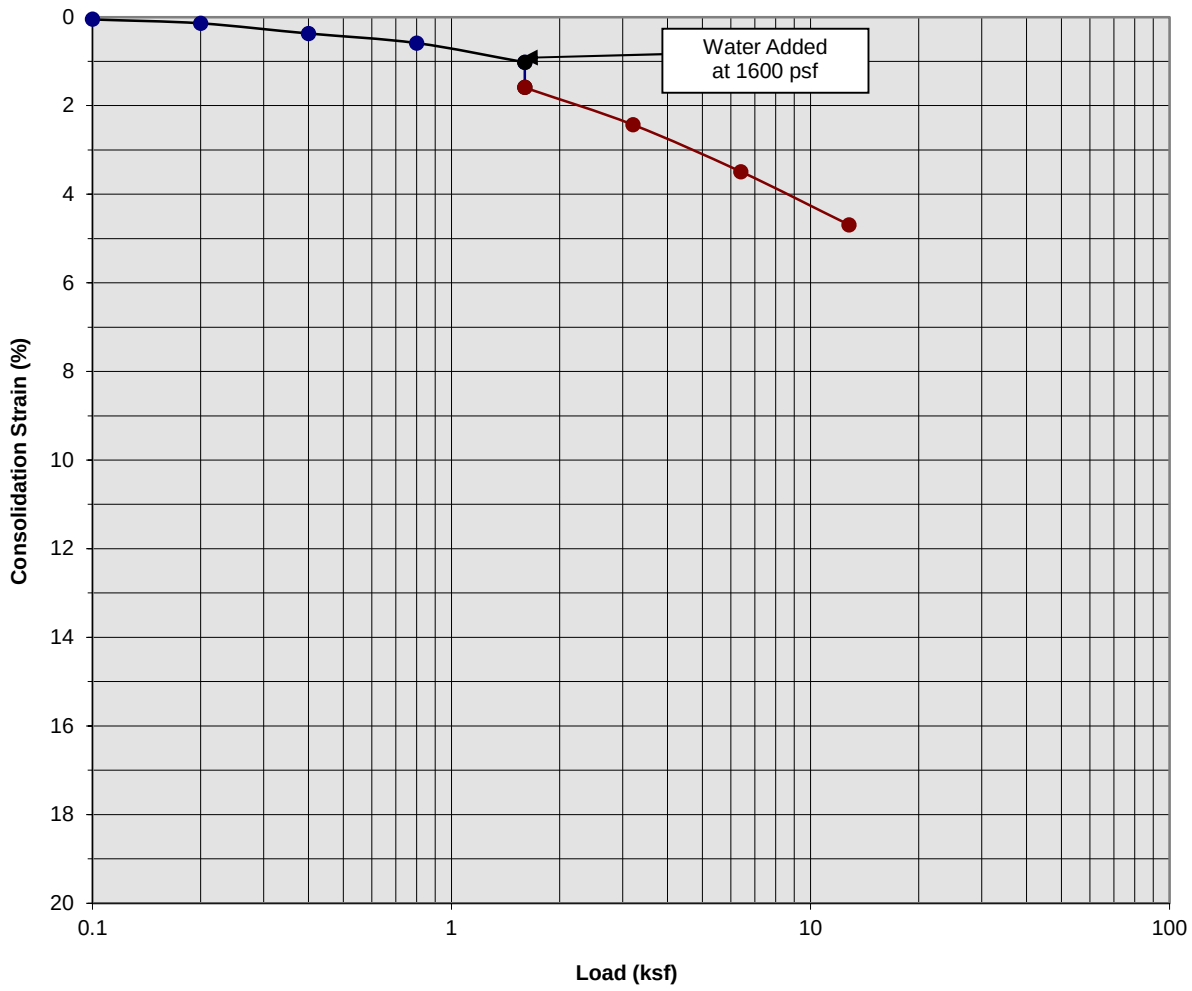
Consolidation/Collapse Test Results



Classification: FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand

Boring Number:	B-26	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	3 to 4	Initial Dry Density (pcf)	123.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	129.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.57

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PLATE C- 23

SoCalGeo
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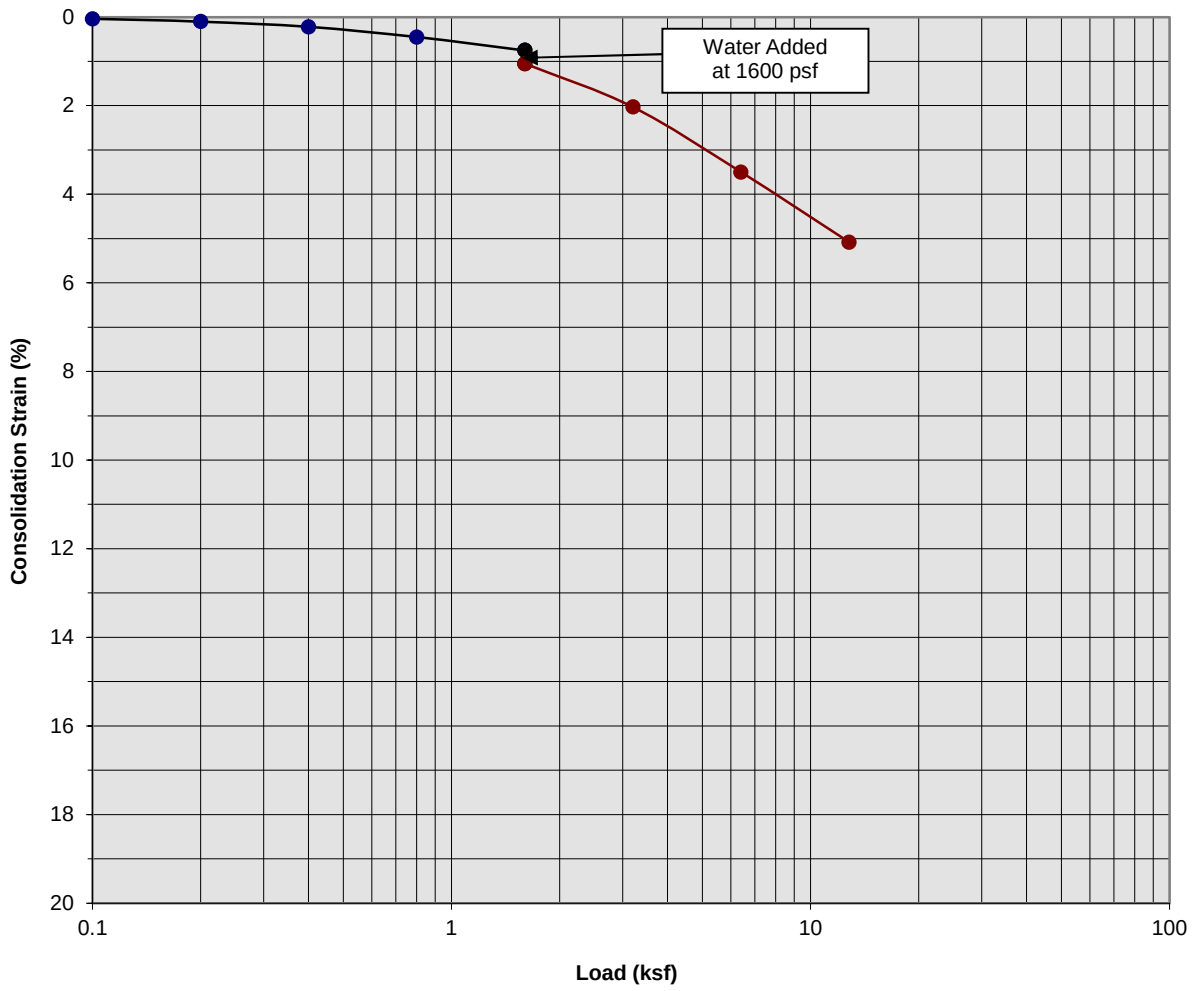
Consolidation/Collapse Test Results



Classification: FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand

Boring Number:	B-26	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	5 to 6	Initial Dry Density (pcf)	121.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.30

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PLATE C- 24

SoCalGeo
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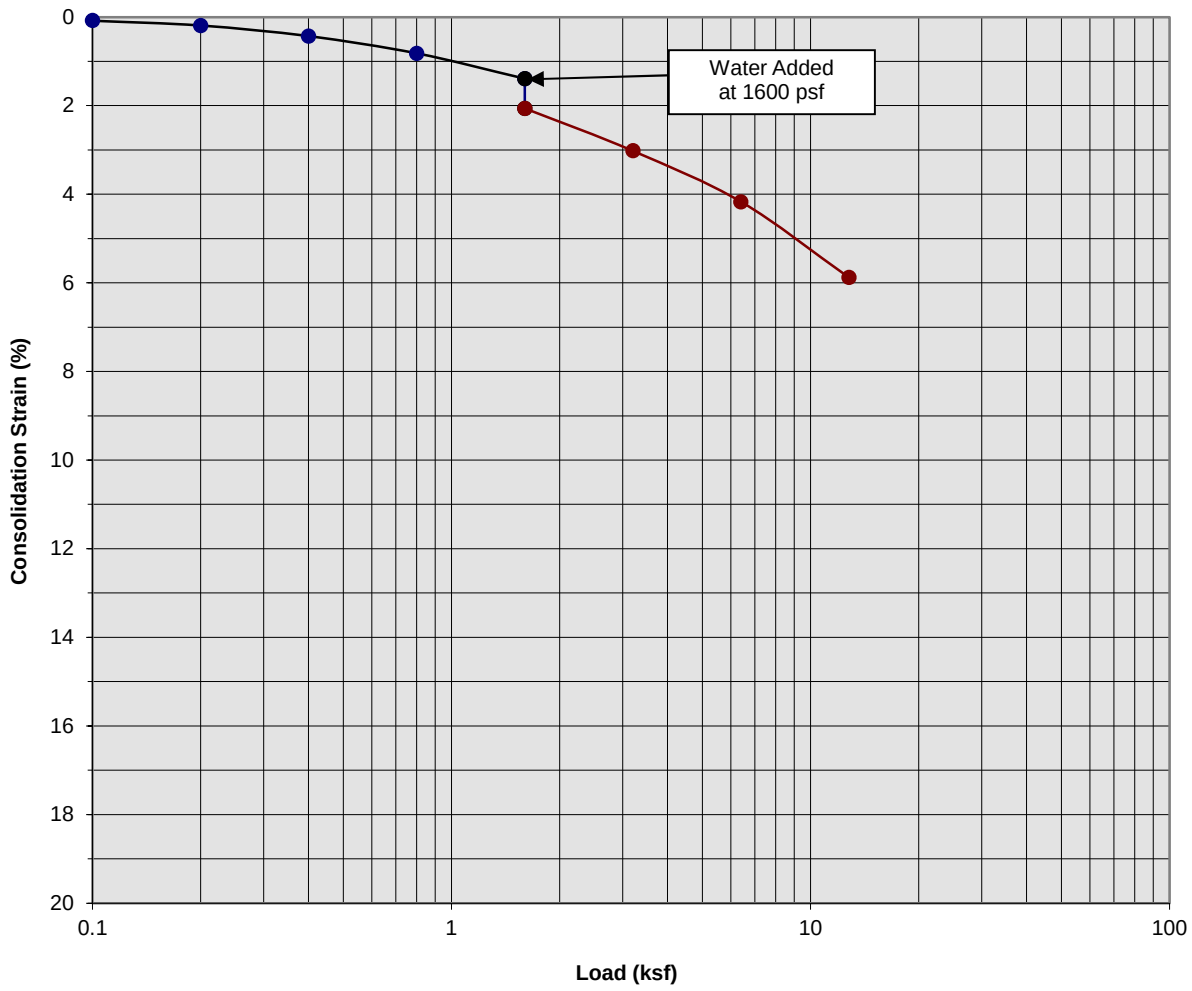
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium Sand, trace Clay

Boring Number:	B-26	Initial Moisture Content (%)	13
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	7 to 8	Initial Dry Density (pcf)	116.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.67

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PLATE C- 25

SoCalGeo
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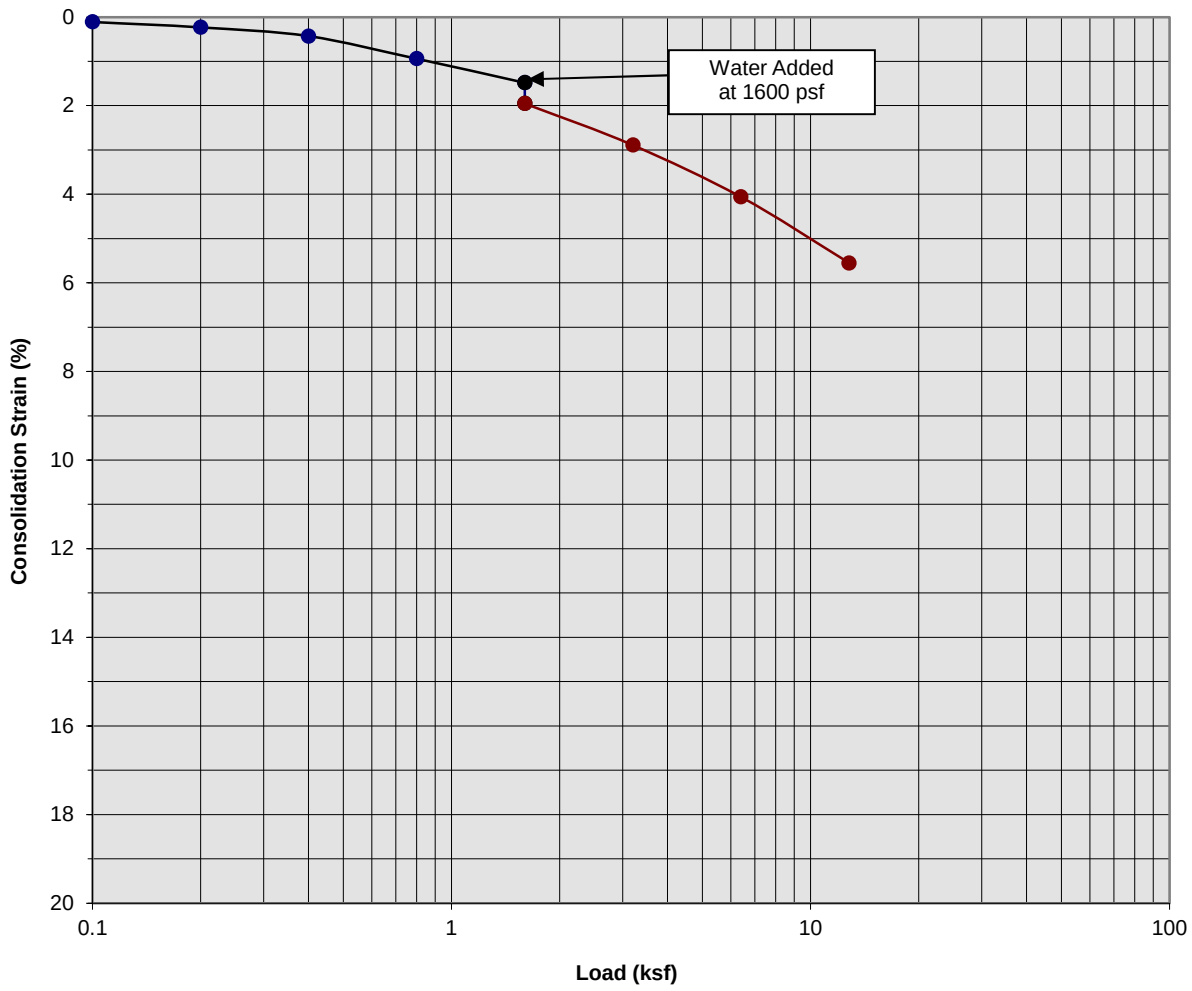
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium Sand, little Clay

Boring Number:	B-26	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	9 to 10	Initial Dry Density (pcf)	117.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.47

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Beaumont, California
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PLATE C- 26

SoCalGeo
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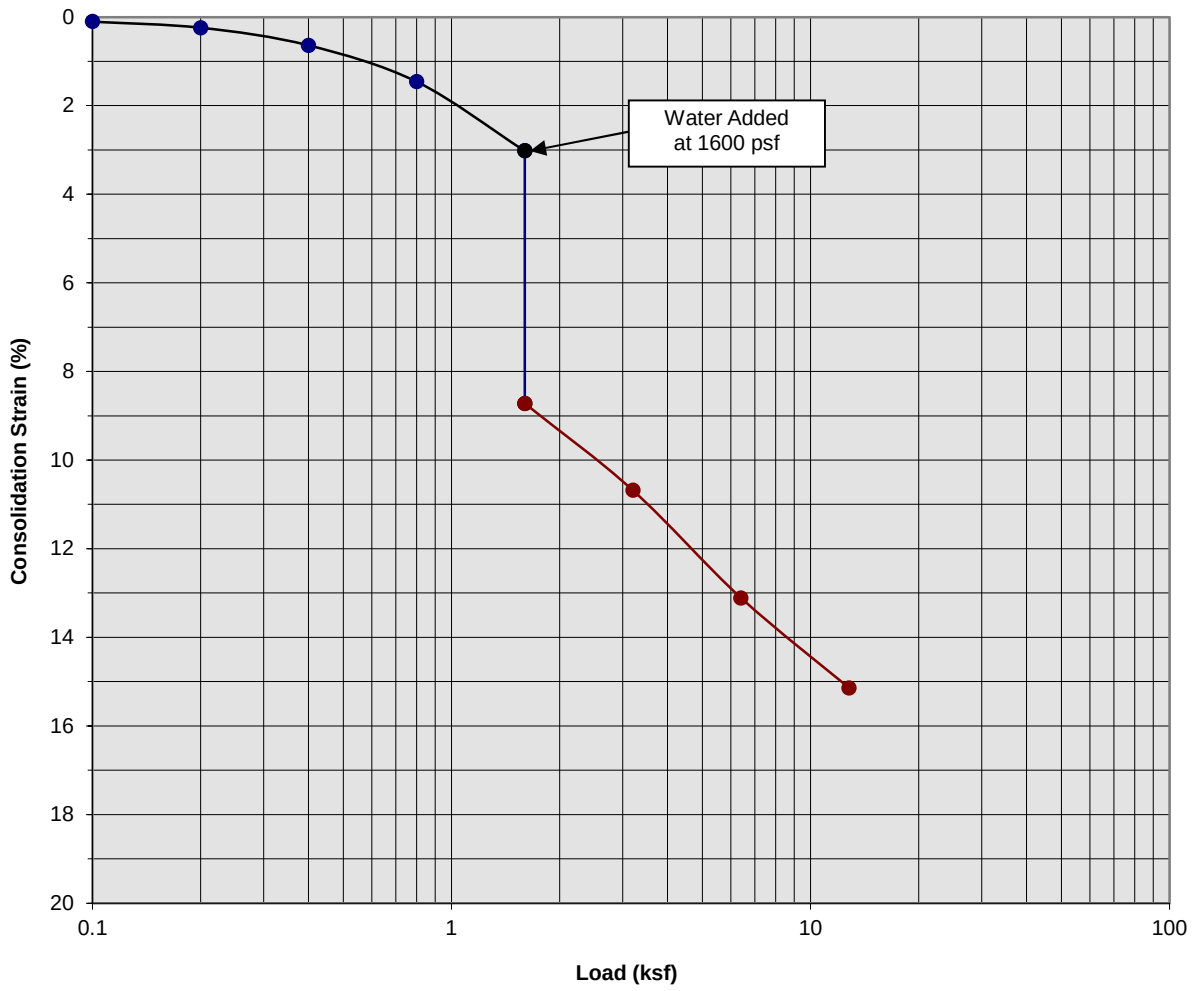
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand

Boring Number:	B-39	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	4 to 5	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.70

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PLATE C- 27

SoCalGeo
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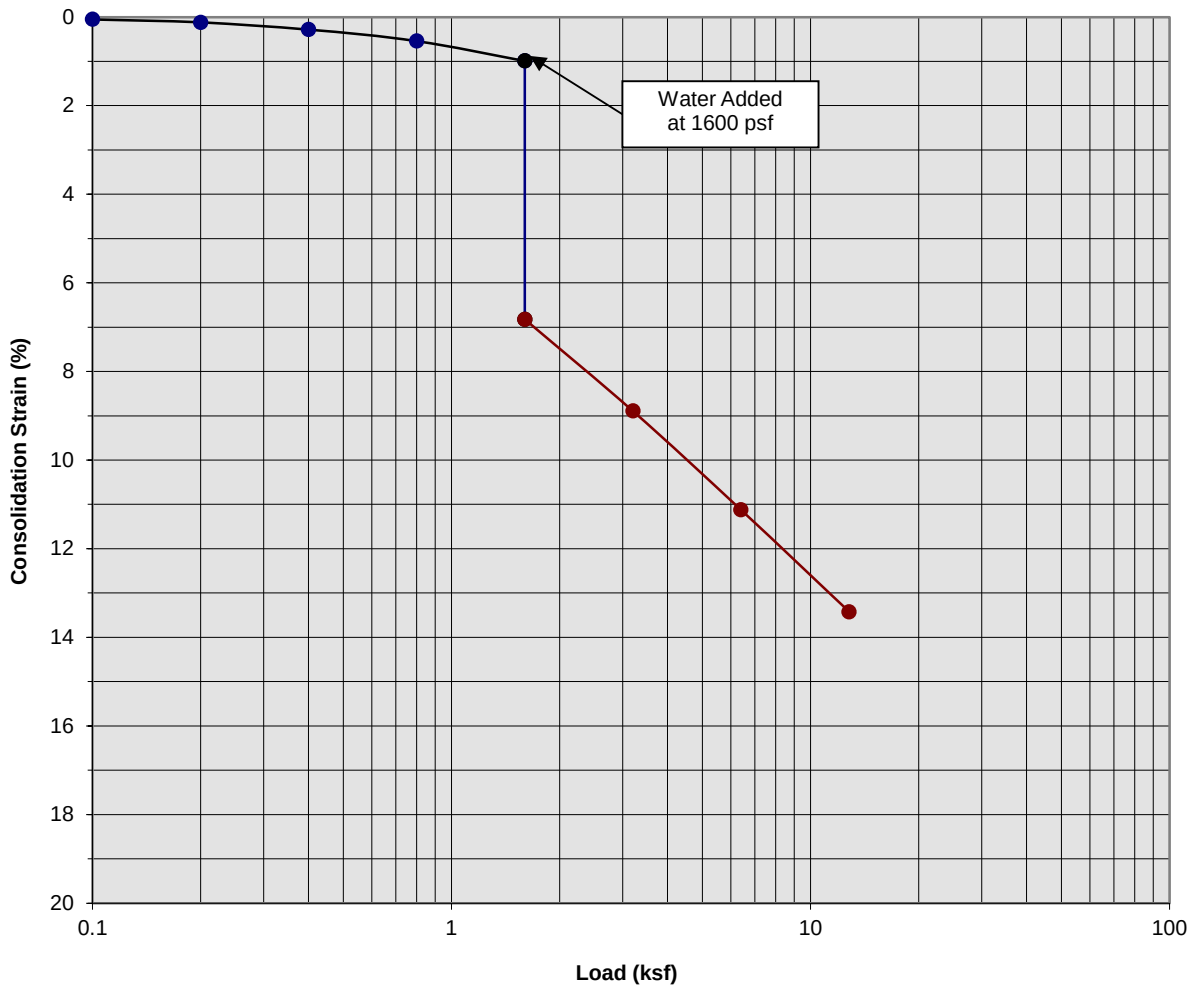
Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.83

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PLATE C- 28

SoCalGeo
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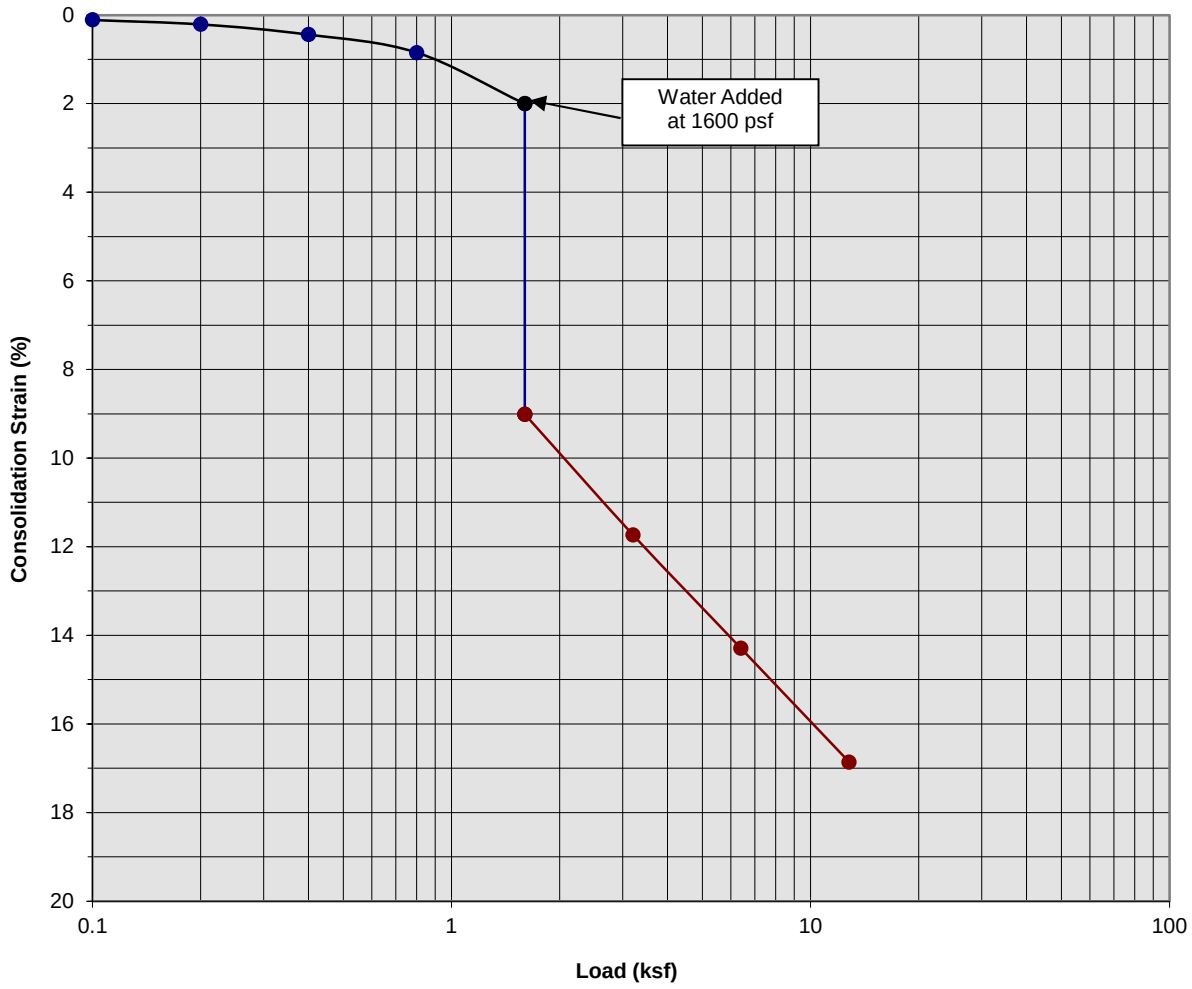
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.01

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PLATE C- 29

SoCalGeo
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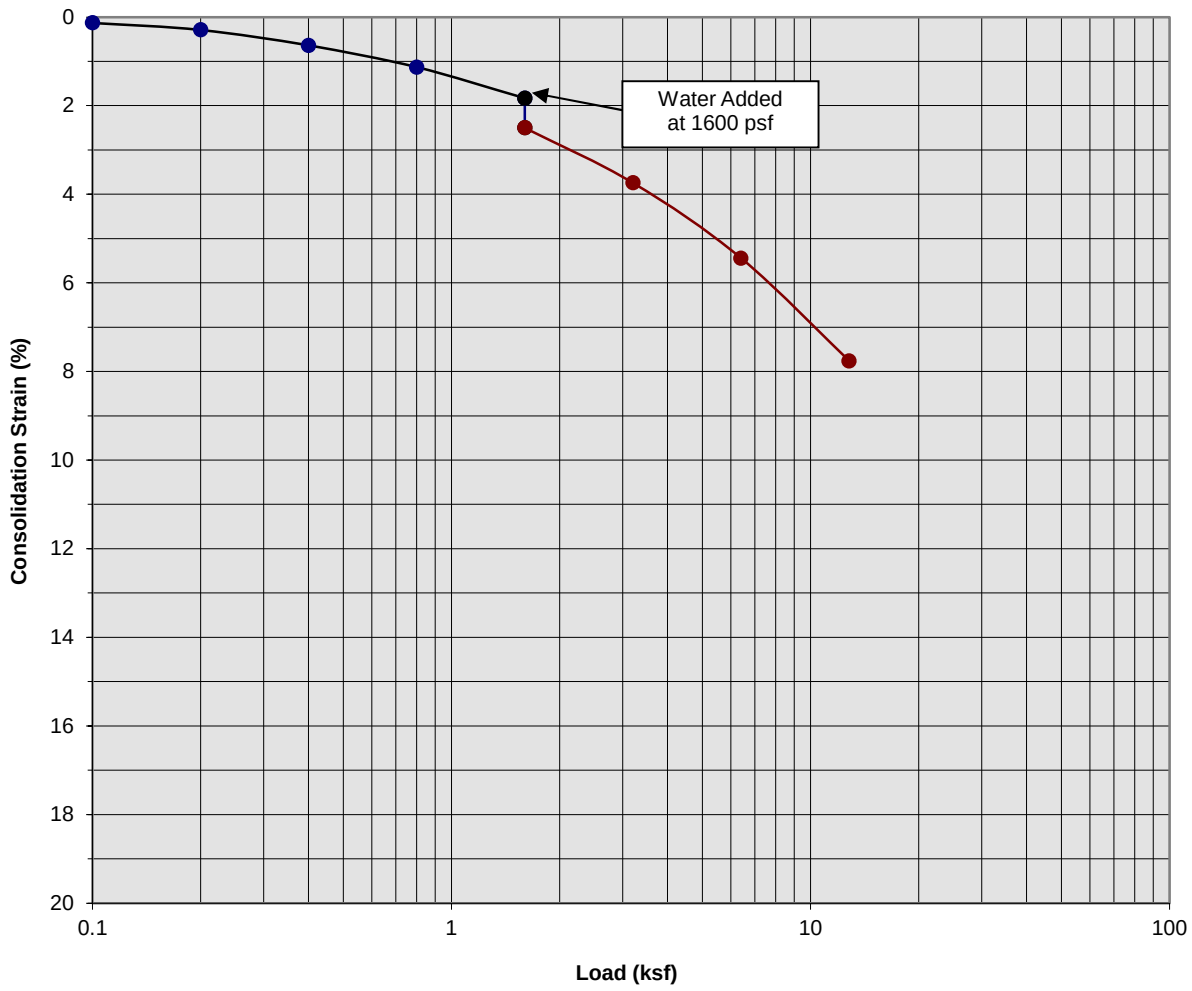
Consolidation/Collapse Test Results



Classification: Gray Brown fine Sand, trace medium to coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	19 to 20	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.67

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PLATE C- 30

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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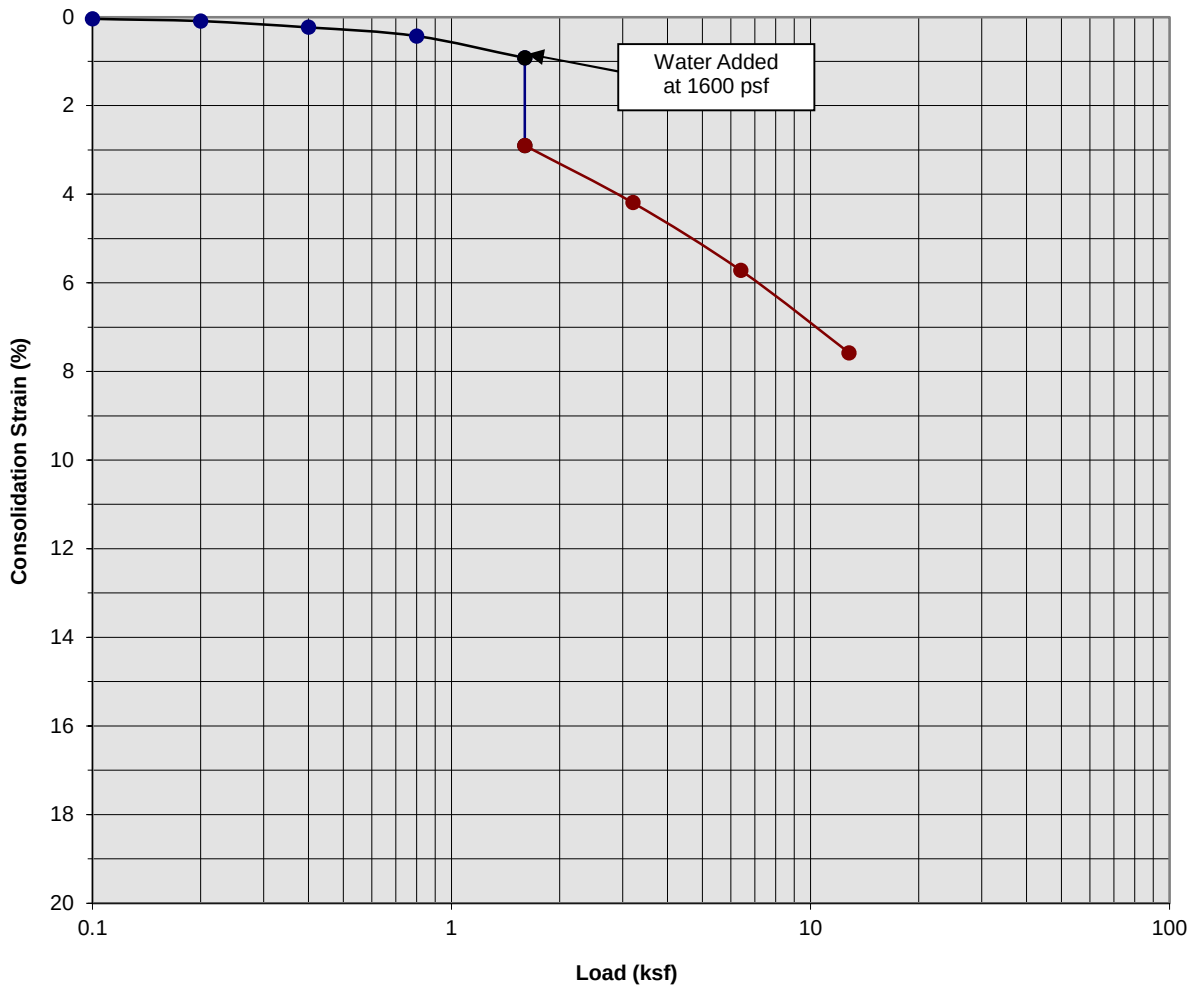
Consolidation/Collapse Test Results



Classification: FILL: Brown Silty fine Sand, trace medium to coarse Sand

Boring Number:	B-41	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	1 to 2	Initial Dry Density (pcf)	126.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	136.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.98

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PLATE C- 31

SoCalGeo
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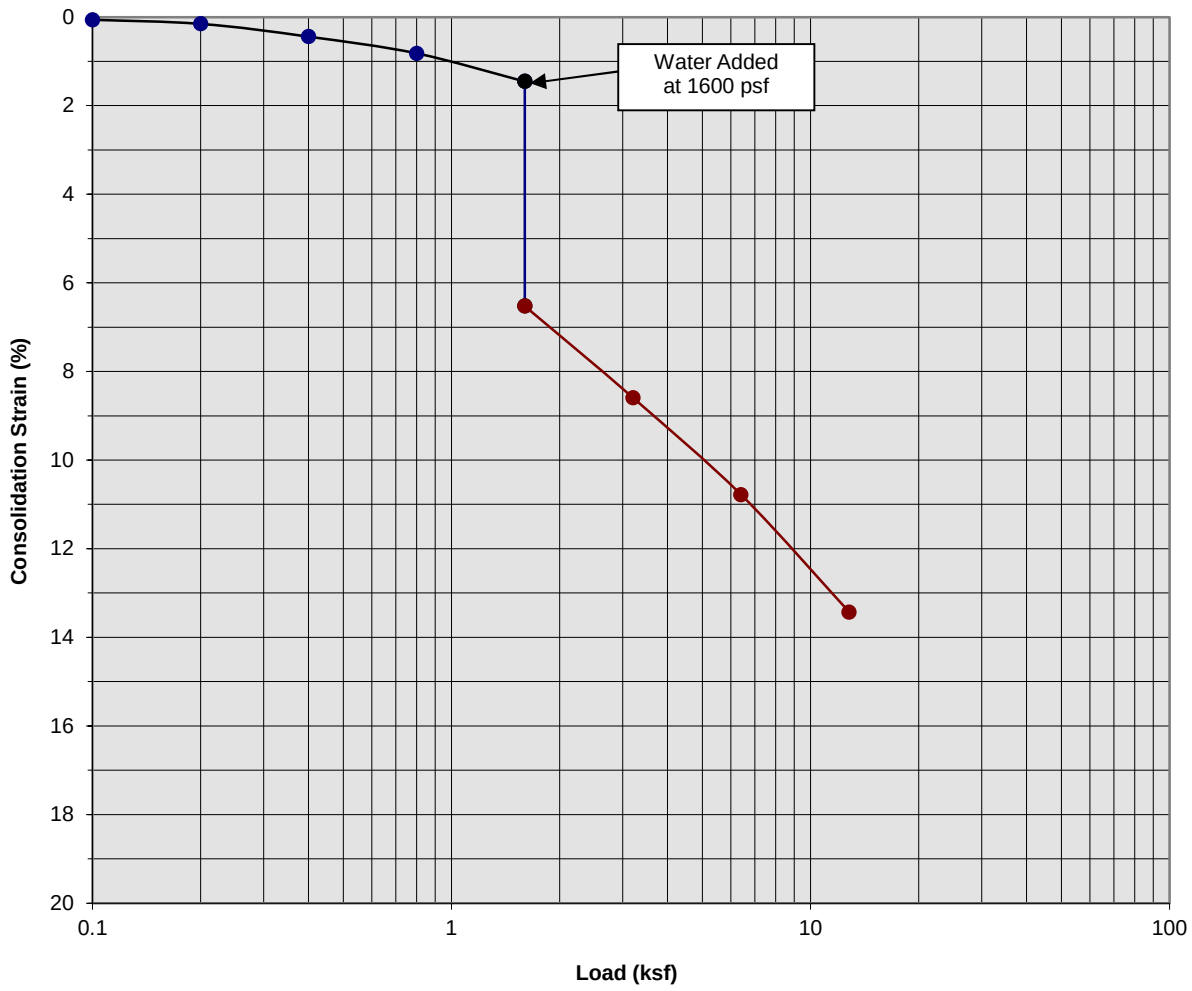
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand

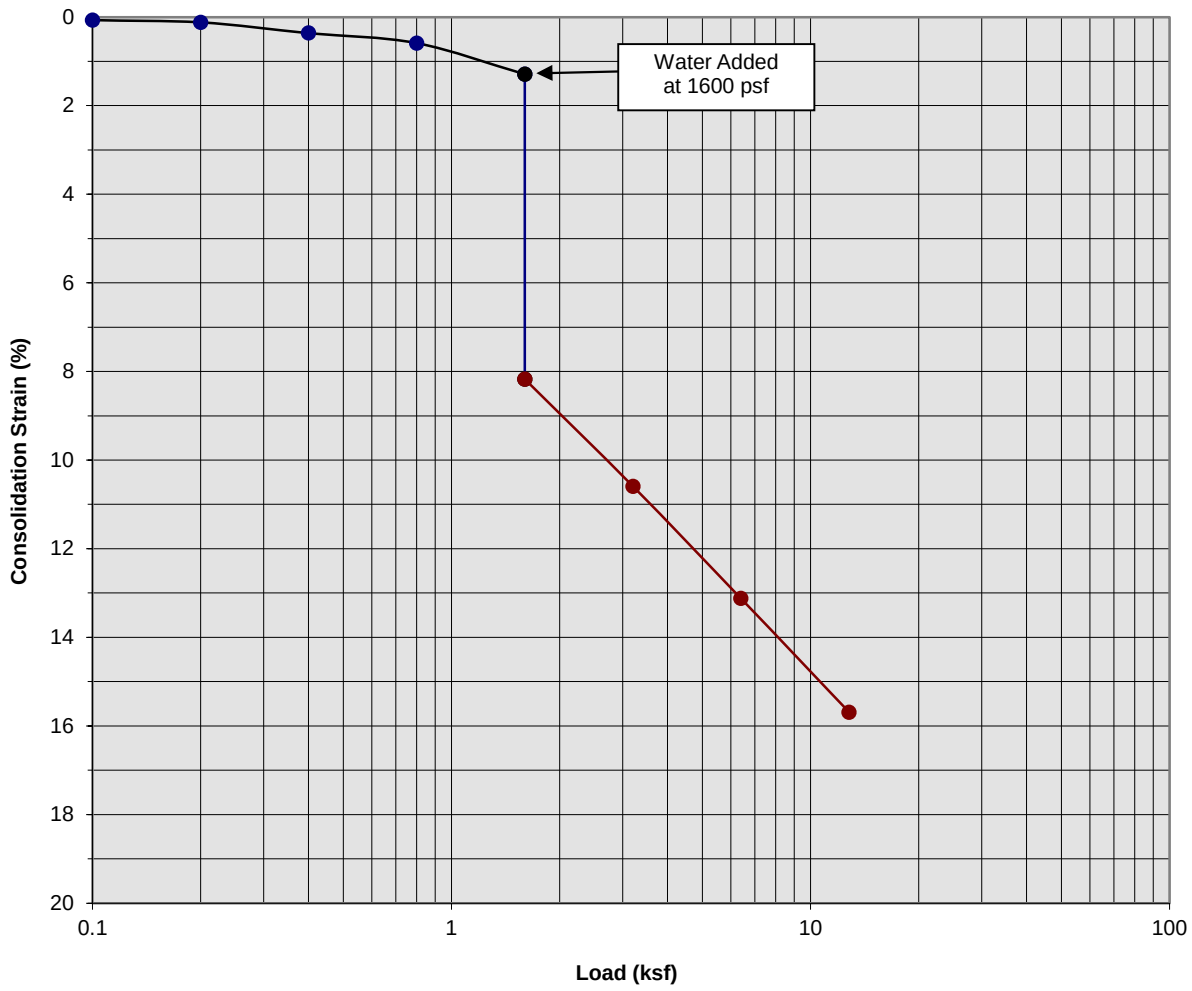
Boring Number:	B-41	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	4 to 5	Initial Dry Density (pcf)	102.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.07

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 32

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown to Red Brown Silty fine to coarse Sand, trace fine Gravel

Boring Number:	B-41	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	101.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.88

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 33

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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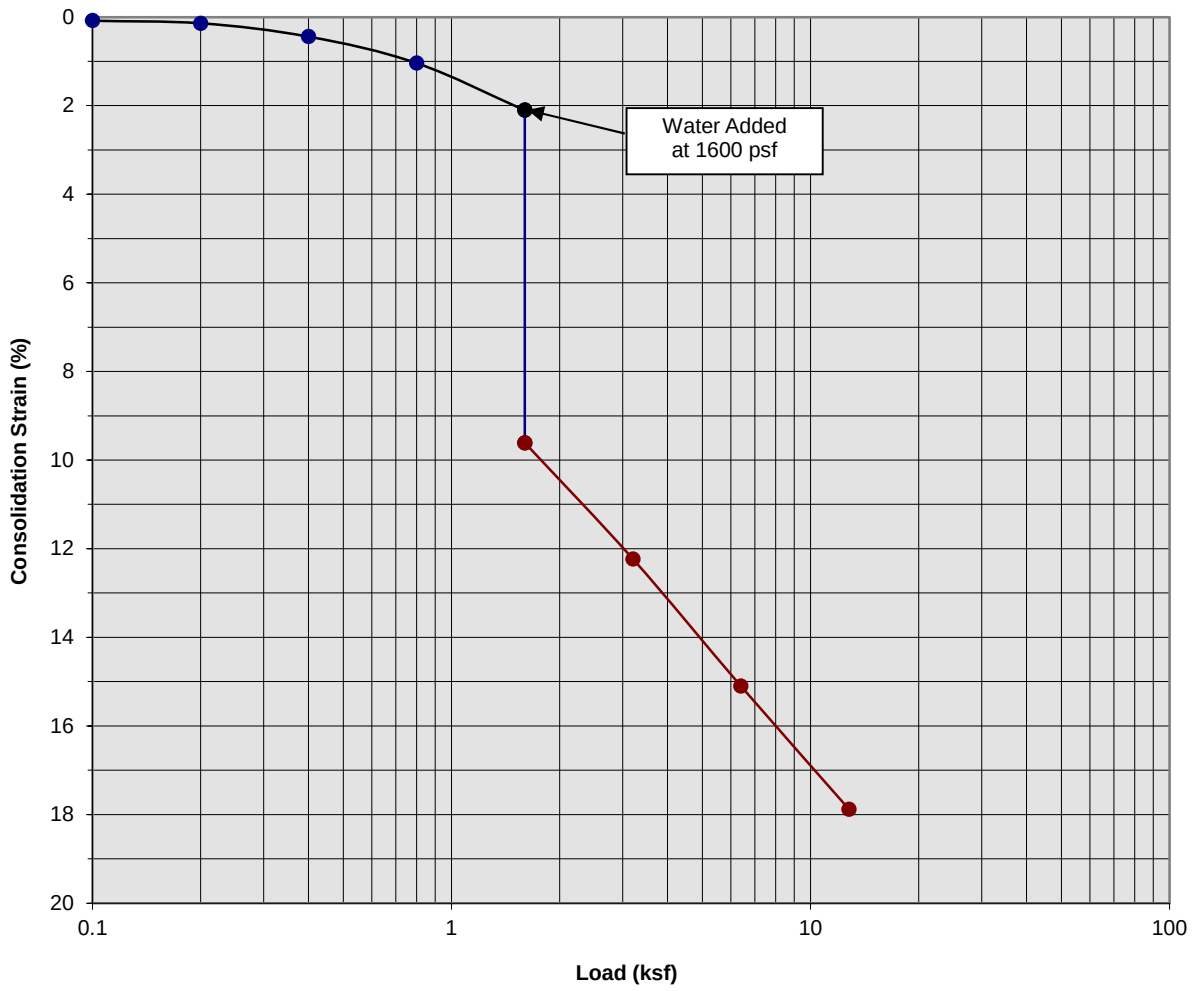
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace Clay, trace medium to coarse Sand

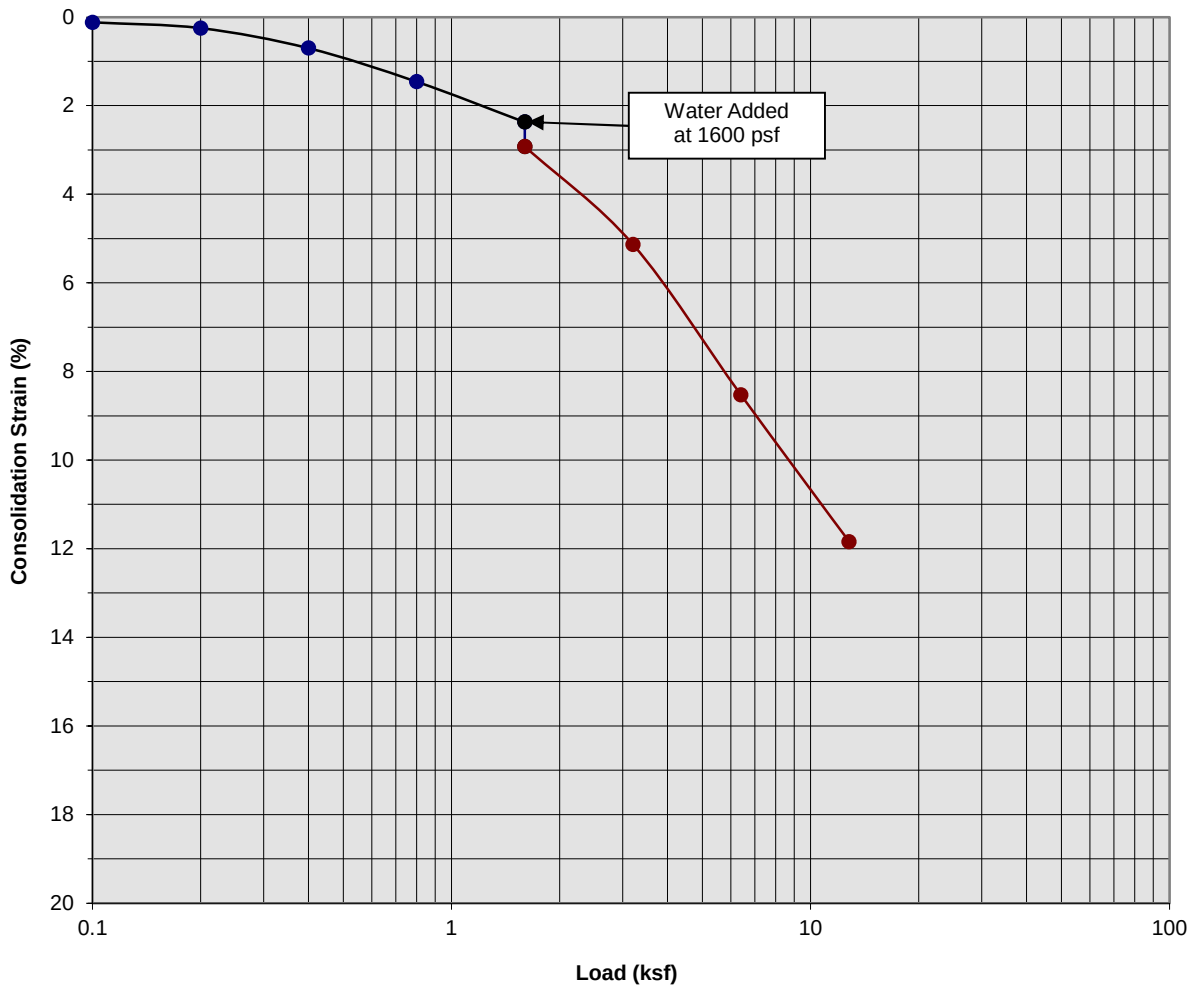
Boring Number:	B-41	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	14 to 15	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.51

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 34

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

Boring Number:	B-42	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	1 to 2	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.55

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 35

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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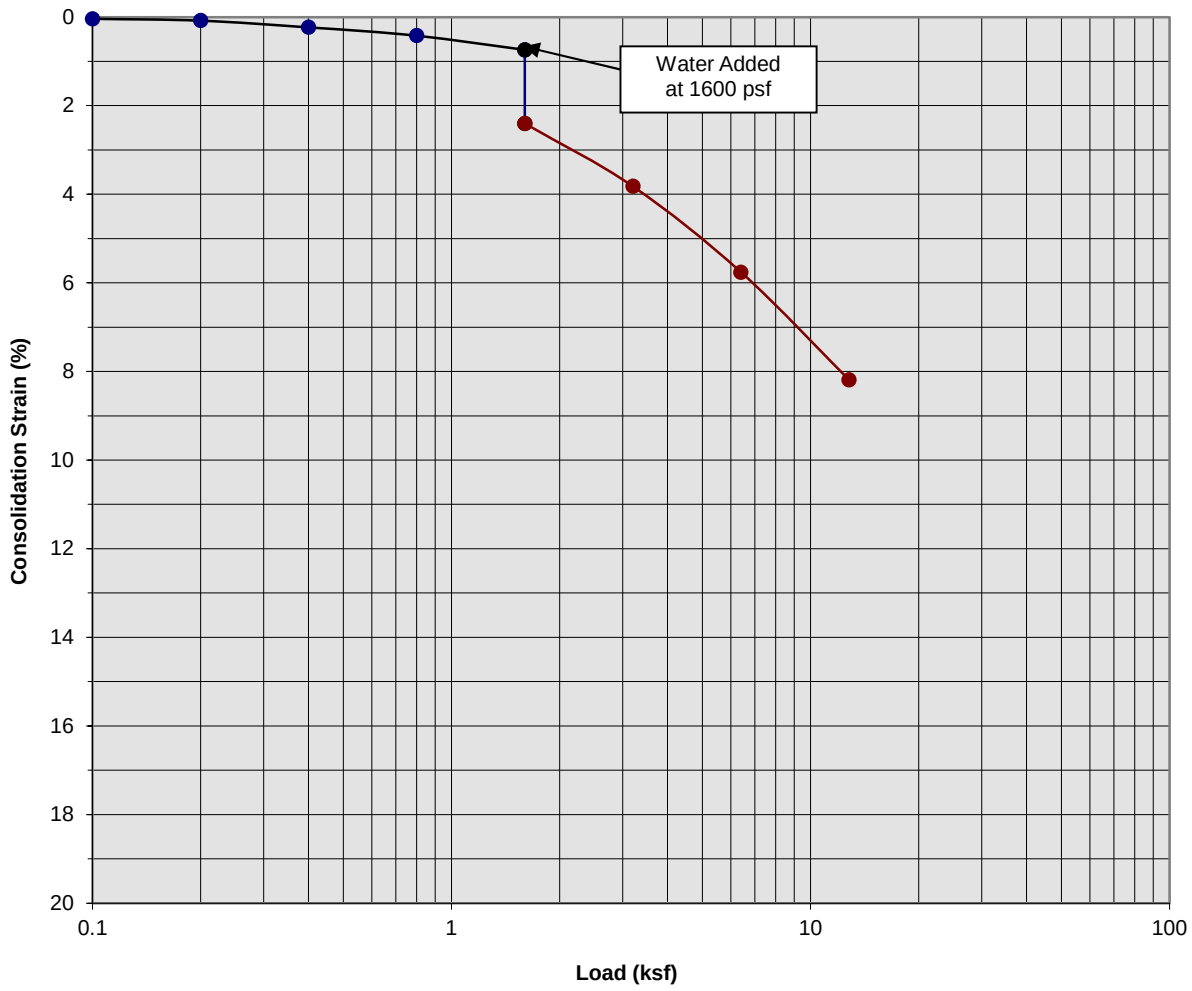
Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

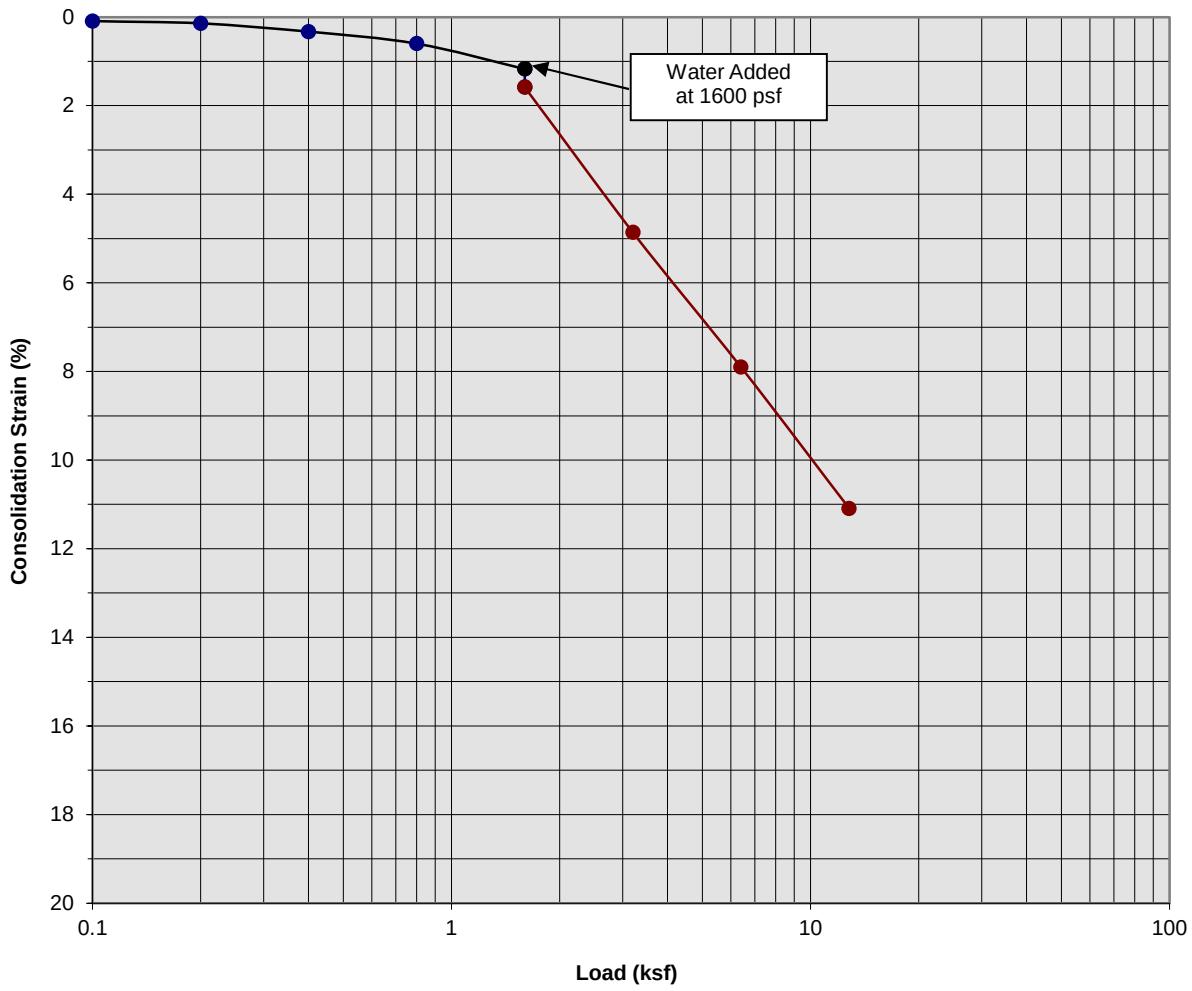
Boring Number:	B-42	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	4 to 5	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.66

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 36

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

Boring Number:	B-42	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	9 to 10	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.41

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Beaumont, California
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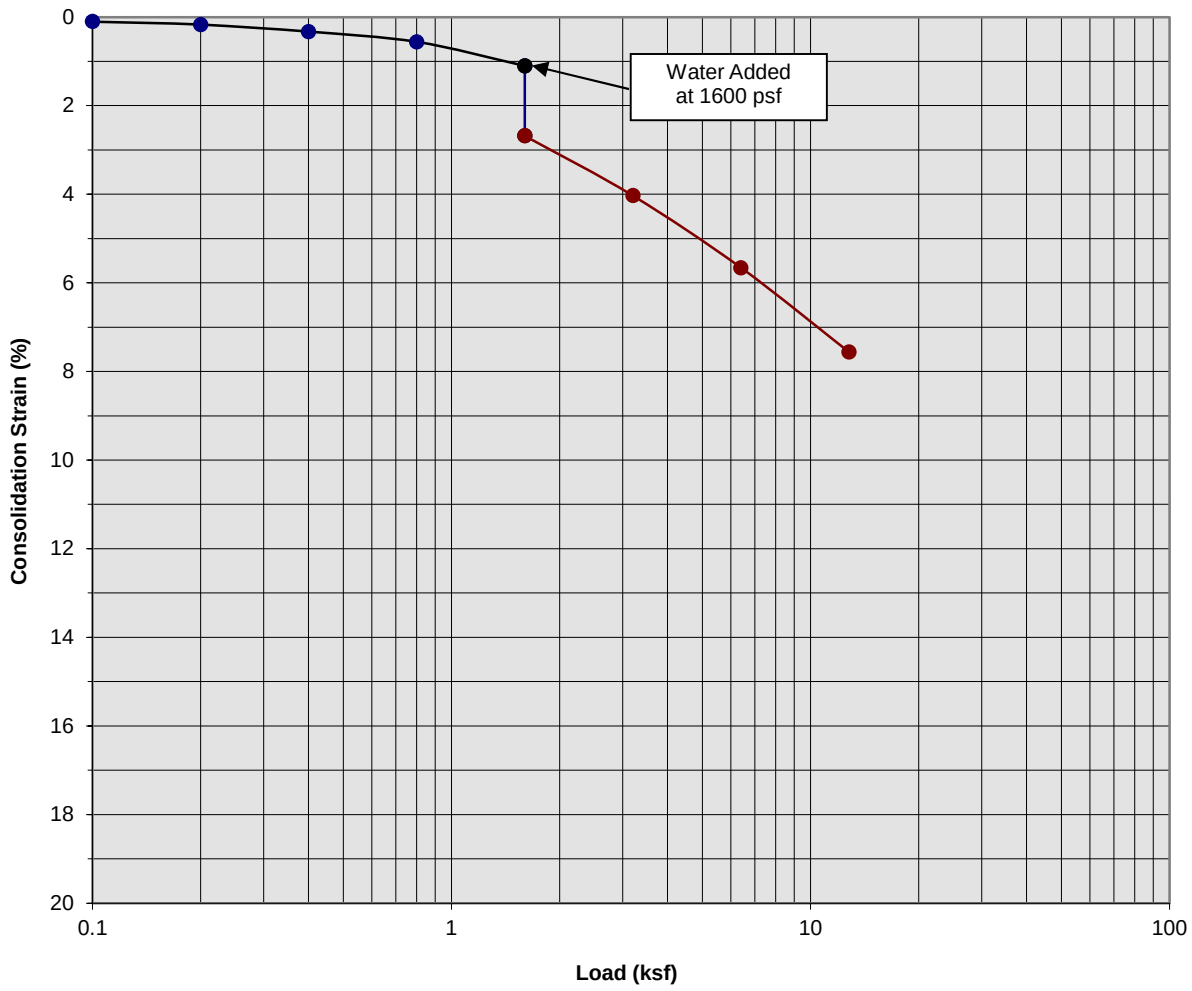
PLATE C- 37

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand

Boring Number:	B-42	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	109.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.58

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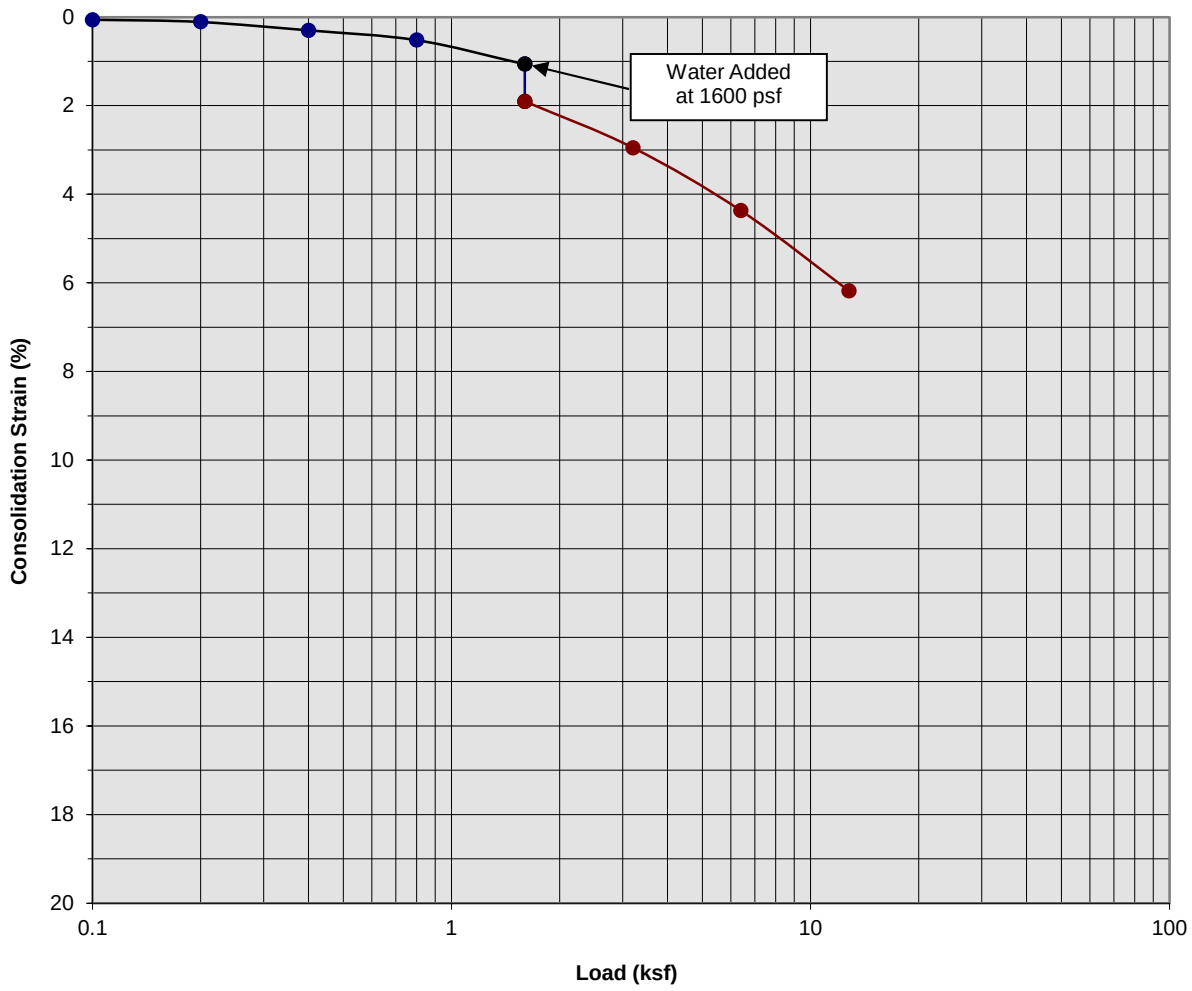
PLATE C- 38

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Gray Brown fine Sand, trace Silt

Boring Number:	B-44	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	46 to 47	Initial Dry Density (pcf)	107.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	114.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.84

Proposed E-Commerce Development
Beaumont, California
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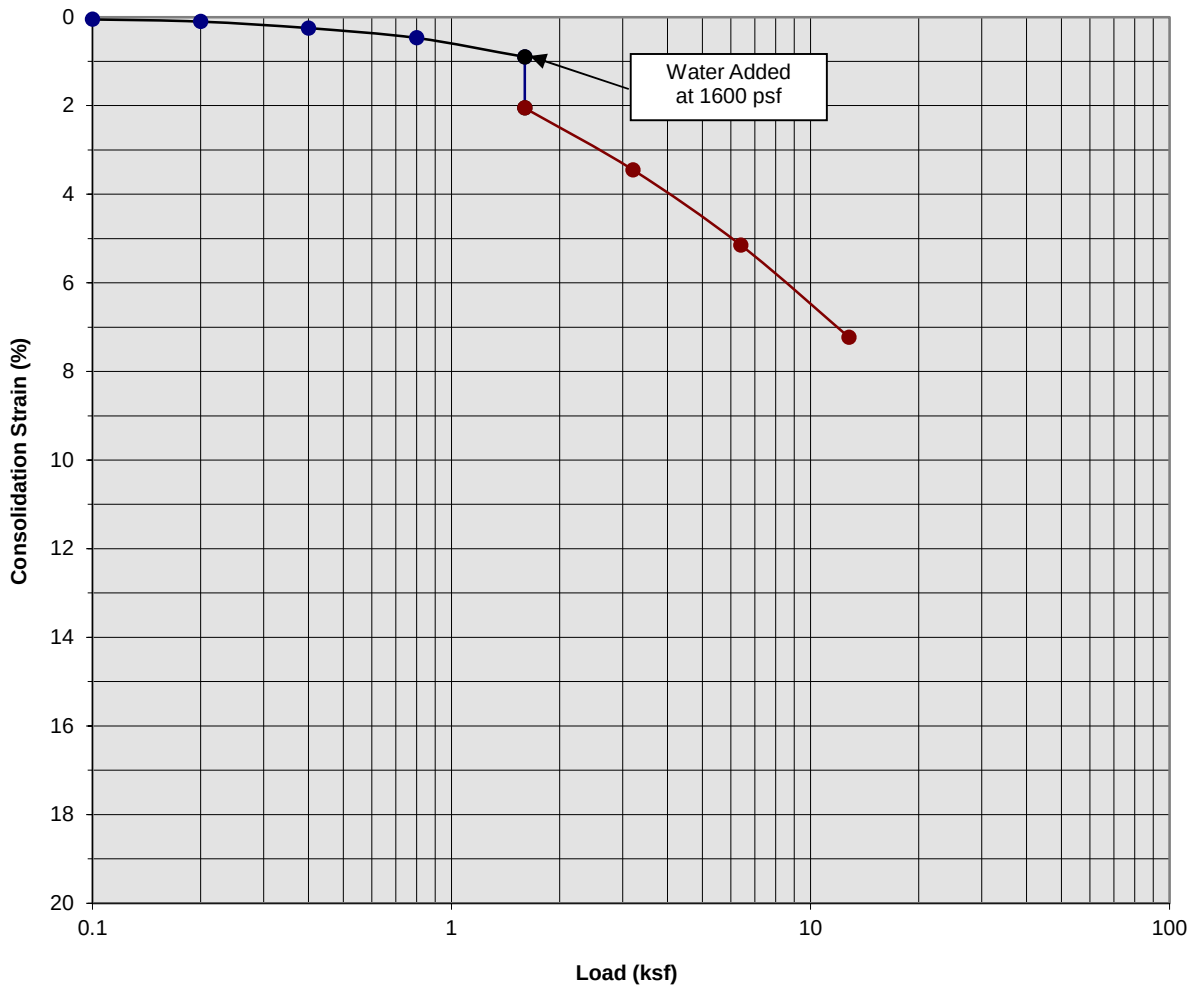
PLATE C- 39

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine to coarse Gravel

Boring Number:	B-44	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	48 to 49	Initial Dry Density (pcf)	121.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	130.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.15

Proposed E-Commerce Development
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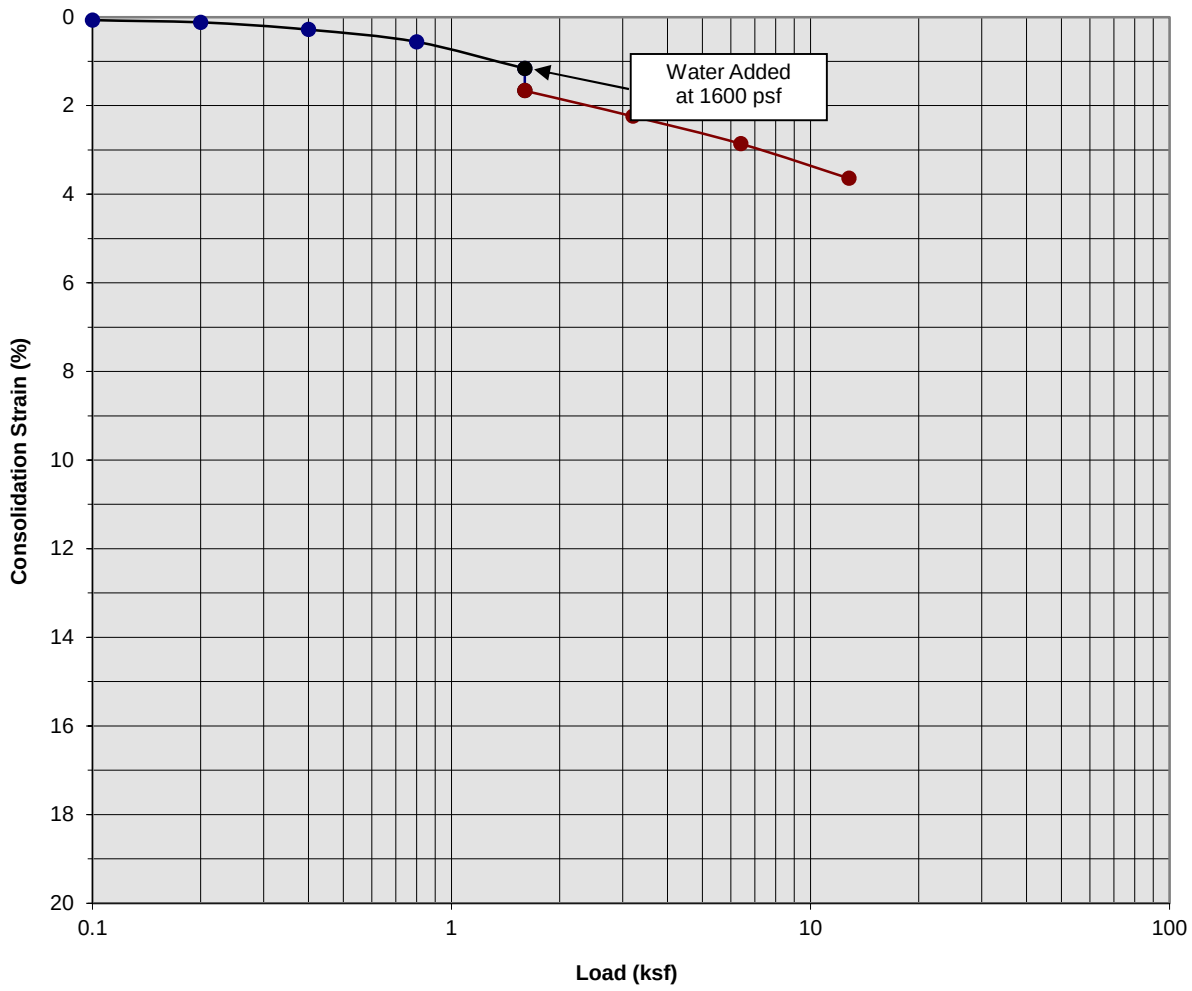
PLATE C- 40

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine to coarse Gravel

Boring Number:	B-44	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	50 to 51	Initial Dry Density (pcf)	110.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	114.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.50

Proposed E-Commerce Development
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PLATE C- 41

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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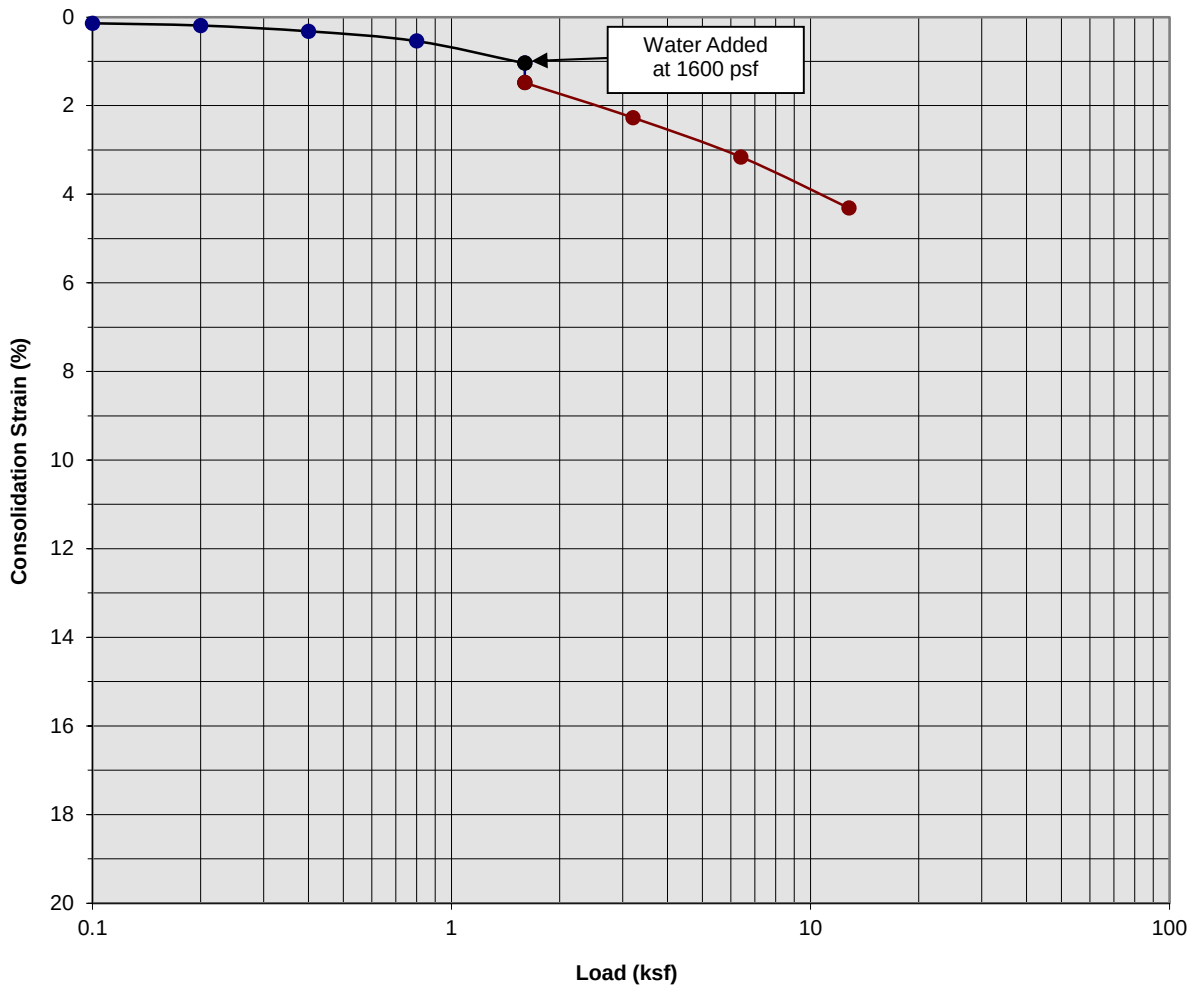
Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine Gravel

Boring Number:	B-44	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	52 to 53	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.44

Proposed E-Commerce Development
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PLATE C- 42

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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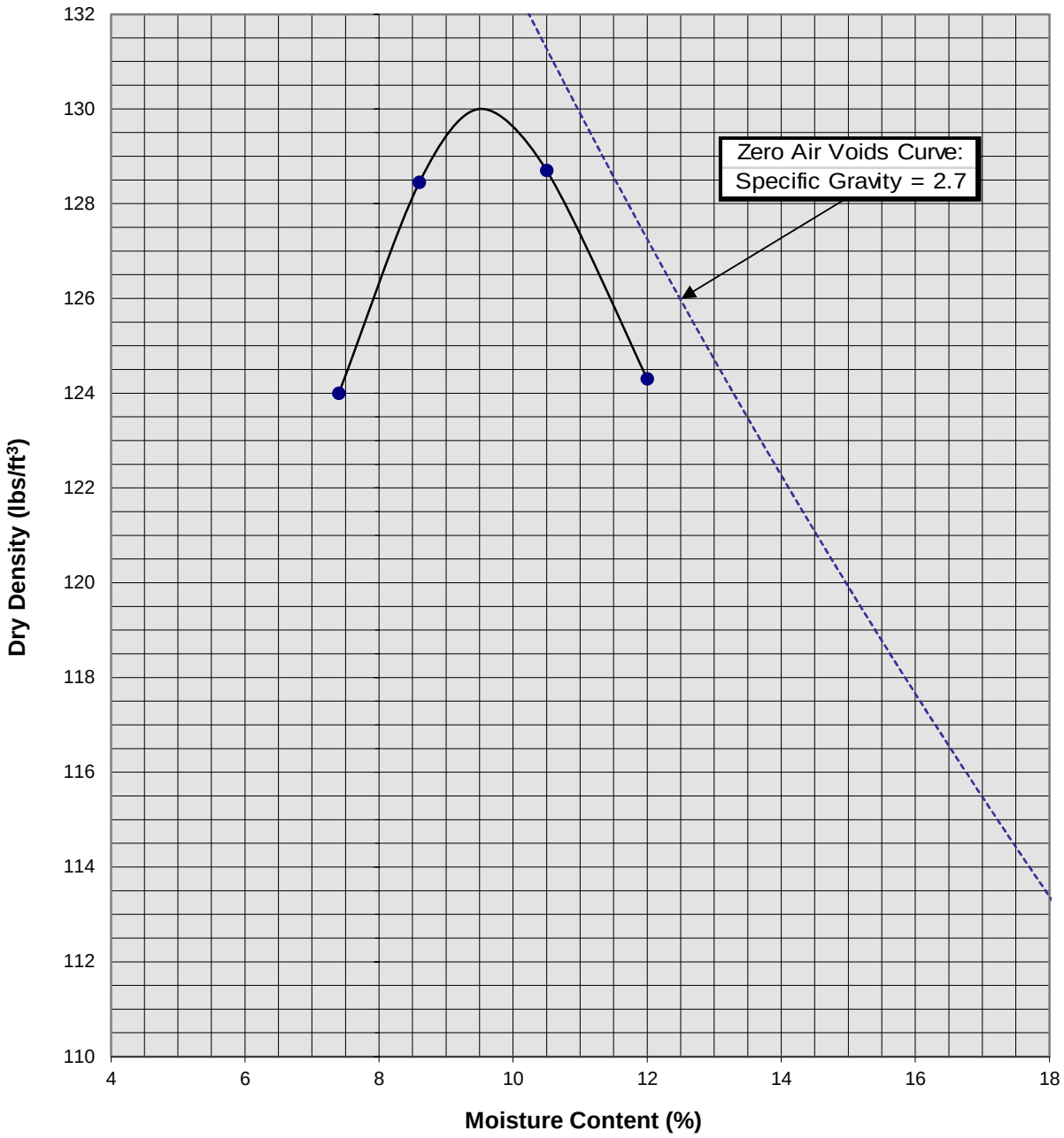
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-14 @ 0-5'
Optimum Moisture (%)	9.5
Maximum Dry Density (pcf)	130
Soil Classification	Brown fine Sandy Clay, trace medium to coarse Sand, little Silt

Proposed E-Commerce Develoment
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PLATE C-43

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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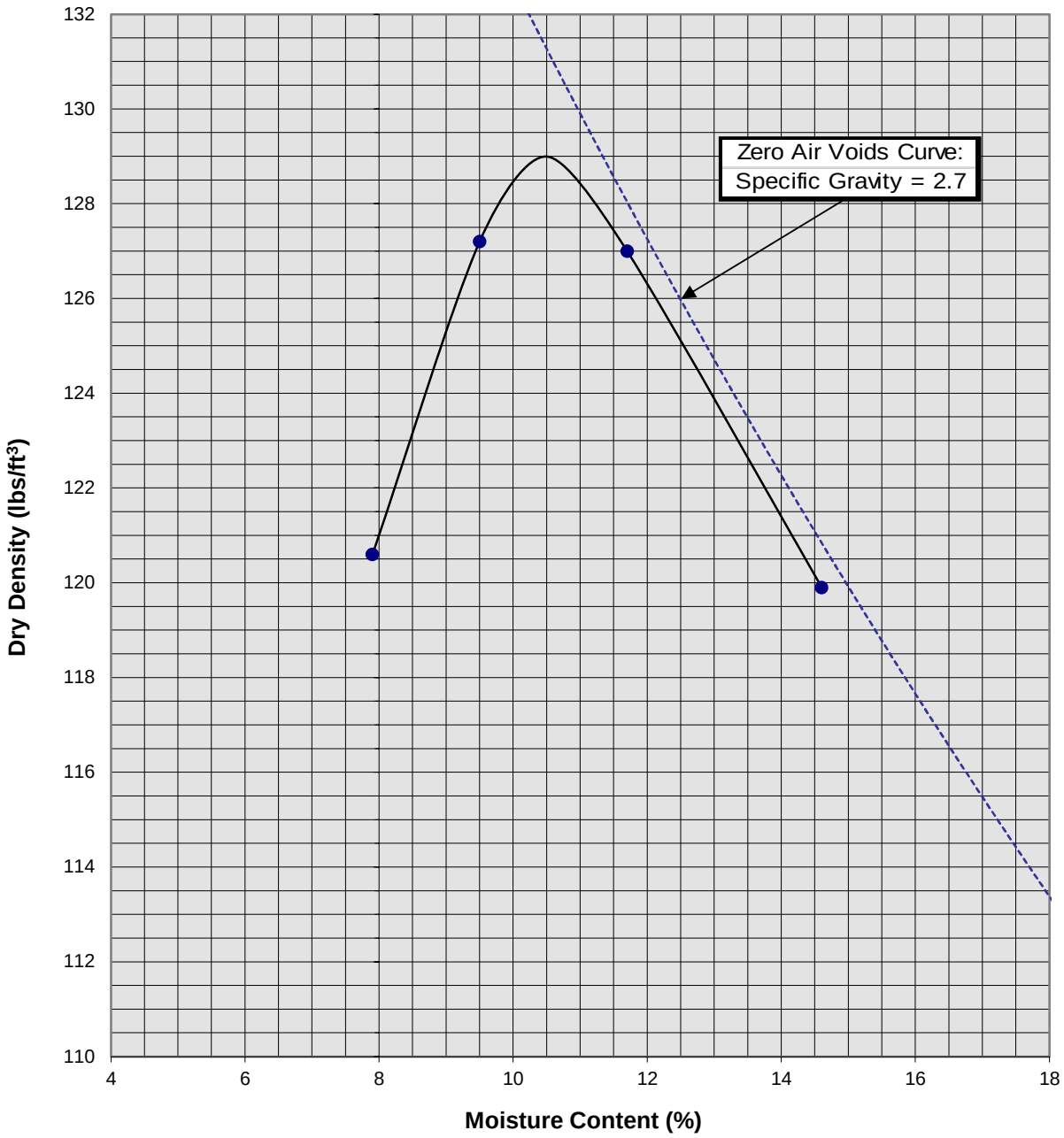
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-17 @ 0-5'
Optimum Moisture (%)	10.5
Maximum Dry Density (pcf)	129
Soil Classification	Dark Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel

Proposed E-Commerce Develoment
Beaumont, California
Project No. 21G133-1

PLATE C-44

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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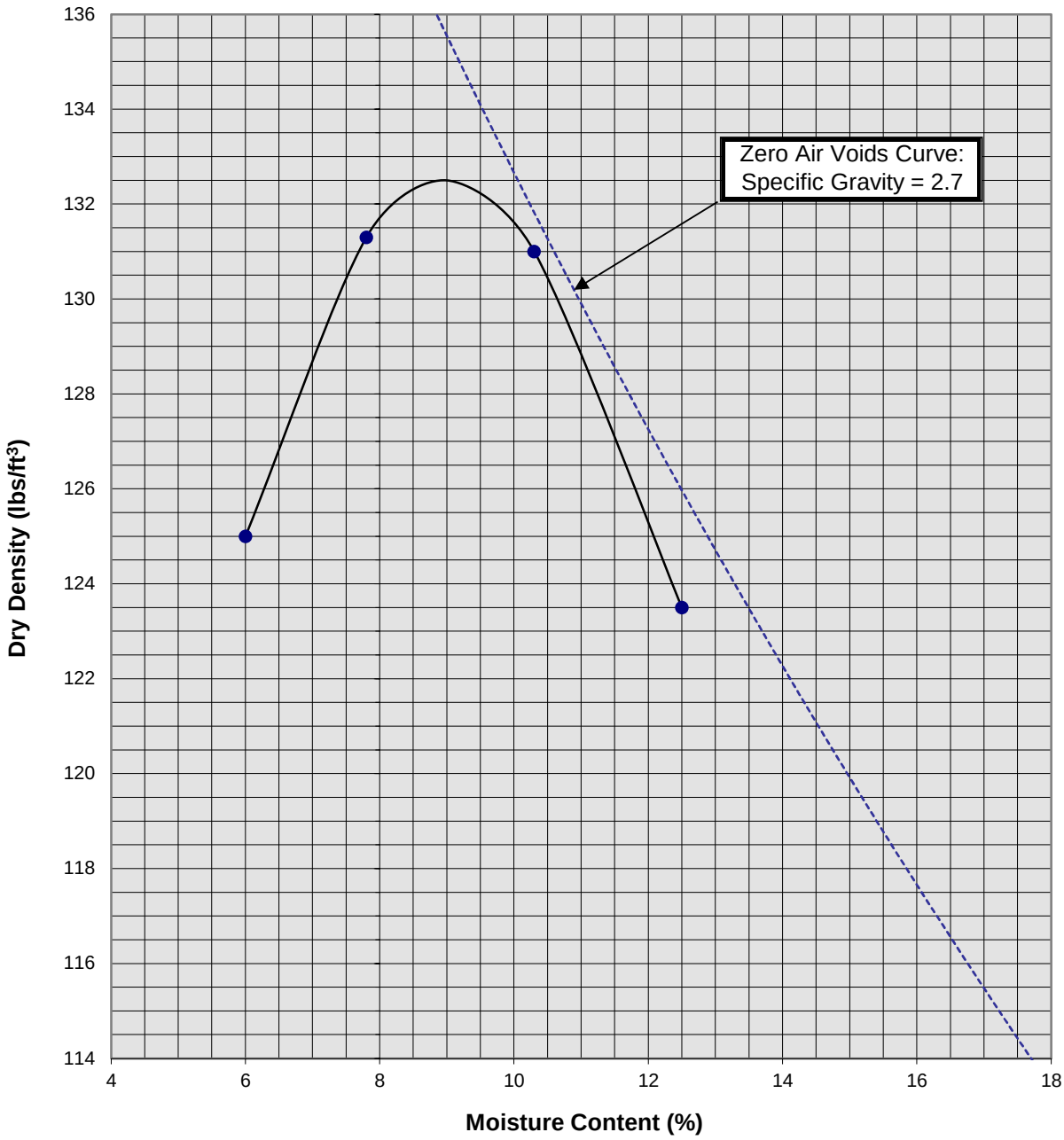
Moisture/Density Relationship
ASTM D-1557

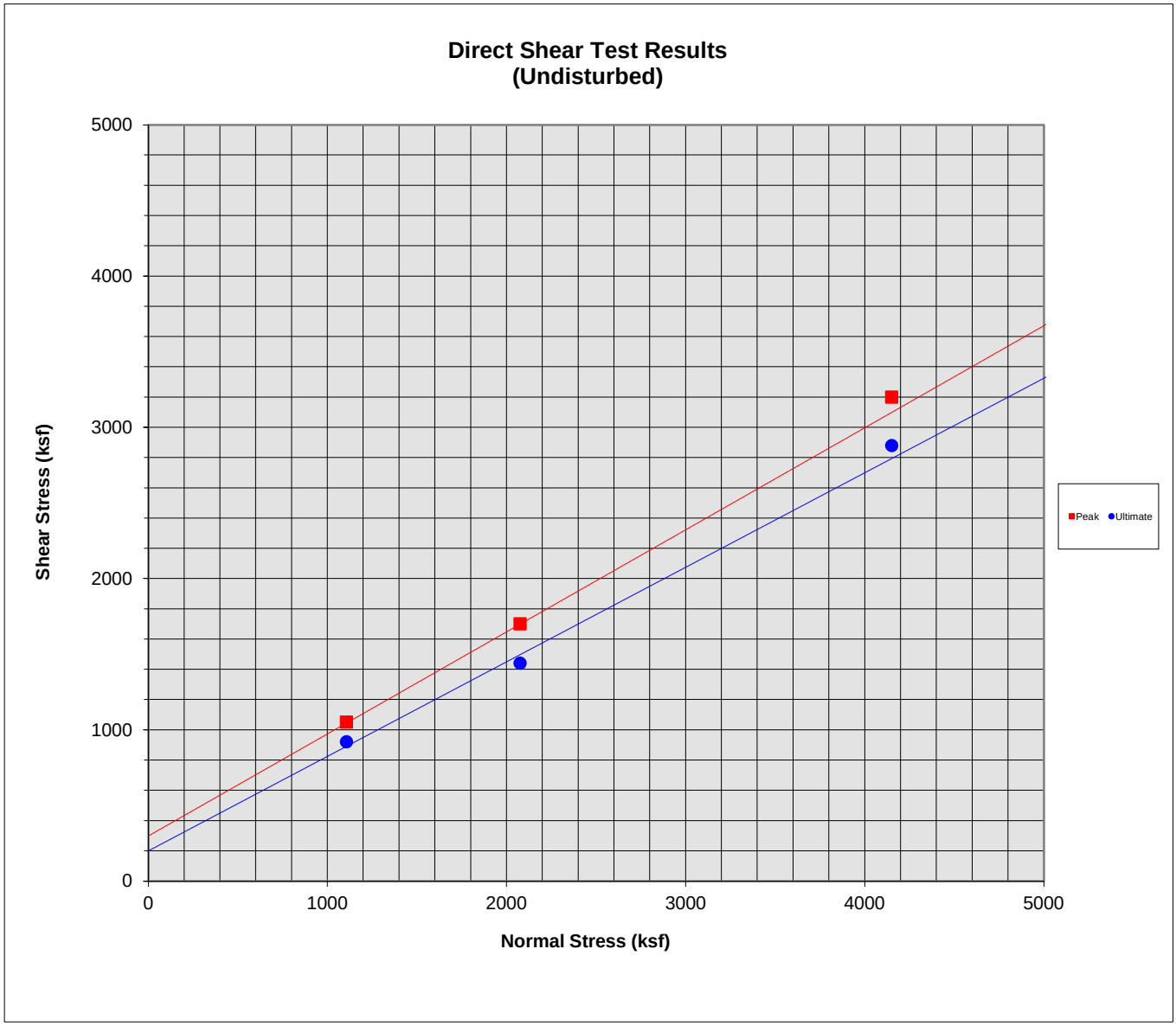


Soil ID Number	B-25 @ 0-5'
Optimum Moisture (%)	9
Maximum Dry Density (pcf)	132.5
Soil Classification	Red Brown Clayey fine Sand, trace medium Sand, little Silt

Proposed E-Commerce Develoment
Beaumont, California
Project No. 21G133-1

PLATE C-45

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation



Sample Description: B-22 @ 5 to 6 feet

Classification: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Sample Data	
Initial Moisture Content	5.0
Final Moisture Content	16.0
Initial Dry Density	112.0
Final Dry Density	---
Specimen Diameter (in)	2.4
Specimen Thickness (in)	1.0

Test Results		
	Peak	Ultimate
ϕ (°)	34.0	32.0
C (psf)	300	200

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133

PLATE C-46

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

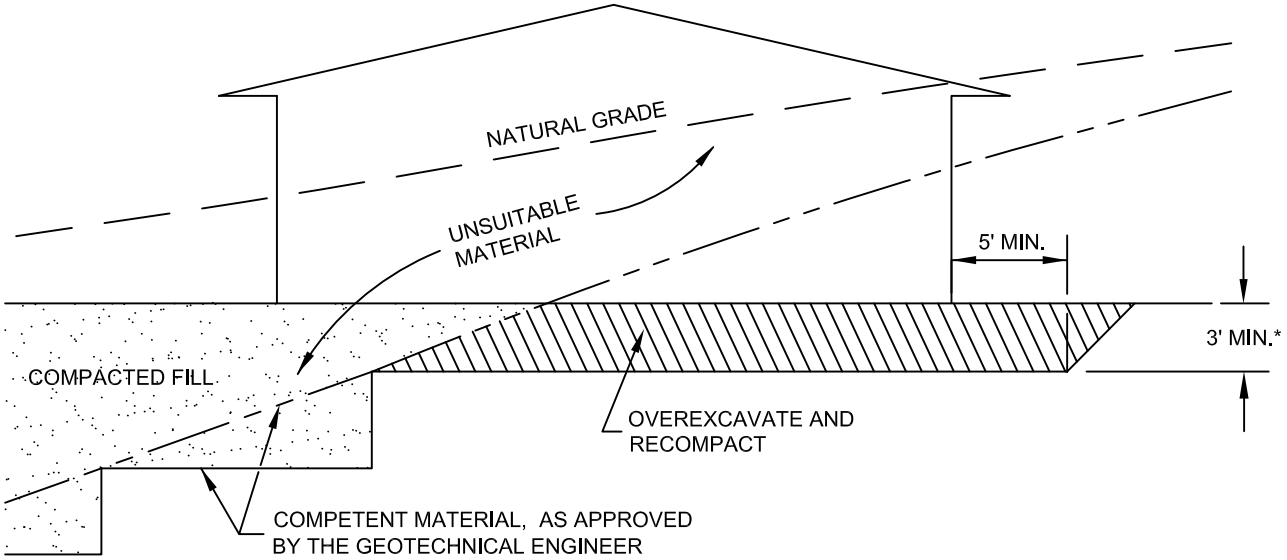
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

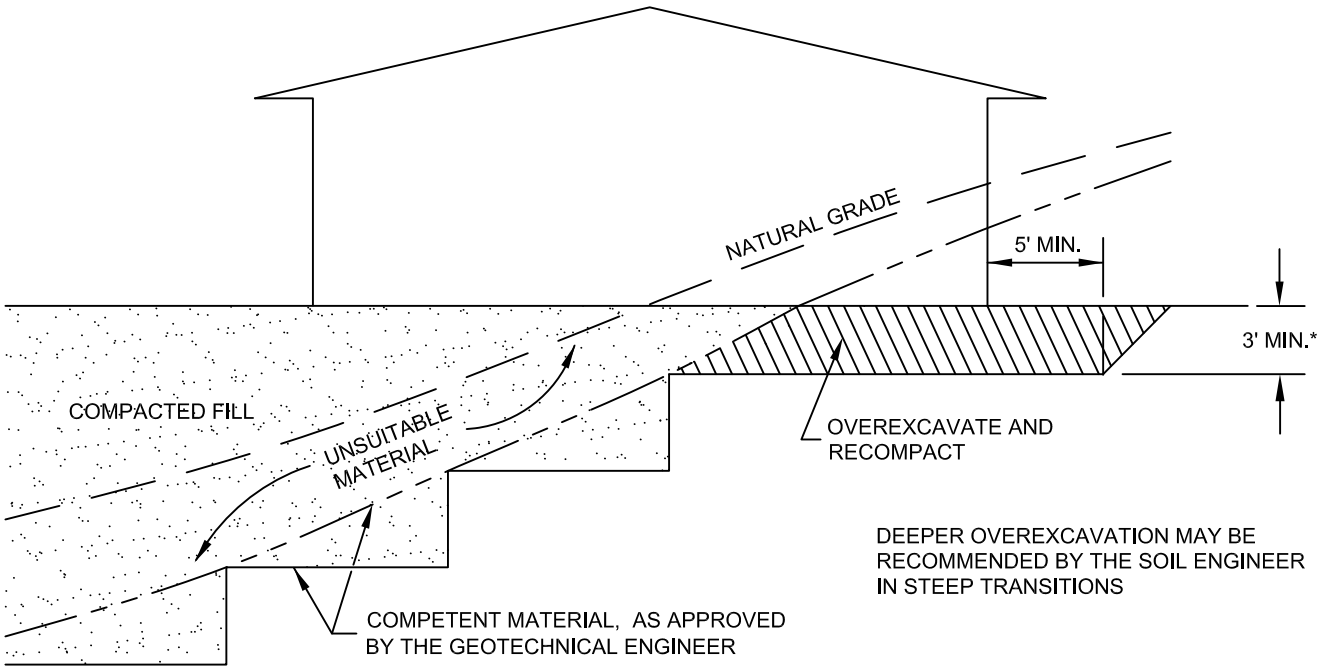
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

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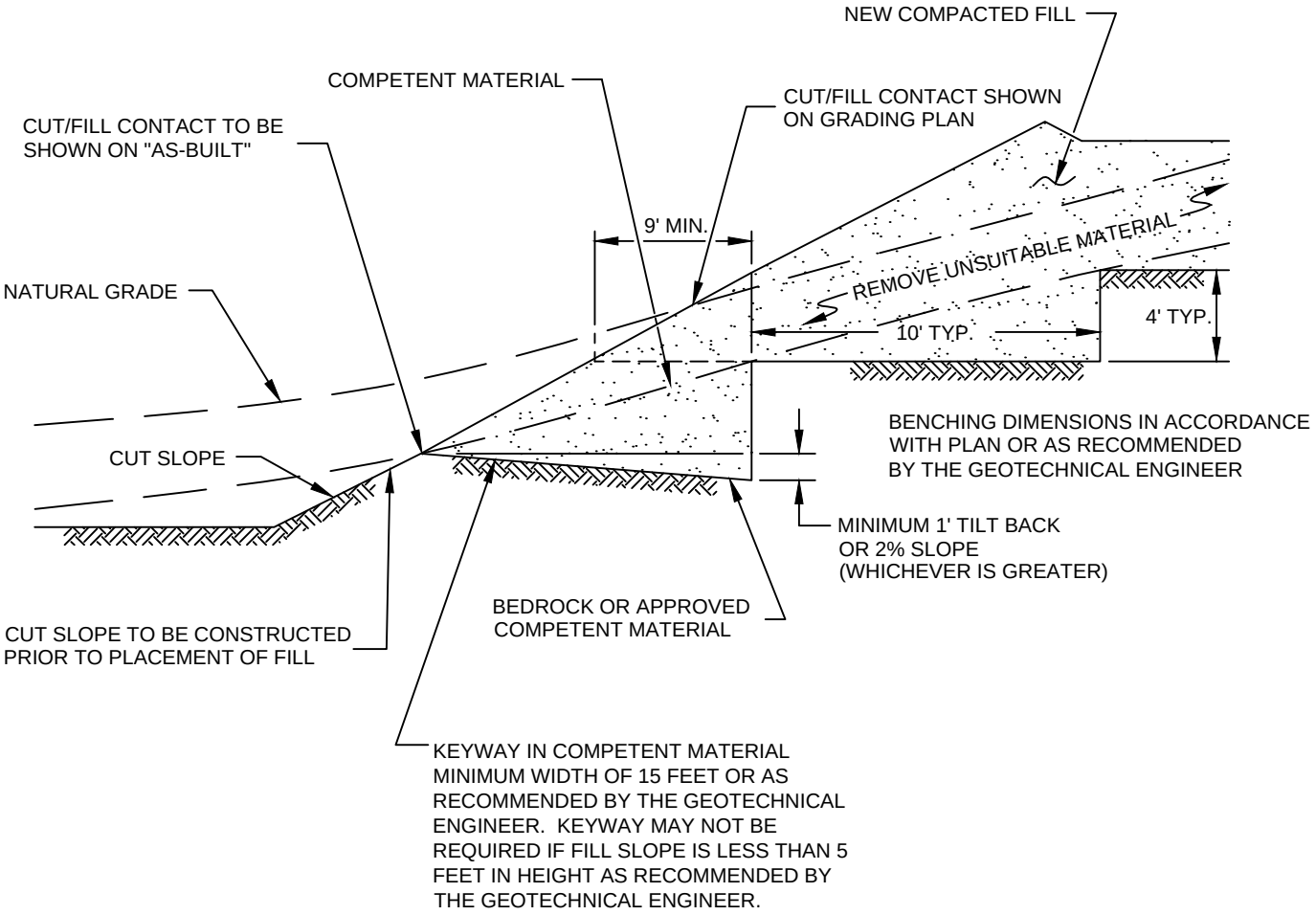


FILL ABOVE CUT SLOPE DETAIL

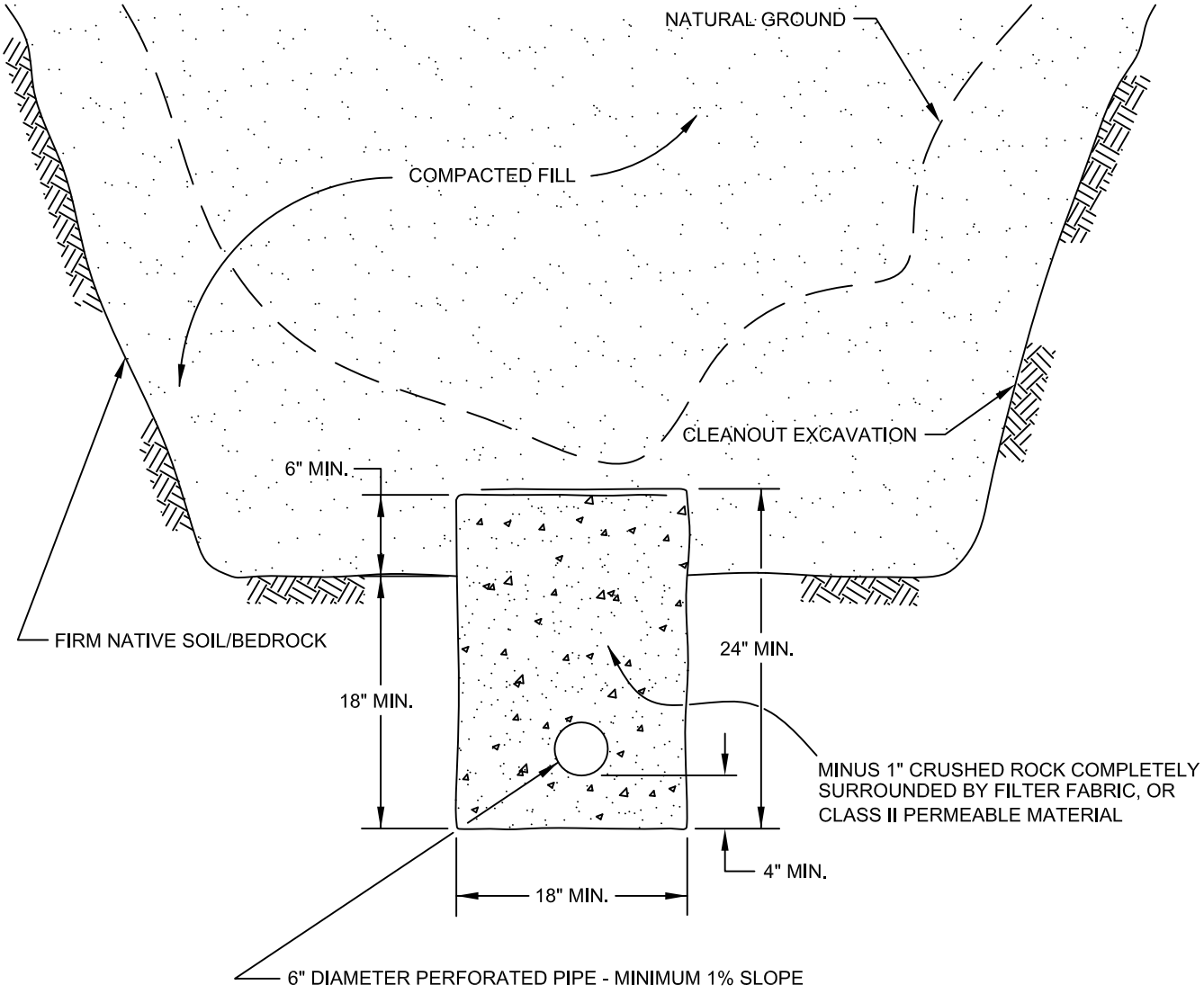
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

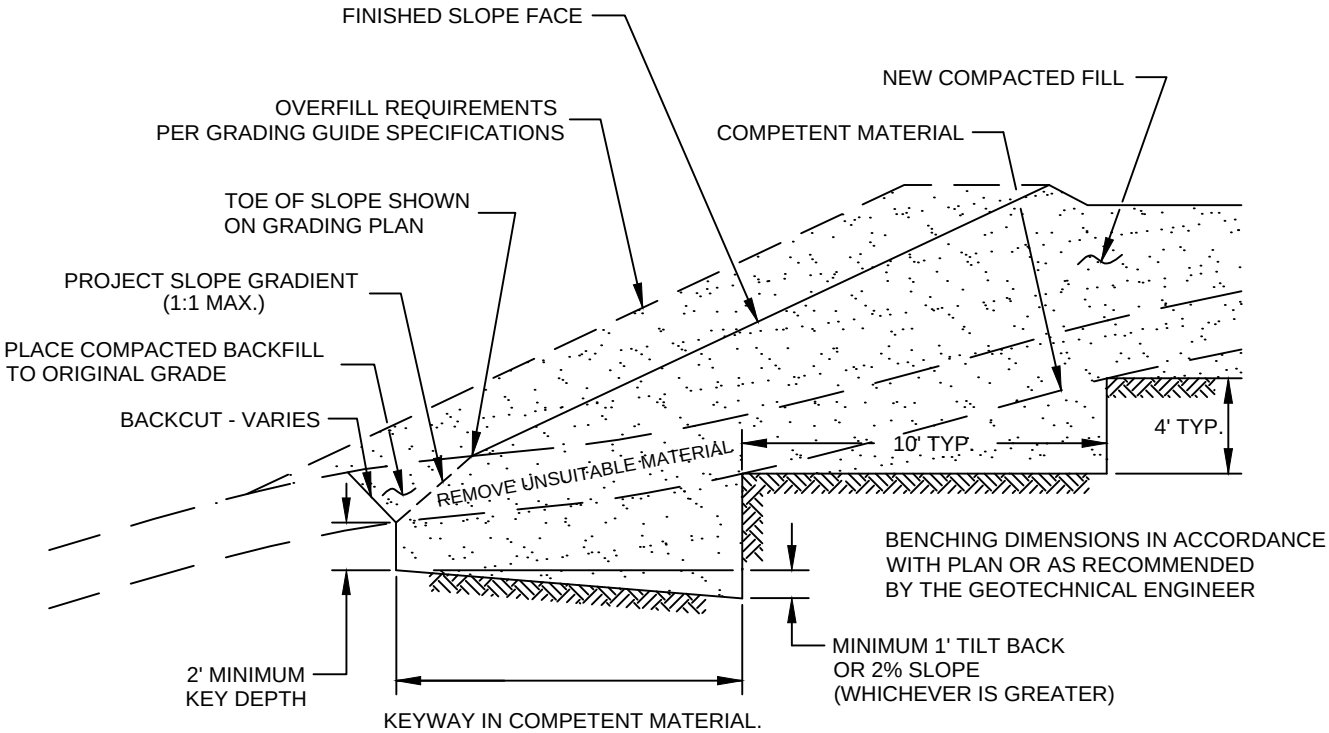
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED
WHEN NATURAL SLOPES ARE
EQUAL TO OR STEEPER THAN 5:1
OR WHEN RECOMMENDED BY
THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

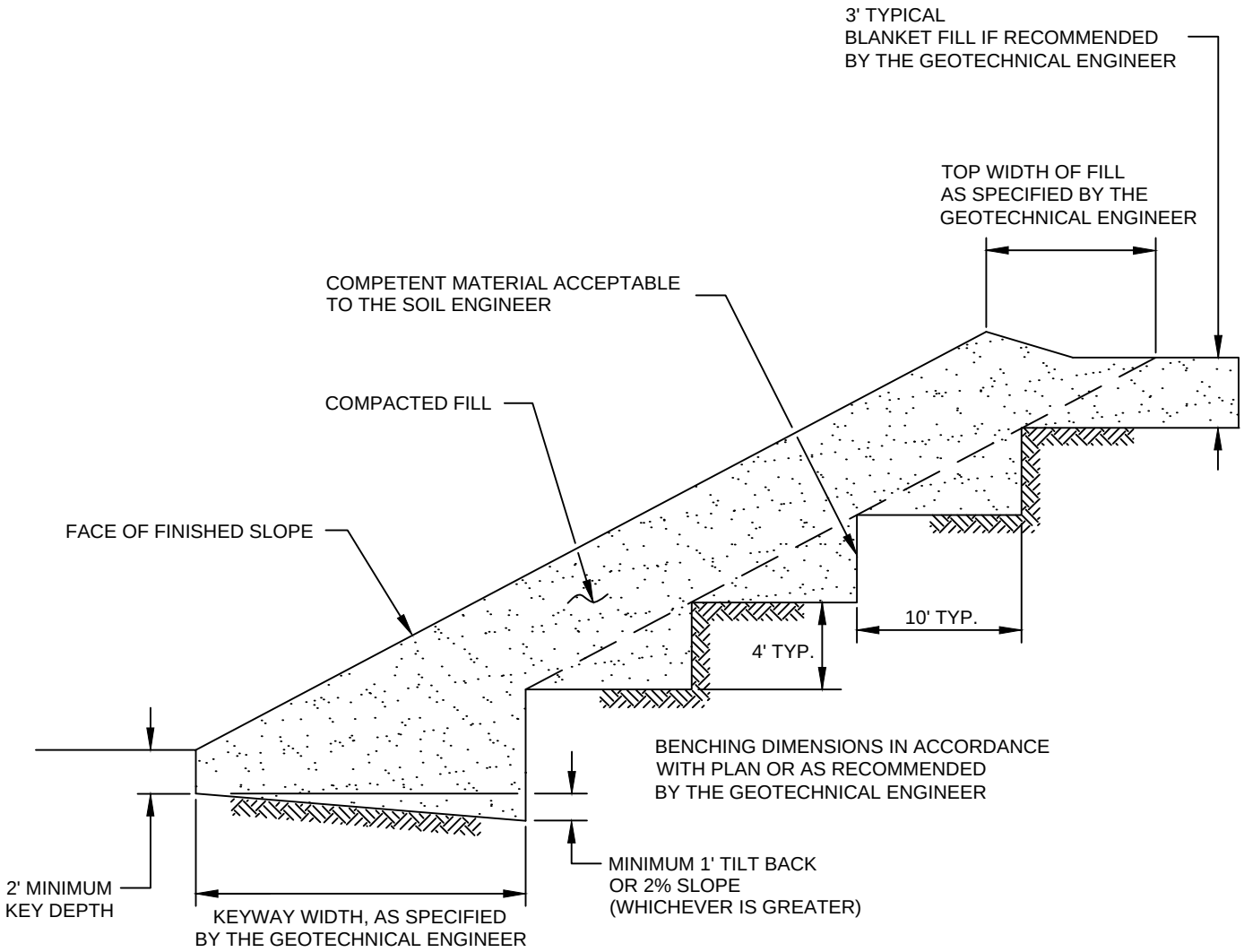
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN
CALIFORNIA
GEOTECHNICAL



STABILIZATION FILL DETAIL

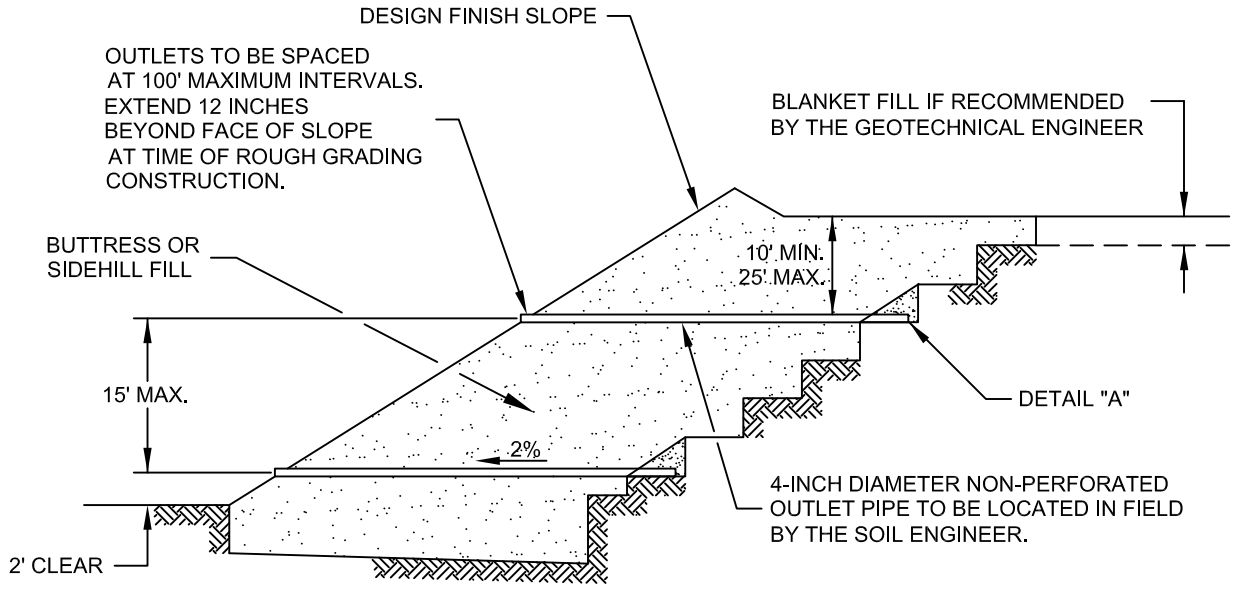
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



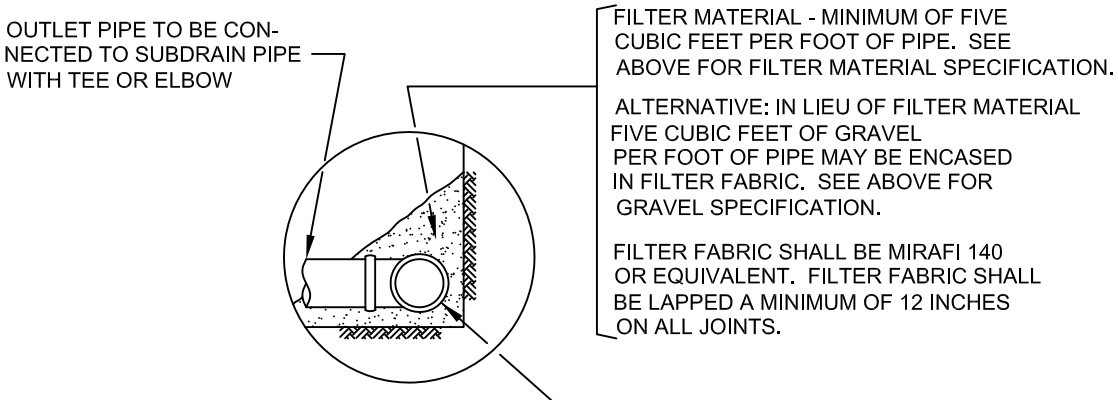
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

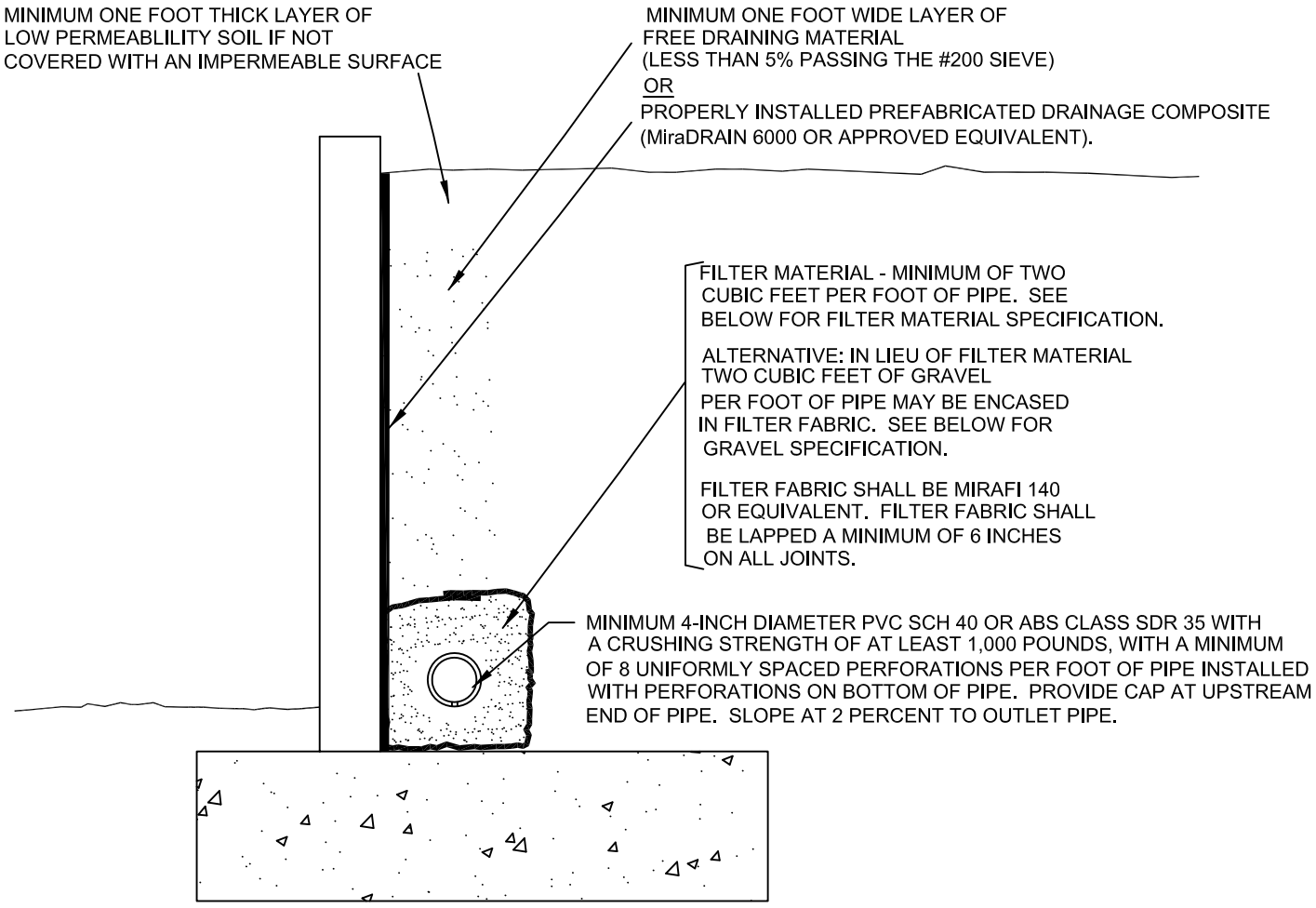
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

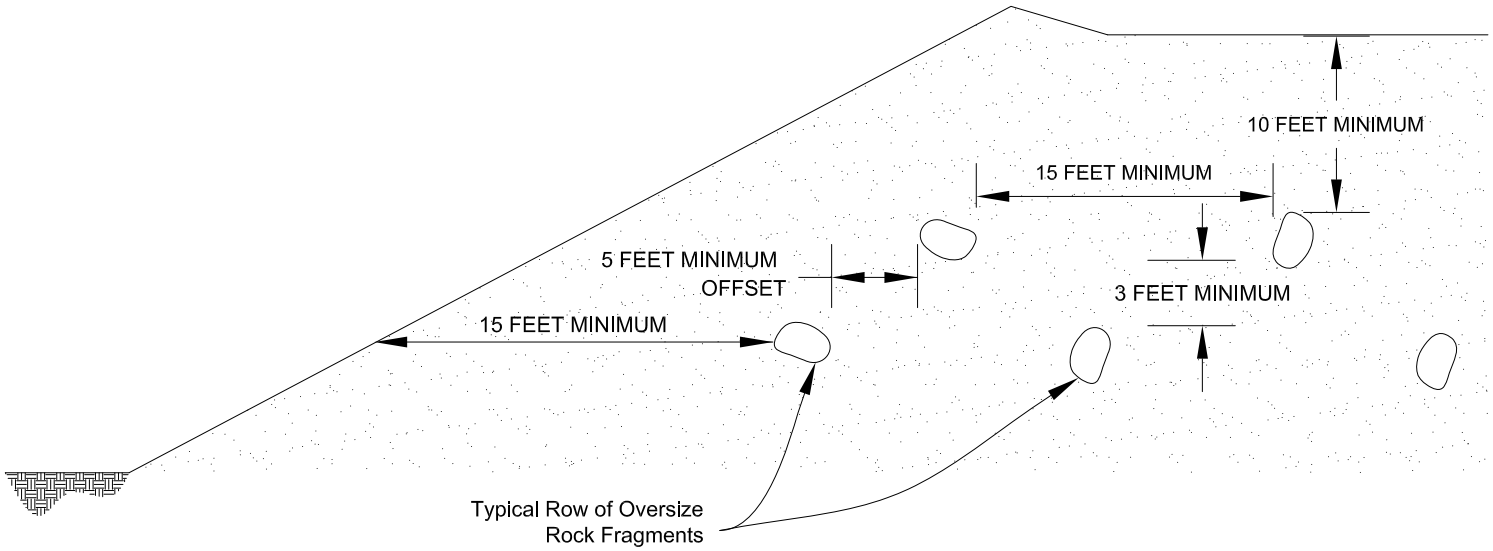
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

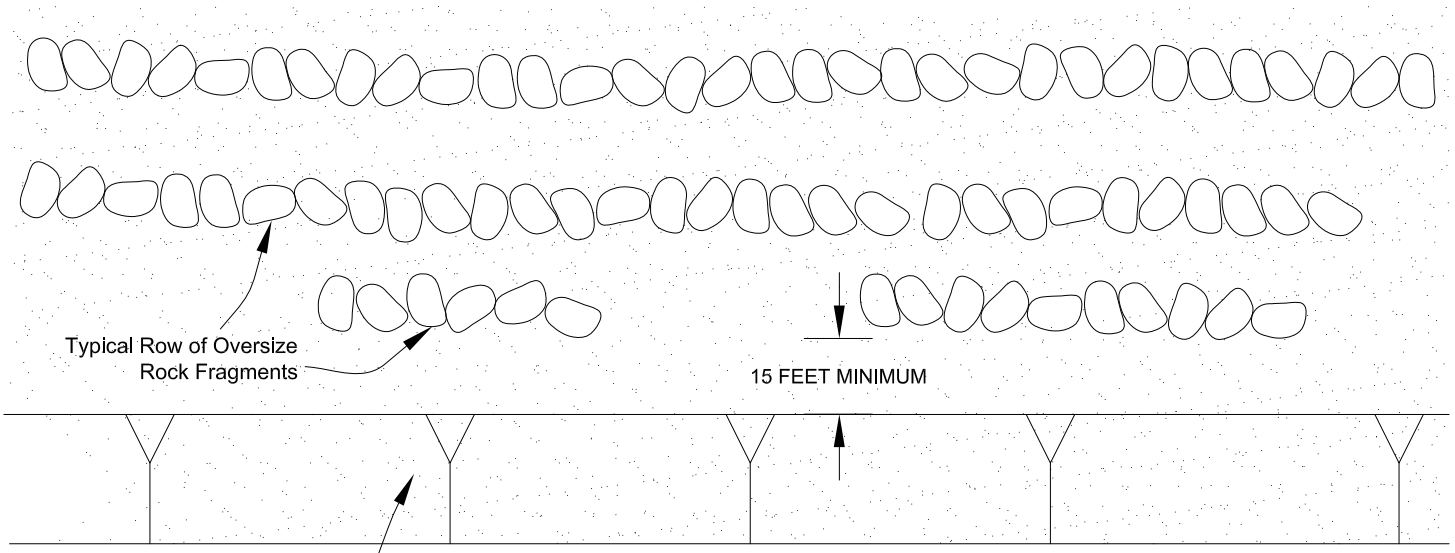
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

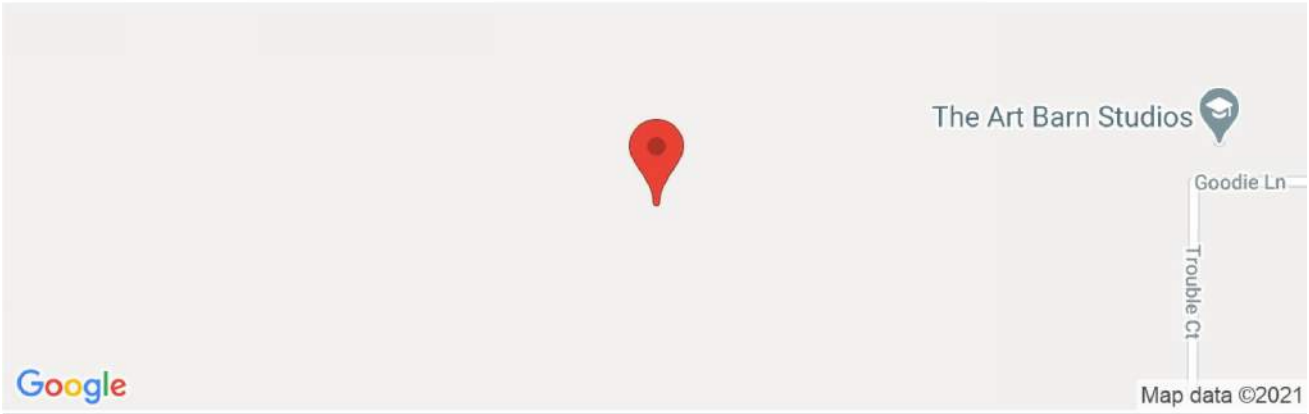
PLATE D-8

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

Latitude, Longitude: 33.966227, -117.018379



Date	4/5/2021, 2:24:01 PM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	D - Default (See Section 11.4.3)

Type	Value	Description
S_S	2.091	MCE_R ground motion. (for 0.2 second period)
S_1	0.718	MCE_R ground motion. (for 1.0s period)
S_{MS}	2.509	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.673	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.853	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	1.024	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	2.212	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.411	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.091	Factored deterministic acceleration value. (0.2 second)
S1RT	0.852	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.956	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.718	Factored deterministic acceleration value. (1.0 second)
PGAd	0.853	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.917	Mapped value of the risk coefficient at short periods
C_{R1}	0.891	Mapped value of the risk coefficient at a period of 1 s

SOURCE: SEAOC/OSHPD Seismic Design Maps Tool
<https://seismicmaps.org/>

SEISMIC DESIGN PARAMETERS - 2019 CBC

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

DRAWN: JAH
CHKD: RGT

SCG PROJECT
21G133-1

PLATE E-1

SOUTHERN CALIFORNIA GEOTECHNICAL

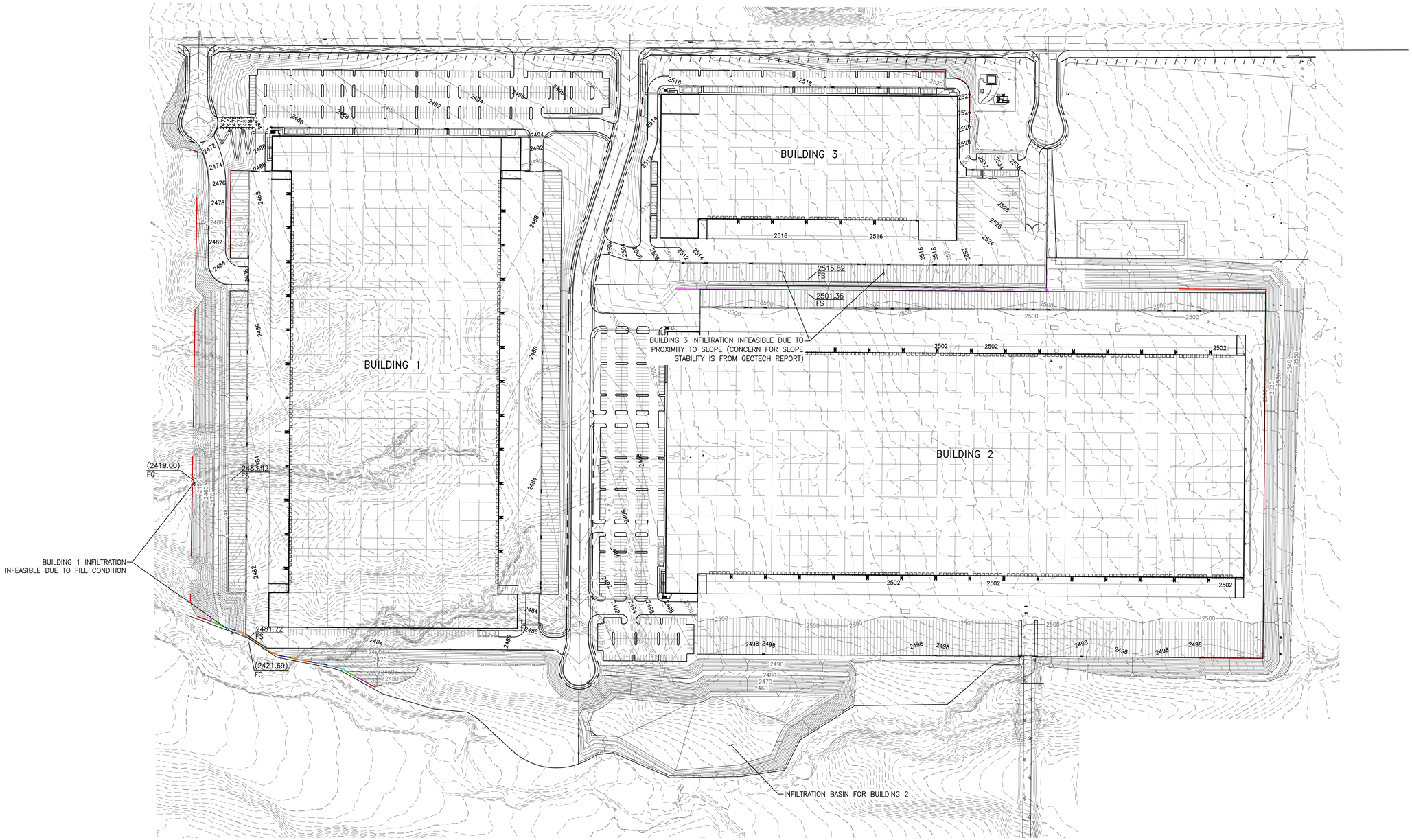
Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

N/A

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis



N
W WEBB E
S

1" = 150'

150 0 150 300 450

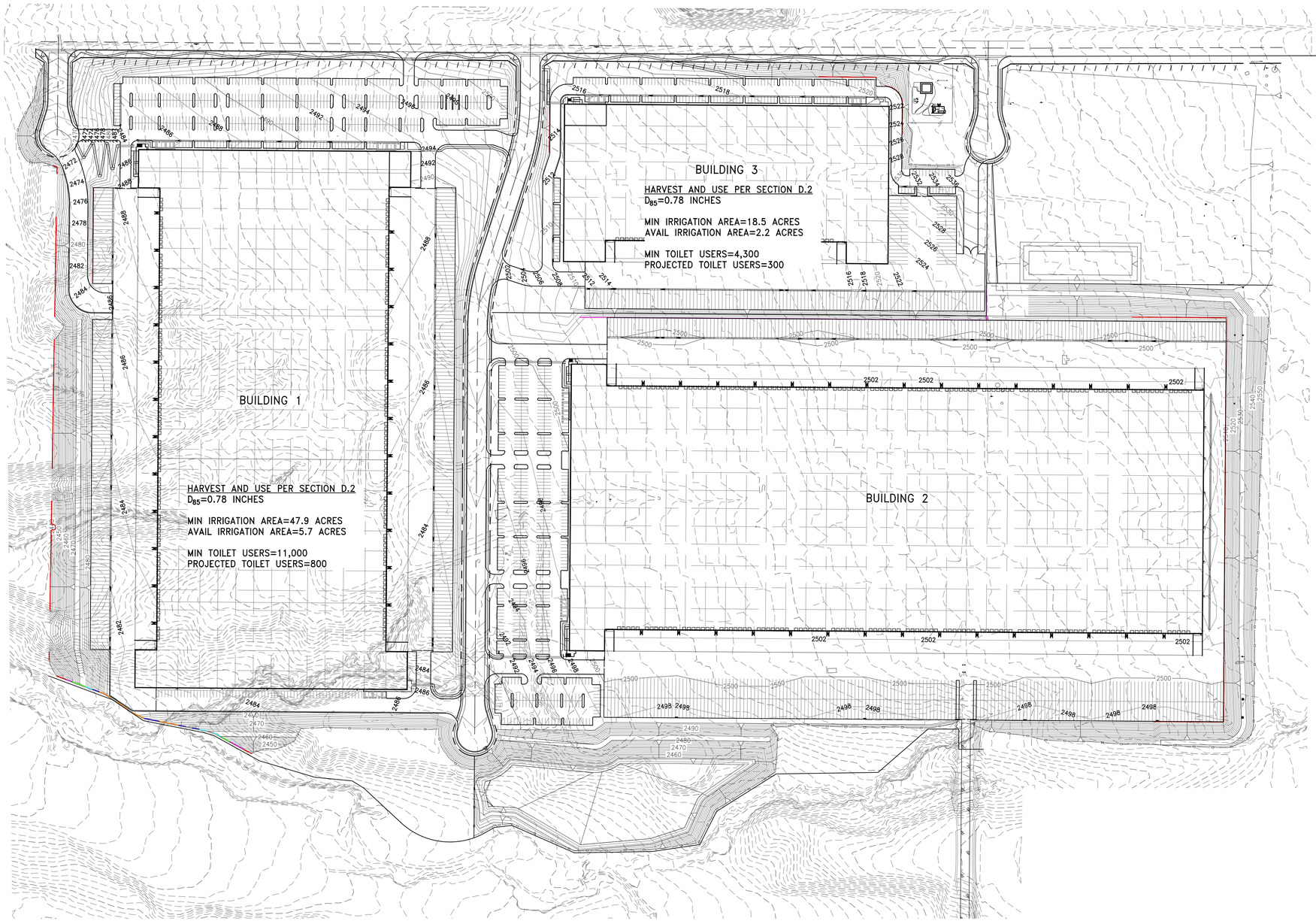
PRELIMINARY

WQMP HIERARCHY FEASIBILITY: INFILTRATION

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O. 21-0044
SHEET 1 OF 3 SHEETS

H:\2021\21-0044\DRAWINGS\EXHIBITS\21-0044-XB-WQ HIERARCHY.DWG 2/1/2022 12:37:39 PM



1" = 150'

150 0 150 300 450

PRELIMINARY

WQMP HIERARCHY FEASIBILITY: HARVEST AND USE

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O. 21-0044
SHEET 2 OF 3 SHEETS

H:\2021\21-0044\DRAWINGS\EXHIBITS\21-0044-XB-WQ HIERARCHY.DWG 2/1/2022 12:37:39 PM

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Albert A. Webb Associates	Date	4/12/2022
Designed by	EP	Case No	
Company Project Number/Name	21-0044 Beaumont Summit Station		

BMP Identification

BMP NAME / ID: Building 1

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.79 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
L-1	*119,487*	*Ornamental Landscaping*	*0.1*	*0.11*	*13198.3*			
R-1	*985,860*	*Roofs*	*1*	*0.89*	*879387.1*			
H-1	*750,724*	*Concrete or Asphalt*	*1*	*0.89*	*669645.8*			
BMP-1	*5,060*	*Ornamental Landscaping*	*0.1*	*0.11*	*558.9*			
	1861131	***Total***			**1562790.1**	**0.79**	***102883.7***	***103,000***

Notes:

BUILDING 1 BIORETENTION BASIN

Basin V_{BMP} Calculation

Designer:	EP
Date:	4/11/2022
Project:	Beaumont Summit Station Builidng 1
Location:	South of Cherry Valley Blvd and North of Brookside Ave
Area:	DMA 1

(1)	Drawdown Time =	48	hrs
(2)	Basin Bottom Area=	5064	ft^2
(3)	Infiltration Rate (i)=	1.6	in/hr

$$V_{BMP}(ft^3) = Drawdown(hr) \times i\left(\frac{in}{hr}\right) \times \left(\frac{1ft}{12in}\right) \times Bottom\ Area(ft^2)$$

V_{BMP} = 32410 ft^3

***A minimum infiltration rate of 1.6 in/hr was assumed for the engineered media.The entire basin will drain within the maximum drawdown time of 48 hours.

BUILDING 2 INFILTRATION BASIN

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID	Legend:	Required Entries / Calculated Cells
Company Name: Albert A. Webb Associates			Date: 12/13/2021
Designed by: EP			County/City Case No.:

Design Volume

a) Tributary area (BMP subarea)	A_T =	50	acres
b) Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	144,000	ft^3

Maximum Depth

a) Infiltration rate	I =	11.5	in/hr
b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook)	FS =	3	
c) Calculate D_1 $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$	D_1 =	23.0	ft
d) Enter the depth of freeboard (at least 1 ft)		1	ft
e) Enter depth to historic high ground water (measured from **top** of basin)		18	ft
f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin)		21	ft
g) D_2 is the smaller of: Depth to groundwater - (10 ft + freeboard) and Depth to impermeable layer - (5 ft + freeboard)	D_2 =	7.0	ft
h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet	D_{MAX} =	7.0	ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1)	z =	4	:1
b) Proposed basin depth (excluding freeboard)	d_B =	4	ft
c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$)	A_S =	36000	ft^2
d) Proposed Design Surface Area	A_D =	106388	ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP})	Volume =	720	ft^3
b) Forebay depth (height of berm/splashwall. 1 foot min.)	Depth =	1	ft
c) Forebay surface area (minimum)	Area =	720	ft^2
d) Full height notch-type weir	Width (W) =	6.0	in

NOTE: See "Beaumont Summit Station - Building 2 Preliminary WQMP" for basin design details. The infiltration basin has been sized for the Building 2 site VBMP of 144,000 cf. Approx. 75,940 cf of the Building 2 VBMP is proposed to be pumped to the basin for treatment once the Building 2 VBMP has fully infiltrated.

BUILDING 1 LID HARVEST & USE

LID Harvest & Reuse V_{BMP} Calculation

Designer:	EP
Date:	4/11/2022
Project:	Beaumont Summit Station Builidng 1
Location:	South of Cherry Valley Blvd and North of Brookside Ave
Area:	LID Harvest & Reuse

(1)	Irrigation Cycle=	12	hrs
(2)	Area of Vegetation=	20150	ft^2
(3)	Infiltration Rate (i)=	1.6	in/hr

$$V_{BMP}(ft^3) = Irrigation\ Time(hr) \times i\left(\frac{in}{hr}\right) \times \left(\frac{1ft}{12in}\right) \times Area(ft^2)$$

V_{BMP} = 32240 ft^3

***A minimum infiltration rate of 1.6 in/hr was assumed for the engineered media.The entire basin will drain within the maximum drawdown time of 48 hours.

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Existing Unit Hydrographs

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/19/21 File: EX2YRA242.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.50	159.60

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 1.500(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	(0.747)	0.010	0.002
2	0.17	0.07	0.012	(0.744)	0.010	0.002
3	0.25	0.07	0.012	(0.741)	0.010	0.002
4	0.33	0.10	0.018	(0.738)	0.014	0.004
5	0.42	0.10	0.018	(0.736)	0.014	0.004
6	0.50	0.10	0.018	(0.733)	0.014	0.004
7	0.58	0.10	0.018	(0.730)	0.014	0.004
8	0.67	0.10	0.018	(0.727)	0.014	0.004
9	0.75	0.10	0.018	(0.724)	0.014	0.004
10	0.83	0.13	0.024	(0.721)	0.019	0.005
11	0.92	0.13	0.024	(0.718)	0.019	0.005
12	1.00	0.13	0.024	(0.716)	0.019	0.005
13	1.08	0.10	0.018	(0.713)	0.014	0.004
14	1.17	0.10	0.018	(0.710)	0.014	0.004
15	1.25	0.10	0.018	(0.707)	0.014	0.004
16	1.33	0.10	0.018	(0.704)	0.014	0.004
17	1.42	0.10	0.018	(0.702)	0.014	0.004
18	1.50	0.10	0.018	(0.699)	0.014	0.004
19	1.58	0.10	0.018	(0.696)	0.014	0.004
20	1.67	0.10	0.018	(0.693)	0.014	0.004
21	1.75	0.10	0.018	(0.690)	0.014	0.004
22	1.83	0.13	0.024	(0.688)	0.019	0.005
23	1.92	0.13	0.024	(0.685)	0.019	0.005
24	2.00	0.13	0.024	(0.682)	0.019	0.005
25	2.08	0.13	0.024	(0.679)	0.019	0.005
26	2.17	0.13	0.024	(0.677)	0.019	0.005
27	2.25	0.13	0.024	(0.674)	0.019	0.005
28	2.33	0.13	0.024	(0.671)	0.019	0.005
29	2.42	0.13	0.024	(0.668)	0.019	0.005
30	2.50	0.13	0.024	(0.666)	0.019	0.005
31	2.58	0.17	0.030	(0.663)	0.024	0.006
32	2.67	0.17	0.030	(0.660)	0.024	0.006
33	2.75	0.17	0.030	(0.657)	0.024	0.006
34	2.83	0.17	0.030	(0.655)	0.024	0.006
35	2.92	0.17	0.030	(0.652)	0.024	0.006
36	3.00	0.17	0.030	(0.649)	0.024	0.006
37	3.08	0.17	0.030	(0.647)	0.024	0.006

38	3.17	0.17	0.030	(0.644)	0.024	0.006
39	3.25	0.17	0.030	(0.641)	0.024	0.006
40	3.33	0.17	0.030	(0.639)	0.024	0.006
41	3.42	0.17	0.030	(0.636)	0.024	0.006
42	3.50	0.17	0.030	(0.633)	0.024	0.006
43	3.58	0.17	0.030	(0.631)	0.024	0.006
44	3.67	0.17	0.030	(0.628)	0.024	0.006
45	3.75	0.17	0.030	(0.625)	0.024	0.006
46	3.83	0.20	0.036	(0.623)	0.029	0.007
47	3.92	0.20	0.036	(0.620)	0.029	0.007
48	4.00	0.20	0.036	(0.617)	0.029	0.007
49	4.08	0.20	0.036	(0.615)	0.029	0.007
50	4.17	0.20	0.036	(0.612)	0.029	0.007
51	4.25	0.20	0.036	(0.610)	0.029	0.007
52	4.33	0.23	0.042	(0.607)	0.034	0.008
53	4.42	0.23	0.042	(0.604)	0.034	0.008
54	4.50	0.23	0.042	(0.602)	0.034	0.008
55	4.58	0.23	0.042	(0.599)	0.034	0.008
56	4.67	0.23	0.042	(0.597)	0.034	0.008
57	4.75	0.23	0.042	(0.594)	0.034	0.008
58	4.83	0.27	0.048	(0.592)	0.038	0.010
59	4.92	0.27	0.048	(0.589)	0.038	0.010
60	5.00	0.27	0.048	(0.586)	0.038	0.010
61	5.08	0.20	0.036	(0.584)	0.029	0.007
62	5.17	0.20	0.036	(0.581)	0.029	0.007
63	5.25	0.20	0.036	(0.579)	0.029	0.007
64	5.33	0.23	0.042	(0.576)	0.034	0.008
65	5.42	0.23	0.042	(0.574)	0.034	0.008
66	5.50	0.23	0.042	(0.571)	0.034	0.008
67	5.58	0.27	0.048	(0.569)	0.038	0.010
68	5.67	0.27	0.048	(0.566)	0.038	0.010
69	5.75	0.27	0.048	(0.564)	0.038	0.010
70	5.83	0.27	0.048	(0.561)	0.038	0.010
71	5.92	0.27	0.048	(0.559)	0.038	0.010
72	6.00	0.27	0.048	(0.556)	0.038	0.010
73	6.08	0.30	0.054	(0.554)	0.043	0.011
74	6.17	0.30	0.054	(0.551)	0.043	0.011
75	6.25	0.30	0.054	(0.549)	0.043	0.011
76	6.33	0.30	0.054	(0.546)	0.043	0.011
77	6.42	0.30	0.054	(0.544)	0.043	0.011
78	6.50	0.30	0.054	(0.542)	0.043	0.011
79	6.58	0.33	0.060	(0.539)	0.048	0.012
80	6.67	0.33	0.060	(0.537)	0.048	0.012
81	6.75	0.33	0.060	(0.534)	0.048	0.012
82	6.83	0.33	0.060	(0.532)	0.048	0.012
83	6.92	0.33	0.060	(0.529)	0.048	0.012
84	7.00	0.33	0.060	(0.527)	0.048	0.012
85	7.08	0.33	0.060	(0.525)	0.048	0.012
86	7.17	0.33	0.060	(0.522)	0.048	0.012
87	7.25	0.33	0.060	(0.520)	0.048	0.012
88	7.33	0.37	0.066	(0.518)	0.053	0.013
89	7.42	0.37	0.066	(0.515)	0.053	0.013
90	7.50	0.37	0.066	(0.513)	0.053	0.013
91	7.58	0.40	0.072	(0.510)	0.058	0.014
92	7.67	0.40	0.072	(0.508)	0.058	0.014
93	7.75	0.40	0.072	(0.506)	0.058	0.014
94	7.83	0.43	0.078	(0.503)	0.062	0.016
95	7.92	0.43	0.078	(0.501)	0.062	0.016
96	8.00	0.43	0.078	(0.499)	0.062	0.016
97	8.08	0.50	0.090	(0.496)	0.072	0.018
98	8.17	0.50	0.090	(0.494)	0.072	0.018
99	8.25	0.50	0.090	(0.492)	0.072	0.018
100	8.33	0.50	0.090	(0.490)	0.072	0.018
101	8.42	0.50	0.090	(0.487)	0.072	0.018
102	8.50	0.50	0.090	(0.485)	0.072	0.018
103	8.58	0.53	0.096	(0.483)	0.077	0.019
104	8.67	0.53	0.096	(0.480)	0.077	0.019
105	8.75	0.53	0.096	(0.478)	0.077	0.019
106	8.83	0.57	0.102	(0.476)	0.082	0.020
107	8.92	0.57	0.102	(0.474)	0.082	0.020
108	9.00	0.57	0.102	(0.471)	0.082	0.020
109	9.08	0.63	0.114	(0.469)	0.091	0.023
110	9.17	0.63	0.114	(0.467)	0.091	0.023
111	9.25	0.63	0.114	(0.465)	0.091	0.023
112	9.33	0.67	0.120	(0.462)	0.096	0.024

113	9.42	0.67	0.120	(0.460)	0.096	0.024
114	9.50	0.67	0.120	(0.458)	0.096	0.024
115	9.58	0.70	0.126	(0.456)	0.101	0.025
116	9.67	0.70	0.126	(0.454)	0.101	0.025
117	9.75	0.70	0.126	(0.452)	0.101	0.025
118	9.83	0.73	0.132	(0.449)	0.106	0.026
119	9.92	0.73	0.132	(0.447)	0.106	0.026
120	10.00	0.73	0.132	(0.445)	0.106	0.026
121	10.08	0.50	0.090	(0.443)	0.072	0.018
122	10.17	0.50	0.090	(0.441)	0.072	0.018
123	10.25	0.50	0.090	(0.439)	0.072	0.018
124	10.33	0.50	0.090	(0.436)	0.072	0.018
125	10.42	0.50	0.090	(0.434)	0.072	0.018
126	10.50	0.50	0.090	(0.432)	0.072	0.018
127	10.58	0.67	0.120	(0.430)	0.096	0.024
128	10.67	0.67	0.120	(0.428)	0.096	0.024
129	10.75	0.67	0.120	(0.426)	0.096	0.024
130	10.83	0.67	0.120	(0.424)	0.096	0.024
131	10.92	0.67	0.120	(0.422)	0.096	0.024
132	11.00	0.67	0.120	(0.420)	0.096	0.024
133	11.08	0.63	0.114	(0.418)	0.091	0.023
134	11.17	0.63	0.114	(0.416)	0.091	0.023
135	11.25	0.63	0.114	(0.413)	0.091	0.023
136	11.33	0.63	0.114	(0.411)	0.091	0.023
137	11.42	0.63	0.114	(0.409)	0.091	0.023
138	11.50	0.63	0.114	(0.407)	0.091	0.023
139	11.58	0.57	0.102	(0.405)	0.082	0.020
140	11.67	0.57	0.102	(0.403)	0.082	0.020
141	11.75	0.57	0.102	(0.401)	0.082	0.020
142	11.83	0.60	0.108	(0.399)	0.086	0.022
143	11.92	0.60	0.108	(0.397)	0.086	0.022
144	12.00	0.60	0.108	(0.395)	0.086	0.022
145	12.08	0.83	0.150	(0.393)	0.120	0.030
146	12.17	0.83	0.150	(0.391)	0.120	0.030
147	12.25	0.83	0.150	(0.389)	0.120	0.030
148	12.33	0.87	0.156	(0.388)	0.125	0.031
149	12.42	0.87	0.156	(0.386)	0.125	0.031
150	12.50	0.87	0.156	(0.384)	0.125	0.031
151	12.58	0.93	0.168	(0.382)	0.134	0.034
152	12.67	0.93	0.168	(0.380)	0.134	0.034
153	12.75	0.93	0.168	(0.378)	0.134	0.034
154	12.83	0.97	0.174	(0.376)	0.139	0.035
155	12.92	0.97	0.174	(0.374)	0.139	0.035
156	13.00	0.97	0.174	(0.372)	0.139	0.035
157	13.08	1.13	0.204	(0.370)	0.163	0.041
158	13.17	1.13	0.204	(0.368)	0.163	0.041
159	13.25	1.13	0.204	(0.367)	0.163	0.041
160	13.33	1.13	0.204	(0.365)	0.163	0.041
161	13.42	1.13	0.204	(0.363)	0.163	0.041
162	13.50	1.13	0.204	(0.361)	0.163	0.041
163	13.58	0.77	0.138	(0.359)	0.110	0.028
164	13.67	0.77	0.138	(0.357)	0.110	0.028
165	13.75	0.77	0.138	(0.355)	0.110	0.028
166	13.83	0.77	0.138	(0.354)	0.110	0.028
167	13.92	0.77	0.138	(0.352)	0.110	0.028
168	14.00	0.77	0.138	(0.350)	0.110	0.028
169	14.08	0.90	0.162	(0.348)	0.130	0.032
170	14.17	0.90	0.162	(0.346)	0.130	0.032
171	14.25	0.90	0.162	(0.345)	0.130	0.032
172	14.33	0.87	0.156	(0.343)	0.125	0.031
173	14.42	0.87	0.156	(0.341)	0.125	0.031
174	14.50	0.87	0.156	(0.339)	0.125	0.031
175	14.58	0.87	0.156	(0.338)	0.125	0.031
176	14.67	0.87	0.156	(0.336)	0.125	0.031
177	14.75	0.87	0.156	(0.334)	0.125	0.031
178	14.83	0.83	0.150	(0.333)	0.120	0.030
179	14.92	0.83	0.150	(0.331)	0.120	0.030
180	15.00	0.83	0.150	(0.329)	0.120	0.030
181	15.08	0.80	0.144	(0.327)	0.115	0.029
182	15.17	0.80	0.144	(0.326)	0.115	0.029
183	15.25	0.80	0.144	(0.324)	0.115	0.029
184	15.33	0.77	0.138	(0.322)	0.110	0.028
185	15.42	0.77	0.138	(0.321)	0.110	0.028
186	15.50	0.77	0.138	(0.319)	0.110	0.028
187	15.58	0.63	0.114	(0.318)	0.091	0.023

188	15.67	0.63	0.114	(0.316)	0.091	0.023
189	15.75	0.63	0.114	(0.314)	0.091	0.023
190	15.83	0.63	0.114	(0.313)	0.091	0.023
191	15.92	0.63	0.114	(0.311)	0.091	0.023
192	16.00	0.63	0.114	(0.309)	0.091	0.023
193	16.08	0.13	0.024	(0.308)	0.019	0.005
194	16.17	0.13	0.024	(0.306)	0.019	0.005
195	16.25	0.13	0.024	(0.305)	0.019	0.005
196	16.33	0.13	0.024	(0.303)	0.019	0.005
197	16.42	0.13	0.024	(0.302)	0.019	0.005
198	16.50	0.13	0.024	(0.300)	0.019	0.005
199	16.58	0.10	0.018	(0.299)	0.014	0.004
200	16.67	0.10	0.018	(0.297)	0.014	0.004
201	16.75	0.10	0.018	(0.296)	0.014	0.004
202	16.83	0.10	0.018	(0.294)	0.014	0.004
203	16.92	0.10	0.018	(0.293)	0.014	0.004
204	17.00	0.10	0.018	(0.291)	0.014	0.004
205	17.08	0.17	0.030	(0.290)	0.024	0.006
206	17.17	0.17	0.030	(0.288)	0.024	0.006
207	17.25	0.17	0.030	(0.287)	0.024	0.006
208	17.33	0.17	0.030	(0.285)	0.024	0.006
209	17.42	0.17	0.030	(0.284)	0.024	0.006
210	17.50	0.17	0.030	(0.282)	0.024	0.006
211	17.58	0.17	0.030	(0.281)	0.024	0.006
212	17.67	0.17	0.030	(0.280)	0.024	0.006
213	17.75	0.17	0.030	(0.278)	0.024	0.006
214	17.83	0.13	0.024	(0.277)	0.019	0.005
215	17.92	0.13	0.024	(0.275)	0.019	0.005
216	18.00	0.13	0.024	(0.274)	0.019	0.005
217	18.08	0.13	0.024	(0.273)	0.019	0.005
218	18.17	0.13	0.024	(0.271)	0.019	0.005
219	18.25	0.13	0.024	(0.270)	0.019	0.005
220	18.33	0.13	0.024	(0.269)	0.019	0.005
221	18.42	0.13	0.024	(0.267)	0.019	0.005
222	18.50	0.13	0.024	(0.266)	0.019	0.005
223	18.58	0.10	0.018	(0.265)	0.014	0.004
224	18.67	0.10	0.018	(0.264)	0.014	0.004
225	18.75	0.10	0.018	(0.262)	0.014	0.004
226	18.83	0.07	0.012	(0.261)	0.010	0.002
227	18.92	0.07	0.012	(0.260)	0.010	0.002
228	19.00	0.07	0.012	(0.259)	0.010	0.002
229	19.08	0.10	0.018	(0.257)	0.014	0.004
230	19.17	0.10	0.018	(0.256)	0.014	0.004
231	19.25	0.10	0.018	(0.255)	0.014	0.004
232	19.33	0.13	0.024	(0.254)	0.019	0.005
233	19.42	0.13	0.024	(0.253)	0.019	0.005
234	19.50	0.13	0.024	(0.251)	0.019	0.005
235	19.58	0.10	0.018	(0.250)	0.014	0.004
236	19.67	0.10	0.018	(0.249)	0.014	0.004
237	19.75	0.10	0.018	(0.248)	0.014	0.004
238	19.83	0.07	0.012	(0.247)	0.010	0.002
239	19.92	0.07	0.012	(0.246)	0.010	0.002
240	20.00	0.07	0.012	(0.245)	0.010	0.002
241	20.08	0.10	0.018	(0.244)	0.014	0.004
242	20.17	0.10	0.018	(0.243)	0.014	0.004
243	20.25	0.10	0.018	(0.242)	0.014	0.004
244	20.33	0.10	0.018	(0.240)	0.014	0.004
245	20.42	0.10	0.018	(0.239)	0.014	0.004
246	20.50	0.10	0.018	(0.238)	0.014	0.004
247	20.58	0.10	0.018	(0.237)	0.014	0.004
248	20.67	0.10	0.018	(0.236)	0.014	0.004
249	20.75	0.10	0.018	(0.235)	0.014	0.004
250	20.83	0.07	0.012	(0.234)	0.010	0.002
251	20.92	0.07	0.012	(0.234)	0.010	0.002
252	21.00	0.07	0.012	(0.233)	0.010	0.002
253	21.08	0.10	0.018	(0.232)	0.014	0.004
254	21.17	0.10	0.018	(0.231)	0.014	0.004
255	21.25	0.10	0.018	(0.230)	0.014	0.004
256	21.33	0.07	0.012	(0.229)	0.010	0.002
257	21.42	0.07	0.012	(0.228)	0.010	0.002
258	21.50	0.07	0.012	(0.227)	0.010	0.002
259	21.58	0.10	0.018	(0.226)	0.014	0.004
260	21.67	0.10	0.018	(0.226)	0.014	0.004
261	21.75	0.10	0.018	(0.225)	0.014	0.004
262	21.83	0.07	0.012	(0.224)	0.010	0.002

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263  21.92     0.07      0.012       (  0.223)       0.010        0.002
264  22.00     0.07      0.012       (  0.223)       0.010        0.002
265  22.08     0.10      0.018       (  0.222)       0.014        0.004
266  22.17     0.10      0.018       (  0.221)       0.014        0.004
267  22.25     0.10      0.018       (  0.220)       0.014        0.004
268  22.33     0.07      0.012       (  0.220)       0.010        0.002
269  22.42     0.07      0.012       (  0.219)       0.010        0.002
270  22.50     0.07      0.012       (  0.218)       0.010        0.002
271  22.58     0.07      0.012       (  0.218)       0.010        0.002
272  22.67     0.07      0.012       (  0.217)       0.010        0.002
273  22.75     0.07      0.012       (  0.217)       0.010        0.002
274  22.83     0.07      0.012       (  0.216)       0.010        0.002
275  22.92     0.07      0.012       (  0.215)       0.010        0.002
276  23.00     0.07      0.012       (  0.215)       0.010        0.002
277  23.08     0.07      0.012       (  0.214)       0.010        0.002
278  23.17     0.07      0.012       (  0.214)       0.010        0.002
279  23.25     0.07      0.012       (  0.213)       0.010        0.002
280  23.33     0.07      0.012       (  0.213)       0.010        0.002
281  23.42     0.07      0.012       (  0.213)       0.010        0.002
282  23.50     0.07      0.012       (  0.212)       0.010        0.002
283  23.58     0.07      0.012       (  0.212)       0.010        0.002
284  23.67     0.07      0.012       (  0.212)       0.010        0.002
285  23.75     0.07      0.012       (  0.211)       0.010        0.002
286  23.83     0.07      0.012       (  0.211)       0.010        0.002
287  23.92     0.07      0.012       (  0.211)       0.010        0.002
288  24.00     0.07      0.012       (  0.211)       0.010        0.002
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     3.6
      Flood volume = Effective rainfall      0.30(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       2.7(Ac.Ft)
      Total soil loss =      1.20(In)
      Total soil loss =    10.638(Ac.Ft)
      Total rainfall =      1.50(In)
      Flood volume =      115845.5 Cubic Feet
      Total soil loss =      463382.1 Cubic Feet
      ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      4.329(CFS)  AREA A
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q          |         |         |         |
  0+10       0.0006      0.08  Q          |         |         |         |
  0+15       0.0018      0.17  Q          |         |         |         |
  0+20       0.0033      0.21  Q          |         |         |         |
  0+25       0.0051      0.26  VQ         |         |         |         |
  0+30       0.0073      0.33  VQ         |         |         |         |
  0+35       0.0097      0.35  VQ         |         |         |         |
  0+40       0.0123      0.37  VQ         |         |         |         |
  0+45       0.0148      0.37  VQ         |         |         |         |
  0+50       0.0175      0.38  VQ         |         |         |         |
  0+55       0.0204      0.42  VQ         |         |         |         |
  1+ 0       0.0236      0.47  VQ         |         |         |         |
  1+ 5       0.0269      0.48  VQ         |         |         |         |
  1+10       0.0301      0.46  VQ         |         |         |         |
  1+15       0.0330      0.42  VQ         |         |         |         |
  1+20       0.0358      0.41  VQ         |         |         |         |
  1+25       0.0385      0.40  VQ         |         |         |         |
  1+30       0.0412      0.39  VQ         |         |         |         |
  1+35       0.0439      0.39  VQ         |         |         |         |
  1+40       0.0466      0.39  VQ         |         |         |         |
  1+45       0.0493      0.39  VQ         |         |         |         |
  1+50       0.0520      0.39  VQ         |         |         |         |
  1+55       0.0549      0.43  VQ         |         |         |         |
  2+ 0       0.0582      0.47  VQ         |         |         |         |
  2+ 5       0.0615      0.49  VQ         |         |         |         |
  2+10       0.0650      0.50  VQ         |         |         |         |
  2+15       0.0685      0.51  |VQ        |         |         |         |
  2+20       0.0720      0.51  |VQ        |         |         |         |
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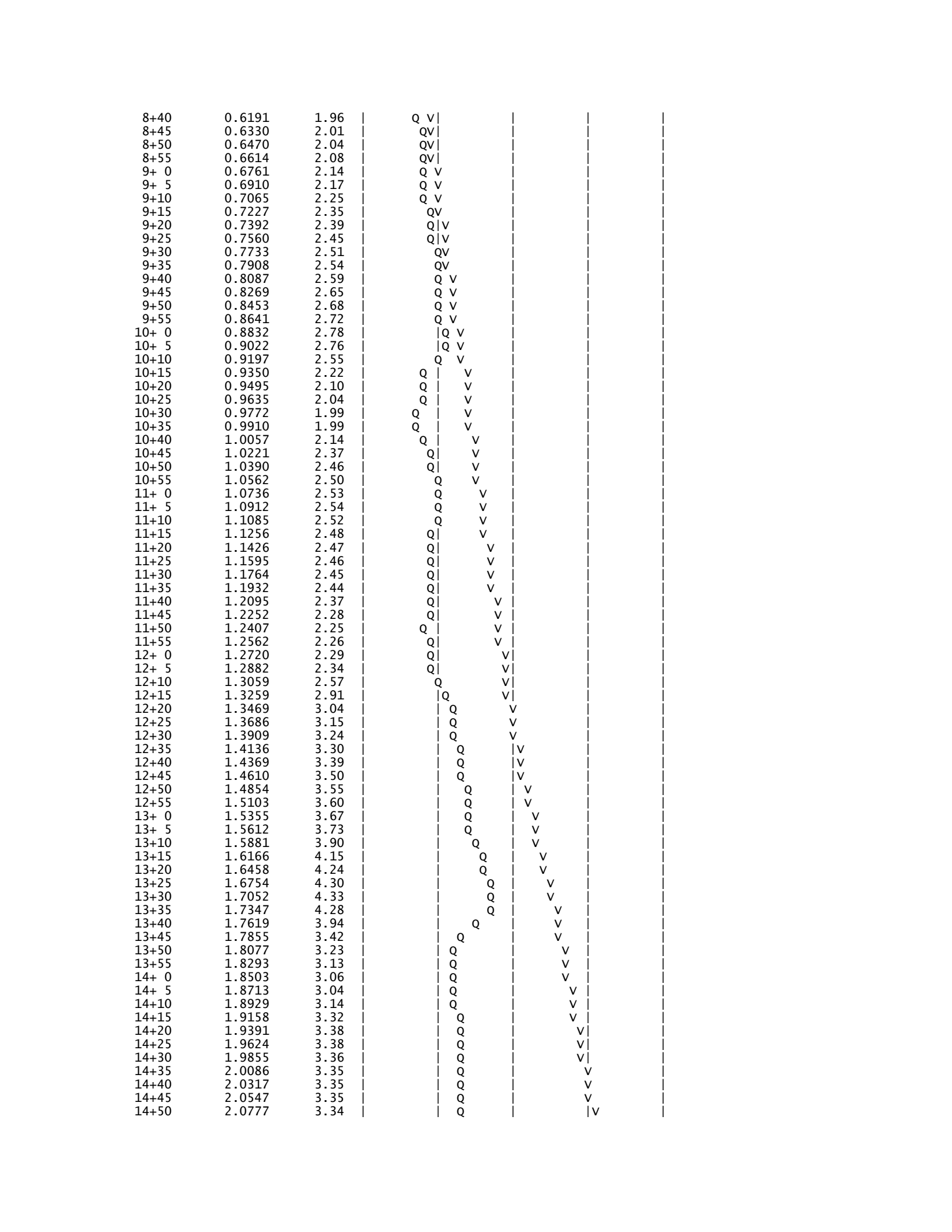
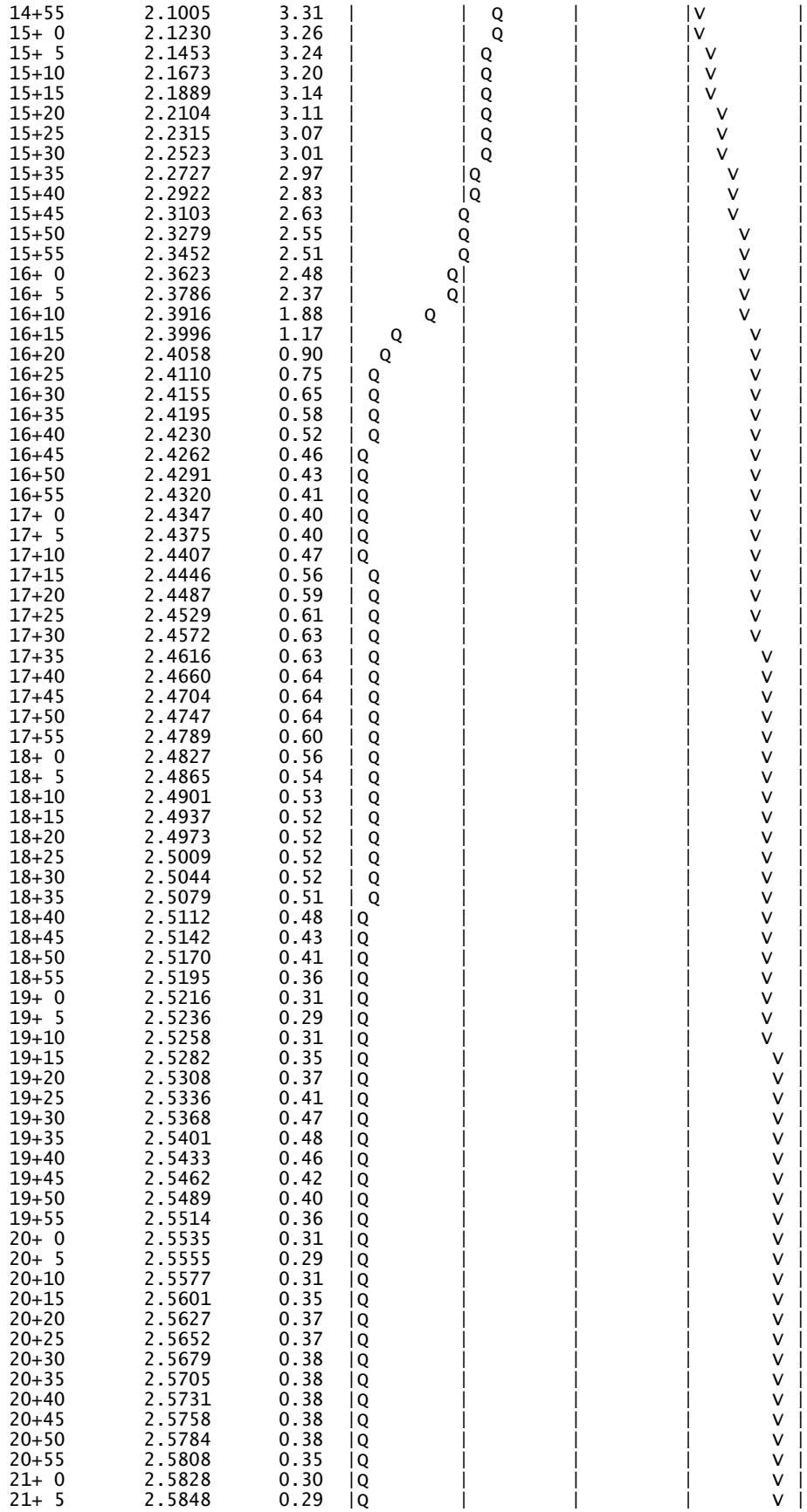
2+25	0.0755	0.51	VQ			
2+30	0.0790	0.51	VQ			
2+35	0.0826	0.52	VQ			
2+40	0.0864	0.55	VQ			
2+45	0.0905	0.60	VQ			
2+50	0.0948	0.62	VQ			
2+55	0.0991	0.63	VQ			
3+ 0	0.1035	0.63	VQ			
3+ 5	0.1079	0.64	VQ			
3+10	0.1123	0.64	VQ			
3+15	0.1167	0.64	VQ			
3+20	0.1212	0.64	VQ			
3+25	0.1256	0.64	VQ			
3+30	0.1300	0.64	VQ			
3+35	0.1345	0.64	Q			
3+40	0.1389	0.64	Q			
3+45	0.1433	0.64	Q			
3+50	0.1478	0.65	Q			
3+55	0.1525	0.68	Q			
4+ 0	0.1575	0.73	Q			
4+ 5	0.1627	0.75	Q			
4+10	0.1679	0.76	VQ			
4+15	0.1731	0.76	VQ			
4+20	0.1785	0.77	VQ			
4+25	0.1840	0.81	VQ			
4+30	0.1899	0.86	VQ			
4+35	0.1959	0.87	VQ			
4+40	0.2020	0.88	Q			
4+45	0.2082	0.89	Q			
4+50	0.2144	0.90	Q			
4+55	0.2208	0.94	Q			
5+ 0	0.2276	0.98	Q			
5+ 5	0.2344	0.99	Q			
5+10	0.2409	0.94	Q			
5+15	0.2467	0.85	Q			
5+20	0.2524	0.82	Q			
5+25	0.2582	0.84	Q			
5+30	0.2642	0.87	Q			
5+35	0.2703	0.89	QV			
5+40	0.2767	0.93	QV			
5+45	0.2835	0.98	QV			
5+50	0.2904	1.00	Q			
5+55	0.2974	1.01	Q			
6+ 0	0.3044	1.02	Q			
6+ 5	0.3115	1.03	Q			
6+10	0.3188	1.06	Q			
6+15	0.3265	1.11	Q			
6+20	0.3343	1.13	QV			
6+25	0.3422	1.14	QV			
6+30	0.3501	1.15	QV			
6+35	0.3581	1.16	QV			
6+40	0.3663	1.19	QV			
6+45	0.3748	1.24	QV			
6+50	0.3835	1.26	Q			
6+55	0.3923	1.27	Q			
7+ 0	0.4011	1.28	QV			
7+ 5	0.4099	1.28	QV			
7+10	0.4187	1.28	QV			
7+15	0.4276	1.29	QV			
7+20	0.4365	1.29	QV			
7+25	0.4456	1.32	QV			
7+30	0.4551	1.37	QV			
7+35	0.4647	1.40	QV			
7+40	0.4746	1.44	Q V			
7+45	0.4849	1.49	Q V			
7+50	0.4954	1.52	QV			
7+55	0.5061	1.56	QV			
8+ 0	0.5173	1.62	QV			
8+ 5	0.5287	1.65	QV			
8+10	0.5406	1.73	Q V			
8+15	0.5532	1.83	QV			
8+20	0.5661	1.87	QV			
8+25	0.5792	1.90	QV			
8+30	0.5923	1.91	QV			
8+35	0.6056	1.93	Q V			





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   21+10       2.5870      0.31  |Q        |         |         |       V |
   21+15       2.5894      0.35  |Q        |         |         |       V |
   21+20       2.5919      0.36  |Q        |         |         |       V |
   21+25       2.5942      0.34  |Q        |         |         |        V|
   21+30       2.5962      0.29  |Q        |         |         |        V|
   21+35       2.5982      0.29  |Q        |         |         |        V|
   21+40       2.6003      0.31  |Q        |         |         |        V|
   21+45       2.6027      0.35  |Q        |         |         |        V|
   21+50       2.6052      0.36  |Q        |         |         |        V|
   21+55       2.6075      0.33  |Q        |         |         |        V|
   22+ 0       2.6095      0.29  |Q        |         |         |        V|
   22+ 5       2.6115      0.29  |Q        |         |         |        V|
   22+10       2.6136      0.31  |Q        |         |         |        V|
   22+15       2.6160      0.35  |Q        |         |         |        V|
   22+20       2.6185      0.36  |Q        |         |         |        V|
   22+25       2.6208      0.33  |Q        |         |         |        V|
   22+30       2.6228      0.29  |Q        |         |         |        V|
   22+35       2.6247      0.28  |Q        |         |         |        V|
   22+40       2.6266      0.27  |Q        |         |         |        V|
   22+45       2.6284      0.26  |Q        |         |         |        V|
   22+50       2.6302      0.26  |Q        |         |         |        V|
   22+55       2.6320      0.26  |Q        |         |         |        V|
   23+ 0       2.6338      0.26  |Q        |         |         |        V|
   23+ 5       2.6356      0.26  |Q        |         |         |        V|
   23+10       2.6373      0.26  |Q        |         |         |        V|
   23+15       2.6391      0.26  |Q        |         |         |        V|
   23+20       2.6409      0.26  |Q        |         |         |        V|
   23+25       2.6427      0.26  |Q        |         |         |        V|
   23+30       2.6444      0.26  |Q        |         |         |        V|
   23+35       2.6462      0.26  |Q        |         |         |        V|
   23+40       2.6480      0.26  |Q        |         |         |        V|
   23+45       2.6498      0.26  |Q        |         |         |        V|
   23+50       2.6515      0.26  |Q        |         |         |        V|
   23+55       2.6533      0.26  |Q        |         |         |        V|
   24+ 0       2.6551      0.26  |Q        |         |         |        V|
   24+ 5       2.6568      0.25  Q         |         |         |        V|
   24+10       2.6580      0.18  Q         |         |         |        V|
   24+15       2.6586      0.09  Q         |         |         |        V|
   24+20       2.6590      0.05  Q         |         |         |        V|
   24+25       2.6592      0.03  Q         |         |         |        V|
   24+30       2.6593      0.02  Q         |         |         |        V|
   24+35       2.6594      0.01  Q         |         |         |        V|
   24+40       2.6594      0.01  Q         |         |         |        V|
   24+45       2.6594      0.00  Q         |         |         |        V|
   24+50       2.6594      0.00  Q         |         |         |        V|
   24+55       2.6594      0.00  Q         |         |         |        V|
   25+ 0       2.6594      0.00  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX2YRB242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.50	126.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	6.50	327.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	53.5	0.536	0.330	0.377	1.000	0.377
					Sum (F) =	0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.668)	0.013	0.007
2	0.17	0.07	0.020	(0.666)	0.013	0.007
3	0.25	0.07	0.020	(0.663)	0.013	0.007
4	0.33	0.10	0.030	(0.660)	0.019	0.011
5	0.42	0.10	0.030	(0.658)	0.019	0.011
6	0.50	0.10	0.030	(0.655)	0.019	0.011
7	0.58	0.10	0.030	(0.653)	0.019	0.011
8	0.67	0.10	0.030	(0.650)	0.019	0.011
9	0.75	0.10	0.030	(0.648)	0.019	0.011
10	0.83	0.13	0.040	(0.645)	0.025	0.015
11	0.92	0.13	0.040	(0.642)	0.025	0.015
12	1.00	0.13	0.040	(0.640)	0.025	0.015
13	1.08	0.10	0.030	(0.637)	0.019	0.011
14	1.17	0.10	0.030	(0.635)	0.019	0.011
15	1.25	0.10	0.030	(0.632)	0.019	0.011
16	1.33	0.10	0.030	(0.630)	0.019	0.011
17	1.42	0.10	0.030	(0.627)	0.019	0.011
18	1.50	0.10	0.030	(0.625)	0.019	0.011
19	1.58	0.10	0.030	(0.622)	0.019	0.011
20	1.67	0.10	0.030	(0.620)	0.019	0.011
21	1.75	0.10	0.030	(0.617)	0.019	0.011
22	1.83	0.13	0.040	(0.615)	0.025	0.015
23	1.92	0.13	0.040	(0.612)	0.025	0.015
24	2.00	0.13	0.040	(0.610)	0.025	0.015
25	2.08	0.13	0.040	(0.607)	0.025	0.015
26	2.17	0.13	0.040	(0.605)	0.025	0.015
27	2.25	0.13	0.040	(0.603)	0.025	0.015
28	2.33	0.13	0.040	(0.600)	0.025	0.015
29	2.42	0.13	0.040	(0.598)	0.025	0.015
30	2.50	0.13	0.040	(0.595)	0.025	0.015
31	2.58	0.17	0.050	(0.593)	0.031	0.018
32	2.67	0.17	0.050	(0.590)	0.031	0.018
33	2.75	0.17	0.050	(0.588)	0.031	0.018
34	2.83	0.17	0.050	(0.586)	0.031	0.018
35	2.92	0.17	0.050	(0.583)	0.031	0.018
36	3.00	0.17	0.050	(0.581)	0.031	0.018
37	3.08	0.17	0.050	(0.578)	0.031	0.018
38	3.17	0.17	0.050	(0.576)	0.031	0.018
39	3.25	0.17	0.050	(0.573)	0.031	0.018
40	3.33	0.17	0.050	(0.571)	0.031	0.018
41	3.42	0.17	0.050	(0.569)	0.031	0.018
42	3.50	0.17	0.050	(0.566)	0.031	0.018

43	3.58	0.17	0.050	(0.564)	0.031	0.018
44	3.67	0.17	0.050	(0.562)	0.031	0.018
45	3.75	0.17	0.050	(0.559)	0.031	0.018
46	3.83	0.20	0.060	(0.557)	0.038	0.022
47	3.92	0.20	0.060	(0.555)	0.038	0.022
48	4.00	0.20	0.060	(0.552)	0.038	0.022
49	4.08	0.20	0.060	(0.550)	0.038	0.022
50	4.17	0.20	0.060	(0.547)	0.038	0.022
51	4.25	0.20	0.060	(0.545)	0.038	0.022
52	4.33	0.23	0.070	(0.543)	0.044	0.026
53	4.42	0.23	0.070	(0.541)	0.044	0.026
54	4.50	0.23	0.070	(0.538)	0.044	0.026
55	4.58	0.23	0.070	(0.536)	0.044	0.026
56	4.67	0.23	0.070	(0.534)	0.044	0.026
57	4.75	0.23	0.070	(0.531)	0.044	0.026
58	4.83	0.27	0.080	(0.529)	0.050	0.030
59	4.92	0.27	0.080	(0.527)	0.050	0.030
60	5.00	0.27	0.080	(0.524)	0.050	0.030
61	5.08	0.20	0.060	(0.522)	0.038	0.022
62	5.17	0.20	0.060	(0.520)	0.038	0.022
63	5.25	0.20	0.060	(0.518)	0.038	0.022
64	5.33	0.23	0.070	(0.515)	0.044	0.026
65	5.42	0.23	0.070	(0.513)	0.044	0.026
66	5.50	0.23	0.070	(0.511)	0.044	0.026
67	5.58	0.27	0.080	(0.509)	0.050	0.030
68	5.67	0.27	0.080	(0.506)	0.050	0.030
69	5.75	0.27	0.080	(0.504)	0.050	0.030
70	5.83	0.27	0.080	(0.502)	0.050	0.030
71	5.92	0.27	0.080	(0.500)	0.050	0.030
72	6.00	0.27	0.080	(0.497)	0.050	0.030
73	6.08	0.30	0.090	(0.495)	0.057	0.033
74	6.17	0.30	0.090	(0.493)	0.057	0.033
75	6.25	0.30	0.090	(0.491)	0.057	0.033
76	6.33	0.30	0.090	(0.489)	0.057	0.033
77	6.42	0.30	0.090	(0.486)	0.057	0.033
78	6.50	0.30	0.090	(0.484)	0.057	0.033
79	6.58	0.33	0.100	(0.482)	0.063	0.037
80	6.67	0.33	0.100	(0.480)	0.063	0.037
81	6.75	0.33	0.100	(0.478)	0.063	0.037
82	6.83	0.33	0.100	(0.476)	0.063	0.037
83	6.92	0.33	0.100	(0.473)	0.063	0.037
84	7.00	0.33	0.100	(0.471)	0.063	0.037
85	7.08	0.33	0.100	(0.469)	0.063	0.037
86	7.17	0.33	0.100	(0.467)	0.063	0.037
87	7.25	0.33	0.100	(0.465)	0.063	0.037
88	7.33	0.37	0.110	(0.463)	0.069	0.041
89	7.42	0.37	0.110	(0.461)	0.069	0.041
90	7.50	0.37	0.110	(0.459)	0.069	0.041
91	7.58	0.40	0.120	(0.456)	0.076	0.044
92	7.67	0.40	0.120	(0.454)	0.076	0.044
93	7.75	0.40	0.120	(0.452)	0.076	0.044
94	7.83	0.43	0.130	(0.450)	0.082	0.048
95	7.92	0.43	0.130	(0.448)	0.082	0.048
96	8.00	0.43	0.130	(0.446)	0.082	0.048
97	8.08	0.50	0.150	(0.444)	0.094	0.055
98	8.17	0.50	0.150	(0.442)	0.094	0.055
99	8.25	0.50	0.150	(0.440)	0.094	0.055
100	8.33	0.50	0.150	(0.438)	0.094	0.055
101	8.42	0.50	0.150	(0.436)	0.094	0.055
102	8.50	0.50	0.150	(0.434)	0.094	0.055
103	8.58	0.53	0.160	(0.432)	0.101	0.059
104	8.67	0.53	0.160	(0.430)	0.101	0.059
105	8.75	0.53	0.160	(0.428)	0.101	0.059
106	8.83	0.57	0.170	(0.426)	0.107	0.063
107	8.92	0.57	0.170	(0.424)	0.107	0.063
108	9.00	0.57	0.170	(0.422)	0.107	0.063
109	9.08	0.63	0.190	(0.420)	0.120	0.070
110	9.17	0.63	0.190	(0.418)	0.120	0.070
111	9.25	0.63	0.190	(0.416)	0.120	0.070
112	9.33	0.67	0.200	(0.414)	0.126	0.074
113	9.42	0.67	0.200	(0.412)	0.126	0.074
114	9.50	0.67	0.200	(0.410)	0.126	0.074
115	9.58	0.70	0.210	(0.408)	0.132	0.078
116	9.67	0.70	0.210	(0.406)	0.132	0.078
117	9.75	0.70	0.210	(0.404)	0.132	0.078

118	9.83	0.73	0.220	(0.402)	0.139	0.081
119	9.92	0.73	0.220	(0.400)	0.139	0.081
120	10.00	0.73	0.220	(0.398)	0.139	0.081
121	10.08	0.50	0.150	(0.396)	0.094	0.055
122	10.17	0.50	0.150	(0.394)	0.094	0.055
123	10.25	0.50	0.150	(0.392)	0.094	0.055
124	10.33	0.50	0.150	(0.390)	0.094	0.055
125	10.42	0.50	0.150	(0.388)	0.094	0.055
126	10.50	0.50	0.150	(0.387)	0.094	0.055
127	10.58	0.67	0.200	(0.385)	0.126	0.074
128	10.67	0.67	0.200	(0.383)	0.126	0.074
129	10.75	0.67	0.200	(0.381)	0.126	0.074
130	10.83	0.67	0.200	(0.379)	0.126	0.074
131	10.92	0.67	0.200	(0.377)	0.126	0.074
132	11.00	0.67	0.200	(0.375)	0.126	0.074
133	11.08	0.63	0.190	(0.373)	0.120	0.070
134	11.17	0.63	0.190	(0.372)	0.120	0.070
135	11.25	0.63	0.190	(0.370)	0.120	0.070
136	11.33	0.63	0.190	(0.368)	0.120	0.070
137	11.42	0.63	0.190	(0.366)	0.120	0.070
138	11.50	0.63	0.190	(0.364)	0.120	0.070
139	11.58	0.57	0.170	(0.363)	0.107	0.063
140	11.67	0.57	0.170	(0.361)	0.107	0.063
141	11.75	0.57	0.170	(0.359)	0.107	0.063
142	11.83	0.60	0.180	(0.357)	0.113	0.067
143	11.92	0.60	0.180	(0.355)	0.113	0.067
144	12.00	0.60	0.180	(0.354)	0.113	0.067
145	12.08	0.83	0.250	(0.352)	0.157	0.092
146	12.17	0.83	0.250	(0.350)	0.157	0.092
147	12.25	0.83	0.250	(0.348)	0.157	0.092
148	12.33	0.87	0.260	(0.347)	0.164	0.096
149	12.42	0.87	0.260	(0.345)	0.164	0.096
150	12.50	0.87	0.260	(0.343)	0.164	0.096
151	12.58	0.93	0.280	(0.341)	0.176	0.104
152	12.67	0.93	0.280	(0.340)	0.176	0.104
153	12.75	0.93	0.280	(0.338)	0.176	0.104
154	12.83	0.97	0.290	(0.336)	0.183	0.107
155	12.92	0.97	0.290	(0.335)	0.183	0.107
156	13.00	0.97	0.290	(0.333)	0.183	0.107
157	13.08	1.13	0.340	(0.331)	0.214	0.126
158	13.17	1.13	0.340	(0.329)	0.214	0.126
159	13.25	1.13	0.340	(0.328)	0.214	0.126
160	13.33	1.13	0.340	(0.326)	0.214	0.126
161	13.42	1.13	0.340	(0.324)	0.214	0.126
162	13.50	1.13	0.340	(0.323)	0.214	0.126
163	13.58	0.77	0.230	(0.321)	0.145	0.085
164	13.67	0.77	0.230	(0.320)	0.145	0.085
165	13.75	0.77	0.230	(0.318)	0.145	0.085
166	13.83	0.77	0.230	(0.316)	0.145	0.085
167	13.92	0.77	0.230	(0.315)	0.145	0.085
168	14.00	0.77	0.230	(0.313)	0.145	0.085
169	14.08	0.90	0.270	(0.311)	0.170	0.100
170	14.17	0.90	0.270	(0.310)	0.170	0.100
171	14.25	0.90	0.270	(0.308)	0.170	0.100
172	14.33	0.87	0.260	(0.307)	0.164	0.096
173	14.42	0.87	0.260	(0.305)	0.164	0.096
174	14.50	0.87	0.260	(0.304)	0.164	0.096
175	14.58	0.87	0.260	(0.302)	0.164	0.096
176	14.67	0.87	0.260	(0.300)	0.164	0.096
177	14.75	0.87	0.260	(0.299)	0.164	0.096
178	14.83	0.83	0.250	(0.297)	0.157	0.092
179	14.92	0.83	0.250	(0.296)	0.157	0.092
180	15.00	0.83	0.250	(0.294)	0.157	0.092
181	15.08	0.80	0.240	(0.293)	0.151	0.089
182	15.17	0.80	0.240	(0.291)	0.151	0.089
183	15.25	0.80	0.240	(0.290)	0.151	0.089
184	15.33	0.77	0.230	(0.288)	0.145	0.085
185	15.42	0.77	0.230	(0.287)	0.145	0.085
186	15.50	0.77	0.230	(0.285)	0.145	0.085
187	15.58	0.63	0.190	(0.284)	0.120	0.070
188	15.67	0.63	0.190	(0.282)	0.120	0.070
189	15.75	0.63	0.190	(0.281)	0.120	0.070
190	15.83	0.63	0.190	(0.280)	0.120	0.070
191	15.92	0.63	0.190	(0.278)	0.120	0.070
192	16.00	0.63	0.190	(0.277)	0.120	0.070

193	16.08	0.13	0.040	(0.275)	0.025	0.015
194	16.17	0.13	0.040	(0.274)	0.025	0.015
195	16.25	0.13	0.040	(0.273)	0.025	0.015
196	16.33	0.13	0.040	(0.271)	0.025	0.015
197	16.42	0.13	0.040	(0.270)	0.025	0.015
198	16.50	0.13	0.040	(0.268)	0.025	0.015
199	16.58	0.10	0.030	(0.267)	0.019	0.011
200	16.67	0.10	0.030	(0.266)	0.019	0.011
201	16.75	0.10	0.030	(0.264)	0.019	0.011
202	16.83	0.10	0.030	(0.263)	0.019	0.011
203	16.92	0.10	0.030	(0.262)	0.019	0.011
204	17.00	0.10	0.030	(0.260)	0.019	0.011
205	17.08	0.17	0.050	(0.259)	0.031	0.018
206	17.17	0.17	0.050	(0.258)	0.031	0.018
207	17.25	0.17	0.050	(0.256)	0.031	0.018
208	17.33	0.17	0.050	(0.255)	0.031	0.018
209	17.42	0.17	0.050	(0.254)	0.031	0.018
210	17.50	0.17	0.050	(0.253)	0.031	0.018
211	17.58	0.17	0.050	(0.251)	0.031	0.018
212	17.67	0.17	0.050	(0.250)	0.031	0.018
213	17.75	0.17	0.050	(0.249)	0.031	0.018
214	17.83	0.13	0.040	(0.248)	0.025	0.015
215	17.92	0.13	0.040	(0.246)	0.025	0.015
216	18.00	0.13	0.040	(0.245)	0.025	0.015
217	18.08	0.13	0.040	(0.244)	0.025	0.015
218	18.17	0.13	0.040	(0.243)	0.025	0.015
219	18.25	0.13	0.040	(0.242)	0.025	0.015
220	18.33	0.13	0.040	(0.240)	0.025	0.015
221	18.42	0.13	0.040	(0.239)	0.025	0.015
222	18.50	0.13	0.040	(0.238)	0.025	0.015
223	18.58	0.10	0.030	(0.237)	0.019	0.011
224	18.67	0.10	0.030	(0.236)	0.019	0.011
225	18.75	0.10	0.030	(0.235)	0.019	0.011
226	18.83	0.07	0.020	(0.233)	0.013	0.007
227	18.92	0.07	0.020	(0.232)	0.013	0.007
228	19.00	0.07	0.020	(0.231)	0.013	0.007
229	19.08	0.10	0.030	(0.230)	0.019	0.011
230	19.17	0.10	0.030	(0.229)	0.019	0.011
231	19.25	0.10	0.030	(0.228)	0.019	0.011
232	19.33	0.13	0.040	(0.227)	0.025	0.015
233	19.42	0.13	0.040	(0.226)	0.025	0.015
234	19.50	0.13	0.040	(0.225)	0.025	0.015
235	19.58	0.10	0.030	(0.224)	0.019	0.011
236	19.67	0.10	0.030	(0.223)	0.019	0.011
237	19.75	0.10	0.030	(0.222)	0.019	0.011
238	19.83	0.07	0.020	(0.221)	0.013	0.007
239	19.92	0.07	0.020	(0.220)	0.013	0.007
240	20.00	0.07	0.020	(0.219)	0.013	0.007
241	20.08	0.10	0.030	(0.218)	0.019	0.011
242	20.17	0.10	0.030	(0.217)	0.019	0.011
243	20.25	0.10	0.030	(0.216)	0.019	0.011
244	20.33	0.10	0.030	(0.215)	0.019	0.011
245	20.42	0.10	0.030	(0.214)	0.019	0.011
246	20.50	0.10	0.030	(0.213)	0.019	0.011
247	20.58	0.10	0.030	(0.212)	0.019	0.011
248	20.67	0.10	0.030	(0.211)	0.019	0.011
249	20.75	0.10	0.030	(0.211)	0.019	0.011
250	20.83	0.07	0.020	(0.210)	0.013	0.007
251	20.92	0.07	0.020	(0.209)	0.013	0.007
252	21.00	0.07	0.020	(0.208)	0.013	0.007
253	21.08	0.10	0.030	(0.207)	0.019	0.011
254	21.17	0.10	0.030	(0.206)	0.019	0.011
255	21.25	0.10	0.030	(0.206)	0.019	0.011
256	21.33	0.07	0.020	(0.205)	0.013	0.007
257	21.42	0.07	0.020	(0.204)	0.013	0.007
258	21.50	0.07	0.020	(0.203)	0.013	0.007
259	21.58	0.10	0.030	(0.203)	0.019	0.011
260	21.67	0.10	0.030	(0.202)	0.019	0.011
261	21.75	0.10	0.030	(0.201)	0.019	0.011
262	21.83	0.07	0.020	(0.200)	0.013	0.007
263	21.92	0.07	0.020	(0.200)	0.013	0.007
264	22.00	0.07	0.020	(0.199)	0.013	0.007
265	22.08	0.10	0.030	(0.198)	0.019	0.011
266	22.17	0.10	0.030	(0.198)	0.019	0.011
267	22.25	0.10	0.030	(0.197)	0.019	0.011

268	22.33	0.07	0.020	(0.196)	0.013	0.007
269	22.42	0.07	0.020	(0.196)	0.013	0.007
270	22.50	0.07	0.020	(0.195)	0.013	0.007
271	22.58	0.07	0.020	(0.195)	0.013	0.007
272	22.67	0.07	0.020	(0.194)	0.013	0.007
273	22.75	0.07	0.020	(0.194)	0.013	0.007
274	22.83	0.07	0.020	(0.193)	0.013	0.007
275	22.92	0.07	0.020	(0.193)	0.013	0.007
276	23.00	0.07	0.020	(0.192)	0.013	0.007
277	23.08	0.07	0.020	(0.192)	0.013	0.007
278	23.17	0.07	0.020	(0.191)	0.013	0.007
279	23.25	0.07	0.020	(0.191)	0.013	0.007
280	23.33	0.07	0.020	(0.190)	0.013	0.007
281	23.42	0.07	0.020	(0.190)	0.013	0.007
282	23.50	0.07	0.020	(0.190)	0.013	0.007
283	23.58	0.07	0.020	(0.189)	0.013	0.007
284	23.67	0.07	0.020	(0.189)	0.013	0.007
285	23.75	0.07	0.020	(0.189)	0.013	0.007
286	23.83	0.07	0.020	(0.189)	0.013	0.007
287	23.92	0.07	0.020	(0.189)	0.013	0.007
288	24.00	0.07	0.020	(0.188)	0.013	0.007

(Loss Rate Not Used)

Sum = 100.0 Sum = 11.1

Flood volume = Effective rainfall 0.92(In)
times area 50.4(Ac.)/[(In)/(Ft.)] = 3.9(Ac.Ft)
Total soil loss = 1.57(In)
Total soil loss = 6.614(Ac.Ft)
Total rainfall = 2.50(In)
Flood volume = 169213.9 Cubic Feet
Total soil loss = 288121.0 Cubic Feet

Peak flow rate of this hydrograph = 6.386(CFS) AREA B

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.05	Q	|	|	|	|
0+10	0.0022	0.26	VQ	|	|	|	|
0+15	0.0045	0.33	VQ	|	|	|	|
0+20	0.0071	0.39	VQ	|	|	|	|
0+25	0.0106	0.50	V Q	|	|	|	|
0+30	0.0143	0.54	V Q	|	|	|	|
0+35	0.0181	0.56	V Q	|	|	|	|
0+40	0.0220	0.56	V Q	|	|	|	|
0+45	0.0259	0.56	V Q	|	|	|	|
0+50	0.0299	0.59	V Q	|	|	|	|
0+55	0.0347	0.70	V Q	|	|	|	|
1+ 0	0.0397	0.73	V Q	|	|	|	|
1+ 5	0.0447	0.72	V Q	|	|	|	|
1+10	0.0489	0.62	V Q	|	|	|	|
1+15	0.0530	0.58	V Q	|	|	|	|
1+20	0.0569	0.57	V Q	|	|	|	|
1+25	0.0608	0.57	V Q	|	|	|	|
1+30	0.0647	0.57	V Q	|	|	|	|
1+35	0.0686	0.56	V Q	|	|	|	|
1+40	0.0725	0.56	V Q	|	|	|	|
1+45	0.0764	0.56	V Q	|	|	|	|
1+50	0.0804	0.59	V Q	|	|	|	|
1+55	0.0852	0.70	V Q	|	|	|	|
2+ 0	0.0902	0.73	V Q	|	|	|	|
2+ 5	0.0954	0.74	V Q	|	|	|	|
2+10	0.1005	0.75	|VQ	|	|	|	|
2+15	0.1057	0.75	|V Q	|	|	|	|
2+20	0.1109	0.75	|V Q	|	|	|	|
2+25	0.1161	0.75	|V Q	|	|	|	|
2+30	0.1212	0.75	|V Q	|	|	|	|
2+35	0.1266	0.78	|V Q	|	|	|	|
2+40	0.1327	0.88	|V Q	|	|	|	|
2+45	0.1390	0.92	|V Q	|	|	|	|

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2+50       0.1454      0.93  |V Q      |         |         |         |
2+55       0.1519      0.94  |V Q      |         |         |         |
3+ 0       0.1583      0.94  |V Q      |         |         |         |
3+ 5       0.1648      0.94  |V Q      |         |         |         |
3+10       0.1713      0.94  |V Q      |         |         |         |
3+15       0.1778      0.94  |V Q      |         |         |         |
3+20       0.1842      0.94  |V Q      |         |         |         |
3+25       0.1907      0.94  |V Q      |         |         |         |
3+30       0.1972      0.94  | VQ      |         |         |         |
3+35       0.2037      0.94  | VQ      |         |         |         |
3+40       0.2101      0.94  | VQ      |         |         |         |
3+45       0.2166      0.94  | VQ      |         |         |         |
3+50       0.2233      0.97  | VQ      |         |         |         |
3+55       0.2307      1.07  | V Q     |         |         |         |
4+ 0       0.2383      1.11  | V Q     |         |         |         |
4+ 5       0.2460      1.12  | V Q     |         |         |         |
4+10       0.2537      1.13  | V Q     |         |         |         |
4+15       0.2615      1.13  | V Q     |         |         |         |
4+20       0.2694      1.15  | V Q     |         |         |         |
4+25       0.2781      1.26  | V  Q    |         |         |         |
4+30       0.2870      1.29  | V  Q    |         |         |         |
4+35       0.2960      1.31  |  V Q    |         |         |         |
4+40       0.3051      1.31  |  V Q    |         |         |         |
4+45       0.3141      1.31  |  V Q    |         |         |         |
4+50       0.3234      1.34  |  V Q    |         |         |         |
4+55       0.3334      1.45  |  V Q    |         |         |         |
5+ 0       0.3436      1.48  |  V Q    |         |         |         |
5+ 5       0.3535      1.44  |  V Q    |         |         |         |
5+10       0.3620      1.24  |  VQ     |         |         |         |
5+15       0.3701      1.17  |  VQ     |         |         |         |
5+20       0.3782      1.17  |  VQ     |         |         |         |
5+25       0.3869      1.27  |  V Q    |         |         |         |
5+30       0.3958      1.30  |   VQ    |         |         |         |
5+35       0.4050      1.34  |   VQ    |         |         |         |
5+40       0.4149      1.44  |   VQ    |         |         |         |
5+45       0.4251      1.48  |   VQ    |         |         |         |
5+50       0.4354      1.50  |   VQ    |         |         |         |
5+55       0.4458      1.50  |   V Q   |         |         |         |
6+ 0       0.4561      1.50  |   V Q   |         |         |         |
6+ 5       0.4667      1.53  |   V Q   |         |         |         |
6+10       0.4779      1.64  |   V Q   |         |         |         |
6+15       0.4894      1.67  |    VQ   |         |         |         |
6+20       0.5010      1.68  |    VQ   |         |         |         |
6+25       0.5127      1.69  |    VQ   |         |         |         |
6+30       0.5243      1.69  |    VQ   |         |         |         |
6+35       0.5362      1.72  |    VQ   |         |         |         |
6+40       0.5487      1.82  |    V Q  |         |         |         |
6+45       0.5615      1.86  |    V Q  |         |         |         |
6+50       0.5744      1.87  |    V Q  |         |         |         |
6+55       0.5873      1.88  |     VQ  |         |         |         |
7+ 0       0.6003      1.88  |     VQ  |         |         |         |
7+ 5       0.6132      1.88  |     VQ  |         |         |         |
7+10       0.6262      1.88  |     VQ  |         |         |         |
7+15       0.6391      1.88  |     VQ  |         |         |         |
7+20       0.6522      1.91  |     VQ  |         |         |         |
7+25       0.6661      2.01  |     V Q |         |         |         |
7+30       0.6802      2.05  |      VQ |         |         |         |
7+35       0.6946      2.09  |      VQ |         |         |         |
7+40       0.7097      2.20  |      VQ |         |         |         |
7+45       0.7251      2.23  |      VQ |         |         |         |
7+50       0.7407      2.27  |      V Q|         |         |         |
7+55       0.7572      2.38  |      V Q|         |         |         |
8+ 0       0.7738      2.42  |      V Q|         |         |         |
8+ 5       0.7910      2.49  |       VQ|         |         |         |
8+10       0.8096      2.70  |       V Q         |         |         |
8+15       0.8287      2.78  |       V  |Q       |         |         |
8+20       0.8480      2.80  |       V  |Q       |         |         |
8+25       0.8674      2.81  |       V  |Q       |         |         |
8+30       0.8868      2.82  |        V |Q       |         |         |
8+35       0.9064      2.85  |        V |Q       |         |         |
8+40       0.9267      2.95  |        V |Q       |         |         |
8+45       0.9473      2.99  |        V |Q       |         |         |
8+50       0.9682      3.03  |        V|  Q      |         |         |
8+55       0.9898      3.14  |         V Q       |         |         |
9+ 0       1.0116      3.17  |         V Q       |         |         |
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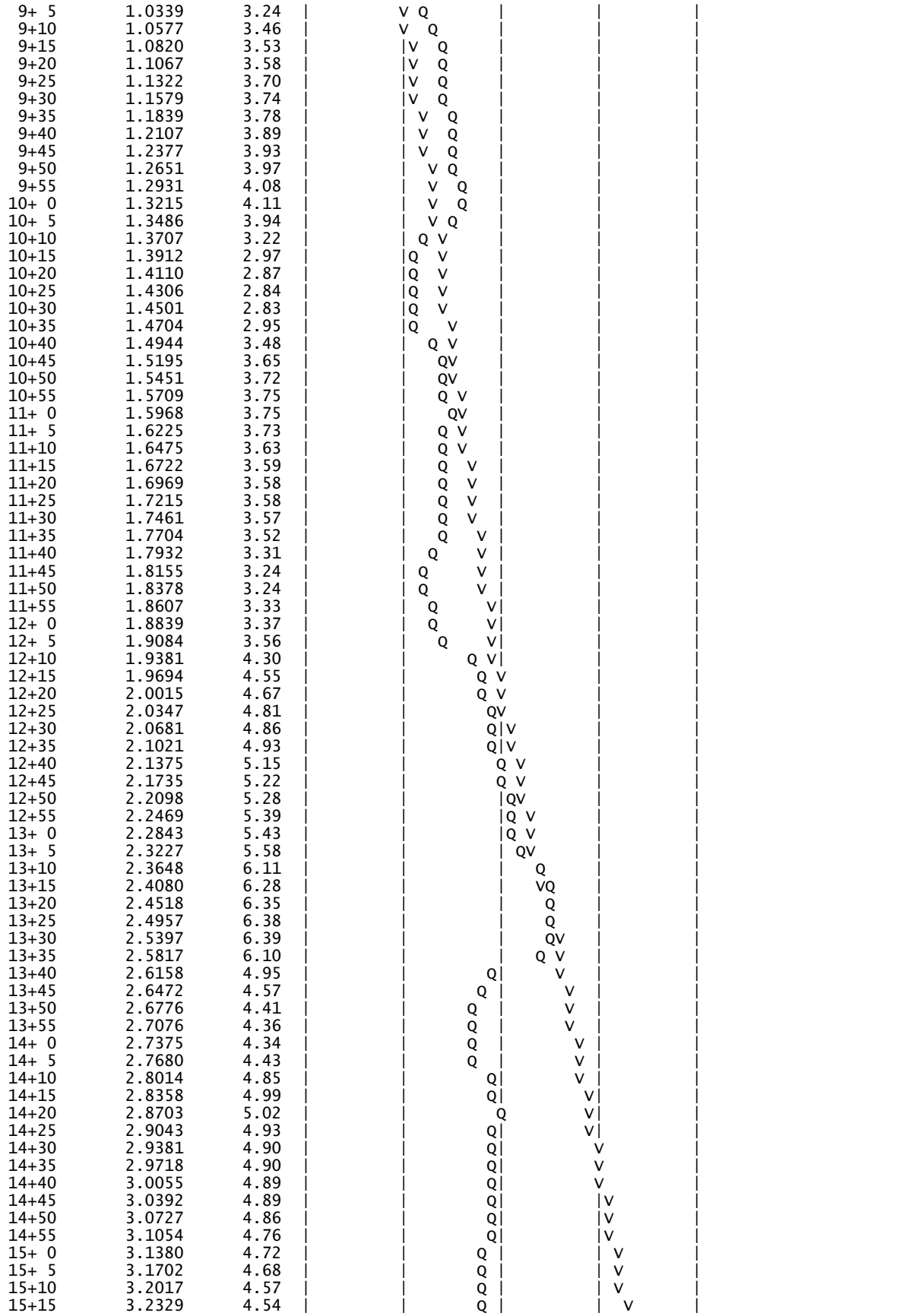

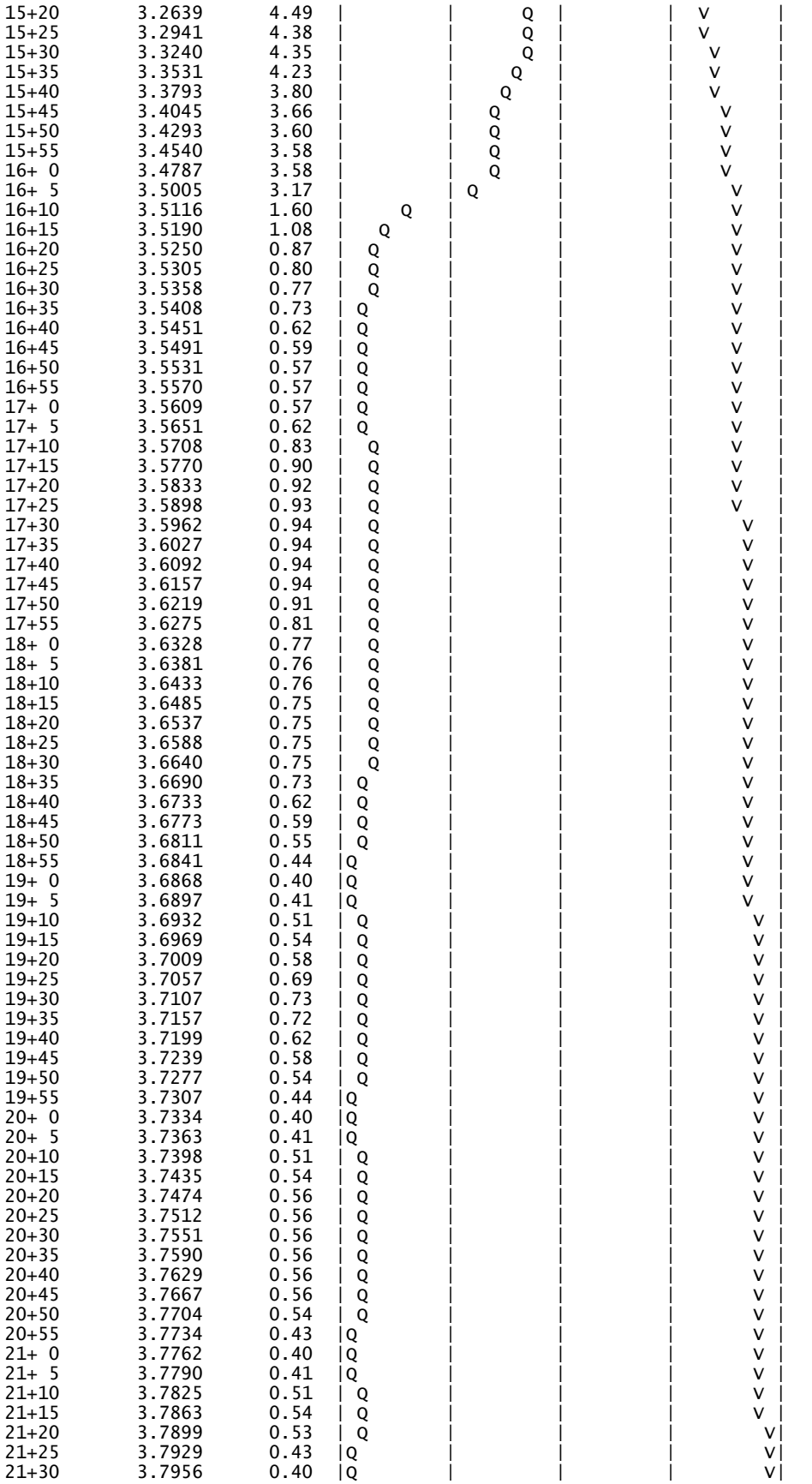

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   21+35       3.7984      0.41  |Q        |         |         |        v|
   21+40       3.8019      0.51  | Q       |         |         |        v|
   21+45       3.8057      0.54  | Q       |         |         |        v|
   21+50       3.8093      0.53  | Q       |         |         |        v|
   21+55       3.8123      0.43  |Q        |         |         |        v|
   22+ 0       3.8150      0.40  |Q        |         |         |        v|
   22+ 5       3.8178      0.41  |Q        |         |         |        v|
   22+10       3.8214      0.51  | Q       |         |         |        v|
   22+15       3.8251      0.54  | Q       |         |         |        v|
   22+20       3.8288      0.53  | Q       |         |         |        v|
   22+25       3.8317      0.43  |Q        |         |         |        v|
   22+30       3.8344      0.40  |Q        |         |         |        v|
   22+35       3.8371      0.38  |Q        |         |         |        v|
   22+40       3.8397      0.38  |Q        |         |         |        v|
   22+45       3.8423      0.38  |Q        |         |         |        v|
   22+50       3.8449      0.38  |Q        |         |         |        v|
   22+55       3.8475      0.38  |Q        |         |         |        v|
   23+ 0       3.8501      0.38  |Q        |         |         |        v|
   23+ 5       3.8527      0.38  |Q        |         |         |        v|
   23+10       3.8552      0.38  |Q        |         |         |        v|
   23+15       3.8578      0.38  |Q        |         |         |        v|
   23+20       3.8604      0.38  |Q        |         |         |        v|
   23+25       3.8630      0.38  |Q        |         |         |        v|
   23+30       3.8656      0.38  |Q        |         |         |        v|
   23+35       3.8682      0.38  |Q        |         |         |        v|
   23+40       3.8708      0.38  |Q        |         |         |        v|
   23+45       3.8734      0.38  |Q        |         |         |        v|
   23+50       3.8760      0.38  |Q        |         |         |        v|
   23+55       3.8786      0.38  |Q        |         |         |        v|
   24+ 0       3.8811      0.38  |Q        |         |         |        v|
   24+ 5       3.8834      0.32  |Q        |         |         |        v|
   24+10       3.8841      0.11  Q         |         |         |        v|
   24+15       3.8844      0.04  Q         |         |         |        v|
   24+20       3.8846      0.02  Q         |         |         |        v|
   24+25       3.8846      0.01  Q         |         |         |        v|
   24+30       3.8846      0.00  Q         |         |         |        v|
   24+35       3.8846      0.00  Q         |         |         |        v|
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Proposed Unit Hydrographs

U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: WEST2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER WEST PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 55.30(Ac.) = 0.086 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 55.30(Ac.) = 0.086 Sq. Mi.
Length along longest watercourse = 2375.00(Ft.)
Length along longest watercourse measured to centroid = 1715.00(Ft.)
Length along longest watercourse = 0.450 Mi.
Length along longest watercourse measured to centroid = 0.325 Mi.
Difference in elevation = 88.00(Ft.)
Slope along watercourse = 195.6379 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.064 Hr.
Lag time = 3.82 Min.
25% of lag time = 0.95 Min.
40% of lag time = 1.53 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	2.50	138.25

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
55.30	6.50	359.45

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
55.300	62.60	0.710

Total Area Entered = 55.30(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

62.6 42.6 0.645 0.710 0.233 1.000 0.233
Sum (F) = 0.233

Area averaged mean soil loss (F) (In/Hr) = 0.233
Minimum soil loss rate ((In/Hr)) = 0.116
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.330

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	131.015	24.971	13.917
2	0.167	262.030	55.588	30.980
3	0.250	393.045	14.152	7.887
4	0.333	524.061	3.839	2.140
5	0.417	655.076	1.026	0.572
6	0.500	786.091	0.425	0.237
			Sum = 100.000	Sum= 55.732

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.412)	0.007	0.013
2	0.17	0.07	0.020	(0.411)	0.007	0.013
3	0.25	0.07	0.020	(0.409)	0.007	0.013
4	0.33	0.10	0.030	(0.408)	0.010	0.020
5	0.42	0.10	0.030	(0.406)	0.010	0.020
6	0.50	0.10	0.030	(0.405)	0.010	0.020
7	0.58	0.10	0.030	(0.403)	0.010	0.020
8	0.67	0.10	0.030	(0.401)	0.010	0.020
9	0.75	0.10	0.030	(0.400)	0.010	0.020
10	0.83	0.13	0.040	(0.398)	0.013	0.027
11	0.92	0.13	0.040	(0.397)	0.013	0.027
12	1.00	0.13	0.040	(0.395)	0.013	0.027
13	1.08	0.10	0.030	(0.394)	0.010	0.020
14	1.17	0.10	0.030	(0.392)	0.010	0.020
15	1.25	0.10	0.030	(0.390)	0.010	0.020
16	1.33	0.10	0.030	(0.389)	0.010	0.020
17	1.42	0.10	0.030	(0.387)	0.010	0.020
18	1.50	0.10	0.030	(0.386)	0.010	0.020
19	1.58	0.10	0.030	(0.384)	0.010	0.020
20	1.67	0.10	0.030	(0.383)	0.010	0.020
21	1.75	0.10	0.030	(0.381)	0.010	0.020
22	1.83	0.13	0.040	(0.380)	0.013	0.027
23	1.92	0.13	0.040	(0.378)	0.013	0.027
24	2.00	0.13	0.040	(0.377)	0.013	0.027
25	2.08	0.13	0.040	(0.375)	0.013	0.027
26	2.17	0.13	0.040	(0.374)	0.013	0.027
27	2.25	0.13	0.040	(0.372)	0.013	0.027
28	2.33	0.13	0.040	(0.370)	0.013	0.027
29	2.42	0.13	0.040	(0.369)	0.013	0.027
30	2.50	0.13	0.040	(0.367)	0.013	0.027
31	2.58	0.17	0.050	(0.366)	0.016	0.033
32	2.67	0.17	0.050	(0.364)	0.016	0.033
33	2.75	0.17	0.050	(0.363)	0.016	0.033
34	2.83	0.17	0.050	(0.361)	0.016	0.033
35	2.92	0.17	0.050	(0.360)	0.016	0.033
36	3.00	0.17	0.050	(0.358)	0.016	0.033
37	3.08	0.17	0.050	(0.357)	0.016	0.033
38	3.17	0.17	0.050	(0.356)	0.016	0.033
39	3.25	0.17	0.050	(0.354)	0.016	0.033
40	3.33	0.17	0.050	(0.353)	0.016	0.033
41	3.42	0.17	0.050	(0.351)	0.016	0.033
42	3.50	0.17	0.050	(0.350)	0.016	0.033
43	3.58	0.17	0.050	(0.348)	0.016	0.033
44	3.67	0.17	0.050	(0.347)	0.016	0.033

45	3.75	0.17	0.050	(0.345)	0.016	0.033
46	3.83	0.20	0.060	(0.344)	0.020	0.040
47	3.92	0.20	0.060	(0.342)	0.020	0.040
48	4.00	0.20	0.060	(0.341)	0.020	0.040
49	4.08	0.20	0.060	(0.339)	0.020	0.040
50	4.17	0.20	0.060	(0.338)	0.020	0.040
51	4.25	0.20	0.060	(0.337)	0.020	0.040
52	4.33	0.23	0.070	(0.335)	0.023	0.047
53	4.42	0.23	0.070	(0.334)	0.023	0.047
54	4.50	0.23	0.070	(0.332)	0.023	0.047
55	4.58	0.23	0.070	(0.331)	0.023	0.047
56	4.67	0.23	0.070	(0.329)	0.023	0.047
57	4.75	0.23	0.070	(0.328)	0.023	0.047
58	4.83	0.27	0.080	(0.327)	0.026	0.054
59	4.92	0.27	0.080	(0.325)	0.026	0.054
60	5.00	0.27	0.080	(0.324)	0.026	0.054
61	5.08	0.20	0.060	(0.322)	0.020	0.040
62	5.17	0.20	0.060	(0.321)	0.020	0.040
63	5.25	0.20	0.060	(0.320)	0.020	0.040
64	5.33	0.23	0.070	(0.318)	0.023	0.047
65	5.42	0.23	0.070	(0.317)	0.023	0.047
66	5.50	0.23	0.070	(0.315)	0.023	0.047
67	5.58	0.27	0.080	(0.314)	0.026	0.054
68	5.67	0.27	0.080	(0.313)	0.026	0.054
69	5.75	0.27	0.080	(0.311)	0.026	0.054
70	5.83	0.27	0.080	(0.310)	0.026	0.054
71	5.92	0.27	0.080	(0.308)	0.026	0.054
72	6.00	0.27	0.080	(0.307)	0.026	0.054
73	6.08	0.30	0.090	(0.306)	0.030	0.060
74	6.17	0.30	0.090	(0.304)	0.030	0.060
75	6.25	0.30	0.090	(0.303)	0.030	0.060
76	6.33	0.30	0.090	(0.302)	0.030	0.060
77	6.42	0.30	0.090	(0.300)	0.030	0.060
78	6.50	0.30	0.090	(0.299)	0.030	0.060
79	6.58	0.33	0.100	(0.298)	0.033	0.067
80	6.67	0.33	0.100	(0.296)	0.033	0.067
81	6.75	0.33	0.100	(0.295)	0.033	0.067
82	6.83	0.33	0.100	(0.294)	0.033	0.067
83	6.92	0.33	0.100	(0.292)	0.033	0.067
84	7.00	0.33	0.100	(0.291)	0.033	0.067
85	7.08	0.33	0.100	(0.290)	0.033	0.067
86	7.17	0.33	0.100	(0.288)	0.033	0.067
87	7.25	0.33	0.100	(0.287)	0.033	0.067
88	7.33	0.37	0.110	(0.286)	0.036	0.074
89	7.42	0.37	0.110	(0.284)	0.036	0.074
90	7.50	0.37	0.110	(0.283)	0.036	0.074
91	7.58	0.40	0.120	(0.282)	0.040	0.080
92	7.67	0.40	0.120	(0.281)	0.040	0.080
93	7.75	0.40	0.120	(0.279)	0.040	0.080
94	7.83	0.43	0.130	(0.278)	0.043	0.087
95	7.92	0.43	0.130	(0.277)	0.043	0.087
96	8.00	0.43	0.130	(0.275)	0.043	0.087
97	8.08	0.50	0.150	(0.274)	0.049	0.100
98	8.17	0.50	0.150	(0.273)	0.049	0.100
99	8.25	0.50	0.150	(0.272)	0.049	0.100
100	8.33	0.50	0.150	(0.270)	0.049	0.100
101	8.42	0.50	0.150	(0.269)	0.049	0.100
102	8.50	0.50	0.150	(0.268)	0.049	0.100
103	8.58	0.53	0.160	(0.266)	0.053	0.107
104	8.67	0.53	0.160	(0.265)	0.053	0.107
105	8.75	0.53	0.160	(0.264)	0.053	0.107
106	8.83	0.57	0.170	(0.263)	0.056	0.114
107	8.92	0.57	0.170	(0.261)	0.056	0.114
108	9.00	0.57	0.170	(0.260)	0.056	0.114
109	9.08	0.63	0.190	(0.259)	0.063	0.127
110	9.17	0.63	0.190	(0.258)	0.063	0.127
111	9.25	0.63	0.190	(0.257)	0.063	0.127
112	9.33	0.67	0.200	(0.255)	0.066	0.134
113	9.42	0.67	0.200	(0.254)	0.066	0.134
114	9.50	0.67	0.200	(0.253)	0.066	0.134
115	9.58	0.70	0.210	(0.252)	0.069	0.141
116	9.67	0.70	0.210	(0.250)	0.069	0.141
117	9.75	0.70	0.210	(0.249)	0.069	0.141
118	9.83	0.73	0.220	(0.248)	0.073	0.147
119	9.92	0.73	0.220	(0.247)	0.073	0.147

120	10.00	0.73	0.220	(0.246)	0.073	0.147
121	10.08	0.50	0.150	(0.245)	0.049	0.100
122	10.17	0.50	0.150	(0.243)	0.049	0.100
123	10.25	0.50	0.150	(0.242)	0.049	0.100
124	10.33	0.50	0.150	(0.241)	0.049	0.100
125	10.42	0.50	0.150	(0.240)	0.049	0.100
126	10.50	0.50	0.150	(0.239)	0.049	0.100
127	10.58	0.67	0.200	(0.237)	0.066	0.134
128	10.67	0.67	0.200	(0.236)	0.066	0.134
129	10.75	0.67	0.200	(0.235)	0.066	0.134
130	10.83	0.67	0.200	(0.234)	0.066	0.134
131	10.92	0.67	0.200	(0.233)	0.066	0.134
132	11.00	0.67	0.200	(0.232)	0.066	0.134
133	11.08	0.63	0.190	(0.231)	0.063	0.127
134	11.17	0.63	0.190	(0.229)	0.063	0.127
135	11.25	0.63	0.190	(0.228)	0.063	0.127
136	11.33	0.63	0.190	(0.227)	0.063	0.127
137	11.42	0.63	0.190	(0.226)	0.063	0.127
138	11.50	0.63	0.190	(0.225)	0.063	0.127
139	11.58	0.57	0.170	(0.224)	0.056	0.114
140	11.67	0.57	0.170	(0.223)	0.056	0.114
141	11.75	0.57	0.170	(0.222)	0.056	0.114
142	11.83	0.60	0.180	(0.220)	0.059	0.121
143	11.92	0.60	0.180	(0.219)	0.059	0.121
144	12.00	0.60	0.180	(0.218)	0.059	0.121
145	12.08	0.83	0.250	(0.217)	0.082	0.167
146	12.17	0.83	0.250	(0.216)	0.082	0.167
147	12.25	0.83	0.250	(0.215)	0.082	0.167
148	12.33	0.87	0.260	(0.214)	0.086	0.174
149	12.42	0.87	0.260	(0.213)	0.086	0.174
150	12.50	0.87	0.260	(0.212)	0.086	0.174
151	12.58	0.93	0.280	(0.211)	0.092	0.188
152	12.67	0.93	0.280	(0.210)	0.092	0.188
153	12.75	0.93	0.280	(0.209)	0.092	0.188
154	12.83	0.97	0.290	(0.208)	0.096	0.194
155	12.92	0.97	0.290	(0.207)	0.096	0.194
156	13.00	0.97	0.290	(0.205)	0.096	0.194
157	13.08	1.13	0.340	(0.204)	0.112	0.228
158	13.17	1.13	0.340	(0.203)	0.112	0.228
159	13.25	1.13	0.340	(0.202)	0.112	0.228
160	13.33	1.13	0.340	(0.201)	0.112	0.228
161	13.42	1.13	0.340	(0.200)	0.112	0.228
162	13.50	1.13	0.340	(0.199)	0.112	0.228
163	13.58	0.77	0.230	(0.198)	0.076	0.154
164	13.67	0.77	0.230	(0.197)	0.076	0.154
165	13.75	0.77	0.230	(0.196)	0.076	0.154
166	13.83	0.77	0.230	(0.195)	0.076	0.154
167	13.92	0.77	0.230	(0.194)	0.076	0.154
168	14.00	0.77	0.230	(0.193)	0.076	0.154
169	14.08	0.90	0.270	(0.192)	0.089	0.181
170	14.17	0.90	0.270	(0.191)	0.089	0.181
171	14.25	0.90	0.270	(0.190)	0.089	0.181
172	14.33	0.87	0.260	(0.189)	0.086	0.174
173	14.42	0.87	0.260	(0.188)	0.086	0.174
174	14.50	0.87	0.260	(0.187)	0.086	0.174
175	14.58	0.87	0.260	(0.186)	0.086	0.174
176	14.67	0.87	0.260	(0.185)	0.086	0.174
177	14.75	0.87	0.260	(0.185)	0.086	0.174
178	14.83	0.83	0.250	(0.184)	0.082	0.167
179	14.92	0.83	0.250	(0.183)	0.082	0.167
180	15.00	0.83	0.250	(0.182)	0.082	0.167
181	15.08	0.80	0.240	(0.181)	0.079	0.161
182	15.17	0.80	0.240	(0.180)	0.079	0.161
183	15.25	0.80	0.240	(0.179)	0.079	0.161
184	15.33	0.77	0.230	(0.178)	0.076	0.154
185	15.42	0.77	0.230	(0.177)	0.076	0.154
186	15.50	0.77	0.230	(0.176)	0.076	0.154
187	15.58	0.63	0.190	(0.175)	0.063	0.127
188	15.67	0.63	0.190	(0.174)	0.063	0.127
189	15.75	0.63	0.190	(0.174)	0.063	0.127
190	15.83	0.63	0.190	(0.173)	0.063	0.127
191	15.92	0.63	0.190	(0.172)	0.063	0.127
192	16.00	0.63	0.190	(0.171)	0.063	0.127
193	16.08	0.13	0.040	(0.170)	0.013	0.027
194	16.17	0.13	0.040	(0.169)	0.013	0.027

195	16.25	0.13	0.040	(0.168)	0.013	0.027
196	16.33	0.13	0.040	(0.167)	0.013	0.027
197	16.42	0.13	0.040	(0.167)	0.013	0.027
198	16.50	0.13	0.040	(0.166)	0.013	0.027
199	16.58	0.10	0.030	(0.165)	0.010	0.020
200	16.67	0.10	0.030	(0.164)	0.010	0.020
201	16.75	0.10	0.030	(0.163)	0.010	0.020
202	16.83	0.10	0.030	(0.162)	0.010	0.020
203	16.92	0.10	0.030	(0.162)	0.010	0.020
204	17.00	0.10	0.030	(0.161)	0.010	0.020
205	17.08	0.17	0.050	(0.160)	0.016	0.033
206	17.17	0.17	0.050	(0.159)	0.016	0.033
207	17.25	0.17	0.050	(0.158)	0.016	0.033
208	17.33	0.17	0.050	(0.158)	0.016	0.033
209	17.42	0.17	0.050	(0.157)	0.016	0.033
210	17.50	0.17	0.050	(0.156)	0.016	0.033
211	17.58	0.17	0.050	(0.155)	0.016	0.033
212	17.67	0.17	0.050	(0.154)	0.016	0.033
213	17.75	0.17	0.050	(0.154)	0.016	0.033
214	17.83	0.13	0.040	(0.153)	0.013	0.027
215	17.92	0.13	0.040	(0.152)	0.013	0.027
216	18.00	0.13	0.040	(0.151)	0.013	0.027
217	18.08	0.13	0.040	(0.151)	0.013	0.027
218	18.17	0.13	0.040	(0.150)	0.013	0.027
219	18.25	0.13	0.040	(0.149)	0.013	0.027
220	18.33	0.13	0.040	(0.148)	0.013	0.027
221	18.42	0.13	0.040	(0.148)	0.013	0.027
222	18.50	0.13	0.040	(0.147)	0.013	0.027
223	18.58	0.10	0.030	(0.146)	0.010	0.020
224	18.67	0.10	0.030	(0.146)	0.010	0.020
225	18.75	0.10	0.030	(0.145)	0.010	0.020
226	18.83	0.07	0.020	(0.144)	0.007	0.013
227	18.92	0.07	0.020	(0.143)	0.007	0.013
228	19.00	0.07	0.020	(0.143)	0.007	0.013
229	19.08	0.10	0.030	(0.142)	0.010	0.020
230	19.17	0.10	0.030	(0.141)	0.010	0.020
231	19.25	0.10	0.030	(0.141)	0.010	0.020
232	19.33	0.13	0.040	(0.140)	0.013	0.027
233	19.42	0.13	0.040	(0.139)	0.013	0.027
234	19.50	0.13	0.040	(0.139)	0.013	0.027
235	19.58	0.10	0.030	(0.138)	0.010	0.020
236	19.67	0.10	0.030	(0.138)	0.010	0.020
237	19.75	0.10	0.030	(0.137)	0.010	0.020
238	19.83	0.07	0.020	(0.136)	0.007	0.013
239	19.92	0.07	0.020	(0.136)	0.007	0.013
240	20.00	0.07	0.020	(0.135)	0.007	0.013
241	20.08	0.10	0.030	(0.135)	0.010	0.020
242	20.17	0.10	0.030	(0.134)	0.010	0.020
243	20.25	0.10	0.030	(0.133)	0.010	0.020
244	20.33	0.10	0.030	(0.133)	0.010	0.020
245	20.42	0.10	0.030	(0.132)	0.010	0.020
246	20.50	0.10	0.030	(0.132)	0.010	0.020
247	20.58	0.10	0.030	(0.131)	0.010	0.020
248	20.67	0.10	0.030	(0.131)	0.010	0.020
249	20.75	0.10	0.030	(0.130)	0.010	0.020
250	20.83	0.07	0.020	(0.129)	0.007	0.013
251	20.92	0.07	0.020	(0.129)	0.007	0.013
252	21.00	0.07	0.020	(0.128)	0.007	0.013
253	21.08	0.10	0.030	(0.128)	0.010	0.020
254	21.17	0.10	0.030	(0.127)	0.010	0.020
255	21.25	0.10	0.030	(0.127)	0.010	0.020
256	21.33	0.07	0.020	(0.126)	0.007	0.013
257	21.42	0.07	0.020	(0.126)	0.007	0.013
258	21.50	0.07	0.020	(0.125)	0.007	0.013
259	21.58	0.10	0.030	(0.125)	0.010	0.020
260	21.67	0.10	0.030	(0.125)	0.010	0.020
261	21.75	0.10	0.030	(0.124)	0.010	0.020
262	21.83	0.07	0.020	(0.124)	0.007	0.013
263	21.92	0.07	0.020	(0.123)	0.007	0.013
264	22.00	0.07	0.020	(0.123)	0.007	0.013
265	22.08	0.10	0.030	(0.122)	0.010	0.020
266	22.17	0.10	0.030	(0.122)	0.010	0.020
267	22.25	0.10	0.030	(0.122)	0.010	0.020
268	22.33	0.07	0.020	(0.121)	0.007	0.013
269	22.42	0.07	0.020	(0.121)	0.007	0.013

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270  22.50     0.07      0.020       (  0.121)       0.007        0.013
271  22.58     0.07      0.020       (  0.120)       0.007        0.013
272  22.67     0.07      0.020       (  0.120)       0.007        0.013
273  22.75     0.07      0.020       (  0.120)       0.007        0.013
274  22.83     0.07      0.020       (  0.119)       0.007        0.013
275  22.92     0.07      0.020       (  0.119)       0.007        0.013
276  23.00     0.07      0.020       (  0.119)       0.007        0.013
277  23.08     0.07      0.020       (  0.118)       0.007        0.013
278  23.17     0.07      0.020       (  0.118)       0.007        0.013
279  23.25     0.07      0.020       (  0.118)       0.007        0.013
280  23.33     0.07      0.020       (  0.118)       0.007        0.013
281  23.42     0.07      0.020       (  0.117)       0.007        0.013
282  23.50     0.07      0.020       (  0.117)       0.007        0.013
283  23.58     0.07      0.020       (  0.117)       0.007        0.013
284  23.67     0.07      0.020       (  0.117)       0.007        0.013
285  23.75     0.07      0.020       (  0.117)       0.007        0.013
286  23.83     0.07      0.020       (  0.117)       0.007        0.013
287  23.92     0.07      0.020       (  0.116)       0.007        0.013
288  24.00     0.07      0.020       (  0.116)       0.007        0.013
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =    20.1
      Flood volume = Effective rainfall      1.67(In)
       times area      55.3(Ac.)/[(In)/(Ft.)] =       7.7(Ac.Ft)
      Total soil loss =      0.82(In)
      Total soil loss =     3.801(Ac.Ft)
      Total rainfall =      2.50(In)
      Flood volume =      336201.5 Cubic Feet
      Total soil loss =      165591.8 Cubic Feet
      ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =     12.701(CFS)  WEST AREA
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0       10.0       15.0       20.0
 ---------------------------------------------------------------------------
   0+ 5       0.0013      0.19  Q          |          |          |          |
   0+10       0.0054      0.60  VQ         |          |          |          |
   0+15       0.0103      0.71  VQ         |          |          |          |
   0+20       0.0160      0.83  VQ         |          |          |          |
   0+25       0.0232      1.04  V Q        |          |          |          |
   0+30       0.0308      1.10  V Q        |          |          |          |
   0+35       0.0385      1.12  V Q        |          |          |          |
   0+40       0.0462      1.12  V Q        |          |          |          |
   0+45       0.0539      1.12  V Q        |          |          |          |
   0+50       0.0623      1.21  V Q        |          |          |          |
   0+55       0.0721      1.42  V Q        |          |          |          |
   1+ 0       0.0822      1.47  V Q        |          |          |          |
   1+ 5       0.0918      1.40  V Q        |          |          |          |
   1+10       0.1000      1.19  V Q        |          |          |          |
   1+15       0.1079      1.14  V Q        |          |          |          |
   1+20       0.1156      1.13  V Q        |          |          |          |
   1+25       0.1234      1.12  V Q        |          |          |          |
   1+30       0.1311      1.12  V Q        |          |          |          |
   1+35       0.1388      1.12  V Q        |          |          |          |
   1+40       0.1465      1.12  V Q        |          |          |          |
   1+45       0.1542      1.12  V Q        |          |          |          |
   1+50       0.1626      1.21  V Q        |          |          |          |
   1+55       0.1724      1.42  V Q        |          |          |          |
   2+ 0       0.1825      1.47  V Q        |          |          |          |
   2+ 5       0.1928      1.49  V Q        |          |          |          |
   2+10       0.2031      1.49  |VQ        |          |          |          |
   2+15       0.2134      1.49  |VQ        |          |          |          |
   2+20       0.2237      1.49  |VQ        |          |          |          |
   2+25       0.2339      1.49  |VQ        |          |          |          |
   2+30       0.2442      1.49  |VQ        |          |          |          |
   2+35       0.2552      1.59  |V Q       |          |          |          |
   2+40       0.2675      1.80  |V Q       |          |          |          |
   2+45       0.2803      1.85  |V Q       |          |          |          |
   2+50       0.2931      1.86  |V Q       |          |          |          |
   2+55       0.3059      1.87  |V Q       |          |          |          |
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3+ 0       0.3188      1.87  |V Q       |          |          |          |
3+ 5       0.3317      1.87  |V Q       |          |          |          |
3+10       0.3445      1.87  |V Q       |          |          |          |
3+15       0.3574      1.87  |V Q       |          |          |          |
3+20       0.3703      1.87  |V Q       |          |          |          |
3+25       0.3831      1.87  |V Q       |          |          |          |
3+30       0.3960      1.87  | VQ       |          |          |          |
3+35       0.4089      1.87  | VQ       |          |          |          |
3+40       0.4217      1.87  | VQ       |          |          |          |
3+45       0.4346      1.87  | VQ       |          |          |          |
3+50       0.4481      1.96  | VQ       |          |          |          |
3+55       0.4630      2.17  | V Q      |          |          |          |
4+ 0       0.4783      2.22  | V Q      |          |          |          |
4+ 5       0.4937      2.24  | V Q      |          |          |          |
4+10       0.5091      2.24  | V Q      |          |          |          |
4+15       0.5246      2.24  | V Q      |          |          |          |
4+20       0.5407      2.33  | V Q      |          |          |          |
4+25       0.5582      2.54  | V  Q     |          |          |          |
4+30       0.5760      2.60  | V  Q     |          |          |          |
4+35       0.5940      2.61  |  V Q     |          |          |          |
4+40       0.6120      2.61  |  V Q     |          |          |          |
4+45       0.6300      2.61  |  V Q     |          |          |          |
4+50       0.6487      2.71  |  V Q     |          |          |          |
4+55       0.6688      2.92  |  V Q     |          |          |          |
5+ 0       0.6892      2.97  |  V Q     |          |          |          |
5+ 5       0.7085      2.80  |  V Q     |          |          |          |
5+10       0.7249      2.39  |  VQ      |          |          |          |
5+15       0.7406      2.28  |  VQ      |          |          |          |
5+20       0.7567      2.35  |  VQ      |          |          |          |
5+25       0.7743      2.55  |   VQ     |          |          |          |
5+30       0.7921      2.60  |   VQ     |          |          |          |
5+35       0.8108      2.70  |   VQ     |          |          |          |
5+40       0.8308      2.91  |   VQ     |          |          |          |
5+45       0.8513      2.97  |   VQ     |          |          |          |
5+50       0.8718      2.98  |   VQ     |          |          |          |
5+55       0.8924      2.99  |   VQ     |          |          |          |
6+ 0       0.9130      2.99  |   VQ     |          |          |          |
6+ 5       0.9342      3.08  |   V Q    |          |          |          |
6+10       0.9569      3.29  |   V Q    |          |          |          |
6+15       0.9799      3.34  |    VQ    |          |          |          |
6+20       1.0030      3.36  |    VQ    |          |          |          |
6+25       1.0261      3.36  |    VQ    |          |          |          |
6+30       1.0493      3.36  |    VQ    |          |          |          |
6+35       1.0731      3.46  |    VQ    |          |          |          |
6+40       1.0983      3.66  |    V Q   |          |          |          |
6+45       1.1239      3.72  |    V Q   |          |          |          |
6+50       1.1496      3.73  |    V Q   |          |          |          |
6+55       1.1753      3.73  |     VQ   |          |          |          |
7+ 0       1.2010      3.74  |     VQ   |          |          |          |
7+ 5       1.2268      3.74  |     VQ   |          |          |          |
7+10       1.2525      3.74  |     VQ   |          |          |          |
7+15       1.2782      3.74  |     VQ   |          |          |          |
7+20       1.3046      3.83  |     VQ   |          |          |          |
7+25       1.3324      4.04  |     V Q  |          |          |          |
7+30       1.3605      4.09  |      VQ  |          |          |          |
7+35       1.3895      4.20  |      VQ  |          |          |          |
7+40       1.4198      4.41  |      VQ  |          |          |          |
7+45       1.4506      4.46  |      VQ  |          |          |          |
7+50       1.4820      4.57  |      V Q |          |          |          |
7+55       1.5150      4.78  |      V Q |          |          |          |
8+ 0       1.5483      4.84  |       VQ |          |          |          |
8+ 5       1.5830      5.04  |       V Q|          |          |          |
8+10       1.6205      5.46  |       V Q|          |          |          |
8+15       1.6589      5.56  |       V  |Q         |          |          |
8+20       1.6974      5.59  |       V  |Q         |          |          |
8+25       1.7359      5.60  |       V  |Q         |          |          |
8+30       1.7745      5.60  |        V |Q         |          |          |
8+35       1.8138      5.70  |        V |Q         |          |          |
8+40       1.8544      5.90  |        V |Q         |          |          |
8+45       1.8955      5.96  |        V |Q         |          |          |
8+50       1.9372      6.06  |         V Q         |          |          |
8+55       1.9805      6.28  |         V Q         |          |          |
9+ 0       2.0241      6.33  |         V Q         |          |          |
9+ 5       2.0690      6.53  |         V  Q        |          |          |
9+10       2.1169      6.95  |         V  Q        |          |          |
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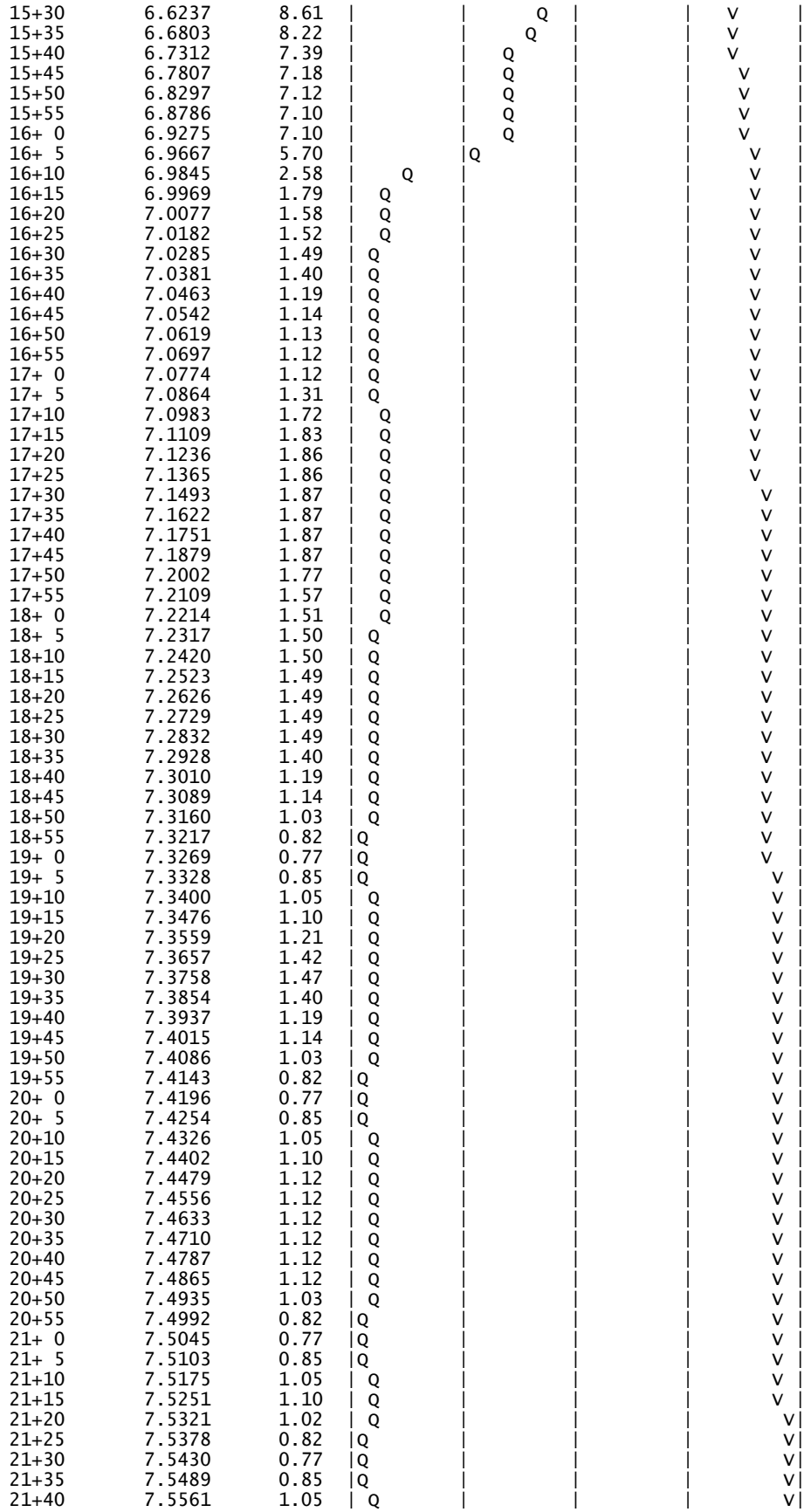
9+15	2.1655	7.06	|	|V Q |	|	|
9+20	2.2150	7.18	|	|V Q |	|	|
9+25	2.2659	7.40	|	|V Q |	|	|
9+30	2.3172	7.45	|	| V Q |	|	|
9+35	2.3693	7.56	|	| V Q |	|	|
9+40	2.4228	7.77	|	| V Q |	|	|
9+45	2.4767	7.82	|	| V Q |	|	|
9+50	2.5313	7.93	|	| V Q |	|	|
9+55	2.5874	8.14	|	| V Q |	|	|
10+ 0	2.6439	8.20	|	| V Q |	|	|
10+ 5	2.6959	7.56	|	| V Q |	|	|
10+10	2.7380	6.11	|	| Q V |	|	|
10+15	2.7776	5.74	|	|Q V |	|	|
10+20	2.8164	5.64	|	|Q V |	|	|
10+25	2.8551	5.61	|	|Q V |	|	|
10+30	2.8937	5.60	|	|Q V |	|	|
10+35	2.9355	6.07	|	| Q V |	|	|
10+40	2.9844	7.11	|	| QV |	|	|
10+45	3.0352	7.37	|	| QV |	|	|
10+50	3.0865	7.44	|	| QV |	|	|
10+55	3.1379	7.46	|	| Q V |	|	|
11+ 0	3.1893	7.47	|	| Q V |	|	|
11+ 5	3.2401	7.38	|	| Q V |	|	|
11+10	3.2895	7.17	|	| Q V |	|	|
11+15	3.3385	7.12	|	| Q V |	|	|
11+20	3.3874	7.10	|	| Q V |	|	|
11+25	3.4363	7.10	|	| Q V |	|	|
11+30	3.4852	7.10	|	| Q V |	|	|
11+35	3.5328	6.91	|	| Q V |	|	|
11+40	3.5776	6.50	|	| Q V |	|	|
11+45	3.6216	6.39	|	| Q V |	|	|
11+50	3.6660	6.45	|	| Q V |	|	|
11+55	3.7118	6.65	|	| Q V|	|	|
12+ 0	3.7580	6.70	|	| Q V|	|	|
12+ 5	3.8088	7.37	|	| Q V|	|	|
12+10	3.8696	8.83	|	| Q V |	|	|
12+15	3.9330	9.20	|	| Q V |	|	|
12+20	3.9977	9.39	|	| Q V |	|	|
12+25	4.0640	9.63	|	| Q|V |	|	|
12+30	4.1307	9.69	|	| Q|V |	|	|
12+35	4.1989	9.89	|	| Q|V |	|	|
12+40	4.2699	10.31	|	| Q V |	|	|
12+45	4.3416	10.42	|	| Q V |	|	|
12+50	4.4143	10.54	|	| |QV |	|	|
12+55	4.4883	10.76	|	| |Q V |	|	|
13+ 0	4.5628	10.81	|	| |Q V |	|	|
13+ 5	4.6406	11.29	|	| | Q V |	|	|
13+10	4.7256	12.34	|	| | Q |	|	|
13+15	4.8123	12.60	|	| | VQ |	|	|
13+20	4.8996	12.67	|	| | Q |	|	|
13+25	4.9870	12.69	|	| | Q |	|	|
13+30	5.0745	12.70	|	| | QV |	|	|
13+35	5.1549	11.67	|	| | Q V |	|	|
13+40	5.2196	9.39	|	| Q | V |	|	|
13+45	5.2803	8.81	|	| Q | V |	|	|
13+50	5.3399	8.65	|	| Q | V |	|	|
13+55	5.3991	8.61	|	| Q | V |	|	|
14+ 0	5.4583	8.59	|	| Q | V |	|	|
14+ 5	5.5201	8.96	|	| Q | V |	|	|
14+10	5.5875	9.80	|	| Q| V |	|	|
14+15	5.6564	10.01	|	| Q V|	|	|
14+20	5.7251	9.97	|	| Q| V|	|	|
14+25	5.7925	9.78	|	| Q| V |	|	|
14+30	5.8595	9.73	|	| Q| V |	|	|
14+35	5.9264	9.72	|	| Q| V |	|	|
14+40	5.9933	9.71	|	| Q| |V |	|	|
14+45	6.0602	9.71	|	| Q| |V |	|	|
14+50	6.1265	9.62	|	| Q| |V |	|	|
14+55	6.1913	9.41	|	| Q | | V |	|	|
15+ 0	6.2557	9.36	|	| Q | | V |	|	|
15+ 5	6.3194	9.25	|	| Q | | V |	|	|
15+10	6.3817	9.04	|	| Q | | V |	|	|
15+15	6.4436	8.99	|	| Q | | V |	|	|
15+20	6.5047	8.88	|	| Q | | V |	|	|
15+25	6.5644	8.67	|	| Q | | V |	|	|



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   21+45       7.5637      1.10  | Q       |         |         |        v|
   21+50       7.5707      1.02  | Q       |         |         |        v|
   21+55       7.5764      0.82  |Q        |         |         |        v|
   22+ 0       7.5816      0.77  |Q        |         |         |        v|
   22+ 5       7.5875      0.85  |Q        |         |         |        v|
   22+10       7.5947      1.05  | Q       |         |         |        v|
   22+15       7.6023      1.10  | Q       |         |         |        v|
   22+20       7.6093      1.02  | Q       |         |         |        v|
   22+25       7.6149      0.82  |Q        |         |         |        v|
   22+30       7.6202      0.77  |Q        |         |         |        v|
   22+35       7.6254      0.75  |Q        |         |         |        v|
   22+40       7.6306      0.75  |Q        |         |         |        v|
   22+45       7.6357      0.75  |Q        |         |         |        v|
   22+50       7.6409      0.75  |Q        |         |         |        v|
   22+55       7.6460      0.75  |Q        |         |         |        v|
   23+ 0       7.6511      0.75  |Q        |         |         |        v|
   23+ 5       7.6563      0.75  |Q        |         |         |        v|
   23+10       7.6614      0.75  |Q        |         |         |        v|
   23+15       7.6666      0.75  |Q        |         |         |        v|
   23+20       7.6717      0.75  |Q        |         |         |        v|
   23+25       7.6769      0.75  |Q        |         |         |        v|
   23+30       7.6820      0.75  |Q        |         |         |        v|
   23+35       7.6872      0.75  |Q        |         |         |        v|
   23+40       7.6923      0.75  |Q        |         |         |        v|
   23+45       7.6975      0.75  |Q        |         |         |        v|
   23+50       7.7026      0.75  |Q        |         |         |        v|
   23+55       7.7077      0.75  |Q        |         |         |        v|
   24+ 0       7.7129      0.75  |Q        |         |         |        v|
   24+ 5       7.7168      0.56  |Q        |         |         |        v|
   24+10       7.7178      0.15  Q         |         |         |        v|
   24+15       7.7180      0.04  Q         |         |         |        v|
   24+20       7.7181      0.01  Q         |         |         |        v|
   24+25       7.7181      0.00  Q         |         |         |         v
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Stage/Storage Tables

Building 1 CMP Chambers - Stage/Storage/Outflow Table
W.O.# 21-0044

Basin Information: Infiltration Basin			2-YEAR	ORIFICE	5-YEAR	WEIR	10/100-YEAR	WEIR
Tributary Area:	42.9	AC	Q EXISTING	3.6	Q EXISTING	9	Q EXISTING	30.8/59.1
DCV=	103,000	CF						
Bottom Elevation:	2476.60	FT	Opening (in)	4	L(ft)	1.5	L(ft)	7
			# of Orifices	4	C	3	C	3
Bottom Area:	84,533	SF	Orifice Area (sf)	0.0873				
Bottom Slope:	0	%	Orifice Diameter (ft)	0.3333				
Constant Infiltration:	0	cfs	Total Area (sf)	0.3491				
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$			G (ft/s^2)	32.2				
Q_{WEIR}= C*L*H$^{3/2}$			Cd	0.66				
			Invert H (ft)	0	Invert H (ft)	5.82	Invert H (ft)	6.96

#	Elevation (ft)	Depth (ft)	Storage (cf)	Storage (ac-ft)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	Total Q (cfs)	Total Q (cfs)	Total Q (cfs)	Comments
											2 Year Total	5 Year Total	10/100 Year Total	
1	**2476.6**	**0**	**0.00**	**0.000**							**0.00**	**0.00**	**0.00**	**Bottom of Chambers**
2	**2479.00**	**2.4**	**1036.80**	**0.024**							**0.00**	**0.00**	**0.00**	**Vbmp/Invert of 2 Yr Orifice**
3	**2479.2**	**2.6**	**13202.10**	**0.303**	**0.00**						**0.00**	**0.00**	**0.00**	**Middle of 2 Yr Orifice**
4	2479.6	3	38230.02	0.878	0.40	1.17					1.17	1.17	1.17	
5	2480.1	3.5	70437.53	1.617	0.90	1.75					1.75	1.75	1.75	
6	2480.6	4	103163.88	2.368	1.40	2.19					2.19	2.19	2.19	
7	2481.1	4.5	135890.23	3.120	1.90	2.55					2.55	2.55	2.55	
8	2481.6	5	168097.74	3.859	2.40	2.86					2.86	2.86	2.86	
9	2482.1	5.5	199241.49	4.574	2.90	3.15					3.15	3.15	3.15	
10	**2482.42**	**5.82**	**218105.9573**	**5.007**	**3.22**	**3.317583**	**0**				**3.32**	**3.32**	**3.32**	**Top of 2 Yr Ponding/Inv 5 Yr**
11	2482.6	6	228717.22	5.251	3.40	3.41	0.18	0.34			3.41	3.75	3.75	
12	2483.1	6.5	255808.19	5.873	3.90	3.65	0.68	2.52			3.65	6.17	6.17	
13	**2483.56**	**6.96**	**277677.9073**	**6.375**	**4.36**	**3.86**	**1.14**	**5.48**	**0**		**3.86**	**9.34**	**9.34**	**Top of 5 Yr Ponding/Inv 10/100 Yr**
14	2483.6	7	279579.62	6.418	4.40	3.88	1.18	5.77	0.04	0.17	3.88	9.65	9.81	
15	**2483.87**	**7.27**	**289849.46**	**6.654**	**4.67**	**4.00**	**1.45**	**7.86**	**0.31**	**3.62**	**4.00**	**11.85**	**15.48**	**Top of 10 Yr Ponding**
16	2484.1	7.5	298597.84	6.855	4.90	4.09	1.68	9.80	0.54	8.33	4.09	13.89	22.22	
17	**2484.59**	**7.99**	**309113.1544**	**7.096**	**5.39**	**4.29**	**2.17**	**14.38**	**1.03**	**21.95**	**4.29**	**18.68**	**40.63**	**Top of 100 Yr Ponding**
18	**2484.6**	**8**	**309327.75**	**7.101**	**5.40**	**4.30**	**2.18**	**14.48**	**1.04**	**22.27**	**4.30**	**18.78**	**41.05**	**Top of Chambers**

DYODS™
Design Your Own Detention System

CONTECH CMP DETENTION SYSTEMS

CONTECH CONSTRUCTION PRODUCTS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com

Project Summary

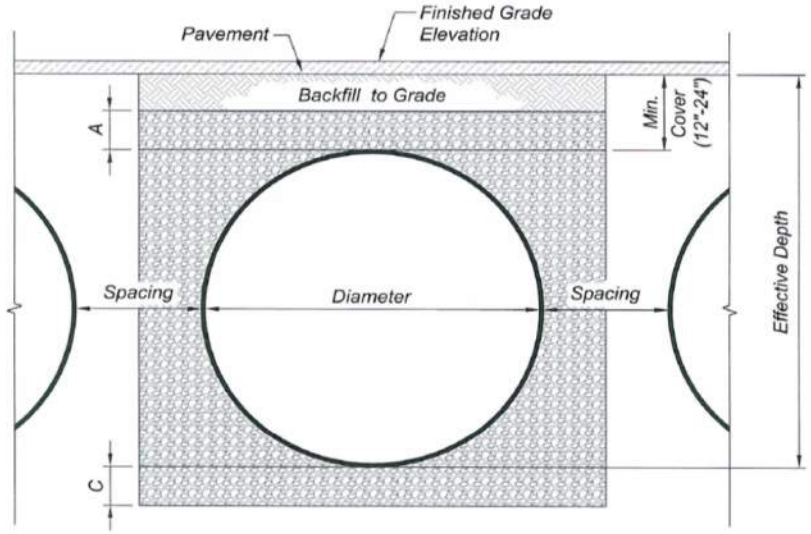
Date:	4/11/2022
Project Name:	Beaumont Summit Station - Building 1
City / County:	Calimesa
State:	CA
Designed By:	EP
Company:	Albert A. Webb Associates
Telephone:	

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	400,000
Limiting Width (ft):	130.00
Invert Depth Below Asphalt (ft):	10.00
Solid or Perforated Pipe:	Solid
Shape Or Diameter (in):	96
Number Of Headers:	2
Spacing between Barrels (ft):	2.50
Stone Width Around Perimeter of System (ft):	2
Depth A: Porous Stone Above Pipe (in):	6
Depth C: Porous Stone Below Pipe (in):	6
Stone Porosity (0 to 40%):	40

50.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	400,264	cf	
Porous Stone Storage:	0	cf	
Total Storage Provided:	400,264	cf	100.1% Of Required Storage
Number of Barrels:	12	barrels	
Length per Barrel:	643.0	ft	
Length Per Header:	123.5	ft	
Rectangular Footprint (W x L):	127.5 ft x 663.	ft	

CONTECH Materials

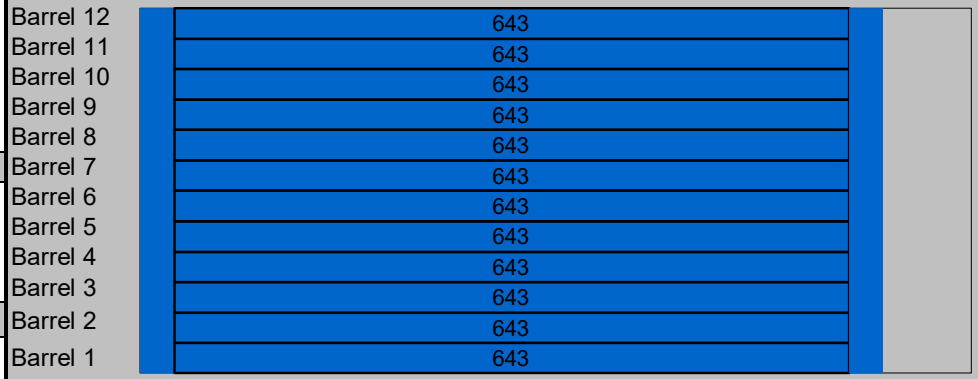
Total CMP Footage:	7,963	ft
Approximate Total Pieces:	336	pcs
Approximate Coupling Bands:	346	bands
Approximate Truckloads:	168	trucks

Construction Quantities**

Total Excavation:	31309	cy
Porous Stone Backfill For Storage:	0	cy stone
Backfill to Grade Excluding Stone:	16484	cy fill

***Construction quantities are approximate and should be verified upon final design*

System Layout



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Routing Analysis

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

21-0044 EXETER INDUSTRIAL BLDG 1
2-YEAR, 24-HOUR STORM EVENT
21-0044
2022-04-07 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: WEST2YR242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 293
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 12.701 (CFS)
Total volume = 7.718 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 293
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

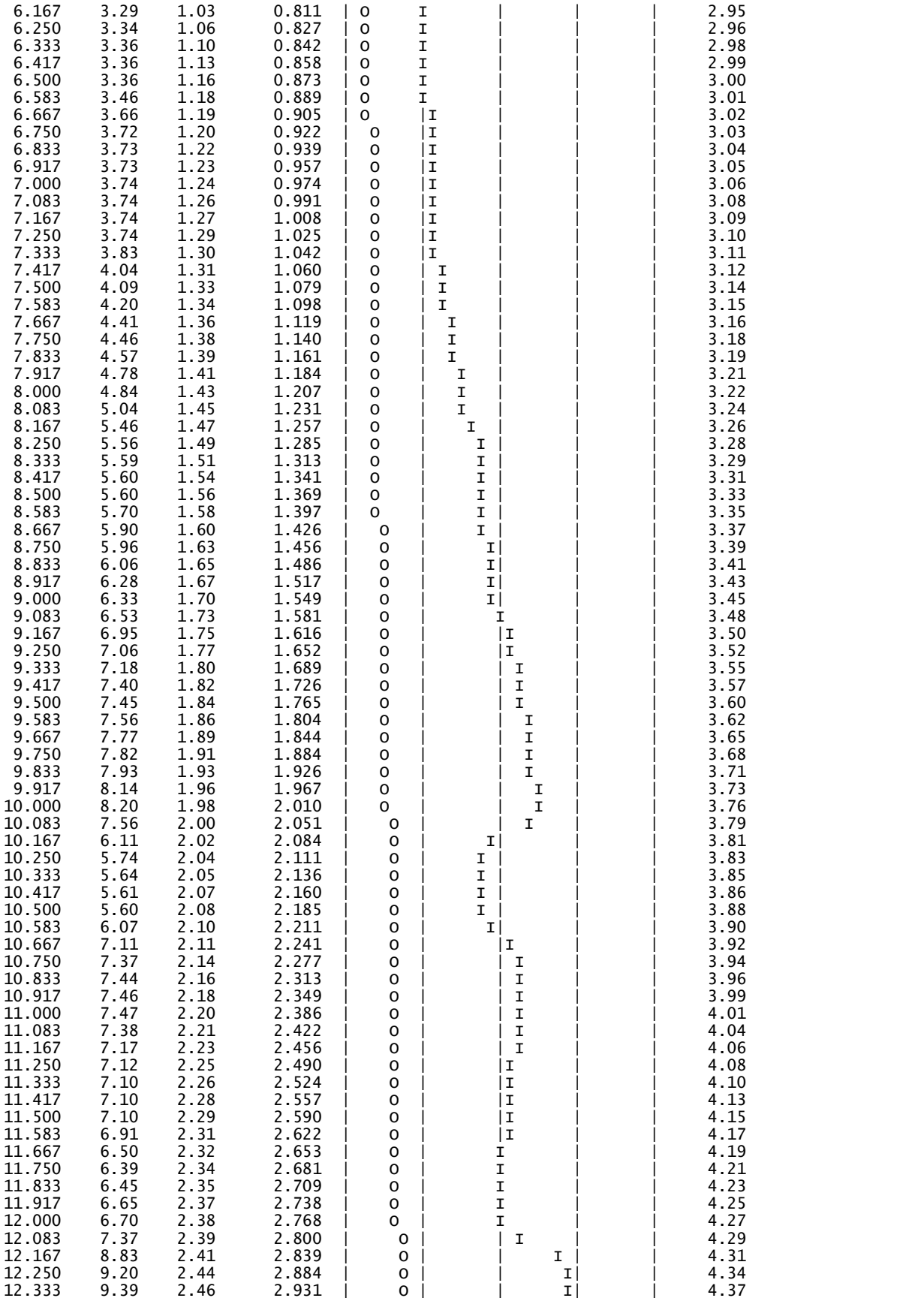
Depth vs. Storage and Depth vs. Discharge data:

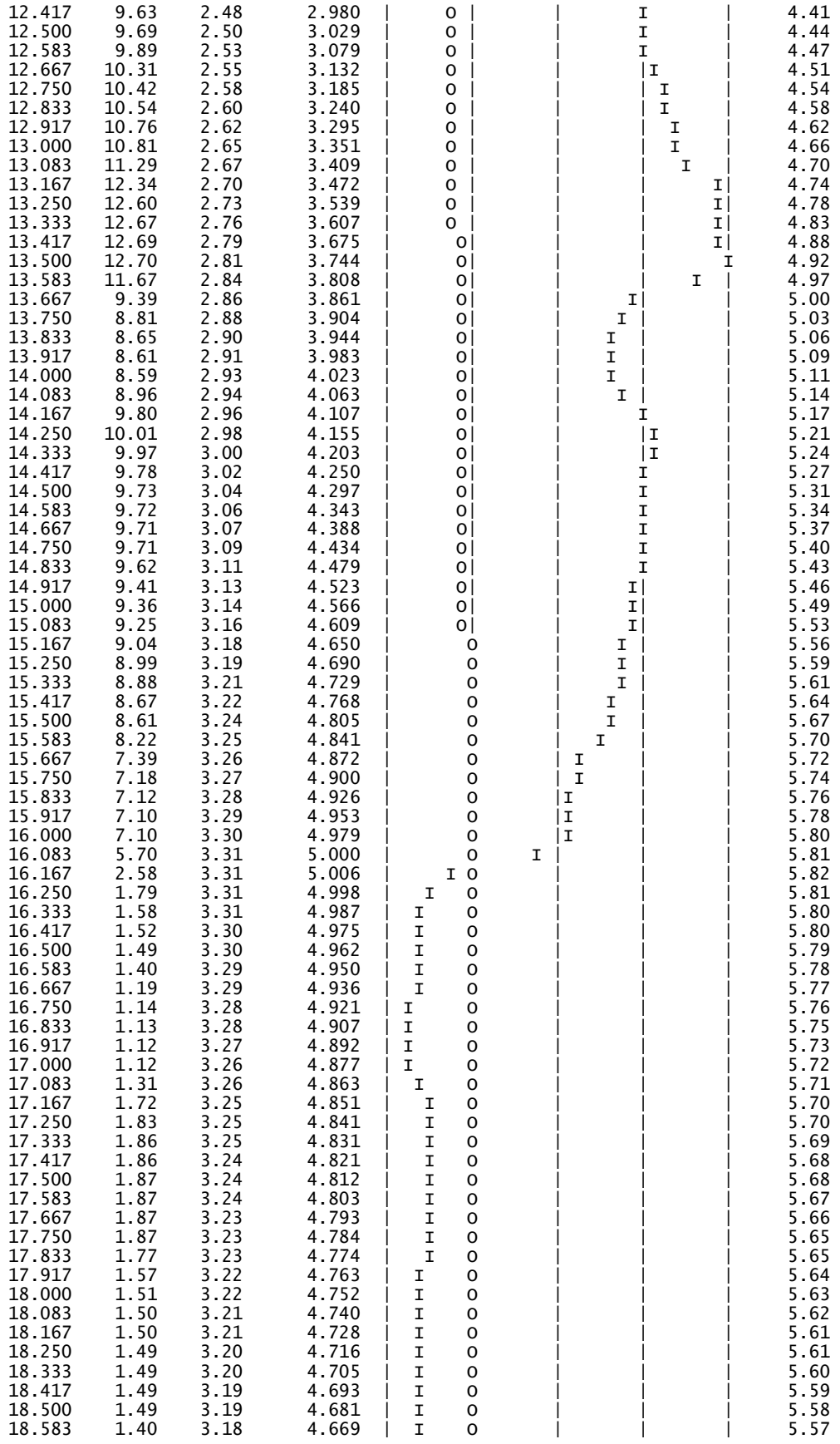
Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.600	0.303	0.001	0.303	0.303
3.000	0.878	1.169	0.874	0.882
3.500	1.617	1.754	1.611	1.623
4.000	2.368	2.188	2.360	2.376
4.500	3.120	2.548	3.111	3.129
5.000	3.859	2.864	3.849	3.869
5.500	4.574	3.148	4.563	4.585
6.000	5.251	3.409	5.239	5.263
6.500	5.873	3.651	5.860	5.886
7.000	6.418	3.878	6.405	6.431
7.500	6.855	4.093	6.841	6.869
8.000	7.101	4.296	7.086	7.116

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	3.2	6.35	9.53	12.70	Depth (Ft.)
0.083	0.19	0.00	0.001	O	|	|	|	|	0.01
0.167	0.60	0.00	0.003	OI	|	|	|	|	0.03
0.250	0.71	0.00	0.008	OI	|	|	|	|	0.07
0.333	0.83	0.00	0.013	O I	|	|	|	|	0.11
0.417	1.04	0.00	0.020	O I	|	|	|	|	0.17
0.500	1.10	0.00	0.027	O I	|	|	|	|	0.23
0.583	1.12	0.00	0.035	O I	|	|	|	|	0.30
0.667	1.12	0.00	0.042	O I	|	|	|	|	0.36
0.750	1.12	0.00	0.050	O I	|	|	|	|	0.43
0.833	1.21	0.00	0.058	O I	|	|	|	|	0.50
0.917	1.42	0.00	0.067	O I	|	|	|	|	0.58
1.000	1.47	0.00	0.077	O I	|	|	|	|	0.66
1.083	1.40	0.00	0.087	O I	|	|	|	|	0.75
1.167	1.19	0.00	0.096	O I	|	|	|	|	0.82
1.250	1.14	0.00	0.104	O I	|	|	|	|	0.89
1.333	1.13	0.00	0.112	O I	|	|	|	|	0.96
1.417	1.12	0.00	0.119	O I	|	|	|	|	1.03
1.500	1.12	0.00	0.127	O I	|	|	|	|	1.09
1.583	1.12	0.00	0.135	O I	|	|	|	|	1.16
1.667	1.12	0.00	0.143	O I	|	|	|	|	1.22
1.750	1.12	0.00	0.150	O I	|	|	|	|	1.29
1.833	1.21	0.00	0.158	O I	|	|	|	|	1.36
1.917	1.42	0.00	0.167	O I	|	|	|	|	1.44
2.000	1.47	0.00	0.177	O I	|	|	|	|	1.52
2.083	1.49	0.00	0.188	O I	|	|	|	|	1.61
2.167	1.49	0.00	0.198	O I	|	|	|	|	1.70
2.250	1.49	0.00	0.208	O I	|	|	|	|	1.79
2.333	1.49	0.00	0.218	O I	|	|	|	|	1.87
2.417	1.49	0.00	0.229	O I	|	|	|	|	1.96
2.500	1.49	0.00	0.239	O I	|	|	|	|	2.05
2.583	1.59	0.00	0.250	O I	|	|	|	|	2.14
2.667	1.80	0.00	0.261	O I	|	|	|	|	2.24
2.750	1.85	0.00	0.274	O I	|	|	|	|	2.35
2.833	1.86	0.00	0.287	O I	|	|	|	|	2.46
2.917	1.87	0.00	0.299	O I	|	|	|	|	2.57
3.000	1.87	0.02	0.312	O I	|	|	|	|	2.61
3.083	1.87	0.05	0.325	O I	|	|	|	|	2.62
3.167	1.87	0.07	0.337	O I	|	|	|	|	2.62
3.250	1.87	0.10	0.350	O I	|	|	|	|	2.63
3.333	1.87	0.12	0.362	O I	|	|	|	|	2.64
3.417	1.87	0.14	0.374	O I	|	|	|	|	2.65
3.500	1.87	0.17	0.385	O I	|	|	|	|	2.66
3.583	1.87	0.19	0.397	O I	|	|	|	|	2.67
3.667	1.87	0.22	0.409	O I	|	|	|	|	2.67
3.750	1.87	0.24	0.420	O I	|	|	|	|	2.68
3.833	1.96	0.26	0.431	O I	|	|	|	|	2.69
3.917	2.17	0.29	0.444	O I	|	|	|	|	2.70
4.000	2.22	0.31	0.457	O I	|	|	|	|	2.71
4.083	2.24	0.34	0.470	O I	|	|	|	|	2.72
4.167	2.24	0.37	0.483	O I	|	|	|	|	2.73
4.250	2.24	0.39	0.496	O I	|	|	|	|	2.73
4.333	2.33	0.42	0.509	|O I	|	|	|	|	2.74
4.417	2.54	0.45	0.522	|O I	|	|	|	|	2.75
4.500	2.60	0.48	0.537	|O I	|	|	|	|	2.76
4.583	2.61	0.51	0.551	|O I	|	|	|	|	2.77
4.667	2.61	0.53	0.566	|O I	|	|	|	|	2.78
4.750	2.61	0.56	0.580	|O I	|	|	|	|	2.79
4.833	2.71	0.59	0.594	|O I	|	|	|	|	2.80
4.917	2.92	0.62	0.610	|O I|	|	|	|	|	2.81
5.000	2.97	0.66	0.625	|O I|	|	|	|	|	2.82
5.083	2.80	0.69	0.641	|O I|	|	|	|	|	2.83
5.167	2.39	0.71	0.654	|O I |	|	|	|	|	2.84
5.250	2.28	0.74	0.665	|O I |	|	|	|	|	2.85
5.333	2.35	0.76	0.676	|O I |	|	|	|	|	2.86
5.417	2.55	0.78	0.687	|O I |	|	|	|	|	2.87
5.500	2.60	0.81	0.699	| O I |	|	|	|	|	2.88
5.583	2.70	0.83	0.712	| O I |	|	|	|	|	2.88
5.667	2.91	0.86	0.725	| O I|	|	|	|	|	2.89
5.750	2.97	0.89	0.740	| O I|	|	|	|	|	2.90
5.833	2.98	0.92	0.754	| O I|	|	|	|	|	2.91
5.917	2.99	0.95	0.768	| O I|	|	|	|	|	2.92
6.000	2.99	0.97	0.782	| O I|	|	|	|	|	2.93
6.083	3.08	1.00	0.796	| O I|	|	|	|	|	2.94





18.667	1.19	3.18	4.656	| I O |	|	|	|	5.56
18.750	1.14	3.17	4.643	| I O|	|	|	|	5.55
18.833	1.03	3.17	4.628	| I O|	|	|	|	5.54
18.917	0.82	3.16	4.613	| I O|	|	|	|	5.53
19.000	0.77	3.16	4.596	|I O|	|	|	|	5.52
19.083	0.85	3.15	4.580	| I O|	|	|	|	5.50
19.167	1.05	3.14	4.565	| I O|	|	|	|	5.49
19.250	1.10	3.14	4.551	| I O|	|	|	|	5.48
19.333	1.21	3.13	4.537	| I O|	|	|	|	5.47
19.417	1.42	3.13	4.525	| I O|	|	|	|	5.47
19.500	1.47	3.12	4.513	| I O|	|	|	|	5.46
19.583	1.40	3.12	4.502	| I O|	|	|	|	5.45
19.667	1.19	3.11	4.489	| I O|	|	|	|	5.44
19.750	1.14	3.11	4.476	| I O|	|	|	|	5.43
19.833	1.03	3.10	4.462	| I O|	|	|	|	5.42
19.917	0.82	3.10	4.447	| I O|	|	|	|	5.41
20.000	0.77	3.09	4.431	|I O|	|	|	|	5.40
20.083	0.85	3.08	4.415	| I O|	|	|	|	5.39
20.167	1.05	3.08	4.400	| I O|	|	|	|	5.38
20.250	1.10	3.07	4.387	| I O|	|	|	|	5.37
20.333	1.12	3.07	4.373	| I O|	|	|	|	5.36
20.417	1.12	3.06	4.360	| I O|	|	|	|	5.35
20.500	1.12	3.06	4.346	| I O|	|	|	|	5.34
20.583	1.12	3.05	4.333	| I O|	|	|	|	5.33
20.667	1.12	3.05	4.320	| I O|	|	|	|	5.32
20.750	1.12	3.04	4.307	| I O|	|	|	|	5.31
20.833	1.03	3.04	4.293	| I O|	|	|	|	5.30
20.917	0.82	3.03	4.278	| I O|	|	|	|	5.29
21.000	0.77	3.02	4.263	|I O|	|	|	|	5.28
21.083	0.85	3.02	4.248	| I O|	|	|	|	5.27
21.167	1.05	3.01	4.234	| I O|	|	|	|	5.26
21.250	1.10	3.01	4.220	| I O|	|	|	|	5.25
21.333	1.02	3.00	4.207	| I O|	|	|	|	5.24
21.417	0.82	3.00	4.193	| I O|	|	|	|	5.23
21.500	0.77	2.99	4.177	|I O|	|	|	|	5.22
21.583	0.85	2.98	4.162	| I O|	|	|	|	5.21
21.667	1.05	2.98	4.148	| I O|	|	|	|	5.20
21.750	1.10	2.97	4.135	| I O|	|	|	|	5.19
21.833	1.02	2.97	4.122	| I O|	|	|	|	5.18
21.917	0.82	2.96	4.108	| I O|	|	|	|	5.17
22.000	0.77	2.96	4.093	|I O|	|	|	|	5.16
22.083	0.85	2.95	4.078	| I O|	|	|	|	5.15
22.167	1.05	2.95	4.065	| I O|	|	|	|	5.14
22.250	1.10	2.94	4.052	| I O|	|	|	|	5.13
22.333	1.02	2.94	4.039	| I O|	|	|	|	5.13
22.417	0.82	2.93	4.025	| I O|	|	|	|	5.12
22.500	0.77	2.92	4.010	|I O|	|	|	|	5.11
22.583	0.75	2.92	3.995	|I O|	|	|	|	5.10
22.667	0.75	2.91	3.980	|I O|	|	|	|	5.08
22.750	0.75	2.91	3.966	|I O|	|	|	|	5.07
22.833	0.75	2.90	3.951	|I O|	|	|	|	5.06
22.917	0.75	2.89	3.936	|I O|	|	|	|	5.05
23.000	0.75	2.89	3.921	|I O|	|	|	|	5.04
23.083	0.75	2.88	3.906	|I O|	|	|	|	5.03
23.167	0.75	2.88	3.892	|I O|	|	|	|	5.02
23.250	0.75	2.87	3.877	|I O|	|	|	|	5.01
23.333	0.75	2.87	3.862	|I O|	|	|	|	5.00
23.417	0.75	2.86	3.848	|I O|	|	|	|	4.99
23.500	0.75	2.85	3.833	|I O|	|	|	|	4.98
23.583	0.75	2.85	3.819	|I O|	|	|	|	4.97
23.667	0.75	2.84	3.804	|I O|	|	|	|	4.96
23.750	0.75	2.83	3.790	|I O|	|	|	|	4.95
23.833	0.75	2.83	3.776	|I O|	|	|	|	4.94
23.917	0.75	2.82	3.761	|I O|	|	|	|	4.93
24.000	0.75	2.82	3.747	|I O|	|	|	|	4.92
24.083	0.56	2.81	3.732	|I O|	|	|	|	4.91
24.167	0.15	2.80	3.715	I O|	|	|	|	4.90
24.250	0.04	2.79	3.697	I O|	|	|	|	4.89
24.333	0.01	2.79	3.678	I O|	|	|	|	4.88
24.417	0.00	2.78	3.658	I O |	|	|	|	4.86
24.500	0.00	2.77	3.639	I O |	|	|	|	4.85
24.583	0.00	2.76	3.620	I O |	|	|	|	4.84
24.667	0.00	2.75	3.601	I O |	|	|	|	4.83
24.750	0.00	2.75	3.582	I O |	|	|	|	4.81
24.833	0.00	2.74	3.564	I O |	|	|	|	4.80

24.917	0.00	2.73	3.545	I	o	|	|	|	4.79
25.000	0.00	2.72	3.526	I	o	|	|	|	4.77
25.083	0.00	2.71	3.507	I	o	|	|	|	4.76
25.167	0.00	2.71	3.489	I	o	|	|	|	4.75
25.250	0.00	2.70	3.470	I	o	|	|	|	4.74
25.333	0.00	2.69	3.451	I	o	|	|	|	4.72
25.417	0.00	2.68	3.433	I	o	|	|	|	4.71
25.500	0.00	2.67	3.414	I	o	|	|	|	4.70
25.583	0.00	2.67	3.396	I	o	|	|	|	4.69
25.667	0.00	2.66	3.378	I	o	|	|	|	4.67
25.750	0.00	2.65	3.359	I	o	|	|	|	4.66
25.833	0.00	2.64	3.341	I	o	|	|	|	4.65
25.917	0.00	2.63	3.323	I	o	|	|	|	4.64
26.000	0.00	2.63	3.305	I	o	|	|	|	4.63
26.083	0.00	2.62	3.287	I	o	|	|	|	4.61
26.167	0.00	2.61	3.269	I	o	|	|	|	4.60
26.250	0.00	2.60	3.251	I	o	|	|	|	4.59
26.333	0.00	2.60	3.233	I	o	|	|	|	4.58
26.417	0.00	2.59	3.215	I	o	|	|	|	4.56
26.500	0.00	2.58	3.197	I	o	|	|	|	4.55
26.583	0.00	2.57	3.180	I	o	|	|	|	4.54
26.667	0.00	2.57	3.162	I	o	|	|	|	4.53
26.750	0.00	2.56	3.144	I	o	|	|	|	4.52
26.833	0.00	2.55	3.127	I	o	|	|	|	4.50
26.917	0.00	2.54	3.109	I	o	|	|	|	4.49
27.000	0.00	2.53	3.092	I	o	|	|	|	4.48
27.083	0.00	2.53	3.074	I	o	|	|	|	4.47
27.167	0.00	2.52	3.057	I	o	|	|	|	4.46
27.250	0.00	2.51	3.040	I	o	|	|	|	4.45
27.333	0.00	2.50	3.022	I	o	|	|	|	4.44
27.417	0.00	2.49	3.005	I	o	|	|	|	4.42
27.500	0.00	2.48	2.988	I	o	|	|	|	4.41
27.583	0.00	2.48	2.971	I	o	|	|	|	4.40
27.667	0.00	2.47	2.954	I	o	|	|	|	4.39
27.750	0.00	2.46	2.937	I	o	|	|	|	4.38
27.833	0.00	2.45	2.920	I	o	|	|	|	4.37
27.917	0.00	2.44	2.903	I	o	|	|	|	4.36
28.000	0.00	2.44	2.886	I	o	|	|	|	4.34
28.083	0.00	2.43	2.870	I	o	|	|	|	4.33
28.167	0.00	2.42	2.853	I	o	|	|	|	4.32
28.250	0.00	2.41	2.836	I	o	|	|	|	4.31
28.333	0.00	2.40	2.820	I	o	|	|	|	4.30
28.417	0.00	2.40	2.803	I	o	|	|	|	4.29
28.500	0.00	2.39	2.787	I	o	|	|	|	4.28
28.583	0.00	2.38	2.770	I	o	|	|	|	4.27
28.667	0.00	2.37	2.754	I	o	|	|	|	4.26
28.750	0.00	2.36	2.737	I	o	|	|	|	4.25
28.833	0.00	2.36	2.721	I	o	|	|	|	4.23
28.917	0.00	2.35	2.705	I	o	|	|	|	4.22
29.000	0.00	2.34	2.689	I	o	|	|	|	4.21
29.083	0.00	2.33	2.673	I	o	|	|	|	4.20
29.167	0.00	2.33	2.657	I	o	|	|	|	4.19
29.250	0.00	2.32	2.641	I	o	|	|	|	4.18
29.333	0.00	2.31	2.625	I	o	|	|	|	4.17
29.417	0.00	2.30	2.609	I	o	|	|	|	4.16
29.500	0.00	2.30	2.593	I	o	|	|	|	4.15
29.583	0.00	2.29	2.577	I	o	|	|	|	4.14
29.667	0.00	2.28	2.562	I	o	|	|	|	4.13
29.750	0.00	2.27	2.546	I	o	|	|	|	4.12
29.833	0.00	2.27	2.530	I	o	|	|	|	4.11
29.917	0.00	2.26	2.515	I	o	|	|	|	4.10
30.000	0.00	2.25	2.499	I	o	|	|	|	4.09
30.083	0.00	2.24	2.484	I	o	|	|	|	4.08
30.167	0.00	2.24	2.468	I	o	|	|	|	4.07
30.250	0.00	2.23	2.453	I	o	|	|	|	4.06
30.333	0.00	2.22	2.438	I	o	|	|	|	4.05
30.417	0.00	2.21	2.422	I	o	|	|	|	4.04
30.500	0.00	2.21	2.407	I	o	|	|	|	4.03
30.583	0.00	2.20	2.392	I	o	|	|	|	4.02
30.667	0.00	2.19	2.377	I	o	|	|	|	4.01
30.750	0.00	2.18	2.362	I	o	|	|	|	4.00
30.833	0.00	2.18	2.347	I	o	|	|	|	3.99
30.917	0.00	2.17	2.332	I	o	|	|	|	3.98
31.000	0.00	2.16	2.317	I	o	|	|	|	3.97
31.083	0.00	2.15	2.302	I	o	|	|	|	3.96

31.167	0.00	2.14	2.287	I	o	|	|	|	3.95
31.250	0.00	2.13	2.272	I	o	|	|	|	3.94
31.333	0.00	2.12	2.258	I	o	|	|	|	3.93
31.417	0.00	2.12	2.243	I	o	|	|	|	3.92
31.500	0.00	2.11	2.229	I	o	|	|	|	3.91
31.583	0.00	2.10	2.214	I	o	|	|	|	3.90
31.667	0.00	2.09	2.200	I	o	|	|	|	3.89
31.750	0.00	2.08	2.185	I	o	|	|	|	3.88
31.833	0.00	2.07	2.171	I	o	|	|	|	3.87
31.917	0.00	2.07	2.157	I	o	|	|	|	3.86
32.000	0.00	2.06	2.143	I	o	|	|	|	3.85
32.083	0.00	2.05	2.128	I	o	|	|	|	3.84
32.167	0.00	2.04	2.114	I	o	|	|	|	3.83
32.250	0.00	2.03	2.100	I	o	|	|	|	3.82
32.333	0.00	2.03	2.086	I	o	|	|	|	3.81
32.417	0.00	2.02	2.072	I	o	|	|	|	3.80
32.500	0.00	2.01	2.059	I	o	|	|	|	3.79
32.583	0.00	2.00	2.045	I	o	|	|	|	3.78
32.667	0.00	1.99	2.031	I	o	|	|	|	3.78
32.750	0.00	1.99	2.017	I	o	|	|	|	3.77
32.833	0.00	1.98	2.004	I	o	|	|	|	3.76
32.917	0.00	1.97	1.990	I	o	|	|	|	3.75
33.000	0.00	1.96	1.977	I	o	|	|	|	3.74
33.083	0.00	1.95	1.963	I	o	|	|	|	3.73
33.167	0.00	1.95	1.950	I	o	|	|	|	3.72
33.250	0.00	1.94	1.936	I	o	|	|	|	3.71
33.333	0.00	1.93	1.923	I	o	|	|	|	3.70
33.417	0.00	1.92	1.910	I	o	|	|	|	3.69
33.500	0.00	1.92	1.896	I	o	|	|	|	3.69
33.583	0.00	1.91	1.883	I	o	|	|	|	3.68
33.667	0.00	1.90	1.870	I	o	|	|	|	3.67
33.750	0.00	1.89	1.857	I	o	|	|	|	3.66
33.833	0.00	1.89	1.844	I	o	|	|	|	3.65
33.917	0.00	1.88	1.831	I	o	|	|	|	3.64
34.000	0.00	1.87	1.818	I	o	|	|	|	3.63
34.083	0.00	1.86	1.805	I	o	|	|	|	3.63
34.167	0.00	1.86	1.793	I	o	|	|	|	3.62
34.250	0.00	1.85	1.780	I	o	|	|	|	3.61
34.333	0.00	1.84	1.767	I	o	|	|	|	3.60
34.417	0.00	1.83	1.754	I	o	|	|	|	3.59
34.500	0.00	1.83	1.742	I	o	|	|	|	3.58
34.583	0.00	1.82	1.729	I	o	|	|	|	3.57
34.667	0.00	1.81	1.717	I	o	|	|	|	3.57
34.750	0.00	1.80	1.704	I	o	|	|	|	3.56
34.833	0.00	1.80	1.692	I	o	|	|	|	3.55
34.917	0.00	1.79	1.680	I	o	|	|	|	3.54
35.000	0.00	1.78	1.667	I	o	|	|	|	3.53
35.083	0.00	1.78	1.655	I	o	|	|	|	3.53
35.167	0.00	1.77	1.643	I	o	|	|	|	3.52
35.250	0.00	1.76	1.631	I	o	|	|	|	3.51
35.333	0.00	1.75	1.619	I	o	|	|	|	3.50
35.417	0.00	1.75	1.606	I	o	|	|	|	3.49
35.500	0.00	1.74	1.595	I	o	|	|	|	3.48
35.583	0.00	1.73	1.583	I	o	|	|	|	3.48
35.667	0.00	1.72	1.571	I	o	|	|	|	3.47
35.750	0.00	1.71	1.559	I	o	|	|	|	3.46
35.833	0.00	1.70	1.547	I	o	|	|	|	3.45
35.917	0.00	1.69	1.536	I	o	|	|	|	3.44
36.000	0.00	1.68	1.524	I	o	|	|	|	3.44
36.083	0.00	1.67	1.512	I	o	|	|	|	3.43
36.167	0.00	1.66	1.501	I	o	|	|	|	3.42
36.250	0.00	1.65	1.489	I	o	|	|	|	3.41
36.333	0.00	1.64	1.478	I	o	|	|	|	3.41
36.417	0.00	1.64	1.467	I	o	|	|	|	3.40
36.500	0.00	1.63	1.456	I	o	|	|	|	3.39
36.583	0.00	1.62	1.444	I	o	|	|	|	3.38
36.667	0.00	1.61	1.433	I	o	|	|	|	3.38
36.750	0.00	1.60	1.422	I	o	|	|	|	3.37
36.833	0.00	1.59	1.411	I	o	|	|	|	3.36
36.917	0.00	1.58	1.400	I	o	|	|	|	3.35
37.000	0.00	1.57	1.390	I	o	|	|	|	3.35
37.083	0.00	1.57	1.379	I	o	|	|	|	3.34
37.167	0.00	1.56	1.368	I	o	|	|	|	3.33
37.250	0.00	1.55	1.357	I	o	|	|	|	3.32
37.333	0.00	1.54	1.347	I	o	|	|	|	3.32

37.417	0.00	1.53	1.336	I	o	|	|	|	3.31
37.500	0.00	1.52	1.326	I	o	|	|	|	3.30
37.583	0.00	1.51	1.315	I	o	|	|	|	3.30
37.667	0.00	1.51	1.305	I	o	|	|	|	3.29
37.750	0.00	1.50	1.294	I	o	|	|	|	3.28
37.833	0.00	1.49	1.284	I	o	|	|	|	3.27
37.917	0.00	1.48	1.274	I	o	|	|	|	3.27
38.000	0.00	1.47	1.264	I	o	|	|	|	3.26
38.083	0.00	1.47	1.253	I	o	|	|	|	3.25
38.167	0.00	1.46	1.243	I	o	|	|	|	3.25
38.250	0.00	1.45	1.233	I	o	|	|	|	3.24
38.333	0.00	1.44	1.223	I	o	|	|	|	3.23
38.417	0.00	1.43	1.214	I	o	|	|	|	3.23
38.500	0.00	1.43	1.204	I	o	|	|	|	3.22
38.583	0.00	1.42	1.194	I	o	|	|	|	3.21
38.667	0.00	1.41	1.184	I	o	|	|	|	3.21
38.750	0.00	1.40	1.174	I	o	|	|	|	3.20
38.833	0.00	1.40	1.165	I	o	|	|	|	3.19
38.917	0.00	1.39	1.155	I	o	|	|	|	3.19
39.000	0.00	1.38	1.146	I	o	|	|	|	3.18
39.083	0.00	1.37	1.136	I	o	|	|	|	3.17
39.167	0.00	1.37	1.127	I	o	|	|	|	3.17
39.250	0.00	1.36	1.117	I	o	|	|	|	3.16
39.333	0.00	1.35	1.108	I	o	|	|	|	3.16
39.417	0.00	1.34	1.099	I	o	|	|	|	3.15
39.500	0.00	1.34	1.090	I	o	|	|	|	3.14
39.583	0.00	1.33	1.080	I	o	|	|	|	3.14
39.667	0.00	1.32	1.071	I	o	|	|	|	3.13
39.750	0.00	1.31	1.062	I	o	|	|	|	3.12
39.833	0.00	1.31	1.053	I	o	|	|	|	3.12
39.917	0.00	1.30	1.044	I	o	|	|	|	3.11
40.000	0.00	1.29	1.035	I	o	|	|	|	3.11
40.083	0.00	1.29	1.026	I	o	|	|	|	3.10
40.167	0.00	1.28	1.017	I	o	|	|	|	3.09
40.250	0.00	1.27	1.009	I	o	|	|	|	3.09
40.333	0.00	1.27	1.000	I	o	|	|	|	3.08
40.417	0.00	1.26	0.991	I	o	|	|	|	3.08
40.500	0.00	1.25	0.983	I	o	|	|	|	3.07
40.583	0.00	1.24	0.974	I	o	|	|	|	3.06
40.667	0.00	1.24	0.965	I	o	|	|	|	3.06
40.750	0.00	1.23	0.957	I	o	|	|	|	3.05
40.833	0.00	1.22	0.948	I	o	|	|	|	3.05
40.917	0.00	1.22	0.940	I	o	|	|	|	3.04
41.000	0.00	1.21	0.932	I	o	|	|	|	3.04
41.083	0.00	1.20	0.923	I	o	|	|	|	3.03
41.167	0.00	1.20	0.915	I	o	|	|	|	3.03
41.250	0.00	1.19	0.907	I	o	|	|	|	3.02
41.333	0.00	1.19	0.899	I	o	|	|	|	3.01
41.417	0.00	1.18	0.891	I	o	|	|	|	3.01
41.500	0.00	1.17	0.882	I	o	|	|	|	3.00
41.583	0.00	1.16	0.874	I	o	|	|	|	3.00
41.667	0.00	1.15	0.866	I	o	|	|	|	2.99
41.750	0.00	1.13	0.859	I	o	|	|	|	2.99
41.833	0.00	1.11	0.851	I	o	|	|	|	2.98
41.917	0.00	1.10	0.843	I	o	|	|	|	2.98
42.000	0.00	1.08	0.836	I	o	|	|	|	2.97
42.083	0.00	1.07	0.828	I	o	|	|	|	2.97
42.167	0.00	1.05	0.821	I	o	|	|	|	2.96
42.250	0.00	1.04	0.814	I	o	|	|	|	2.96
42.333	0.00	1.02	0.807	I	o	|	|	|	2.95
42.417	0.00	1.01	0.800	I	o	|	|	|	2.95
42.500	0.00	1.00	0.793	I	o	|	|	|	2.94
42.583	0.00	0.98	0.786	I	o	|	|	|	2.94
42.667	0.00	0.97	0.779	I	o	|	|	|	2.93
42.750	0.00	0.96	0.773	I	o	|	|	|	2.93
42.833	0.00	0.94	0.766	I	o	|	|	|	2.92
42.917	0.00	0.93	0.760	I	o	|	|	|	2.92
43.000	0.00	0.92	0.753	I	o	|	|	|	2.91
43.083	0.00	0.90	0.747	I	o	|	|	|	2.91
43.167	0.00	0.89	0.741	I	o	|	|	|	2.90
43.250	0.00	0.88	0.735	I	o	|	|	|	2.90
43.333	0.00	0.87	0.729	I	o	|	|	|	2.90
43.417	0.00	0.85	0.723	I	o	|	|	|	2.89
43.500	0.00	0.84	0.717	I	o	|	|	|	2.89
43.583	0.00	0.83	0.711	I	o	|	|	|	2.88

43.667	0.00	0.82	0.706	I O				2.88
43.750	0.00	0.81	0.700	I O				2.88
43.833	0.00	0.80	0.695	I O				2.87
43.917	0.00	0.79	0.689	IO				2.87
44.000	0.00	0.77	0.684	IO				2.86
44.083	0.00	0.76	0.678	IO				2.86
44.167	0.00	0.75	0.673	IO				2.86
44.250	0.00	0.74	0.668	IO				2.85
44.333	0.00	0.73	0.663	IO				2.85
44.417	0.00	0.72	0.658	IO				2.85
44.500	0.00	0.71	0.653	IO				2.84
44.583	0.00	0.70	0.648	IO				2.84
44.667	0.00	0.69	0.643	IO				2.84
44.750	0.00	0.68	0.639	IO				2.83
44.833	0.00	0.67	0.634	IO				2.83
44.917	0.00	0.66	0.629	IO				2.83
45.000	0.00	0.65	0.625	IO				2.82
45.083	0.00	0.65	0.620	IO				2.82
45.167	0.00	0.64	0.616	IO				2.82
45.250	0.00	0.63	0.612	IO				2.81
45.333	0.00	0.62	0.607	IO				2.81
45.417	0.00	0.61	0.603	IO				2.81
45.500	0.00	0.60	0.599	IO				2.81
45.583	0.00	0.59	0.595	IO				2.80
45.667	0.00	0.59	0.591	IO				2.80
45.750	0.00	0.58	0.587	IO				2.80
45.833	0.00	0.57	0.583	IO				2.79
45.917	0.00	0.56	0.579	IO				2.79
46.000	0.00	0.55	0.575	IO				2.79
46.083	0.00	0.55	0.571	IO				2.79
46.167	0.00	0.54	0.567	IO				2.78
46.250	0.00	0.53	0.564	IO				2.78
46.333	0.00	0.52	0.560	IO				2.78
46.417	0.00	0.52	0.557	IO				2.78
46.500	0.00	0.51	0.553	IO				2.77
46.583	0.00	0.50	0.550	IO				2.77
46.667	0.00	0.49	0.546	IO				2.77
46.750	0.00	0.49	0.543	IO				2.77
46.833	0.00	0.48	0.539	IO				2.76
46.917	0.00	0.47	0.536	IO				2.76
47.000	0.00	0.47	0.533	IO				2.76
47.083	0.00	0.46	0.530	IO				2.76
47.167	0.00	0.46	0.527	IO				2.76
47.250	0.00	0.45	0.523	IO				2.75
47.333	0.00	0.44	0.520	IO				2.75
47.417	0.00	0.44	0.517	IO				2.75
47.500	0.00	0.43	0.514	IO				2.75
47.583	0.00	0.42	0.511	IO				2.74
47.667	0.00	0.42	0.508	IO				2.74
47.750	0.00	0.41	0.506	IO				2.74
47.833	0.00	0.41	0.503	IO				2.74
47.917	0.00	0.40	0.500	IO				2.74
48.000	0.00	0.40	0.497	O				2.74
48.083	0.00	0.39	0.495	O				2.73
48.167	0.00	0.38	0.492	O				2.73
48.250	0.00	0.38	0.489	O				2.73
48.333	0.00	0.37	0.487	O				2.73
48.417	0.00	0.37	0.484	O				2.73
48.500	0.00	0.36	0.482	O				2.72
48.583	0.00	0.36	0.479	O				2.72
48.667	0.00	0.35	0.477	O				2.72
48.750	0.00	0.35	0.474	O				2.72
48.833	0.00	0.34	0.472	O				2.72
48.917	0.00	0.34	0.469	O				2.72
49.000	0.00	0.33	0.467	O				2.71
49.083	0.00	0.33	0.465	O				2.71
49.167	0.00	0.33	0.463	O				2.71
49.250	0.00	0.32	0.460	O				2.71
49.333	0.00	0.32	0.458	O				2.71
49.417	0.00	0.31	0.456	O				2.71
49.500	0.00	0.31	0.454	O				2.70
49.583	0.00	0.30	0.452	O				2.70
49.667	0.00	0.30	0.450	O				2.70
49.750	0.00	0.29	0.448	O				2.70
49.833	0.00	0.29	0.446	O				2.70

49.917	0.00	0.29	0.444	o	|	|	|	|	2.70
50.000	0.00	0.28	0.442	o	|	|	|	|	2.70
50.083	0.00	0.28	0.440	o	|	|	|	|	2.70
50.167	0.00	0.27	0.438	o	|	|	|	|	2.69
50.250	0.00	0.27	0.436	o	|	|	|	|	2.69
50.333	0.00	0.27	0.434	o	|	|	|	|	2.69
50.417	0.00	0.26	0.432	o	|	|	|	|	2.69
50.500	0.00	0.26	0.431	o	|	|	|	|	2.69
50.583	0.00	0.26	0.429	o	|	|	|	|	2.69
50.667	0.00	0.25	0.427	o	|	|	|	|	2.69
50.750	0.00	0.25	0.425	o	|	|	|	|	2.69
50.833	0.00	0.25	0.424	o	|	|	|	|	2.68
50.917	0.00	0.24	0.422	o	|	|	|	|	2.68
51.000	0.00	0.24	0.420	o	|	|	|	|	2.68
51.083	0.00	0.24	0.419	o	|	|	|	|	2.68
51.167	0.00	0.23	0.417	o	|	|	|	|	2.68
51.250	0.00	0.23	0.415	o	|	|	|	|	2.68
51.333	0.00	0.23	0.414	o	|	|	|	|	2.68
51.417	0.00	0.22	0.412	o	|	|	|	|	2.68
51.500	0.00	0.22	0.411	o	|	|	|	|	2.67
51.583	0.00	0.22	0.409	o	|	|	|	|	2.67
51.667	0.00	0.21	0.408	o	|	|	|	|	2.67
51.750	0.00	0.21	0.406	o	|	|	|	|	2.67
51.833	0.00	0.21	0.405	o	|	|	|	|	2.67
51.917	0.00	0.20	0.403	o	|	|	|	|	2.67
52.000	0.00	0.20	0.402	o	|	|	|	|	2.67
52.083	0.00	0.20	0.401	o	|	|	|	|	2.67
52.167	0.00	0.20	0.399	o	|	|	|	|	2.67
52.250	0.00	0.19	0.398	o	|	|	|	|	2.67
52.333	0.00	0.19	0.397	o	|	|	|	|	2.67
52.417	0.00	0.19	0.395	o	|	|	|	|	2.66
52.500	0.00	0.19	0.394	o	|	|	|	|	2.66
52.583	0.00	0.18	0.393	o	|	|	|	|	2.66
52.667	0.00	0.18	0.391	o	|	|	|	|	2.66
52.750	0.00	0.18	0.390	o	|	|	|	|	2.66
52.833	0.00	0.18	0.389	o	|	|	|	|	2.66
52.917	0.00	0.17	0.388	o	|	|	|	|	2.66
53.000	0.00	0.17	0.387	o	|	|	|	|	2.66
53.083	0.00	0.17	0.385	o	|	|	|	|	2.66
53.167	0.00	0.17	0.384	o	|	|	|	|	2.66
53.250	0.00	0.16	0.383	o	|	|	|	|	2.66
53.333	0.00	0.16	0.382	o	|	|	|	|	2.65
53.417	0.00	0.16	0.381	o	|	|	|	|	2.65
53.500	0.00	0.16	0.380	o	|	|	|	|	2.65
53.583	0.00	0.15	0.379	o	|	|	|	|	2.65
53.667	0.00	0.15	0.378	o	|	|	|	|	2.65
53.750	0.00	0.15	0.377	o	|	|	|	|	2.65
53.833	0.00	0.15	0.376	o	|	|	|	|	2.65
53.917	0.00	0.15	0.375	o	|	|	|	|	2.65
54.000	0.00	0.14	0.374	o	|	|	|	|	2.65
54.083	0.00	0.14	0.373	o	|	|	|	|	2.65
54.167	0.00	0.14	0.372	o	|	|	|	|	2.65
54.250	0.00	0.14	0.371	o	|	|	|	|	2.65
54.333	0.00	0.14	0.370	o	|	|	|	|	2.65
54.417	0.00	0.13	0.369	o	|	|	|	|	2.65
54.500	0.00	0.13	0.368	o	|	|	|	|	2.65
54.583	0.00	0.13	0.367	o	|	|	|	|	2.64
54.667	0.00	0.13	0.366	o	|	|	|	|	2.64
54.750	0.00	0.13	0.365	o	|	|	|	|	2.64
54.833	0.00	0.13	0.364	o	|	|	|	|	2.64
54.917	0.00	0.12	0.363	o	|	|	|	|	2.64
55.000	0.00	0.12	0.363	o	|	|	|	|	2.64
55.083	0.00	0.12	0.362	o	|	|	|	|	2.64
55.167	0.00	0.12	0.361	o	|	|	|	|	2.64
55.250	0.00	0.12	0.360	o	|	|	|	|	2.64
55.333	0.00	0.12	0.359	o	|	|	|	|	2.64
55.417	0.00	0.11	0.359	o	|	|	|	|	2.64
55.500	0.00	0.11	0.358	o	|	|	|	|	2.64
55.583	0.00	0.11	0.357	o	|	|	|	|	2.64
55.667	0.00	0.11	0.356	o	|	|	|	|	2.64
55.750	0.00	0.11	0.356	o	|	|	|	|	2.64
55.833	0.00	0.11	0.355	o	|	|	|	|	2.64
55.917	0.00	0.10	0.354	o	|	|	|	|	2.64
56.000	0.00	0.10	0.353	o	|	|	|	|	2.64
56.083	0.00	0.10	0.353	o	|	|	|	|	2.63

56.167	0.00	0.10	0.352	o	|	|	|	2.63
56.250	0.00	0.10	0.351	o	|	|	|	2.63
56.333	0.00	0.10	0.351	o	|	|	|	2.63
56.417	0.00	0.10	0.350	o	|	|	|	2.63
56.500	0.00	0.09	0.349	o	|	|	|	2.63
56.583	0.00	0.09	0.349	o	|	|	|	2.63
56.667	0.00	0.09	0.348	o	|	|	|	2.63
56.750	0.00	0.09	0.347	o	|	|	|	2.63
56.833	0.00	0.09	0.347	o	|	|	|	2.63
56.917	0.00	0.09	0.346	o	|	|	|	2.63
57.000	0.00	0.09	0.345	o	|	|	|	2.63
57.083	0.00	0.09	0.345	o	|	|	|	2.63
57.167	0.00	0.08	0.344	o	|	|	|	2.63
57.250	0.00	0.08	0.344	o	|	|	|	2.63
57.333	0.00	0.08	0.343	o	|	|	|	2.63
57.417	0.00	0.08	0.343	o	|	|	|	2.63
57.500	0.00	0.08	0.342	o	|	|	|	2.63
57.583	0.00	0.08	0.341	o	|	|	|	2.63
57.667	0.00	0.08	0.341	o	|	|	|	2.63
57.750	0.00	0.08	0.340	o	|	|	|	2.63
57.833	0.00	0.08	0.340	o	|	|	|	2.63
57.917	0.00	0.07	0.339	o	|	|	|	2.63
58.000	0.00	0.07	0.339	o	|	|	|	2.62
58.083	0.00	0.07	0.338	o	|	|	|	2.62
58.167	0.00	0.07	0.338	o	|	|	|	2.62
58.250	0.00	0.07	0.337	o	|	|	|	2.62
58.333	0.00	0.07	0.337	o	|	|	|	2.62
58.417	0.00	0.07	0.336	o	|	|	|	2.62
58.500	0.00	0.07	0.336	o	|	|	|	2.62
58.583	0.00	0.07	0.335	o	|	|	|	2.62
58.667	0.00	0.07	0.335	o	|	|	|	2.62
58.750	0.00	0.07	0.335	o	|	|	|	2.62
58.833	0.00	0.06	0.334	o	|	|	|	2.62
58.917	0.00	0.06	0.334	o	|	|	|	2.62
59.000	0.00	0.06	0.333	o	|	|	|	2.62
59.083	0.00	0.06	0.333	o	|	|	|	2.62
59.167	0.00	0.06	0.332	o	|	|	|	2.62
59.250	0.00	0.06	0.332	o	|	|	|	2.62
59.333	0.00	0.06	0.332	o	|	|	|	2.62
59.417	0.00	0.06	0.331	o	|	|	|	2.62
59.500	0.00	0.06	0.331	o	|	|	|	2.62
59.583	0.00	0.06	0.330	o	|	|	|	2.62
59.667	0.00	0.06	0.330	o	|	|	|	2.62
59.750	0.00	0.06	0.330	o	|	|	|	2.62
59.833	0.00	0.05	0.329	o	|	|	|	2.62
59.917	0.00	0.05	0.329	o	|	|	|	2.62
60.000	0.00	0.05	0.328	o	|	|	|	2.62
60.083	0.00	0.05	0.328	o	|	|	|	2.62
60.167	0.00	0.05	0.328	o	|	|	|	2.62
60.250	0.00	0.05	0.327	o	|	|	|	2.62
60.333	0.00	0.05	0.327	o	|	|	|	2.62
60.417	0.00	0.05	0.327	o	|	|	|	2.62
60.500	0.00	0.05	0.326	o	|	|	|	2.62
60.583	0.00	0.05	0.326	o	|	|	|	2.62
60.667	0.00	0.05	0.326	o	|	|	|	2.62
60.750	0.00	0.05	0.325	o	|	|	|	2.62
60.833	0.00	0.05	0.325	o	|	|	|	2.62
60.917	0.00	0.05	0.325	o	|	|	|	2.62
61.000	0.00	0.04	0.324	o	|	|	|	2.61
61.083	0.00	0.04	0.324	o	|	|	|	2.61
61.167	0.00	0.04	0.324	o	|	|	|	2.61
61.250	0.00	0.04	0.324	o	|	|	|	2.61
61.333	0.00	0.04	0.323	o	|	|	|	2.61
61.417	0.00	0.04	0.323	o	|	|	|	2.61
61.500	0.00	0.04	0.323	o	|	|	|	2.61
61.583	0.00	0.04	0.322	o	|	|	|	2.61
61.667	0.00	0.04	0.322	o	|	|	|	2.61
61.750	0.00	0.04	0.322	o	|	|	|	2.61
61.833	0.00	0.04	0.322	o	|	|	|	2.61
61.917	0.00	0.04	0.321	o	|	|	|	2.61
62.000	0.00	0.04	0.321	o	|	|	|	2.61
62.083	0.00	0.04	0.321	o	|	|	|	2.61
62.167	0.00	0.04	0.321	o	|	|	|	2.61
62.250	0.00	0.04	0.320	o	|	|	|	2.61
62.333	0.00	0.04	0.320	o	|	|	|	2.61

62.417	0.00	0.04	0.320	o	|	|	|	|	2.61
62.500	0.00	0.03	0.320	o	|	|	|	|	2.61
62.583	0.00	0.03	0.319	o	|	|	|	|	2.61
62.667	0.00	0.03	0.319	o	|	|	|	|	2.61
62.750	0.00	0.03	0.319	o	|	|	|	|	2.61
62.833	0.00	0.03	0.319	o	|	|	|	|	2.61
62.917	0.00	0.03	0.318	o	|	|	|	|	2.61
63.000	0.00	0.03	0.318	o	|	|	|	|	2.61
63.083	0.00	0.03	0.318	o	|	|	|	|	2.61
63.167	0.00	0.03	0.318	o	|	|	|	|	2.61
63.250	0.00	0.03	0.318	o	|	|	|	|	2.61
63.333	0.00	0.03	0.317	o	|	|	|	|	2.61
63.417	0.00	0.03	0.317	o	|	|	|	|	2.61
63.500	0.00	0.03	0.317	o	|	|	|	|	2.61
63.583	0.00	0.03	0.317	o	|	|	|	|	2.61
63.667	0.00	0.03	0.317	o	|	|	|	|	2.61
63.750	0.00	0.03	0.316	o	|	|	|	|	2.61
63.833	0.00	0.03	0.316	o	|	|	|	|	2.61
63.917	0.00	0.03	0.316	o	|	|	|	|	2.61
64.000	0.00	0.03	0.316	o	|	|	|	|	2.61
64.083	0.00	0.03	0.316	o	|	|	|	|	2.61
64.167	0.00	0.03	0.315	o	|	|	|	|	2.61
64.250	0.00	0.03	0.315	o	|	|	|	|	2.61
64.333	0.00	0.03	0.315	o	|	|	|	|	2.61
64.417	0.00	0.03	0.315	o	|	|	|	|	2.61
64.500	0.00	0.02	0.315	o	|	|	|	|	2.61
64.583	0.00	0.02	0.315	o	|	|	|	|	2.61
64.667	0.00	0.02	0.314	o	|	|	|	|	2.61
64.750	0.00	0.02	0.314	o	|	|	|	|	2.61
64.833	0.00	0.02	0.314	o	|	|	|	|	2.61
64.917	0.00	0.02	0.314	o	|	|	|	|	2.61
65.000	0.00	0.02	0.314	o	|	|	|	|	2.61
65.083	0.00	0.02	0.314	o	|	|	|	|	2.61
65.167	0.00	0.02	0.313	o	|	|	|	|	2.61
65.250	0.00	0.02	0.313	o	|	|	|	|	2.61
65.333	0.00	0.02	0.313	o	|	|	|	|	2.61
65.417	0.00	0.02	0.313	o	|	|	|	|	2.61
65.500	0.00	0.02	0.313	o	|	|	|	|	2.61
65.583	0.00	0.02	0.313	o	|	|	|	|	2.61
65.667	0.00	0.02	0.313	o	|	|	|	|	2.61
65.750	0.00	0.02	0.312	o	|	|	|	|	2.61
65.833	0.00	0.02	0.312	o	|	|	|	|	2.61
65.917	0.00	0.02	0.312	o	|	|	|	|	2.61
66.000	0.00	0.02	0.312	o	|	|	|	|	2.61
66.083	0.00	0.02	0.312	o	|	|	|	|	2.61
66.167	0.00	0.02	0.312	o	|	|	|	|	2.61
66.250	0.00	0.02	0.312	o	|	|	|	|	2.61
66.333	0.00	0.02	0.311	o	|	|	|	|	2.61
66.417	0.00	0.02	0.311	o	|	|	|	|	2.61
66.500	0.00	0.02	0.311	o	|	|	|	|	2.61
66.583	0.00	0.02	0.311	o	|	|	|	|	2.61
66.667	0.00	0.02	0.311	o	|	|	|	|	2.61
66.750	0.00	0.02	0.311	o	|	|	|	|	2.61
66.833	0.00	0.02	0.311	o	|	|	|	|	2.61
66.917	0.00	0.02	0.311	o	|	|	|	|	2.61
67.000	0.00	0.02	0.311	o	|	|	|	|	2.61
67.083	0.00	0.02	0.310	o	|	|	|	|	2.61
67.167	0.00	0.02	0.310	o	|	|	|	|	2.61
67.250	0.00	0.02	0.310	o	|	|	|	|	2.61
67.333	0.00	0.02	0.310	o	|	|	|	|	2.60
67.417	0.00	0.02	0.310	o	|	|	|	|	2.60
67.500	0.00	0.01	0.310	o	|	|	|	|	2.60
67.583	0.00	0.01	0.310	o	|	|	|	|	2.60
67.667	0.00	0.01	0.310	o	|	|	|	|	2.60
67.750	0.00	0.01	0.310	o	|	|	|	|	2.60
67.833	0.00	0.01	0.309	o	|	|	|	|	2.60
67.917	0.00	0.01	0.309	o	|	|	|	|	2.60
68.000	0.00	0.01	0.309	o	|	|	|	|	2.60
68.083	0.00	0.01	0.309	o	|	|	|	|	2.60
68.167	0.00	0.01	0.309	o	|	|	|	|	2.60
68.250	0.00	0.01	0.309	o	|	|	|	|	2.60
68.333	0.00	0.01	0.309	o	|	|	|	|	2.60
68.417	0.00	0.01	0.309	o	|	|	|	|	2.60
68.500	0.00	0.01	0.309	o	|	|	|	|	2.60
68.583	0.00	0.01	0.309	o	|	|	|	|	2.60

68.667	0.00	0.01	0.309	o	|	|	|	|	2.60
68.750	0.00	0.01	0.308	o	|	|	|	|	2.60
68.833	0.00	0.01	0.308	o	|	|	|	|	2.60
68.917	0.00	0.01	0.308	o	|	|	|	|	2.60
69.000	0.00	0.01	0.308	o	|	|	|	|	2.60
69.083	0.00	0.01	0.308	o	|	|	|	|	2.60
69.167	0.00	0.01	0.308	o	|	|	|	|	2.60
69.250	0.00	0.01	0.308	o	|	|	|	|	2.60
69.333	0.00	0.01	0.308	o	|	|	|	|	2.60
69.417	0.00	0.01	0.308	o	|	|	|	|	2.60
69.500	0.00	0.01	0.308	o	|	|	|	|	2.60
69.583	0.00	0.01	0.308	o	|	|	|	|	2.60
69.667	0.00	0.01	0.308	o	|	|	|	|	2.60
69.750	0.00	0.01	0.308	o	|	|	|	|	2.60
69.833	0.00	0.01	0.307	o	|	|	|	|	2.60
69.917	0.00	0.01	0.307	o	|	|	|	|	2.60
70.000	0.00	0.01	0.307	o	|	|	|	|	2.60
70.083	0.00	0.01	0.307	o	|	|	|	|	2.60
70.167	0.00	0.01	0.307	o	|	|	|	|	2.60
70.250	0.00	0.01	0.307	o	|	|	|	|	2.60
70.333	0.00	0.01	0.307	o	|	|	|	|	2.60
70.417	0.00	0.01	0.307	o	|	|	|	|	2.60
70.500	0.00	0.01	0.307	o	|	|	|	|	2.60
70.583	0.00	0.01	0.307	o	|	|	|	|	2.60
70.667	0.00	0.01	0.307	o	|	|	|	|	2.60
70.750	0.00	0.01	0.307	o	|	|	|	|	2.60
70.833	0.00	0.01	0.307	o	|	|	|	|	2.60
70.917	0.00	0.01	0.307	o	|	|	|	|	2.60
71.000	0.00	0.01	0.307	o	|	|	|	|	2.60
71.083	0.00	0.01	0.307	o	|	|	|	|	2.60
71.167	0.00	0.01	0.306	o	|	|	|	|	2.60
71.250	0.00	0.01	0.306	o	|	|	|	|	2.60
71.333	0.00	0.01	0.306	o	|	|	|	|	2.60
71.417	0.00	0.01	0.306	o	|	|	|	|	2.60
71.500	0.00	0.01	0.306	o	|	|	|	|	2.60
71.583	0.00	0.01	0.306	o	|	|	|	|	2.60
71.667	0.00	0.01	0.306	o	|	|	|	|	2.60
71.750	0.00	0.01	0.306	o	|	|	|	|	2.60
71.833	0.00	0.01	0.306	o	|	|	|	|	2.60
71.917	0.00	0.01	0.306	o	|	|	|	|	2.60
72.000	0.00	0.01	0.306	o	|	|	|	|	2.60
72.083	0.00	0.01	0.306	o	|	|	|	|	2.60
72.167	0.00	0.01	0.306	o	|	|	|	|	2.60
72.250	0.00	0.01	0.306	o	|	|	|	|	2.60
72.333	0.00	0.01	0.306	o	|	|	|	|	2.60
72.417	0.00	0.01	0.306	o	|	|	|	|	2.60
72.500	0.00	0.01	0.306	o	|	|	|	|	2.60
72.583	0.00	0.01	0.306	o	|	|	|	|	2.60
72.667	0.00	0.01	0.306	o	|	|	|	|	2.60
72.750	0.00	0.01	0.306	o	|	|	|	|	2.60
72.833	0.00	0.01	0.306	o	|	|	|	|	2.60
72.917	0.00	0.01	0.305	o	|	|	|	|	2.60
73.000	0.00	0.01	0.305	o	|	|	|	|	2.60
73.083	0.00	0.01	0.305	o	|	|	|	|	2.60
73.167	0.00	0.01	0.305	o	|	|	|	|	2.60
73.250	0.00	0.01	0.305	o	|	|	|	|	2.60
73.333	0.00	0.01	0.305	o	|	|	|	|	2.60
73.417	0.00	0.01	0.305	o	|	|	|	|	2.60
73.500	0.00	0.01	0.305	o	|	|	|	|	2.60
73.583	0.00	0.01	0.305	o	|	|	|	|	2.60
73.667	0.00	0.01	0.305	o	|	|	|	|	2.60
73.750	0.00	0.01	0.305	o	|	|	|	|	2.60
73.833	0.00	0.01	0.305	o	|	|	|	|	2.60
73.917	0.00	0.01	0.305	o	|	|	|	|	2.60
74.000	0.00	0.01	0.305	o	|	|	|	|	2.60
74.083	0.00	0.00	0.305	o	|	|	|	|	2.60
74.167	0.00	0.00	0.305	o	|	|	|	|	2.60
74.250	0.00	0.00	0.305	o	|	|	|	|	2.60
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74.500	0.00	0.00	0.305	o	|	|	|	|	2.60
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74.667	0.00	0.00	0.305	o	|	|	|	|	2.60
74.750	0.00	0.00	0.305	o	|	|	|	|	2.60
74.833	0.00	0.00	0.305	o	|	|	|	|	2.60

74.917	0.00	0.00	0.305	o	|	|	|	|	2.60
75.000	0.00	0.00	0.305	o	|	|	|	|	2.60
75.083	0.00	0.00	0.305	o	|	|	|	|	2.60
75.167	0.00	0.00	0.305	o	|	|	|	|	2.60
75.250	0.00	0.00	0.305	o	|	|	|	|	2.60
75.333	0.00	0.00	0.304	o	|	|	|	|	2.60
75.417	0.00	0.00	0.304	o	|	|	|	|	2.60
75.500	0.00	0.00	0.304	o	|	|	|	|	2.60
75.583	0.00	0.00	0.304	o	|	|	|	|	2.60
75.667	0.00	0.00	0.304	o	|	|	|	|	2.60
75.750	0.00	0.00	0.304	o	|	|	|	|	2.60
75.833	0.00	0.00	0.304	o	|	|	|	|	2.60
75.917	0.00	0.00	0.304	o	|	|	|	|	2.60
76.000	0.00	0.00	0.304	o	|	|	|	|	2.60
76.083	0.00	0.00	0.304	o	|	|	|	|	2.60
76.167	0.00	0.00	0.304	o	|	|	|	|	2.60
76.250	0.00	0.00	0.304	o	|	|	|	|	2.60
76.333	0.00	0.00	0.304	o	|	|	|	|	2.60
76.417	0.00	0.00	0.304	o	|	|	|	|	2.60
76.500	0.00	0.00	0.304	o	|	|	|	|	2.60
76.583	0.00	0.00	0.304	o	|	|	|	|	2.60
76.667	0.00	0.00	0.304	o	|	|	|	|	2.60
76.750	0.00	0.00	0.304	o	|	|	|	|	2.60
76.833	0.00	0.00	0.304	o	|	|	|	|	2.60
76.917	0.00	0.00	0.304	o	|	|	|	|	2.60
77.000	0.00	0.00	0.304	o	|	|	|	|	2.60
77.083	0.00	0.00	0.304	o	|	|	|	|	2.60
77.167	0.00	0.00	0.304	o	|	|	|	|	2.60
77.250	0.00	0.00	0.304	o	|	|	|	|	2.60
77.333	0.00	0.00	0.304	o	|	|	|	|	2.60
77.417	0.00	0.00	0.304	o	|	|	|	|	2.60
77.500	0.00	0.00	0.304	o	|	|	|	|	2.60
77.583	0.00	0.00	0.304	o	|	|	|	|	2.60
77.667	0.00	0.00	0.304	o	|	|	|	|	2.60
77.750	0.00	0.00	0.304	o	|	|	|	|	2.60
77.833	0.00	0.00	0.304	o	|	|	|	|	2.60
77.917	0.00	0.00	0.304	o	|	|	|	|	2.60
78.000	0.00	0.00	0.304	o	|	|	|	|	2.60
78.083	0.00	0.00	0.304	o	|	|	|	|	2.60
78.167	0.00	0.00	0.304	o	|	|	|	|	2.60
78.250	0.00	0.00	0.304	o	|	|	|	|	2.60
78.333	0.00	0.00	0.304	o	|	|	|	|	2.60
78.417	0.00	0.00	0.304	o	|	|	|	|	2.60
78.500	0.00	0.00	0.304	o	|	|	|	|	2.60
78.583	0.00	0.00	0.304	o	|	|	|	|	2.60
78.667	0.00	0.00	0.304	o	|	|	|	|	2.60
78.750	0.00	0.00	0.304	o	|	|	|	|	2.60
78.833	0.00	0.00	0.304	o	|	|	|	|	2.60
78.917	0.00	0.00	0.304	o	|	|	|	|	2.60
79.000	0.00	0.00	0.304	o	|	|	|	|	2.60
79.083	0.00	0.00	0.304	o	|	|	|	|	2.60
79.167	0.00	0.00	0.304	o	|	|	|	|	2.60
79.250	0.00	0.00	0.304	o	|	|	|	|	2.60
79.333	0.00	0.00	0.304	o	|	|	|	|	2.60
79.417	0.00	0.00	0.304	o	|	|	|	|	2.60
79.500	0.00	0.00	0.303	o	|	|	|	|	2.60
79.583	0.00	0.00	0.303	o	|	|	|	|	2.60
79.667	0.00	0.00	0.303	o	|	|	|	|	2.60
79.750	0.00	0.00	0.303	o	|	|	|	|	2.60
79.833	0.00	0.00	0.303	o	|	|	|	|	2.60
79.917	0.00	0.00	0.303	o	|	|	|	|	2.60
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80.167	0.00	0.00	0.303	o	|	|	|	|	2.60
80.250	0.00	0.00	0.303	o	|	|	|	|	2.60
80.333	0.00	0.00	0.303	o	|	|	|	|	2.60
80.417	0.00	0.00	0.303	o	|	|	|	|	2.60
80.500	0.00	0.00	0.303	o	|	|	|	|	2.60
80.583	0.00	0.00	0.303	o	|	|	|	|	2.60
80.667	0.00	0.00	0.303	o	|	|	|	|	2.60
80.750	0.00	0.00	0.303	o	|	|	|	|	2.60
80.833	0.00	0.00	0.303	o	|	|	|	|	2.60
80.917	0.00	0.00	0.303	o	|	|	|	|	2.60
81.000	0.00	0.00	0.303	o	|	|	|	|	2.60
81.083	0.00	0.00	0.303	o	|	|	|	|	2.60

81.167	0.00	0.00	0.303	o	|	|	|	2.60
81.250	0.00	0.00	0.303	o	|	|	|	2.60
81.333	0.00	0.00	0.303	o	|	|	|	2.60
81.417	0.00	0.00	0.303	o	|	|	|	2.60
81.500	0.00	0.00	0.303	o	|	|	|	2.60
81.583	0.00	0.00	0.303	o	|	|	|	2.60
81.667	0.00	0.00	0.303	o	|	|	|	2.60
81.750	0.00	0.00	0.303	o	|	|	|	2.60
81.833	0.00	0.00	0.303	o	|	|	|	2.60
81.917	0.00	0.00	0.303	o	|	|	|	2.60
82.000	0.00	0.00	0.303	o	|	|	|	2.60
82.083	0.00	0.00	0.303	o	|	|	|	2.60
82.167	0.00	0.00	0.303	o	|	|	|	2.60
82.250	0.00	0.00	0.303	o	|	|	|	2.60
82.333	0.00	0.00	0.303	o	|	|	|	2.60
82.417	0.00	0.00	0.303	o	|	|	|	2.60
82.500	0.00	0.00	0.303	o	|	|	|	2.60
82.583	0.00	0.00	0.303	o	|	|	|	2.60
82.667	0.00	0.00	0.303	o	|	|	|	2.60
82.750	0.00	0.00	0.303	o	|	|	|	2.60
82.833	0.00	0.00	0.303	o	|	|	|	2.60
82.917	0.00	0.00	0.303	o	|	|	|	2.60
83.000	0.00	0.00	0.303	o	|	|	|	2.60
83.083	0.00	0.00	0.303	o	|	|	|	2.60
83.167	0.00	0.00	0.303	o	|	|	|	2.60
83.250	0.00	0.00	0.303	o	|	|	|	2.60
83.333	0.00	0.00	0.303	o	|	|	|	2.60
83.417	0.00	0.00	0.303	o	|	|	|	2.60
83.500	0.00	0.00	0.303	o	|	|	|	2.60
83.583	0.00	0.00	0.303	o	|	|	|	2.60
83.667	0.00	0.00	0.303	o	|	|	|	2.60

Remaining water in basin = 0.30 (Ac.Ft)

**********HYDROGRAPH DATA**********

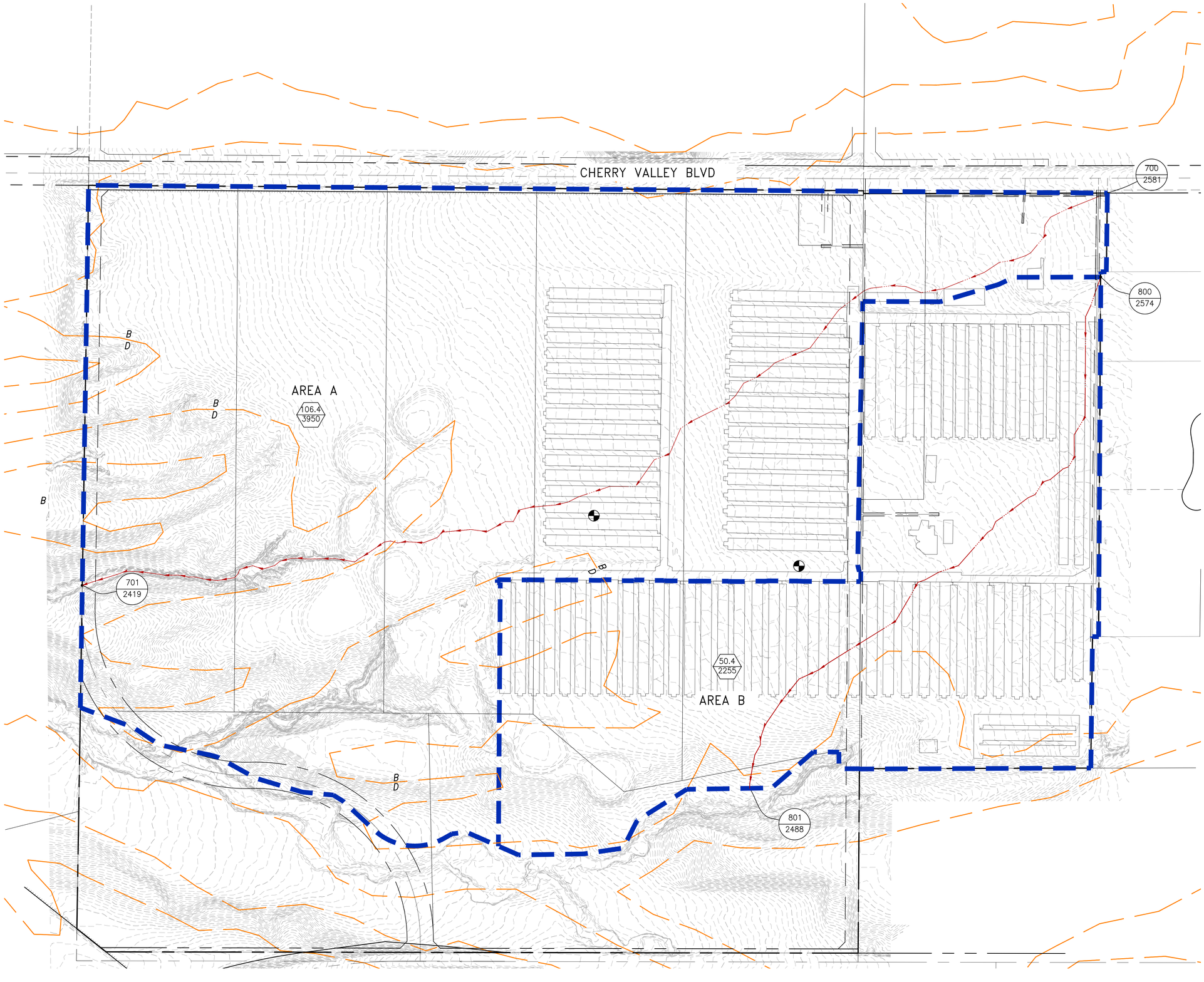
Number of intervals = 1004
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 3.314 (CFS) WEST AREA
Total volume = 7.415 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

Hydrology Maps



EXISTING AREA A	
TOTAL AREA	106.4 AC
L_T	3950 Ft
L_{CA}	1805 Ft
ΔH	162.0 Ft

EXISTING AREA B	
TOTAL AREA	50.4 AC
L_T	2255 Ft
L_{CA}	615 Ft
ΔH	86.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER – ELEVATION (FT)

AC / FT – AREA (AC) – LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W WEBB E S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 6
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE:	1"=X'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/10/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 1
DESIGNED:	EP		OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

H:\2021\21-0044\DRAINAGE\HYD\DWG FOLDER\21-0044-UH MAPS 2021-06-17.DWG 2/23/2022 3:27:49 PM

CHERRY VALLEY BLVD

AREA A

88.8 ACRES

AREA B

17.7 ACRES

B
D

LEGEND

- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY

PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED WEST AREA (83.4% AREA A)

PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED NORTH AREA (16.6% AREA A)

N
W WEBB E
S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 7
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION AREA A PORTIONS
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE: 8/10/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 2
DESIGNED: EP		OF 3 SHEETS
CHECKED:		DWG. NO.
PLN CK REF:		
F.B.		

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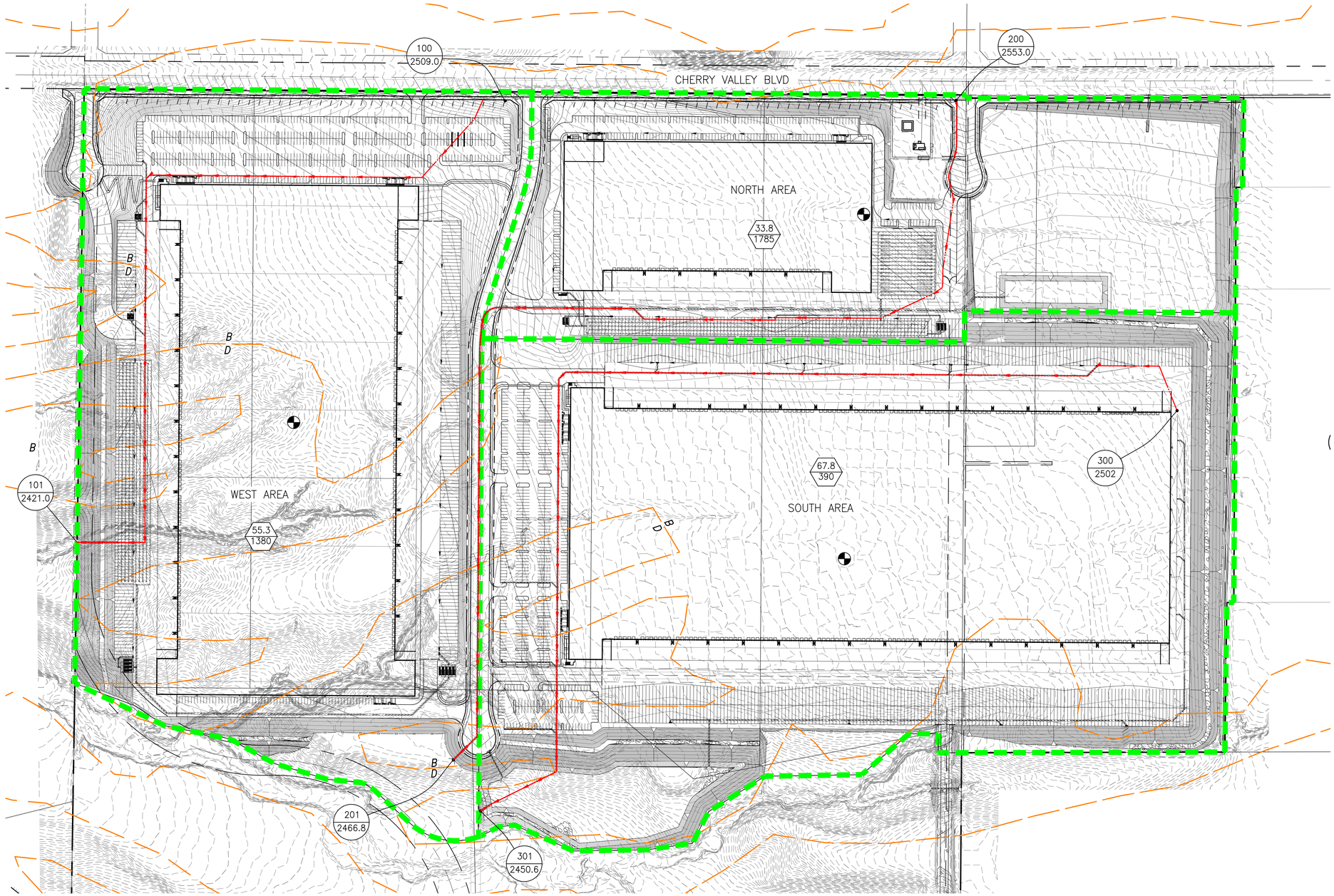

PROPOSED WEST AREA	
TOTAL AREA	55.3 AC
L_T	1380 Ft
L_{CA}	695 Ft
ΔH	12.0 Ft

PROPOSED NORTH AREA	
TOTAL AREA	33.8 AC
L_T	1785 Ft
L_{CA}	1340 Ft
ΔH	27.0 Ft

PROPOSED SOUTH AREA	
TOTAL AREA	67.8 AC
L_T	390 Ft
L_{CA}	360 Ft
ΔH	9.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER / ELEVATION (FT)

AC / FT – AREA (AC) / LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W E S WEBB

1" = 150'

150 0 150 300 450

PRELIMINARY

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CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 8
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 7/20/2021			SHEET 3
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ A. **On-site storm drain inlets**	☒ **Locations of inlets.**	☒ **Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.**	☒ **Maintain and periodically repaint or replace inlet markings.** ☒ **Provide stormwater pollution prevention information to new site owners, lessees, or operators.** ☒ **See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** ☒ **Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."**
☒ B. **Interior floor drains and elevator shaft sump pumps**		☒ **State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.**	☒ **Inspect and maintain drains to prevent blockages and overflow.**
☐ C. **Interior parking garages**		☐ **State that parking garage floor drains will be plumbed to the sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ D1. **Need for future indoor & structural pest control**		☒ **Note building design features that discourage entry of pests.**	☒ **Provide Integrated Pest Management information to owners, lessees, and operators.**
☒ D2. **Landscape/ Outdoor Pesticide Use**	☐ **Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.** ☐ **Show self-retaining landscape areas, if any.** ☒ **Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)**	**State that final landscape plans will accomplish all of the following.** ☒ **Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.** ☒ **Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.** ☒ **Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.** ☒ **Consider using pest-resistant plants, especially adjacent to hardscape.** **To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.**	☒ **Maintain landscaping using minimum or no pesticides.** ☒ **See applicable operational BMPs in "What you should know for…..Landscape and Gardening"** at http://rcflood.org/stormwater/**Error! Hyperlink reference not valid.** ☒ **Provide IPM information to new owners, lessees and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ E. **Pools, spas, ponds, decorative fountains, and other water features.**	☐ **Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)**	**If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.**	☐ **See applicable operational BMPs in** "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/
☐ F. **Food service**	☐ **For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.** ☐ **On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.**	☐ **Describe the location and features of the designated cleaning area.** ☐ **Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.**	☐ **See the brochure, "**The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ **Provide this brochure to new site owners, lessees, and operators.**
☒ G. **Refuse areas**	☒ **Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.** ☒ **If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.** ☒ **Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.**	☒ **State how site refuse will be handled and provide supporting detail to what is shown on plans.** ☒ **State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.**	☒ **State how the following will be implemented:** **Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at** www.cabmphandbooks.com

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ H. **Industrial processes.**	☒ **Show process area.**	☒ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	☒ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ I. **Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)**	❑ **Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.** ❑ **Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.** ❑ **Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.**	**Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.** **Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:** ▪ **Hazardous Waste Generation** ▪ **Hazardous Materials Release Response and Inventory** ▪ **California Accidental Release (CalARP)** ▪ **Aboveground Storage Tank** ▪ **Uniform Fire Code Article 80 Section 103(b) & (c) 1991** ▪ **Underground Storage Tank** **www.cchealth.org/groups/hazmat/**	❑ **See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ J. **Vehicle and Equipment Cleaning**	❑ **Show on drawings as appropriate:** **(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.** **(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).** **(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.** **(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.**	❑ **If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.**	**Describe operational measures to implement the following (if applicable):** ❑ **Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.** Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ ❑ **Car dealerships and similar may rinse cars with water only.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ K. **Vehicle/Equipment Repair and Maintenance**	❑ **Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.** ❑ **Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.** ❑ **Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.**	❑ **State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.** ❑ **State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.** ❑ **State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.**	**In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:** ❑ **No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.** ❑ **No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.** ❑ **No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.** Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ L. **Fuel Dispensing Areas**	❑ **Fueling areas[6] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.** ❑ **Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.**		❑ **The property owner shall dry sweep the fueling area routinely.** ❑ **See the Fact Sheet SD-30 , "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

[6] **The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ M. **Loading Docks**	☒ **Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.** ☒ **Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.** ☒ **Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.**		☒ **Move loaded and unloaded items indoors as soon as possible.** ☒ **See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ N. **Fire Sprinkler Test Water**		☒ **Provide a means to drain fire sprinkler test water to the sanitary sewer.**	☒ **See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**
☒ O. **Miscellaneous Drain or Wash Water or Other Sources** ☐ **Boiler drain lines** ☐ **Condensate drain lines** ☐ **Rooftop equipment** ☐ **Drainage sumps** ☐ **Roofing, gutters, and trim.** ☐ **Other sources**		☒ **Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.** ☒ **Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.** ☒ **Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.** ☒ **Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.** ☒ **Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.** **Include controls for other sources as specified by local reviewer.**	

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ P. **Plazas, sidewalks, and parking lots.**			☒ **Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.**

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Recorded at the request of:
COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT

THIS INSTRUMENT IS FOR THE BENEFIT
OF THE COUNTY OF RIVERSIDE AND
ENTITLED TO BE RECORDED WITHOUT
FEE.(GOV. CODE 6103)

RETURN TO:
RIVERSIDE COUNTY TRANSPORTATION
DEPARTMENT. **STOP NO. 1080**

COVENANT AND AGREEMENT REGARDING WATER QUALITY MANAGEMENT PLAN BMP, CONSENT TO INSPECT, MAINTENANCE AND INDEMNIFICATION

APN:_____PROJECT No._____IP No._____

OWNER(S):_____

PROPERTY ADDRESS:_____

LEGAL DESCRIPTION: See attached Exhibit A; File No.: NCS-xxxx_____
_____
_____

THIS AGREEMENT is made and entered into in Riverside County, California, this day of_____Year 2022, by and between_____, (hereinafter referred to as "Covenantor" or "Owner") and the COUNTY OF RIVERSIDE via its Department of Transportation, a political subdivision of the State of California (hereinafter referred to as "County").

RECITALS

WHEREAS, the Covenantor owns real property ("Property") in the County of Riverside, State of California, more specifically described in Exhibit "A" and depicted in Exhibit "B", each of these exhibits is attached, and incorporated herein by this reference;

WHEREAS, the County is the owner of interests in that certain real property within the unincorporated area of the County of Riverside, State of California, containing storm drains, pipelines, and related appurtenances constituting the County's municipal separate storm sewer system (the County's "MS4");

WHEREAS, Covenantor intends to develop, improve, and/or use the Property is such a way that approval by the County for such development, improvement, and/or use is required pursuant to applicable laws;

WHEREAS, As a condition for said approval by the County, County required Covenantor, and Covenantor desires to, restrict the use of the Property according to the conditions, covenants, equitable servitudes, and restrictions contained herein for the express benefit of the County's MS4, which include requirements that the Property incorporate post construction on-site stormwater quality control measures;

WHEREAS, the Covenantor/Owner has chosen to install one or more bioretention basin and underground chambers, hereinafter referred to as "Device", as the on-site control measure to minimize pollutants in urban runoff;

WHEREAS, said Device has been installed in accordance with plans and specifications accepted by the County;

WHEREAS, said Device, with installation on private property and draining only private property, is a private facility with all maintenance or replacement, therefore, the sole responsibility of the Covenantor/Owner in accordance with the terms of this Agreement;

WHEREAS, the Covenantor/Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of Device and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining; to confined space and waste disposal methods, in effect at the time such maintenance occurs;

NOW THEREFORE, incorporating the foregoing Recitals and in consideration of the covenants and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and expressly for the benefit of, and to bind, their successors in interest, the parties hereto agree as follows:

1. Covenantor/Owner hereby provides the County or County's designee complete access to the Device and its immediate vicinity and such access onto the property to permit access to the devise at any time, upon twenty-four *(24)* hour advance notice in writing, of any duration for the purpose of inspection, sampling and testing of the Device. County shall make every effort at all times to minimize or avoid interference with Owner's use of the Property.

2. Covenantor/Owner shall use its best efforts diligently to maintain the Device in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of material(s) from the Device and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested

from time to time by the County / Regional Water Quality Control Board (RWQCB), the Owner shall provide the RWQCB with documentation identifying the material(s) removed, the quantity, and disposal destination.

3. In the event Covenantor/Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) days of being given written notice by the County, the County is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense to the Owner or Owner's successors or assigns, including administrative costs and interest thereon at the maximum rate authorized by the Civil Code from the date of notice of expense until paid in full.

4. The County may require the Covenantor/Owner to post security in a form and for a time period satisfactory to the County to guarantee the performance of the obligations stated herein. Should the Owner fail to perform the obligations under this Agreement, the County may, in the case of a cash deposit, certificate of deposit or letter of credit, act for the Owner using the proceeds from it, or in the case of a surety bond, require the sureties to perform the obligations of the Agreement.

5. The County may, but shall not be obligated to, enforce this Agreement by a proceeding at law or in equity against any person or persons violating or attempting to violate any condition, covenant, equitable servitude, or restriction provided for herein, either to restrain such violation or to recover damages.

6. This Agreement constitutes the entire agreement and understanding between the parties with respect to the subject matter of this Agreement and supersedes all prior or contemporaneous agreements and understandings with respect to the subject matter hereof, whether oral or written.

7. If any part of this Agreement is declared by a final decision of a court of competent jurisdiction to be invalid for any reason, such shall not affect the validity of the rest of the Agreement. The other parts of this Agreement shall remain in effect as if this Agreement had been executed without the invalid parts(s). The parties declare that they intend and desire that the remaining parts of this Agreement continue to be effective without any part(s) that have been declared invalid.

8. This Agreement may be executed in counterparts, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an original, and all such counterparts together shall constitute one and the same instrument.

9. This Agreement shall be recorded in the Office of the Recorder of Riverside County, California and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth.

10. In the event of legal action occasioned by any default or action of the Covenantor/Owner, or its successors or assigns, then the Covenantor/Owner and its

successors or assigns agree(s) to pay all costs incurred by the County in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

11. Covenantor/Owner agrees to indemnify, defend, and hold harmless the County, its elected officers, employees, agents, and contractors from and against any and all liability, expense, including costs and reasonable legal fees, and claims of damage of any nature whatsoever including, but not limited to, death, bodily injury, personal injury, or property damage arising from or connected with the County inspection of the Property except where such liability, expense, or claim for damage results from the sole negligence or willful misconduct of the County.

12. It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien thereon against.

13. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto and any other present or future interest holders or estate holders in the property. The term "Owner" shall include not only the present Owner, but also its heirs, successors in interest and in title to the property, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of this Agreement. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the County at the same time such notice is provided to the successor.

14. Time is of the essence in the performance of this Agreement.

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15. Any notice to a party required or called for in this Agreement shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two *(72)* hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

COVENANTOR/OWNER:

COUNTY:

Riverside County Department of Transportation
Attn: Transportation Director
4080 Lemon Street
Riverside, CA

COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT

_____ _____
Patricia Romo, P.E. Date
Director of Transportation

_____ _____
(Attest) Date

COVENANTOR/OWNER

_____
Company/Corporation/Partnership

_____
(Print Name)

_____
(Print Title)

Attach Notary

Maintenance Plan for
Summit Station – Building 1

Date:_____

Project Address and Cross Streets_____

Assessor's Parcel No.: _____

Property Owner: _____ Phone No.:_____

Designated Contact: _____ Phone No.:_____

Mailing Address:_____

The property contains key drainage facilities located as described below and as shown in the attached site plan. It also contains many small, but critical, drainage source controls.

DMA 1

- **Bioretention Basin** is located in the southeastern landscaped area of the eastern parking lot.
- **Underground Chambers** are in the western truck court.

I. Routine Maintenance Activities

Primary maintenance activities include vegetation management and sediment removal, although mosquito abatement is a concern if the basin is designed to include permanent pools of standing water. Routine maintenance activities, and the frequency at which they will be conducted, are shown in Table 1.

Table 1
Routine Maintenance Activities for Drainage Facilities

No.	Maintenance Task	Frequency of Task
1	Inspect the storm drain outlet. Look for obstructions, vegetation, debris, litter, sediment, etc. blocking the outlet. Check for bushes, trees, or other dense vegetation growing immediately in front of the outlet. Inspect and maintain source controls found in Appendix 8.	Before each rainy season
2	Inspect the entire storm drain system from the upstream end to the outfall including both underground chamber systems. Observe the flow of water. Any evidence of ponding in the bioretention area indicates a blockage.	Before each rainy season and after the first heavy rain.
3	Inspect all subdrain cleanouts. Ensure that all cleanout caps are present. Look for obstructions, debris, trash, leaves, vegetation, etc. growing inside the subdrain or covering the cleanout.	Before each rainy season
4	Evaluate health of vegetation and remove and replace any dead or dying plants. Remove all green waste and dispose of properly.	Twice a year
5	Inspect slope between flow inlets and treatment facility. Look for gullies, washouts, evidence of uncontrolled surface water flow or any other evidence of distress to the slope.	Before each rainy season
6	Remove sediment from lift station and underground chambers.	Check twice a year before each rainy season and after the first heavy rain. Maintain as needed
7	Remove accumulated sediment in storage basin and regrade when the accumulated sediment volume exceeds 20% of basin volume and dispose of sediment properly.	Every 15 years, or as needed

8	Inspect for growth of trees or invasive plants in grassy bioretention area.	Each month
9	Test the irrigation system. Observe whether all grassy areas in the bioretention and storage areas are receiving the correct amount of water. Observe whether excessive irrigation is creating flow in the subdrains (irrigation should not cause any flow in subdrain).	Before each dry season and each month throughout the dry season.
10	Inspect drainage facilities using the attached inspection checklist.	Quarterly, or as needed
11	Maintain vegetation landscaping and the irrigation system. Prune and weed to keep self-retaining and self-treating areas neat and orderly in appearance.	Before wet season begins, or as needed

II. Prohibitions

The use of pesticides and quick release fertilizers shall be minimized, and the principles of integrated pest management (IPM) followed:

1. Employ non-chemical controls (biological, physical and cultural controls) before using chemicals to treat a pest problem.
2. Prune plants properly and at the appropriate time of year.
3. Provide adequate irrigation for landscape plants. Do not over water.
4. Limit fertilizer use unless soil testing indicates a deficiency. Slow-release or organic fertilizer is preferable. Check with municipality for specific requirements.
5. Pest control should avoid harming non-target organisms, or negatively affecting air and water quality and public health. Apply chemical controls only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, apply the least toxic and the least persistent pesticide that will provide adequate pest control. Do not apply pesticides on a prescheduled basis.
6. Sweep up spilled fertilizer and pesticides. Do not wash away or bury such spills.
7. Do not over apply pesticide. Spray only where the infestation exists. Follow the manufacturer's instructions for mixing and applying materials.
8. Only licensed, trained pesticide applicators shall apply pesticides.
9. Apply pesticides at the appropriate time to maximize their effectiveness and minimize the likelihood of discharging pesticides into runoff. With the exception of pre-emergent pesticides, avoid application if rain is expected.
10. Unwanted/unused pesticides shall be disposed as hazardous waste.

Standing water shall not remain in the treatment and/or hydromodification management measures for more than 3 days, to prevent mosquito generation.

III. Vector Control Contacts

Riverside County Environmental Health
951.766.9454 Vector Control at County Environmental Health

IV. Inspections

The attached Inspection and Maintenance Checklist shall be used to conduct inspections monthly (or as needed), identify needed maintenance, and record maintenance that is conducted.

Drainage Facilities
Inspection and Maintenance Checklist

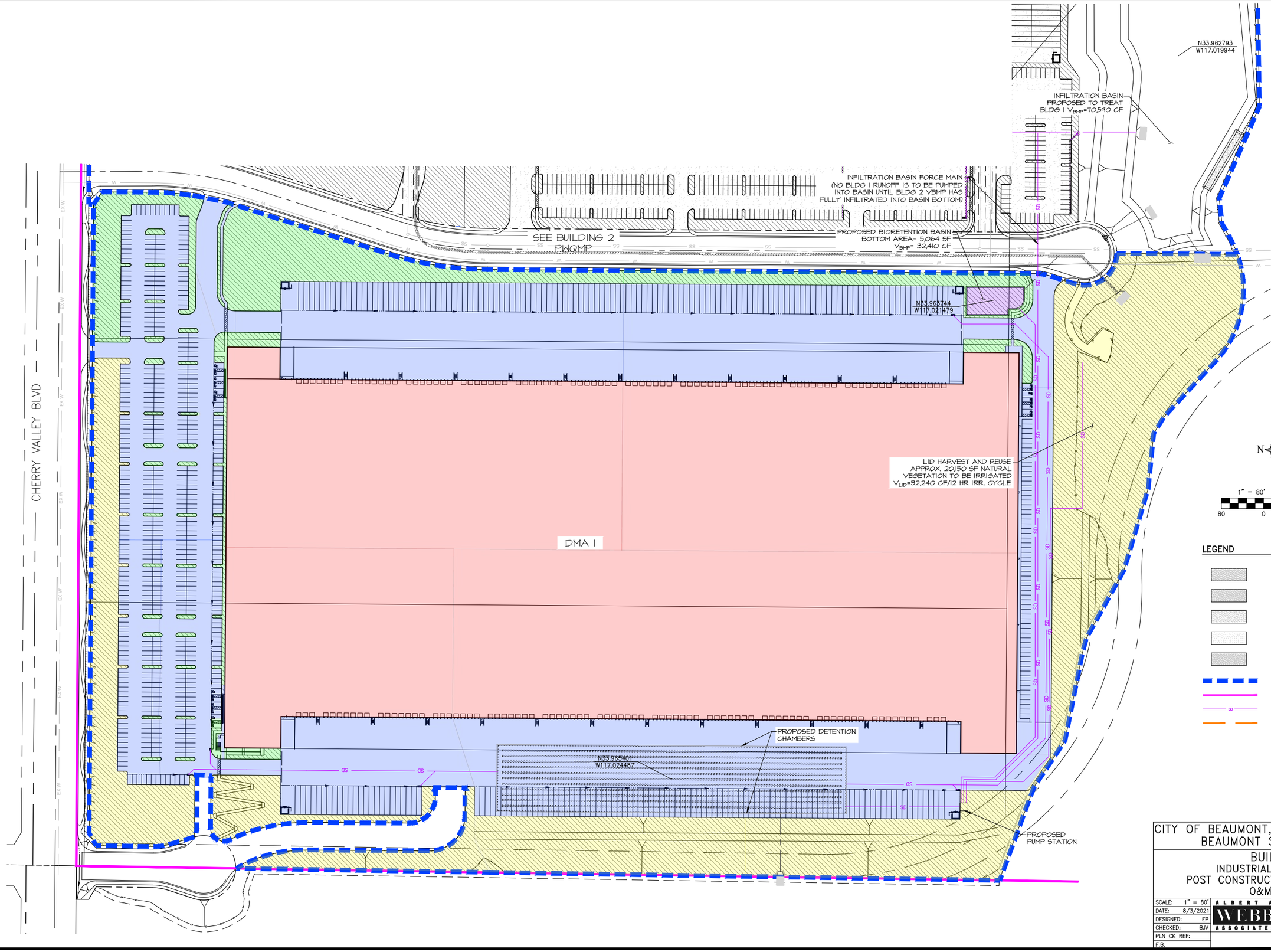
Property Address: _____ Property Owner: _____

Treatment Measure No.: _____ Date of Inspection: _____ Type of Inspection: □ Monthly □ Pre-Wet Season
□ After heavy runoff □ End of Wet Season
Inspector(s): _____ □ Other:_____

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
General				
Standing Water	• When water stands in the modular wetland and underground chamber systems between storms and does not drain within 48 hours after rainfall.			There should be no areas of standing water once inflow has ceased. Any of the following may apply: sediment or trash blockages removed.
Poisonous Vegetation and noxious weeds	Poisonous or nuisance vegetation or noxious weeds, e.g., morning glory, English ivy, reed canary grass, Japanese knotweed, purple loosestrife, blackberry, Scotch broom, poison oak, stinging nettles, or devil's club.			Use Integrated Pest Management techniques to control noxious weeds or invasive species.
Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants.			No contaminants or pollutants present.
Rodent Holes	If facility acts as a dam or berm, any evidence of rodent holes, or any evidence of water piping through dam or berm via rodent holes.			The design specifications are not compromised by holes. Any rodent control activities are in accordance with applicable laws and do not affect any protected species.
Insects	Insects such as wasps and hornets interfere with maintenance activities.			Insects do not interfere with maintenance activities.

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
Tree/Brush Growth and Hazard Trees	• Growth does not allow maintenance access or interferes with maintenance activity. • Dead, diseased, or dying trees.			• Trees do not hinder maintenance activities. • Remove hazard trees as approved by the City. (Use a certified Arborist to determine health of tree or removal requirements).
Drainage time	Standing water remains in chambers or modular wetlands more than five days.			Correct any circumstances that restrict the flow of water from the system. Restore drainage to design condition; may need to maintain chambers and modular wetlands. If the problem cannot be corrected and problems with standing water recur, then mosquitoes should be controlled with larvicides, applied by a licensed pesticide applicator.
Outfall structure	Debris or silt build-up obstructs an outfall structure.			Remove debris and/or silt build-up and dispose of properly.
Storage Area				
Sediment	Accumulated sediment >15% of designed basin depths or affects inletting or outletting condition of the facilities.			Sediment cleaned out to designed basin shapes and depths; basin reseeded if necessary to control erosion. Sediment disposed of properly.
Debris Barriers (e.g., Trash Racks)				
Trash and Debris	Trash and debris accumulated in the chambers and modular wetlands.			Trash and debris removed and disposed of properly.
Damaged/ Missing Bars	Bars are missing, loose, bent out of shape, or deteriorating due to excessive rust.			Bars are repaired or replaced to allow proper functioning of trash rack.
Inlet/Outlet Pipe	Debris barrier is missing or not attached to pipe.			Debris barrier is repaired or replaced to allow proper functioning of trash rack.

Defect	**Conditions When Maintenance Is Needed**	**Maintenance Needed? (Y/N)**	**Comments** (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	**Results Expected When Maintenance Is Performed**
Risers, orifices and screens	Any debris or clogging			Restore unobstructed flow through discharge structure; to meet original design; dispose of debris properly.
Miscellaneous				
Miscellan-ous	Any condition not covered above that needs attention to restore drainage facilities to design conditions.			Meets the design specifications.



DMA 1 AREA TABLE	
ROOFS (SF)	985,860
CONCRETE (SF)	750,724
LANDSCAPE (SF)	119,487
BASIN (SF)	5,060
SELF-TREAT (SF)	390,655
VBMP (CF)	103000

PERVIOUS AREA= 515,202 SF
PERVIOUS = 22.9%

IMPERVIOUS AREA= 1,736,584 SF
IMPERVIOUS = 77.1%

LEGEND

- ROOF
- CONCRETE/ASPHALT
- LANDSCAPE
- SELF-TREATING
- BIORETENTION BASIN
- DMA BOUNDARY
- PROJECT BOUNDARY
- PROPOSED ONSITE STORM DRAIN
- NRCS SOIL BOUNDARY

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION
BUILDING 1
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
O&M EXHIBIT

SCALE:	1" = 80'
DATE:	8/3/2021
DESIGNED:	EP
CHECKED:	BJV
PLN CK REF:	
F.B.	

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O.	21-0044
SHEET	1
OF	1 SHEETS
DWG. NO.	

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Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

BMP TRAINING ACKNOWLEDGEMENT FORM

By signing this form, the undersigned certifies that he/she has received the listed materials and training for the BMP's that he or she is responsible for operation and maintenance or responsible to meet the requirements. The undersigned also acknowledged that punitive actions may be imposed if he or she fails to comply. The punitive actions can be in terms of monetary fine or termination of the contract or the rights that is transferred to the undersigned through contracts. If necessary, the owner or public agencies may complete the corrective actions and billed the undersigned.

Name (Print): _____
Business Name:_____
Title/Position: _____
Signature: _____ Date: _____

Item	Training Description	Related BMP(s)	Handout Materials	Initials	Comments

For Information:

Local Sewering Agencies in Riverside County:

City of Beaumont	(909) 769-8520
Belair Homeowners Association	(909) 277-1414
City of Banning	(909) 922-3130
City of Blythe	(760) 922-6161
City of Coachella	(760) 391-5008
Coachella Valley Water District	(760) 398-2651
City of Corona	(909) 736-2259
Desert Center, CSA #51	(760) 227-3203
Eastern Municipal Water District	(909) 928-3777
Elsinore Valley MWD	(909) 674-3146
Farm Mutual Water Company	(909) 244-4198
Idyllwild Water District	(909) 659-2143
Jurupa Community Services Dist.	(909) 685-7434
Lake Hemet MWD	(909) 658-3241
Lee Lake Water District	(909) 277-1414
March Air Force Base	(909) 656-7000
Mission Springs Water District	(760) 329-6448
City of Palm Springs	(760) 323-8242
Rancho Caballero	(909) 780-9272
Rancho California Water Dist.	(909) 676-4101
Ripley, CSA #62	(760) 922-4909
Rubidoux Community Services Dist.	(909) 684-7580
City of Riverside	(909) 782-5341
Silent Valley Club, Inc	(909) 849-4501
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(909) 780-4170

Spill Response Agency:
Haz-Mat: (909) 358-5055
Hazardous Waste Disposal: (909) 358-5055
To Report Illegal Dumping or a Clogged Storm Drain: 1-800-506-2555

StormWater CleanWater
PROTECTION PROGRAM

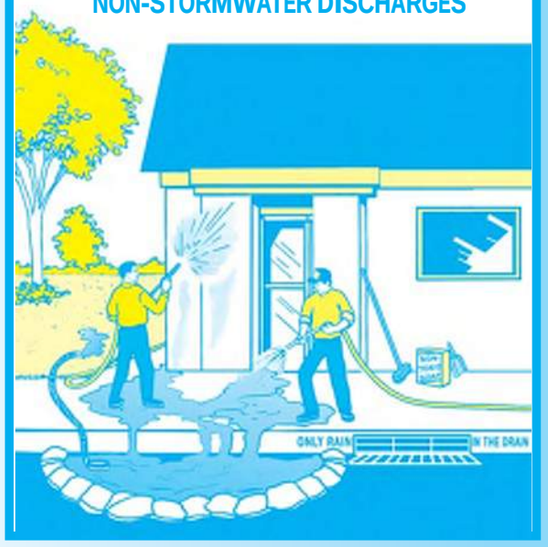
Riverside County gratefully acknowledges the Bay Area Stormwater Management Agencies Association and the Cleaning Equipment Trade Association for information provided in this brochure.

StormWater Pollution

What you should know for...

OUTDOOR CLEANING ACTIVITIES

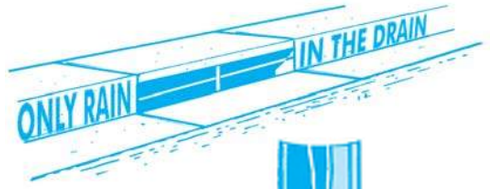
NON-STORMWATER DISCHARGES



GUIDELINES for disposal of washwater from:

- Sidewalk, plaza or parking lot cleaning
- Vehicle washing or detailing
- Building exterior cleaning
- Waterproofing
- Equipment cleaning or degreasing

Do you know . . . where the water should go?



Riverside County has two drainage systems - sanitary sewers and storm drains. The storm drain system is designed to prevent flooding by carrying excess rainwater away from streets. . . it's not designed to be a waste disposal system. Since the storm drain system does not provide for water treatment, it often serves the unintended function of transporting pollutants directly to our waterways.

Unlike sanitary sewers, storm drains are not connected to a treatment plant - they flow directly to our local streams, rivers and lakes.

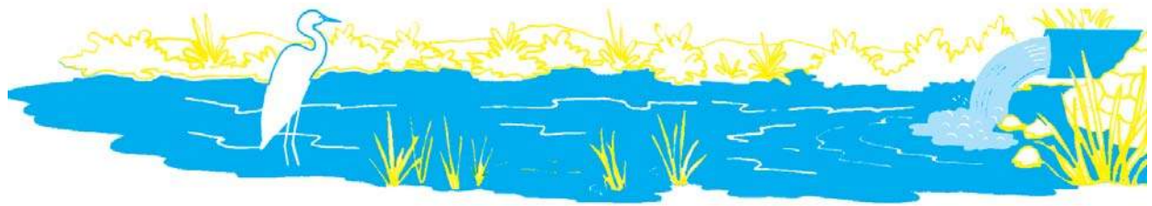
Non-stormwater discharges such as washwater generated from outdoor cleaning projects often transport harmful pollutants into storm drains and our local waterways. Polluted runoff contaminates local waterways and poses a threat to groundwater resources.

Soaps, degreasers, automotive fluids, litter, and a host of other materials washed off buildings, sidewalks, plazas, parking areas, vehicles, and equipment can all pollute our waterways.

The Cities and County of Riverside StormWater/CleanWater Protection Program

Since preventing pollution is much easier, and less costly than cleaning up "after the fact," the Cities and County of Riverside StormWater/CleanWater Protection Program informs residents and businesses of pollution prevention activities such as those described in this pamphlet.

The Cities and County of Riverside have adopted ordinances for stormwater management and discharge control. In accordance with state and federal law, these local stormwater ordinances **prohibit** the discharge of wastes into the storm drain system or local surface waters. This includes non-stormwater discharges containing oil, grease, detergents, degreasers, trash, or other waste materials.



PLEASE NOTE: The discharge of pollutants into the street, gutters, storm drain system, or waterways - without a Regional Water Quality Control Board permit or waiver - is ***strictly prohibited*** by local ordinances and state and federal law.

Help Protect Our Waterways!

Use These Guidelines For Outdoor Cleaning Activities and Washwater Disposal

DO . . . Dispose of **small amounts** of **washwater from cleaning building exteriors, sidewalks, or plazas** onto landscaped or unpaved surfaces provided you have the owner's permission and the discharge will not cause flooding or nuisance problems, or flow into a storm drain.

DO NOT . . . Discharge **large amounts** of these types of washwater onto landscaped areas or soil where water may run to a street or storm drain. Wastewater from exterior cleaning may be pumped to a sewer line with specific permission from the local sewering agency.

DO . . . Check with your local sewering agency's policies and requirements concerning waste water disposal. **Water from many outdoor cleaning activities** may be acceptable for disposal to the sewer system. See the list on the back of this flyer for phone numbers of the sewering agencies in your area.

DO NOT . . . Pour **hazardous wastes** or toxic materials into the storm drain or sewer system . . . properly dispose of it instead. When in doubt, contact the local sewering agency! The agency will tell you what types of liquid wastes can be accepted.

DO . . . Understand that **water (without soap) used to remove dust from clean vehicles** may be discharged to a street or storm drain. **Washwater from sidewalk, plaza, and building surface cleaning** may go into a street or storm drain if ALL of the following conditions are met:

1) The surface being washed is free of residual oil stains, debris and similar pollutants by using dry cleanup methods (sweeping, and cleaning any oil or chemical spills with rags or other absorbent materials before using water).
2) Washing is done with water only - no soap or other cleaning materials.
3) You have not used the water to remove paint from surfaces during cleaning.

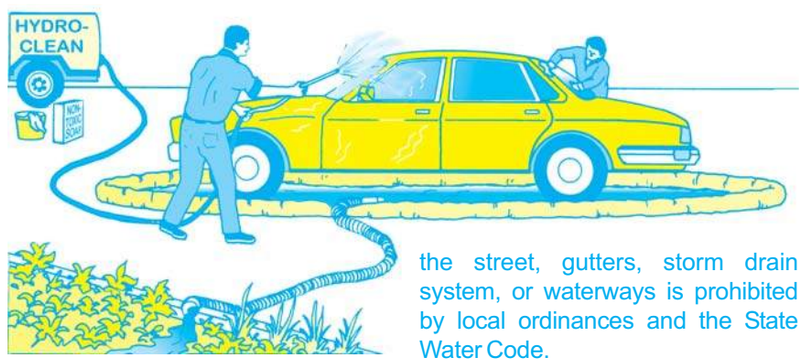
DO NOT . . . Dispose of water containing **soap or any other type of cleaning agent** into a storm drain or water body. This is a direct violation of state and/or local regulations. Because **wastewater from cleaning parking areas or roadways** normally contains metallic brake pad dust, oil and other automotive fluids, it should never be discharged to a street, gutter, or storm drain.

DO . . . Understand that **mobile auto detailers** should divert washwater to landscaped or dirt areas. Note: Be aware that soapy washwater may adversely affect landscaping; consult with the property owner. Residual washwater may remain on paved surfaces to evaporate; sweep up any remaining residue. If there is sufficient water volume to reach the storm drain, collect the runoff and obtain permission to pump it into the sanitary sewer. Follow local sewering agency's requirements for disposal.

DO NOT . . . Dispose of left over cleaning agents into the gutter, storm drain or sanitary sewer.

Regarding Cleaning Agents:

If you must use soap, use biodegradable/phosphate free cleaners. Avoid use of petroleum based cleaning products. Although the use of nontoxic cleaning products is strongly encouraged, ***do*** understand that these products can still degrade water quality and, therefore, the discharge of these products into



the street, gutters, storm drain system, or waterways is prohibited by local ordinances and the State Water Code.

Note: When cleaning surfaces with a high pressure washer or steam cleaning methods, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning, as compared to the use of a low pressure hose, can remove additional materials that can contaminate local waterways.

Other Tips to Help Protect Our Water . . .

Screening Wash Water

A thorough dry cleanup before washing (without soap) surfaces such as building exteriors and decks without loose paint, sidewalks, or plaza areas, *should be sufficient to protect storm drains.* **However**, if any debris (solids) could enter storm drains or remain in the gutter or street after cleaning, washwater should first pass through a "20 mesh" or finer screen to catch the solid material, which should then be disposed of in the trash.

Drain Inlet Protection/ Containing & Collecting Wash Water

- Sand bags can be used to create a barrier around storm drain inlets.
- Plugs or rubber mats can be used to temporarily seal storm drain openings.
- You can also use vacuum booms, containment pads, or temporary berms to keep wash water away from the street, gutter, or storm drain.

Equipment and Supplies

Special materials such as absorbents, storm drain plugs and seals, small sump pumps, and vacuum booms are available from many vendors. For more information check catalogs such as New Pig (800-468-4647), Lab Safety Supply (800-356-0783), C&H (800-558-9966), and W.W. Grainger (800-994-9174); or call the Cleaning Equipment Trade Association (800-441-0111) or the Power Washers of North America (800-393-PWNA).

Helpful telephone numbers and links:

Riverside County Stormwater Protection Partners

Flood Control District	(951) 955-1200
County of Riverside	(951) 955-1000
City of Banning	(951) 922-3105
City of Beaumont	(951) 769-8520
City of Calimesa	(909) 795-9801
City of Canyon Lake	(951) 244-2955
Cathedral City	(760) 770-0327
City of Coachella	(760) 398-4978
City of Corona	(951) 736-2447
City of Desert Hot Springs	(760) 329-6411
City of Eastvale	(951) 361-0900
City of Hemet	(951) 765-2300
City of Indian Wells	(760) 346-2489
City of Indio	(760) 391-4000
City of Lake Elsinore	(951) 674-3124
City of La Quinta	(760) 777-7000
City of Menifee	(951) 672-6777
City of Moreno Valley	(951) 413-3000
City of Murrieta	(951) 304-2489
City of Norco	(951) 270-5607
City of Palm Desert	(760) 346-0611
City of Palm Springs	(760) 323-8299
City of Perris	(951) 943-6100
City of Rancho Mirage	(760) 324-4511
City of Riverside	(951) 361-0900
City of San Jacinto	(951) 654-7337
City of Temecula	(951) 694-6444
City of Wildomar	(951) 677-7751

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555 or e-mail us at
fcnpdes@rcflood.org

- Riverside County Flood Control and Water Conservation District
  www.rcflood.org

Online resources include:

- California Storm Water Quality Association
  www.casqa.org
- State Water Resources Control Board
  www.waterboards.ca.gov
- Power Washers of North America
  www.thepwna.org

Stormwater Pollution

What you should know for...

Outdoor Cleaning Activities and Professional Mobile Service Providers

Storm drain pollution prevention information for:

- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

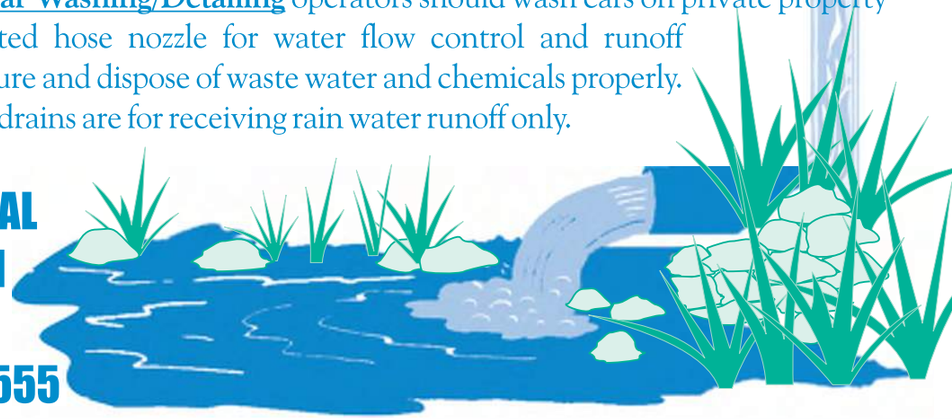
Do you know where street flows actually go?

Storm drains are NOT connected to sanitary sewer systems and treatment plants!

The primary purpose of storm drains is to carry *rain* water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** *Always* have a **Spill Response Kit** on hand to clean up unintentional spills. Only emergency **Mechanical** repairs should be done in City streets, using drip pans for spills. **Plumbing** should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. **Window/Power Washing** waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled **Carpet Cleaning** wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. **Car Washing/Detailing** operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Remember, storm drains are for receiving rain water runoff only.

REPORT ILLEGAL STORM DRAIN DISPOSAL 1-800-506-2555



Help Protect Our Waterways!

Use these guidelines for Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or body of water is *PROHIBITED* by law and can result in stiff penalties?

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. ***Each of us*** can do our part to keep stormwater clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do...consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do...prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do...use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do...obtain the property owner's permission to dispose of ***small amounts*** of power washing waste water on to landscaped, gravel or unpaved surfaces.

Do...check your local sanitary sewer agency's policies on wash water disposal regulations before disposing of wash water into the sewer. (See list on reverse side)

Do...be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do...check to see if local ordinances prevent certain activities.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.

Report illegal storm drain disposal
Call Toll Free
1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them with being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.

When cleaning surfaces with a ***high-pressure washer*** or ***steam cleaner***, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks. Water is a precious resource, don't let it flow freely and be sure to shut it off in between uses.

Screening Wash Water

Conduct thorough dry cleanup before washing exterior surfaces, such as buildings and decks ***with loose paint***, sidewalks or plaza areas. Keep debris from entering the storm drain after cleaning by first passing the wash water through a "20 mesh" or finer screen to catch the solid materials, then dispose of the mesh in a refuse container. Do not let the remaining wash water enter a street, gutter or storm drain.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or other appropriate materials.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Concrete/Coring/Saw Cutting and Drilling Projects

Protect any down-gradient inlets by using dry activity techniques whenever possible. If water is used, minimize the amount of water used during the coring/drilling or saw cutting process. Place a barrier of sandbags and/or absorbent berms to protect the storm drain inlet or watercourse. Use a shovel or wet vacuum to remove the residue from the pavement. Do not wash residue or particulate matter into a storm drain inlet or watercourse.

Landscaping and garden maintenance activities can be major contributors to water pollution. Soils, yard wastes, over-watering and garden chemicals become part of the urban runoff mix that winds its way through streets, gutters and storm drains before entering lakes, rivers, streams, etc. Urban runoff pollution contaminates water and harms aquatic life!

In Riverside County, report illegal discharges into the storm drain, call
1-800-506-2555
"Only Rain Down the Storm Drain"

Important Links:

Riverside County Household Hazardous Waste Collection Information
1-800-304-2226 or www.rivcowm.org

Riverside County Backyard Composting Program
1-800-366-SAVE

Integrated Pest Management (IPM) Solutions
www.ipm.ucdavis.edu

California Master Gardener Programs
www.mastergardeners.org
www.camastergardeners.ucdavis.edu

California Native Plant Society
www.cnps.org

The Riverside County "Only Rain Down the Storm Drain" Pollution Prevention Program gratefully acknowledges Orange County's Storm Water Program for their contribution to this brochure.

...Only Rain Down ...the Storm Drain

What you should know for... Landscape and Gardening

Best Management tips for:

- Professionals
- Novices
- Landscapers
- Gardeners
- Cultivators

Tips for Landscape & Gardening

This brochure will help you to get the most of your lawn and gardening efforts and keep our waterways clean. Clean waterways provide recreation, establish thriving fish habitats, secure safe sanctuaries for wildlife, and add beauty to our communities. NEVER allow gardening products or waste water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.

- Plant native vegetation to reduce the amount of water, fertilizers and pesticides applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro-spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.

- Consider recycling your green waste and adding "nature's own fertilizer" to your lawn or garden.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.
- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains or sewers. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting.
- Try natural long-term common sense solutions first. Integrated Pest Management (IPM) can provide landscaping guidance and solutions, such as:
  - **Physical Controls** - Try hand picking, barriers, traps or caulking holes to control weeds and pests.
  - **Biological Controls** - Use predatory insects to control harmful pests.
  - **Chemical Controls** - Check out www.ipm.ucdavis.edu before using chemicals. Remember, all chemicals should be used cautiously and in moderation.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Waste Collection Center to be recycled.
- *Dumping toxics into the street, gutter or storm drain is illegal!*

www.bewaterwise.com Great water conservation tips and drought tolerant garden designs.

www.ourwaterourworld.com Learn how to safely manage home and garden pests.

Additional information can also be found on the back of this brochure.

For Information:

For more information on the General Industrial Storm Water Permit contact:

State Water Resources Control Board (SWRCB)
(916) 657-1146 or www.swrcb.ca.gov/ or, at your Regional Water Quality Control Board (RWQCB).

Santa Ana Region (8)
California Tower
3737 Main Street, Ste. 500
Riverside, CA 92501-3339
(909) 782-4130

San Diego Region (9)
9771 Clairemont Mesa Blvd., Ste. A
San Diego, CA 92124
(619) 467-2952

Colorado River Basin Region (7)
73-720 Fred Waring Dr., Ste. 100
Palm Desert, CA 92260
(760) 346-7491

SPILL RESPONSE AGENCY:
HAZ-MAT: (909) 358-5055
HAZARDOUS WASTE DISPOSAL: (909) 358-5055
RECYCLING INFORMATION: 1-800-366-SAVE
TO REPORT ILLEGAL DUMPING OR A CLOGGED STORM DRAIN: 1-800-506-2555

To order additional brochures or to obtain information on other pollution prevention activities, call: (909) 955-1111.

StormWater CleanWater
PROTECTION PROGRAM

Riverside County gratefully acknowledges the State Water Quality Control Board and the American Public Works Association, Storm Water Quality Task Force for the information provided in this brochure.

DID YOU KNOW . . .

YOUR FACILITY MAY NEED A STORM WATER PERMIT?

Many industrial facilities and manufacturing operations must obtain coverage under the Industrial Activities Storm Water General Permit

FIND OUT IF YOUR FACILITY MUST OBTAIN A PERMIT

StormWater Pollution . . . What you should know

Riverside County has two drainage systems - sanitary sewers and storm drains. The storm drain system is designed to help prevent flooding by carrying excess rainwater away from streets. Since the storm drain system does not provide for water treatment, it also serves the *unintended* function of transporting pollutants directly to our waterways.

Unlike sanitary sewers, storm drains are not connected to a treatment plant - they flow directly to our local streams, rivers and lakes.

In recent years, awareness of the need to protect water quality has increased. As a result, federal, state, and local programs have been established to reduce polluted stormwater discharges to our waterways. The emphasis of these programs is to prevent stormwater pollution since it's much easier, and less costly, than cleaning up "after the fact."

National Pollutant Discharge Elimination System (NPDES)

In 1987, the Federal Clean Water Act was amended to establish a framework for regulating industrial stormwater discharges under the NPDES permit program. In California, NPDES permits are issued by the State Water Resources Control Board (SWRCB) and the nine (9) Regional Water Quality Control Boards (RWQCB). In general, certain industrial facilities and manufacturing operations must obtain coverage under the Industrial Activities Storm Water General Permit if the type of facilities or operations falls into one of the several categories described in this brochure.

How Do I Know If I Need A Permit?

Following are ***general descriptions*** of the industry categories types that are regulated by the Industrial Activities Storm Water General Permit. Contact your local Region Water Quality Control Board to determine if your facility/operation requires coverage under the Permit.

➜ Facilities such as cement manufacturing; feedlots; fertilizer manufacturing; petroleum refining; phosphate manufacturing; steam electric power generation; coal mining; mineral mining and processing; ore mining and dressing; and asphalt emulsion;

➜ Facilities classified as lumber and wood products (except wood kitchen cabinets); pulp, paper, and paperboard mills; chemical producers (except some pharmaceutical and biological products); petroleum and coal products; leather production and products; stone, clay and glass products; primary metal industries; fabricated structural metal; ship and boat building and repairing;

➜ Active or inactive mining operations and oil and gas exploration, production, processing, or treatment operations;

➜ Hazardous waste treatment, storage, or disposal facilities;

➜ Landfills, land application sites and open dumps that receive or have received any industrial waste; unless there is a new overlying land use such as a golf course, park, etc., and there is no discharge associated with the landfill;

➜ Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards;

➜ Steam electric power generating facilities, facilities that generate steam for electric power by combustion;

➜ Transportation facilities that have vehicle maintenance shops, fueling facilities, equipment cleaning operations, or airport deicing operations. This includes school bus maintenance facilities operated by a school district;

➜ Sewage treatment facilities;

➜ Facilities that have areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water.

How do I obtain coverage under the Industrial Activities Storm Water General Permit?

Obtain a permit application package from your local Regional Water Quality Control Board listed on the back of this brochure or the State Water Resources Control Board (SWRCB). Submit a completed Notice of Intent (NOI) form, site map and the appropriate fee ($250 or $500) to the SWRCB. Facilities must submit an NOI thirty (30) days prior to beginning operation. Once you submit the NOI, the State Board will send you a letter acknowledging receipt of your NOI and will assign your facility a waste discharge identification number (WDID No.). You will also receive an annual fee billing. These billings should roughly coincide with the date the State Board processed your original NOI submittal.

What are the requirements of the Industrial Activities Storm Water General Permit?

The basic requirements of the Permit are:

1. The facility must eliminate any non-stormwater discharges or obtain a separate permit for such discharges.

2. The facility must develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must identify sources of pollutants that may be exposed to stormwater. Once the sources of pollutants have been identified, the facility operator must develop and implement Best Management Practices (BMPs) to minimize or prevent polluted runoff.

   Guidance in preparing a SWPPP is available from a document prepared by the California Storm Water Quality Task Force called the California Storm Water Best Management Practice Handbook.

3. The facility must develop and implement a Monitoring Program that includes conducting visual observations and collecting samples of the facility's storm water discharges associated with industrial activity. The General Permit requires that the analysis be conducted by a laboratory that is certified by the State of California.

4. The facility must submit to the Regional Board, every July 1, an annual report that includes the results of its monitoring program.

A Non-Storm Water Discharge is... *any discharge to a storm drain system that is not composed entirely of storm water. The following non-storm water discharges are authorized by the General Permit: fire hydrant flushing; potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems; drinking fountain water; atmospheric condensates including refrigeration, air conditioning, and compressor condensate; irrigation drainage; landscape watering; springs; non-contaminated ground water; foundation or footing drainage; and sea water infiltration where the sea waters are discharged back into the sea water source.*

A BMP is . . . *a technique, process, activity, or structure used to reduce the pollutant content of a storm water discharge. BMPs may include simple, non-structural methods such as good housekeeping, staff training and preventive maintenance. Additionally, BMPs may include structural modifications such as the installation of berms, canopies or treatment control (e.g. setting basins, oil/water separators, etc.)*

WARNING*: There are significant penalties for non-compliance: a minimum fine of $5,000 for failing to obtain permit coverage, and, up to $10,000 per day, per violation plus $10 per gallon of discharge in excess of 1,000 gallons.*

Stormwater Pollution

What you should know for...

Industrial & Commercial Facilities

Best Management Practices (BMPS) for:

- Industrial Facilities
- Commercial Facilities

Riverside County Stormwater Program Members

City of Banning
(951) 922-3105

City of Beaumont
(951) 769-8520

City of Calimesa
(909) 795-9801

City of Canyon Lake
(951) 244-2955

City of Cathedral City
(760) 770-0340

City of Coachella
(760) 398-3502

City of Corona
(951) 736-2447

City of Desert Hot Springs
(760) 329-6411

City of Eastvale
(951) 361-0900

City of Hemet
(951) 765-2300

City of Indian Wells
(760) 346-2489

City of Indio
(760) 391-4000

City of Jurupa Valley
(951) 332-6464

City of Lake Elsinore
(951) 674-3124

City of La Quinta
(760) 777-7000

City of Menifee
(951) 672-6777

City of Moreno Valley
(951) 413-3000

City of Murrieta
(951) 304-2489

City of Norco
(951) 270-5607

City of Palm Desert
(760) 346-0611

City of Palm Springs
(760) 323-8299

City of Perris
(951) 943-6100

City of Rancho Mirage
(760) 324-4511

City of Riverside
(951) 826-5311

City of San Jacinto
(951) 487-7330

City of Temecula
(951) 694-6444

City of Wildomar
(951) 677-7751

Coachella Valley Water District
(760) 398-2651

County of Riverside
(951) 955-1000

Riverside County Flood Control District
(951) 955-1200

YOU can prevent Stormwater Pollution following these practices...

Industrial and Commercial Facilities

The Riverside County Stormwater Program has identified a number of Best Management Practices (BMPs) for Industrial and Commercial Facilities. These BMPs control and reduce stormwater pollutants from reaching our storm drain system and ultimately our local water bodies. City and County ordinances require businesses to use these BMPs to protect our water quality. Local cities and the County are required to verify implementation of these BMPs by performing regular facility inspections.

Prohibited Discharges

Discontinue all non-stormwater discharges to the storm drain system. It is *prohibited* to discharge any chemicals, paints, debris, wastes or wastewater into the gutter, street or storm drain.

Outdoor Storage BMPs

- Install covers and secondary containment areas for all hazardous materials and wastes stored outdoors in accordance with County and/or City standards.
- Keep all temporary waste containers covered, at all times when not in use.
- Sweep outdoor areas instead of using a hose or pressure washer.
- Move all process operations including vehicle/equipment maintenance inside of the building or under a covered and contained area.
- Wash equipment and vehicles in a contained and covered wash bay which is closed-loop or connected to a clarifier sized to local standards and discharged to a sanitary sewer or take them to a commercial car wash.

Spills and Clean Up BMPs

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep up the area.
- Clean up spills immediately when they occur, using dry clean up methods such as absorbent materials or sweep followed by proper disposal of materials.
- Always have a spill kit available near chemical loading dock doors and vehicle maintenance and fueling areas.
- Follow your Business Emergency Plan, as filed with the local Fire Department.
- Report all prohibited discharges and non-implementation of BMPs to your local Stormwater Coordinator as listed on the back of this pamphlet.
- Report hazardous materials spills to 951-358-5055 or call after hours to 951-782-2973 or, if an emergency, call the Fire Department's Haz Mat Team at 911.

Plastic Manufacturing Facilities BMPs

AB 258 requires plastic product manufacturers to use BMPs, such as safe storage and clean-up procedures to prevent plastic pellets (nurdles) from entering the waterway. The plastic pellets are released into the environment during transporting, packaging and processing and migrate to waterways through the storm drain system. AB 258 will help protect fish and wildlife from the hazards of plastic pollution.

Training BMPs

As prescribed by your City and County Stormwater Ordinance(s), train employees in spill procedures and prohibit non-stormwater discharges to the storm drain system. Applicable BMP examples can be found at www.cabmphandbooks.com.

Permitting

Stormwater discharges associated with specific categories for industrial facilities are regulated by the State Water Resources Control Board through an Industrial Stormwater General Permit. A copy of this General Permit and application forms are available at: www.waterboards.ca.gov, select stormwater then the industrial quick link.

To report illegal dumping or for more information on stormwater pollution prevention call: 1-800-506-2555 or e-mail us at: fcnpdes@rcflood.org.

For Information:

To report illegal dumping or a clogged storm drain
1-800-506-2555

Hazardous Materials Disposal,
Recycling/Disposal Vendors call:
951-486-3200 or 1-800-506-2555

County Code Enforcement Offices
(unincorporated area)
Lake Elsinore/Mead Valley.....951-245-3186
Jurupa Valley.....951-275-8739
Moreno Valley/Banning 951-485-5840
Murrieta So. County 951-600-6140
Thousand Palms District 760-343-4150

Environmental Crimes
1-800-304-6100

Spill Response Agency
1-800-304-2226 or 951-358-5172

Recycling and Hazardous Waste Disposal
1-800-366-SAVE

For pollution prevention brochures or to obtain information on other County Environmental Services, call 1-800-506-2555

Popular links:
www.rcflood.org
www.cabmphandbooks.com
www.cfpub.epa.gov/npdes

ONLY RAIN DOWN THE STORM DRAIN
POLLUTION PREVENTION PROGRAM
1-800-506-2555

Riverside County's "Only Rain Down the Storm Drain" Pollution Prevention Program members include:

Banning
Beaumont
Calimesa
Canyon Lake
Cathedral City
City of Riverside
Corona
Coachella
Coachella Valley Water District
Desert Hot Springs
Hemet
Indian Wells
Indio
Lake Elsinore
La Quinta
Menifee
Murrieta
Moreno Valley
Norco
Palm Desert
Palm Springs
Perris
Rancho Mirage
Riverside County
San Jacinto
Temecula
Wildomar

Stormwater Pollution

What you should know for...

Automotive Maintenance and Car Care

Best Management Practices (BMPS) for:

- Auto Body Shops
- Auto Repair Shops
- Car Dealerships
- Gas Stations
- Fleet Service Operations

Stormwater Pollution...What You Should Know

Riverside County has three major river systems, or watersheds, that are important to our communities and the environment. Improper automotive maintenance, storage and washing activities can cause pollution that endangers the health of these rivers.

Pollutants that can collect on the ground from automotive repair, storage and washing areas such as antifreeze, oil, grease, gas, lubricants, soaps and dirt can be washed into the street by rain, over-irrigation or wash water runoff. Once these pollutants are in the streets they can be carried to these rivers by the storm drain system. Unlike the sewer system, the storm drain system carries water (and pollution) to our rivers without treatment. Pollution from storm drains is a form of storm water pollution.

A common storm water pollution problem associated with automotive shops and businesses is the activity of hosing down service bays without proper capture of runoff water, illegal dumping of fluids to the street or storm drain inlets and not properly storing hazardous materials. Examples of pollutants that can be mobilized by these activities include oil and grease from cars, copper and asbestos from worn break linings, zinc from tires and toxics from spilled fluids.

The Cities and County of Riverside have adopted ordinances, in accordance with state and federal law, which prohibit the discharge of pollutants into the storm drain system or local lakes, rivers or streams. This brochure provides common practices that can prevent storm water pollution and keep your shop in compliance with the law.

Best Management Practices for Auto Body & Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations

Changing Automotive Fluids

- Locate storm drains on or near your property. Do not allow material to flow to these drains.
- Collect, and separately recycle motor oil, antifreeze, transmission fluid and gear oil. Combining waste fluid prevents recycling.
- Drain brake fluid and other non-recyclables into a proper container and handle as a hazardous waste.
- Use a recyclable radiator flushing fluid and discard safely.

Only rain is allowed down the storm drain! Don't be an offender!! Violations of local ordinances are prosecuted to the fullest extent of the law.

Identify specific activities with the potential to cause spills or release pollutants such as oil, grease, fuel, etc. Post signs and train employees on how to prevent and clean up spills during activities.

YOU can prevent Stormwater Pollution following these practices...

Working on Transmissions, Engines and Miscellaneous Repairs

- Keep a drip pan or a wide low-rimmed container under vehicles to catch fluids whenever you unclip hoses, unscrew filters, or change parts, to contain unexpected leaks.
- Drain all fluids from wrecked vehicles into proper containers before disassembly or repair.
- Store batteries indoors, on an open rack.
- Return used batteries to a battery vendor.
- Contain cracked batteries to prevent hazardous spills.
- Catch metal filings in an enclosed unit or on a tarpaulin.
- Sweep filing areas to prevent washing metals into floor drains.

Cleaning Parts

- Clean parts in a self-contained unit, solvent sink, or parts washer to prevent solvents and grease from entering a storm drain.

Fueling Vehicles

- Clean-up minor spills with a dry absorbent, rather than allowing them to evaporate.
- Use a damp cloth and a damp mop to keep the area clean rather than a hose or a wet mop.

Keeping your shop or work area pollutant clean and environmentally safe

- Never hose down your work area, as pollutants could be washed into the storm drain.
- Sweep or vacuum the shop floor frequently.
- Routinely check equipment. Wipe up spills and repair leaks.
- Use large pans or an inflatable portable berm under wrecked cars.
- Avoid spills by emptying and wiping drip pans, when they are half-full.
- Keep dry absorbent materials and/or a wet/dry vacuum cleaner on hand for mid-sized spills.
- Train your employees to be familiar with hazardous spill response plans and emergency procedures.
- Immediately report hazardous material spills that have entered the street or storm drain to OES and local authorities.

Outdoor Parking and Auto Maintenance

- Use covered or controlled areas to prevent offsite spills.
- Sweep-up trash and dirt from outdoor parking and maintenance areas. Do not hose down areas. All non-stormwater discharges to the street of storm drain are prohibited.

Storing and Disposing of Waste

- Store recyclable and non-recyclable waste separately.
- Place liquid waste (hazardous or otherwise) in proper containers with secondary containment.
- Cover outdoor storage areas to prevent contact with rain water.
- Collect used parts for delivery to a scrap metal dealer.

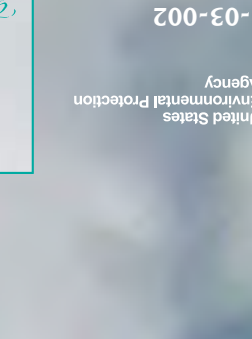
Washing vehicles and steam cleaning equipment

- For car washing, minimize wash water used and use designated areas. Never discharge wash water to the street, gutters or storm drain.
- Be sure to keep waste water from engine parts cleaning or steam cleaning from being discharged to the street, gutter or storm drain.
- Wash vehicles and steam clean with environmentally friendly soaps and polishes.

Selecting and Controlling Inventory

- Purchase recyclable or non-toxic materials.
- Select “closed-loop” suppliers and purchase supplies in bulk.

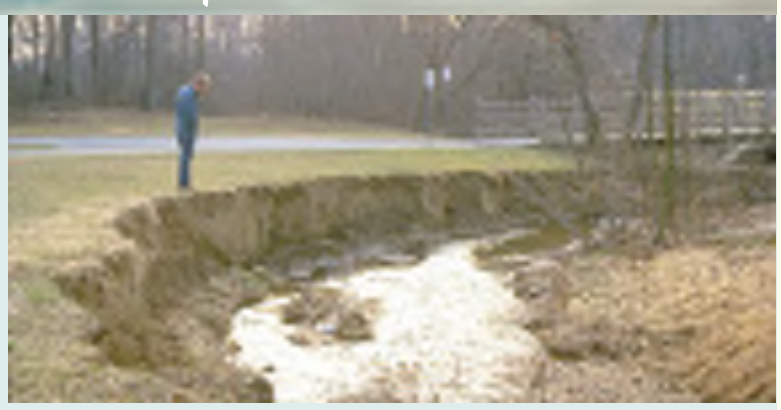
After the Storm



What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is stormwater runoff a problem?



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.

- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

United States Environmental Protection Agency

EPA 833-B-03-002

January 2003

Internet Address (URL) • HTTP://www.epa.gov
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THE YEAR OF CLEAN WATER

Clean Water Environment

A Citizen's Guide to Understanding Stormwater

Stormwater Pollution Solutions

Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

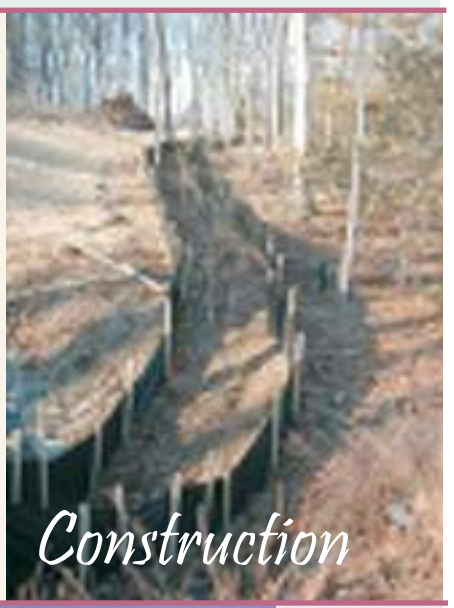
Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.



Construction

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.

Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

Stormwater Pollution Found in Your Area!

This is not a citation.

This is to inform you that our staff found the following pollutants in the storm sewer system in your area. This storm sewer system leads directly to

_____ .

- ❑ Motor oil
- ❑ Oil filters
- ❑ Antifreeze/ transmission fluid
- ❑ Paint
- ❑ Solvent/degreaser
- ❑ Cooking grease
- ❑ Detergent
- ❑ Home improvement waste (concrete, mortar)
- ❑ Pet waste
- ❑ Yard waste (leaves, grass, mulch)
- ❑ Excessive dirt and gravel
- ❑ Trash
- ❑ Construction debris
- ❑ Pesticides and fertilizers
- ❑ Other

_____

For more information or to report an illegal discharge of pollutants, please call:

www.epa.gov/npdes/stormwater

EPA
United States
Environmental Protection
Agency

EPA 833-F-03-002
April 2003

Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up debris, chemicals, dirt, and other pollutants and deposit them into a storm sewer system or waterbody.

Anything that enters a storm sewer system is discharged *untreated* into the waterbodies we use for swimming, fishing, and providing drinking water.

Remember: Only Rain Down the Drain

To keep the stormwater leaving your home or workplace clean, follow these simple guidelines:

- Use pesticides and fertilizers sparingly.
- Repair auto leaks.
- Dispose of household hazardous waste, used auto fluids (antifreeze, oil, etc.), and batteries at designated collection or recycling locations.
- Clean up after your pet.
- Use a commercial car wash or wash your car on a lawn or other unpaved surface.
- Sweep up yard debris rather than hosing down areas. Compost or recycle yard waste when possible.
- Clean paint brushes in a sink, not outdoors. Properly dispose of excess paints through a household hazardous waste collection program.
- Sweep up and properly dispose of construction debris like concrete and mortar.

EPA

Clean Water State Revolving Fund

ACTIVITY *UPDATE*

Innovative use of Clean Water State Revolving Funds for Nonpoint Source Pollution

States are successfully using linked deposit and pass-through loans to fund important nonpoint source pollution remediation projects

Many states are successfully using the USEPA's Office of Water, Clean Water State Revolving Fund (CWSRF) loan program to fund important nonpoint source pollution remediation projects. Nonpoint source pollution is widely viewed as one of the most serious threats to our nation's water quality. State and local governments, local watershed and agricultural organizations, and many others are working to devise solutions that address nonpoint source pollution. The CWSRF program provides very attractive low-interest loans that spread project costs over a repayment period of up to 20 years. Today, CWSRF programs are funding projects that address agriculture runoff, leaking on-site septic systems, and urban nonpoint source pollution, including stormwater runoff and brownfield contamination.

During the initial operating phase of CWSRF programs, states designed loan options and implemented administrative procedures that would best serve municipal wastewater system projects. However, when considering how the CWSRF program could be used to address nonpoint source pollution, a number of states recognized that they would need to go beyond the typical municipal borrower and provide loan assistance to farmers, homeowners, and nonprofit organizations. States also recognized that providing loans to small private borrowers could be challenging. The loans would fund a variety of small projects, there would be more of them to service and manage, and there would be a greater risk of loan defaults.

States have taken different approaches to addressing these challenges. In some states, the CWSRF program has called upon internal expertise and the expertise of other state personnel to help manage loans to private borrowers. Other states have used creative lending approaches that pass loan risks and loan servicing responsibilities to financial institutions, local governments, or other state agencies. These lending methods include linked deposit loan programs with local financial institutions and pass-through loan programs with local government or state agencies. This activity update will highlight these loan structures with three case studies of successful state programs.

What is a linked deposit loan?

Under a linked deposit loan approach, a state works with local private lending institutions to provide assistance for nonpoint source pollution control. The state agrees to accept a reduced rate of return on an investment (e.g., a certificate of deposit) and the lending institution agrees to provide a loan to a borrower at a similarly reduced interest rate. For example, if the typical earnings rate for a certificate of deposit (CD) is five percent, a state might agree to purchase a CD that earns two percent interest, and in exchange, the lending institution agrees to provide a loan to a borrower at an interest rate that is three percentage points lower than the market rate for the borrower. In this program, the CWSRF investment (deposit) is linked to a low-interest loan, thereby earning the description "linked deposit loan."

Linked deposit loan programs provide benefits for CWSRF programs, local financial institutions, and borrowers. The linked-deposit approach benefits CWSRF programs because they support high priority nonpoint source projects and because they place risk and management responsibilities with local financial institutions. Financial institutions earn profits from the linked deposit agreements and add an additional service for their customers. Borrowers find linked deposit programs to be economical and comfortable; they save money with low-interest loans, and they are comfortable working with local financial institutions.

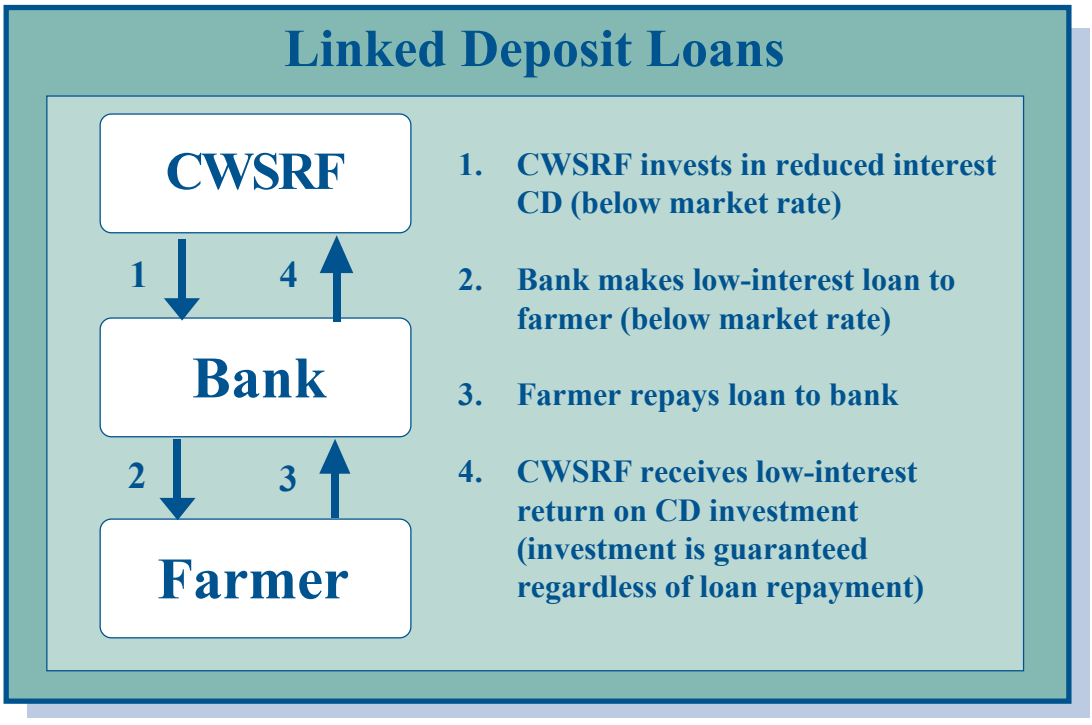


Figure 1. Linked deposit program flow chart

What is a pass-through loan?

In a pass-through loan, a CWSRF program makes a loan to another state or local government agency and that agency then lends the funds to private borrowers to address nonpoint source pollution. The town, county, or state agency reviews the project and the finances of each borrower. CWSRF loan funds are "passed-through" another government agency to private borrowers.

Pass-through loan programs benefit CWSRF programs, pass-through partners (towns, counties, and state agencies), and borrowers. These programs benefit CWSRF programs because they support high-priority nonpoint source projects and because they place risk and management responsibilities with program partners. Towns, counties, and state agencies benefit from pass-through programs because CWSRF funds support their nonpoint source priorities. Pass-through loans can offer two potential benefits to borrowers. First, pass-through loans are not provided by private lenders and, as a result, are likely to have lower interest rates. Second, local government agencies may have greater flexibility to provide loans to borrowers with relatively weak credit conditions if the borrower's nonpoint source project is a high priority for the state or local government agency.

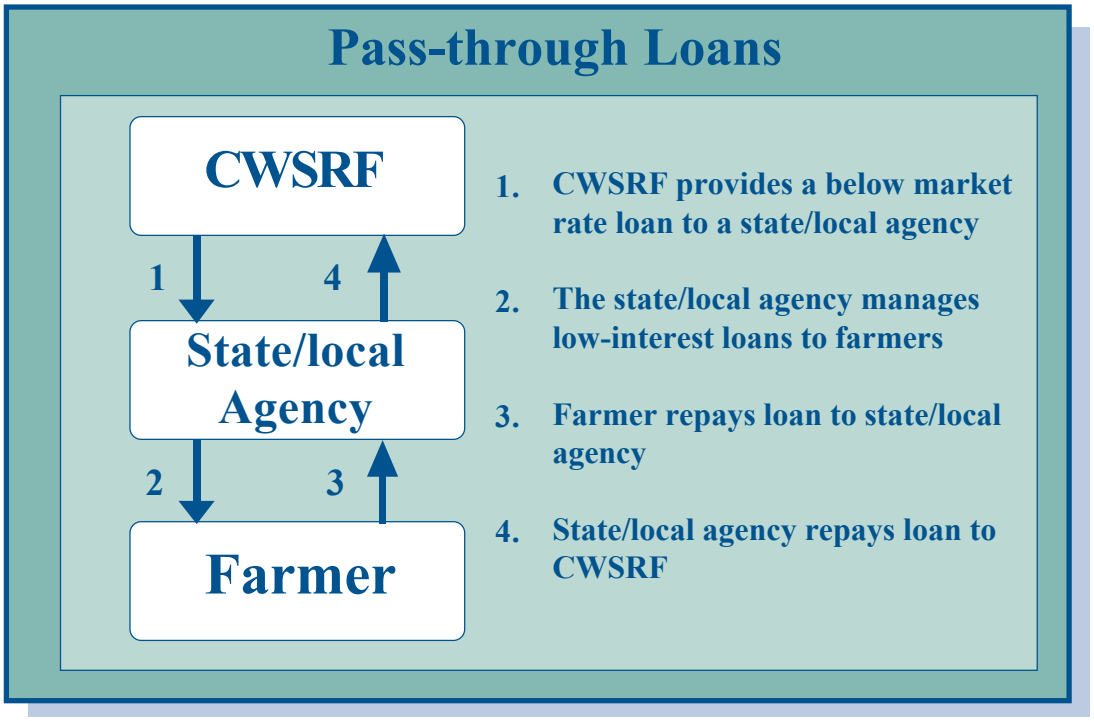


Figure 2. Pass-through program flow chart

Who has benefited from these programs and what have they funded?

CWSRF linked deposit and pass-through loan programs have supported borrowers implementing a variety of nonpoint source projects:

- Homeowners have implemented stormwater runoff best management practices and repaired or replaced failing on-site septic systems.
- Homeowner associations have addressed failing stormwater management facilities.
- Farmers have addressed agricultural runoff with a wide variety of agricultural best management practices including the construction of manure storage facilities, the restoration of filter strips and grassed waterways, and the use of conservation tillage equipment.

Ohio Case Study — Linked Deposit Loan Program

Ohio has used a linked-deposit loan program since 1993 to fund projects that support county watershed management plans. This program has funded more than 300 projects, including the repair of onsite wastewater treatment systems and the implementation of best management practices for agriculture, forestry, stormwater, and land development. The CWSRF program developed this program with the help of county soil and water conservation districts and local banks.

The CWSRF program implements its linked deposit loan program one county at a time. Each county's program is developed with two concurrent steps: the county soil and water conservation district develops a watershed management plan, and the CWSRF program and local financial institutions enter into agreements describing requirements and procedures for linked deposit loans.

Watershed management plans describe a watershed, identify sources of pollution, suggest actions that would address those pollution sources, prioritize water quality problems, identify sources of funding, and establish an implementation schedule. The county soil and water district's draft plan is reviewed by Ohio EPA and by a formal public review process. If Ohio EPA approves a plan after this review, the CWSRF program and the soil and water conservation district sign a memorandum of understanding that describes how these two entities will coordinate their implementation of the management plan.

At the same time that a watershed management plan is developed and reviewed, soil and conservation districts contact local banks to identify institutions that would like to participate in a linked deposit program. Interested banks enter into agreements with the CWSRF program that describe requirements and procedures for linked deposit loans.

Any borrower with a project that helps to implement a watershed management plan is eligible for a linked deposit loan. Participating banks review borrowers' credit using their own credit standards. If a bank approves a linked deposit loan, the CWSRF program purchases a CD of equal value from the bank. The CWSRF program accepts a CD interest rate that is five percentage points lower than the rate of a U.S. Treasury Note or Bond with the same term. The borrower's loan interest rate is also reduced by five percentage points. The bank makes semiannual payments of principal and interest to repay the CWSRF for its investment in the CD, and it makes these payments even if the borrower defaults on the linked deposit loan.

Massachusetts Case Study — Lending through Local Government

Since 1995, Massachusetts' Community Septic Management Program has used pass-through loans with local municipalities to fund the repair and replacement of failing septic systems. The program has funded more than 3,000 projects across the state. The CWSRF has developed this program with the cooperation of local municipalities.

Communities that participate in Massachusetts' Community Septic Management Program can borrow hundreds of thousands of dollars from the CWSRF program, but communities must first develop a septic management plan and procedures for a local betterment loan program (the community uses betterment assessments to secure the loans). Massachusetts provides grants of up to $20,000 to municipalities to support these planning activities and the administration of the program.

Massachusetts law defines a betterment assessment as a charge imposed on real property that receives a benefit from a public improvement. Municipalities have traditionally imposed betterments to pay for improvements such as roads, sidewalks and sewer lines. In the Community Septic Management Program, however, betterment agreements allow individuals to receive community support (a betterment loan) for septic system improvements, and the agreements allow communities to ensure that the loans are repaid as part of a property tax bill. The community can place a municipal lien on property if a homeowner defaults on a betterment loan.

Septic management plans identify and prioritize areas with septic systems that require monitoring, maintaining, and upgrading. As part of the planning process, communities develop maintenance schedules for septic systems, and they develop databases that track the inspection, maintenance, and upgrade of these systems. The Massachusetts Department of Environmental Protection reviews all community septic management plans.

Before a community can receive a CWSRF loan from the state, however, it also develops the framework for a local betterment loan program. Communities create administrative structures to manage the programs, devise a method for selecting priority projects, and work with their tax assessors to ensure that homeowners will repay their betterment loans as part of their local tax assessments.

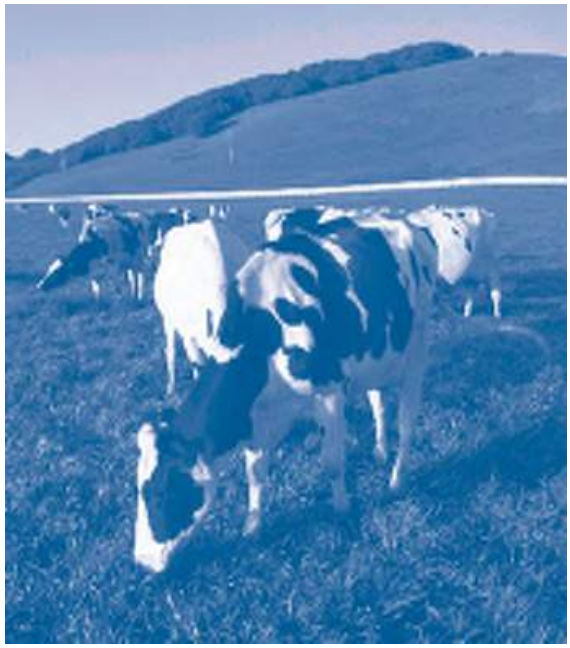
Communities that develop septic management plans and procedures for a local betterment loan program receive loans from the CWSRF program for 20 years at zero percent interest. Communities typically borrow $200,000 from this program. Homeowners typically receive twenty-year loans from communities at two to five percent interest. Communities can use interest accrued on betterment loans to support the administrative costs of the loan programs. Communities must begin to repay the CWSRF within one year after they have finished dispersing the proceeds of each CWSRF loan.

Missouri Case Study — Lending through State Agencies

Missouri's Nonpoint Source Animal Waste Treatment Facility Loan Program is a pass-through loan program that uses a state agency as a loan intermediary. Since 1995, the Missouri Agriculture and Small Business Development Authority (MASBDA) has borrowed $5 million from the CWSRF program, and MASBDA has used these funds to support the construction of 88 animal waste treatment systems for livestock and poultry producers. The agricultural operation of each borrower in this loan program produces fewer than 1,000 animal units -- concentrated animal feeding operations are ineligible.

Missouri's Nonpoint Source Animal Waste Treatment Facility Loan Program does not require a regional planning effort similar to the soil and water conservation plans required in Ohio' linked deposit program or the septic management plans required in Massachusetts' pass-through loan program. Engineers with Missouri's CWSRF program review each project application to ensure that CWSRF-financed structures and equipment support the goals of the program.

Missouri's CWSRF program provides 10-year loans to MASBDA that have a 1.8 percent interest rate. Individual agricultural producers access these resources by submitting applications to MASBDA. MASBDA reviews the financial component of each application, assessing cash flows and establishing security requirements. Borrowers must provide a dedicated source of repayment and a first or second deed of trust on their property. Agricultural producers typically receive 10-year loans from MASBDA that have interest rates from 5.3-5.8 percent. However, MASBDA does not offer construction financing for animal waste treatment systems. Typically, agricultural producers use loans from the Nonpoint Source Animal Waste Treatment Facility Loan Program to pay off construction loans from a private lender. MASBDA uses the repayments from agricultural producers to repay its loan from the CWSRF.



Case Study Contact Information

More information on the programs outlined in this update can be found on the state program web sites or by contacting the programs themselves.

Ohio Environmental Protection Agency
Div. of Environmental & Financial Assistance
Contact: Bob Monsarrat
Phone: 614-644-3655
Web site:
www.epa.state.oh.us/defa/linkdepo.html

Massachusetts Department of Environmental Protection
Massachusetts' Community Septic Management Program
Contact: Joseph McNealy
Phone: 617-556-1068
Web site: www.state.ma.us/dep/brp

Missouri Department of Agriculture
Animal Waste Facility Loan Program
Contact: Steve Townley
Phone: 573-751-1397
Web site: www.mda.state.mo.us/a2c.htm

For more information about the Clean Water Revolving Fund, or for a program representative in your State, please contact:

Clean Water State Revolving Fund Branch

U.S. Environmental Protection Agency

1201 Constitution Avenue, NW (Mailcode 4204M)

Washington, DC 20004

Phone: (202) 564-0752 **Fax:** (202) 501-2403

Internet: http://www.epa.gov/owm

Clean Water
State Revolving Fund

Office of Water July 2002 EPA 832-F-02-004

Clean Water

Everybody's Business

10 Things You Can Do to Prevent Stormwater Runoff Pollution

- Use fertilizers sparingly and sweep up driveways, sidewalks, and roads
- Never dump anything down storm drains
- Vegetate bare spots in your yard
- Compost your yard waste
- Avoid pesticides; learn about Integrated Pest Management (IPM)
- Direct downspouts away from paved surfaces
- Take your car to the car wash instead of washing it in the driveway
- Check car for leaks, and recycle motor oil
- Pick up after your pet
- Have your septic tank pumped and system inspected regularly

EPA United States Environmental Protection Agency

For more information, visit www.epa.gov/nps or www.epa.gov/npdes/stormwater

EPA
United States
Environmental Protection
Agency

EPA 841-F-03-003

Protecting Water Quality *from* URBAN RUNOFF

Clean Water Is Everybody's Business

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain and snowmelt to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers, where they seriously harm water quality. To protect surface water quality and groundwater resources, development should be designed and built to minimize increases in runoff.

The most recent National Water Quality Inventory reports that runoff from urbanized areas is the leading source of water quality impairments to surveyed estuaries and the third-largest source of impairments to surveyed lakes.

Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?

How Urbanized Areas Affect Water Quality

Increased Runoff

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to filter slowly into the ground. In contrast, impervious (nonporous) surfaces like roads, parking lots, and rooftops prevent rain and snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall and snowmelt remains above the surface, where it runs off rapidly in unnaturally large amounts.

Storm sewer systems concentrate runoff into smooth, straight conduits. This runoff gathers speed and erosional power as it travels underground. When this runoff leaves the storm drains and empties into a stream, its excessive volume and power blast out streambanks, damaging streamside vegetation and wiping out aquatic habitat. These increased storm flows carry sediment loads from construction sites and other denuded surfaces and eroded streambanks. They often carry higher water temperatures from streets, roof tops, and parking lots, which are harmful to the health and reproduction of aquatic life.

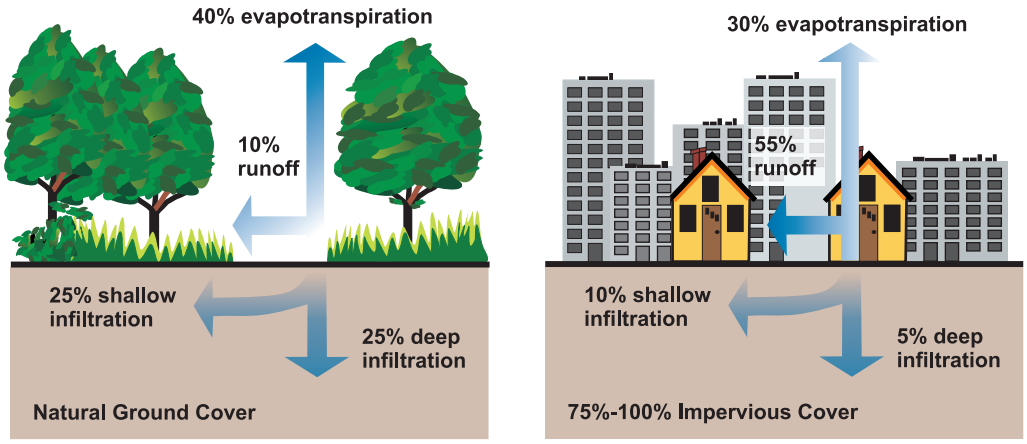
The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot survive when these conditions prevail.

Increased Pollutant Loads

Urbanization increases the variety and amount of pollutants carried into streams, rivers, and lakes. The pollutants include:

- Sediment
- Oil, grease, and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria, and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles, and other sources
- Thermal pollution from dark impervious surfaces such as streets and rooftops

These pollutants can harm fish and wildlife populations, kill native vegetation, foul drinking water supplies, and make recreational areas unsafe and unpleasant.



Relationship between impervious cover and surface runoff. Impervious cover in a watershed results in increased surface ruunoff. As little as 10 percent impervious cover in a watershed can result in stream degradation.

Managing Urban Runoff

What Homeowners Can Do

To decrease polluted runoff from paved surfaces, households can develop alternatives to areas traditionally covered by impervious surfaces. Porous pavement materials are available for driveways and sidewalks, and native vegetation and mulch can replace high maintenance grass lawns. Homeowners can use fertilizers sparingly and sweep driveways, sidewalks, and roads instead of using a hose. Instead of disposing of yard waste, they can use the materials to start a compost pile. And homeowners can learn to use Integrated Pest Management (IPM) to reduce dependence on harmful pesticides.

In addition, households can prevent polluted runoff by picking up after pets and using, storing, and disposing of chemicals properly. Drivers should check their cars for leaks and recycle their motor oil and antifreeze when these fluids are changed. Drivers can also avoid impacts from car wash runoff (e.g., detergents, grime, etc.) by using car wash facilities that do not generate runoff. Households served by septic systems should have them professionally inspected and pumped every 3 to 5 years. They should also practice water conservation measures to extend the life of their septic systems.

Controlling Impacts from New Development

Developers and city planners should attempt to control the volume of runoff from new development by using low impact development, structural controls, and pollution prevention strategies. Low impact development includes measures that conserve natural areas (particularly sensitive hydrologic areas like riparian buffers and infiltrable soils); reduce development impacts; and reduce site runoff rates by maximizing surface roughness, infiltration opportunities, and flow paths.

Controlling Impacts from Existing Development

Controlling runoff from existing urban areas is often more costly than controlling runoff from new developments. Economic efficiencies are often realized through approaches that target "hot spots" of runoff pollution or have multiple benefits, such as high-efficiency street sweeping (which addresses aesthetics, road safety, and water quality). Urban planners and others responsible for managing urban and suburban areas can first identify and implement pollution prevention strategies and examine source control opportunities. They should seek out priority pollutant reduction opportunities, then protect natural areas that help control runoff, and finally begin ecological restoration and retrofit activities to clean up degraded water bodies. Local governments are encouraged to take lead roles in public education efforts through public signage, storm drain marking, pollution prevention outreach campaigns, and partnerships with citizen groups and businesses. Citizens can help prioritize the clean-up strategies, volunteer to become involved in restoration efforts, and mark storm drains with approved "don't dump" messages.

Related Publications

Turn Your Home into a Stormwater Pollution Solution!

www.epa.gov/nps

This web site links to an EPA homeowner's guide to healthy habits for clean water that provides tips for better vehicle and garage care, lawn and garden techniques, home improvement, pet care, and more.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas

www.epa.gov/owow/nps/urbanmm

This technical guidance and reference document is useful to local, state, and tribal managers in implementing management programs for polluted runoff. Contains information on the best available, economically achievable means of reducing pollution of surface waters and groundwater from urban areas.

Onsite Wastewater Treatment System Resources

www.epa.gov/owm/onsite

This web site contains the latest brochures and other resources from EPA for managing onsite wastewater treatment systems (OWTS) such as conventional septic systems and alternative decentralized systems. These resources provide basic information to help individual homeowners, as well as detailed, up-to-date technical guidance of interest to local and state health departments.

Low Impact Development Center

www.lowimpactdevelopment.org

This center provides information on protecting the environment and water resources through integrated site design techniques that are intended to replicate preexisting hydrologic site conditions.

Stormwater Manager's Resource Center (SMRC)

www.stormwatercenter.net

Created and maintained by the Center for Watershed Protection, this resource center is designed specifically for stormwater practitioners, local government officials, and others that need technical assistance on stormwater management issues.

Strategies: Community Responses to Runoff Pollution

www.nrdc.org/water/pollution/storm/stoinx.asp

The Natural Resources Defense Council developed this interactive web document to explore some of the most effective strategies that communities are using around the nation to control urban runoff pollution. The document is also available in print form and as an interactive CD-ROM.

For More Information

U.S. Environmental Protection Agency
Nonpoint Source Control Branch (4503T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

www.epa.gov/nps

February 2003

Stormwater Management

A Guide for Auto Recycler Owners and Operators

Stormwater Protection
Starts With You

The facility operator's attitude toward stormwater management can make all the difference. It's your responsibility to communicate to your employees that stormwater management is a priority. Make sure your employees understand why stormwater management is important, both to your business and to the environment. Start by having them review the enclosed video and fact sheet.

Protecting stormwater can benefit your business in several important ways:

- **Professionalism and pride in your business** – Both workers and customers appreciate a clean and responsible facility.
- **It's the law** – Not complying with stormwater rules can put your business in jeopardy. Regulators and environmental groups across the country are increasingly targeting auto dismantlers for stormwater violations.

Protect the environment to protect your business

- **Environmental protection** – We all want clean streams, rivers, lakes, bays, and oceans for our families and for our future. Your business can protect the environment by following some straightforward and commonsense practices.

The following practices describe options that your facility can implement to help address its stormwater issues. Although following all of the practices described below may help improve performance with regard to stormwater management, it does not guarantee that your facility will be in compliance with all applicable stormwater rules. Check with your state regulatory agency or EPA for more information.

The Stormwater Permit

All vehicle dismantling facilities in the United States (except those in a combined sewer service area or facilities that do not discharge stormwater from their property) are required by the Clean Water Act to obtain a stormwater permit either from the U.S. Environmental Protection Agency or from an appropriate state agency. You must first file a Notice of Intent (NOI) with the appropriate state agency. You must also prepare a Storm Water Pollution Prevention Plan (SWPPP) to describe how you will address your facility's stormwater issues.

The practices below are organized by facility area or activity. Links and contact information to obtain additional information about stormwater and other environmental issues related to auto dismantling are listed at the end of this document.

What are Best Management Practices (BMPs)?

The term "BMP" is used to describe management practices that many different industries use to address a range of environmental issues. We'll use BMP to describe the practices that you can implement to address your auto dismantling facility's stormwater issues.

› Training

Employee training is critical! Train appropriate employees on relevant stormwater management procedures, especially during the wet season and prior to rain or snow events. All employees must be trained upon their initial hire and at least once per year thereafter. Be sure to document employee training. Also, place signs around activity areas as reminders to your workers; for example, "No fluids in the drain" or "Sweep up loose absorbent daily." Make up your own signs that make sense for your operation.

› Incoming Vehicles

Inspect all incoming vehicles for leaking fluids and unwanted materials as they enter your facility. Promptly contain leaks with drip pans or absorbent materials.

› Fluid Removal

Establish a procedure for processing vehicles and stick to it. First, before any vehicle is placed in the yard for long-term storage or crushed, and before fluid-containing parts are dismantled, drain the following fluids from the vehicle in the order that best fits your operation:

- Fuel
- Motor oil
- Transmission fluid
- Brake fluid
- Antifreeze
- Freon

Draining these fluids before placing the vehicle in the yard reduces 1) the possibility of spills when parts are removed later, and 2) time and cost to your business of cleaning up leaks and spills.

› Fluid Draining and Vehicle Dismantling Area

Ideally, these activities should be conducted in the same area, which should be covered with a roof. Your fluid draining and vehicle dismantling areas have more potential to contaminate stormwater than any other areas of your facility. Properly covering this area can eliminate contact with rainfall and is a great way to get a big bang for your buck in preventing stormwater pollution. Rain or snow can carry harmful materials like oil or gasoline into the soil and nearby streams, rivers, and lakes. Roofs not only keep out rain and snow, but also make the work area more comfortable for your workers.

If you don't currently dismantle fluid-containing parts and drain fluids under cover, you don't necessarily have to put up an entirely new and expensive building. One low-cost roofing option available is the "VersaTube" offered by Tuff Shed. (See http://www.tuffshed.com/versatube.htm or call (800) BUY-TUFF for more information.)

Another option includes building your own temporary cover using low-cost materials. Plans and materials for such temporary roofs can be obtained from vendors like South Bay Canopy (408) 998-8280.

You should also have a concrete pad in the draining and dismantling area, and you should drain all vehicles on this surface. Draining over concrete makes spills and leaks easier to clean up and minimizes the chance of environmental harm. Use appropriate fluid removal and handling equipment, such as suction systems, drain racks, and funnels for the containers.

Prevent stormwater pollution by minimizing the exposure of dismantling and fluid removal activities to stormwater. In addition to overhead cover, possible options include installing intercept trenches, berming the perimeter of the area, or using channels, swales, or grade breaks to divert the flow of stormwater around these areas.

› Fluid Storage

Storing fluids properly helps cut down on the amount of contaminants that end up in stormwater. When you remove fluids, transfer them to the proper container. Confine fluid storage to designated areas that are covered and have adequate secondary containment. Keep drums containing fluids away from storm drains; consider storing fluids near the location where fluids are drained. Maintain good integrity of all storage containers. Do not leave open drain pans that contain fluids around the shop.

You are responsible for ensuring that your fluids are handled by an authorized processor, transporter, and treatment/disposal facility.

› Spill Cleanup

Clean up spills promptly and thoroughly. Keep appropriately sized and stocked "spill kits" available in the areas where you conduct the following activities:

- Dismantling and fluid removal
- Fluid storage
- Battery and parts storage
- Fueling
- Equipment maintenance

For smaller spills, use shop rags and oil dry. Used absorbents should be placed in a designated container for proper disposal.

What should be in your spill kit?

- Absorbent socks or booms
- Absorbent pillows and pads
- Oil dry
- Broom and shovel
- Disposal bags or other containers
- Safety goggles
- Plastic gloves

- **Never use vehicle fluids for dust control!**
- **Don't mix your used oil with solvents, brake cleaner, or antifreeze.**
  This creates a hazardous waste, which can't be recycled and is very expensive to get rid of.
- **Don't pour fluids into your septic system, sanitary sewer, dry well, on the ground, or in the trash.**

› Parts Storage

Store engines, transmissions, and other oily parts (resale, core, or scrap) in a way that avoids exposure to rain or snowfall. This can include:

1) Storing parts indoors
2) Storing parts under a permanent roof on impervious surface
3) Storing parts in weather-proof, leak-proof, covered containers
4) Placing parts in vehicle bodies
5) Providing temporary cover (like tarps) for these parts as an interim measure

Lead acid battery components are toxic and corrosive and can contaminate the soil and water if handled improperly. Store batteries inside a building or outside in covered, non-leaking containers. Separate batteries from other wastes like paper, rags, garbage and flammable or hazardous chemicals. Monitor your battery storage area for leaks or deterioration, and take quick action to address any spills or leaks. Lime can be used to neutralize spilled battery acid. *Never pour battery acid on the ground or into a storm drain!*

Radiators removed from vehicles should be stored under a roof, tarp, or other cover, and raised up off the ground such that there is no contact with rainfall and surface drainage.

› Crushing

Never crush a vehicle without draining all the fluids and removing gas tanks, tires, and batteries. Capture and properly dispose of residual fluids released during crushing. You're responsible for ensuring fluids are captured and don't run off your property, even if you use a contractor to crush your vehicles.

› Vehicle Storage

If engines or fluid-containing parts remain in the vehicle when it is placed in the yard, place a hood or other cover, such as a well-secured tarp, over the vehicle engine. Use drip pans under stored vehicles with leaks.

Don't place vehicles on the ground where there is a heavy stormwater flow or close to a storm drain.

After vehicles are moved, scrape up dirt or gravel that was stained from leaks and drips. Manage the contaminated material in accordance with applicable regulations.

- Never wash spills into storm drains!
- Sweep up absorbent material and properly dispose at least daily.

› Equipment Maintenance

Schedule and perform periodic inspections of equipment. Regular maintenance of equipment such as forklifts reduces risk of breakdown and fluid release. Check for leaks and spills and for malfunctioning, worn, or corroded parts. Equipment maintenance should be done indoors or, where practical, on an impervious surface. If maintenance can't be done under cover, take adequate spill control and/or cleanup measures.

› Fueling

Pave refueling areas with concrete to prevent contamination of the soil and to enable cleanup. Don't leave vehicles unattended while fueling.

› Housekeeping

Sweep and clean paved surfaces daily to reduce sediment and contaminant buildup. Routine housekeeping is important. Catchments, inlets, oil-water separators, oil booms, waddles, tarps, and other pollutant-collecting materials need to be maintained regularly or they can become ineffective. Clean out drain inlets periodically, especially before the wet season, during the wet season, and after the wet season ends.

› Erosion Control

Tackle TSS! You may have heard of TSS or total suspended solids – in other words, dirt. Controlling the amount of dirt that runs off your property is important because metals and other harmful pollutants can attach themselves to the dirt particles and end up flowing off the property with stormwater. Eroded soil can also smother aquatic life.

Implement appropriate vegetative, structural, or stabilization measures such as basins, sediment traps, geotextiles, buffer strips, or filter berms in areas without much vegetation where soil erosion is evident.

› Non-Stormwater Discharges

Wash water from equipment, work areas, or shop floors cannot come into contact or mix with rainfall or surface drainage, or drain offsite. Vehicle and hand wash water is OK to be discharged to the sanitary sewer where allowed (be sure to check with your local sanitary sewer district). Most states prohibit all non-stormwater discharges from your property, including, but not limited to, discharges of wash water, rinse water and spilled fluids. If you are permitted to use sewers, make sure your drain is connected to the sanitary sewer. If this is not possible in your area, the wash water must be managed on-site. Management options include recycling, re-use, or off-site disposal. If you let the water soak into the ground (infiltration), take appropriate steps to prevent groundwater contamination and infestation by mosquitoes or other pests. For additional information consult your local regulatory agency.

- Residues from dried wash water cannot come into contact with rainfall or surface drainage.

- **Know where your drains go. Plug any floor drains that would let a spill run into septic systems or storm drains.**
  Automotive fluids and solvents can contaminate drinking water if they end up in drains that discharge to soil.

- Following washing, collect and clean up any accumulated sediments, oil deposits, debris, and paint particles.
- Do not steam clean or pressure wash parts without proper wash water management.
- Do not hose down the shop floor if water will run into a storm drain or off the property.

› Stormwater Filter Systems

Inexpensive filter systems or absorbents can provide an extra level of defense against stormwater pollution. Examples include: absorbent socks or booms, silt fences, straw bales, rock filters, and inlet filters. Regular maintenance of these products is essential – if they're not maintained, they won't work. Further, these measures are not a substitute for good stormwater management practices.

› Inspection

Inspect your site regularly to ensure all appropriate BMPs are being implemented. Increase inspections during periods of rainy weather. Based on permit or management needs, maintain a record of visual inspections.

Inspect oil containers, fresh water systems, irrigation lines, fueling areas, and other piping systems for leaks. If evidence of leaks is found, promptly repair or replace damaged parts to prevent polluted runoff and non-stormwater discharges.

› Customer Education

Inform customers who remove parts to do so properly and to appropriately dispose of fluids. For example, make fluid receptacles readily available, post signs that require the use of drip pans for parts removal, and prohibit waste generating activities like vehicle maintenance in parking lots.

Mercury Switches

Mercury switches are an important issue. Many older vehicles contain mercury, which is highly toxic and can cause learning disabilities and mental retardation in newborn children. When vehicles are crushed and mercury remains inside, it can get onto the ground and into waterways. Also, mercury can be released into the air and water bodies after scrapped vehicles go to the shredder.

What to do about mercury

Mercury switches are commonly found under vehicle hoods and trunks and less frequently in automatic braking systems (ABS). These switches can easily be removed to prevent contamination of the environment and human health problems.

Information on removing mercury from vehicles is available online at:

epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf

epa.gov/region5/air/mercury/autoswitch.htm

switchout.ca

Some states require mercury switches to be removed before vehicles are crushed. Some auto dismantlers remove the switches even if they are not required to do so. If you choose to address this important environmental issue and remove mercury switches before your vehicles are crushed, store the switches in a leak-proof, clearly marked, closed container. Also take care to ensure that the switches do not break during handling or storage. A licensed metals recycler that reclaims mercury can dispose of the switches. Contact your state environmental agency for more information.

You
>> CAN <<
Make a Difference!

Auto recyclers do their part to conserve natural resources by recycling valuable materials. Build on this good work and protect the environment from polluted runoff by implementing the BMPs described in this fact sheet. Make sure that your employees understand that stormwater management is important and are trained to implement your BMPs.

Remember,
stormwater protection
starts with YOU!

"It's critical for owners to set an example and be actively involved in implementing BMPs." – Brian Werth, Select Auto & Truck Recyclers

Where to find more information

Check out the following sources for additional information on BMPs for auto recyclers:

Manuals

- An Environmental Compliance Workbook for Automotive Recyclers, Florida DEP
  www.dep.state.fl.us/central/home/ps/asyca/fl_gyb.pdf
- Environmental Compliance Guide for Motor Vehicle Salvage Yards, OH Small Bus. Assistance Office
  www.epa.state.oh.us/other/sbao/salvageguide.pdf
- Vehicle Recycling Manual: A Guide for Vehicle Recyclers, Washington State Department of Ecology
  www.ecy.wa.gov/pubs/97433.pdf
- Automotive Recyclers Guide to a Cleaner Environment, New York DEC
  www.dec.state.ny.us/website/reg8/press/autorec/autorec0.pdf
- Certified Auto Recycler (CAR) Guidance Manual, Automotive Recyclers Association
  www.autorecyc.org (Available to members only)

Other Sources

- The National Compliance Assistance Clearinghouse is your guide to compliance information on the Internet. It provides quick access to compliance tools and contacts from EPA and other compliance assistance providers. The clearinghouse has an entire section devoted to the auto salvage industry.
  cfpub.epa.gov/clearinghouse
- A list of state and local environmental contacts can be found on the internet at:
  www.epa.gov/epapages/statelocal/envrolst.htm
- The EPA Small Business Ombudsman can help you understand environmental regulations, or refer you to local contacts. Their toll-free small business hotline provides regulatory and technical assistance information: (800) 368-5888

Vendors

Call for catalogs or more information

Low-Cost Roofs:		**Fluid Removal and Storage Equipment**:		**Spill Kits and Absorbent Materials**:	
Tuff Shed	(800) BUY-TUFF	Hy-Tec Environmental	(800) 336-4499	Stormtech	(888) 549-5374
South Bay Canopy	(408) 998-8280	Spill Cleanup Direct	(800) 356-0783	New Pig	(800) 468-4647

Note: Sustainable Conservation and U.S. EPA do not endorse any of these products.
This list is not complete: other vendors may provide similar or identical products and services.

Developed by

Sustainable Conservation
www.suscon.org

Supervisión de la Precipitación Pluvial

Una Guía para los Dueños y Operadores de Recicladoras de Autos

La Protección de la Precipitación Pluvial Comienza Con Usted

La actitud del operador de la compañía hacia la supervisión de la precipitación pluvial puede hacer la diferencia. Es su responsabilidad comunicar a sus empleados que la supervisión de la precipitación pluvial es una prioridad. Asegúrese que sus empleados entiendan por qué es importante la supervisión de la precipitación pluvial tanto para su negocio como para el medio ambiente. Comienze mostrándoles el video y hoja informativa que aquí se adjuntan.

Proteger la precipitación pluvial puede beneficiar a su negocio de varias maneras importantes:

- **Profesionalismo y orgullo en su negocio** - Tanto los trabajadores como sus clientes aprecian una compañía limpia y responsable.
- **Es la ley** - El no cumplir con las normas de precipitación pluvial puede poner su negocio en juego. Los grupos reguladores y ambientalistas en todo el país estan enfocándose cada vez más en las desmanteladoras de autos por violaciones en cuanto a la precipitación pluvial.
- **Protección ambiental** - Todos queremos arroyos, ríos, lagos, bahías, y oceanos limpios para nuestras familias y nuestro futuro. Su compañía puede proteger el medio ambiente siguiendo algunas prácticas directas y de sentido común.

Proteja el medio ambiente para proteger a su negocio

Las siguientes prácticas describen opciones que su compañía puede aplicar para ayudarse a administrar lo relativo a la precipitación pluvial. Aunque el seguir todas las prácticas descritas abajo puede ayudar a mejorar el desempeño respecto a la supervición de la precipitación pluvial, ello no garantiza que su compañía estará en cumplimiento con todas las normas aplicables de la precipitación pluvial. Comuníquese con una agencia reguladora del estado o la EPA si desea más información.

El Permiso de precipitación pluvial

Todas las instalaciones desmanteladoras de vehículos en los Estados Unidos (excepto aquellas en una área de servicio de desagüe combinado o instalaciones que no desechen precipitación pluvial de su propiedad) están obligadas por la Ley de Agua Limpia (Clean Water Act) a obtener un permiso de precipitación pluvial, ya sea de la Agencia de Protección del Medio Ambiente de los EE.UU. o de una agencia estatal correspondiente. Usted primero debe archivar un Aviso de Intención (Notice of Intent, o N.O.I.) ante la agencia estatal correspondiente. También debe preparar un Plan de Prevención de Contaminación de la precipitación pluvial (SWPPP) para describir cómo es que su compañía administrará lo referente a la precipitación pluvial.

Las siguientes prácticas están organizadas por área o actividad de la compañía. Para referencias y contactos para obtener información adicional acerca de la precipitación pluvial y otros asuntos ambientales relacionados la desmantelación de vehículos, vea el final de este documento.

¿Cuáles son las prácticas de mejor manejo (BMPs)?

El término “BMP” es utilizado para describir prácticas de manejo que muchas diferentes industrias usan para dirigir un gran número de asuntos ambientales. Nosotros utilizaremos BMP para describir las prácticas que usted puede aplicar para administrar lo referente a la precipitación pluvial en su desmanteladora de autos.

Supervisión de la Precipitación Pluvial

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› La capacitación

¡La capacitación de los empleados es fundamental! Capacite a sus empleados en procedimientos referentes al manejo de la precipitación pluvial, especialmente durante la temporada de lluvia y nieve y antes de que éstas lleguen. Todos los empleados deben ser capacitados al inicio de su contratación y al menos una vez al año después de ella. Asegúrese de documentar la capacitación de sus empleados. También debe colocar letreros alrededor de las áreas de actividad con recordatorios para sus trabajadores. Por ejemplo, "Evite los fluidos en el drenaje" o "Barra diariamente el absorbente." Diseñe sus propios letreros que den sentido a su operación.

› Ingreso de vehículos

Inspeccione todos los vehículos de reciente ingreso por posibles fugas de fluidos y materiales no deseados, cuando vayan entrando a las instalaciones. Contenga rápidamente las fugas con charolas o materiales absorbentes.

› Extracción de fluidos

Establezca un procedimiento para procesar vehículos y apéguese a él. Primero, antes de que cualquier vehículo sea colocado en la yarda por un término largo de almacenamiento o para compactarse, y antes que se desmantelen las partes que contengan fluidos, extraiga los siguientes fluidos del vehículo, en el orden que mejor funcione para su operación:

- Combustible
- Aceite de motor
- Líquido de transmisión
- Líquido de frenos
- Anticongelante
- Gas freón

Extraer estos fluidos antes de colocar el vehículo en la yarda disminuye 1) la posibilidad de derrames cuando las partes son removidas posteriormente, y 2) el tiempo y costo requerido en su negocio para limpiar fugas y derrames.

› Área de extracción de fluidos y de desmantelamiento de vehículos

Lo ideal es que estas actividades se realicen en la misma área, la cual debe estar cubierta con un techo. Sus áreas de extracción de fluidos y de desmantelación de vehículos tienen mayor potencial de contaminar la precipitación pluvial que cualquier otra área de su compañía. El cubrir apropiadamente esta área puede eliminar el contacto con la caída de la lluvia y es una gran forma de economizar, al prevenir la contaminación de la precipitación pluvial. La lluvia y la nieve pueden acarrear materiales dañinos como aceite o gasolina al suelo y cerca de arroyos, ríos, y lagos. Los techos no solo

detienen la lluvia y la nieve, sino que también hacen el área de trabajo más cómoda para sus trabajadores.

Si usted no desmantela actualmente partes que contengan fluidos y extrae fluidos debajo de un techo, usted no necesariamente tiene que construir un edificio nuevo y costoso. Una opción disponible es el techo de bajo costo "Versa Tube" ofrecido por Tuff Shed. (Vea http://www.tuffshed.com/versatube.htm o llame (800) BUY TUFF para más información.) Otra opción incluye construir su propio techo temporal utilizando materiales de bajo costo. Puede obtener planos y materiales de dichos techos temporales de vendedores como South Bay Canopy (408) 998-8280.

Usted también debe tener una plataforma de concreto en el área de extracción y desmantelamiento, y dee drenar todos los vehículos sobre la superficie. El drenar sobre concreto hace que los derrames y fugas sean más fáciles de limpiar y minimiza la posibilidad de daño ambiental. Utilice equipo apropiado para la extracción y manejo de fluidos, tales como sistemas de succión, racas de drenaje y embudos para contenedores.

Prevenga la contaminación de la precipitación pluvial minimizando la exposición de las actividades de desmantelamiento y de extracción de fluidos a la precipitación pluvial. Además de un techo, otras opciones posibles incluyen instalar zanjas interceptoras, bordear el perímetro del área, o utilizar canales, o cortes para desviar el flujo de la precipitación pluvial fuera del alcance de estas áreas.

› Almacenamiento de fluidos

El almacenar los fluidos apropiadamente ayuda a reducir la cantidad de contaminantes que terminan en la precipitación pluvial. Cuando extraiga fluidos, colóquelos en el contenedor apropiado. Destine el almacenamiento de fluidos a áreas designadas que estén cubiertas y que tengan un adecuado contenimiento secundario. Mantenga los barriles que contengan fluidos alejados de los drenajes de agua; considere almacenar los fluidos cerca del área donde los fluidos son extraidos. Mantenga en buenas condiciones todos los contenedores de almacenamiento. No deje charolas abiertas que contengan fluidos alrededor del taller.

Usted es responsable de asegurarse que sus fluidos sean manejados por procesadores, transportistas, y compañías de tratamiento/desechos autorizados.

- **¡Nunca utilice fluidos de vehículo para controlar el polvo!**
- **No mezcle su aceite usado con solventes, limpiador de frenos, ni anticongelante.** **Esto crea un desperdicio peligroso el cual no puede ser reciclado y es muy costoso deshacerse de él.**
- **No vierta fluidos dentro del sistema séptico, el drenaje sanitario, los pozos, en la tierra, ni en la basura.**

› Limpieza de derrames

Limpie los derrames rápida y completamente. Guarde kits para derrames, del tamaño apropiado, en todas las áreas donde realice las siguientes actividades:

- Desmantelamiento y extracción de fluidos
- Almacenamiento de fluidos
- Almacenamiento de baterías y partes
- Abastecimiento de combustible
- Mantenimiento de equipo

Para derrames menores utilice trapos y "oil dry". Los materiales absorbentes usados deberán colocarse en un contenedor designado para su desecho.

¿Qué debería haber en su kit para derrames?

- Tubos ("socks") absorbentes
- Cojines y almohadas absorbentes
- "Oil dry"
- Escoba y pala
- Lentes de seguridad
- Guantes de plástico
- Bolsas para desecho y otros contenedores

› Almacenamiento de partes

Almacene motores, transmisiones, y otras partes grasosas (reventa, core, o chatarra) de forma que se evite la exposición a la lluvia o caída de nieve. Esto puede incluir:

1) Almacenar partes a puerta cerrada
2) Almacenar partes bajo un techo permanente sobre una superficie impenetrable
3) Almacenar partes en contenedores cubiertos a prueba del clima y de fugas
4) Colocar partes en las carrocerías de los vehículos
5) Proveer cobertura temporal (como lonas) para estas partes como medida alterna

Los componentes de la batería de acido de plomo son tóxicos y corrosivos y pueden contaminar el suelo y agua si son manejados incorrectamente. Almacene las baterías dentro o fuera de un edificio en contenedores cubiertos y sin fugas. Separe las baterías de otros desperdicios como el papel, trapos, basura y químicos inflamables o peligrosos. Monitoree su área de almacenamiento de baterías por posibles fugas o deterioraciones, y tome acción rapida para evitar cualquier derrame o fuga. La cal puede utilizarse para neutralizar el acido de batería derramado. *¡Nunca vierta acido de batería en la tierra o dentro del drenaje de agua!*

Los radiadores extraidos de los vehículos deben almacenarse bajo techo, lona, u otro cobertizo, y a cierta altura del suelo de tal manera que no haya contacto con la lluvia o el drenaje de la superficie.

› Compactación

Nunca compacte un vehículo sin haber extraido todos los fluidos y quitado los tanques de gasolina, las llantas y las baterías. Contenga y deseche apropiadamente los residuos de fluidos que escurran mientras se está compactando. Usted es responsable de asegurarse que se contangan todos los fluidos y que no escurran fuera de su propiedad, aún si compacta sus vehículos a través de un contratista.

› Almacenamiento de vehículos

En caso de que haya motores o partes que contengan fluidos dentro del vehículo cuando éste se coloque en la yarda, coloque un cofre u otro cobertor tal como una lona bien asegurada sobre el motor del vehículo. Coloque charolas debajo de los vehículos que tengan fugas. No ponga vehículos en la tierra donde haya una corriente fuerte de precipitación pluvial o cerca de un drenaje. Después de que los vehículos sean retirados, levante la tierra o grava que ha sido manchada por fugas y goteos. Maneje el material contaminado de acuerdo con las regulaciones correspondientes.

- **¡Nunca dirija derrames hacia los drenajes!**
- **Barra el material absorbente y deséchelo apropiadamente al menos una vez al día.**

› Mantenimiento del equipo

Programe y realice inspecciones periódicas del equipo. El mantenimiento regular del equipo, tal como los montacargas, reduce el riesgo de que se descomponga y que tire fluidos. Revise por posibles fugas y derrames, el mal funcionamiento, desgaste, o partes corroídas. El mantenimiento del equipo debe hacerse en un lugar cerrado o, cuando sea práctico, en una superficie impenetrable. Si el mantenimiento no puede hacerse bajo techo, tome medidas adecuadas de control de derrames y/o limpieza.

› Abastecimiento de combustible

Pavimente las áreas de abastecimiento de combustible con concreto para prevenir la contaminación del suelo y facilitar la limpieza. No deje los vehículos sin atender mientras se estén cargando de combustible.

› Mantenimiento

Barra y limpie las superficies pavimentadas diariamente para reducir la sedimentación y acumulación de contaminantes. El mantenimiento como rutina es importante. Recipientes, zanjas, separadores de agua/aceite, repelentes de aceite, lonas, y demas materiales para retener contaminantes deben recibir mantenimiento regular o pueden llegar a ser ineficaces. Limpie las zanjas de drenaje periódicamente, antes, durante y después de la temporada de lluvias.

› Control de la erosión

¡Elimine los TSS! Quizás haya oído hablar de los TSS o sólidos totalmente suspendidos: en otras palabras, la tierra. Controlar la cantidad de tierra que se escurre fuera de su propiedad es importante porque los metales y otros contaminantes dañinos pueden adherirse a las particulas de tierra y terminar escurriéndose fuera de la propiedad hacia la precipitación pluvial. El suelo erosionado puede también extinguir la vida acuática.

Tome medidas adecuadas en cuanto a la vegetación, estructuración o estabilización, tales como desagües, retenedores de sedimentación, geotextiles, o bordos de filtración en áreas sin mucha vegetación, donde la erosión del suelo es evidente.

› Los escurrimientos que no provienen de la precipitación pluvial

El agua para lavar equipo, áreas de trabajo, o pisos del taller no puede entrar en contacto o mezclarse con la lluvia o el drenaje superficial ni el drenaje común. El agua para lavarse las manos o lavar vehículos puede descargarse en el drenaje sanitario donde sea permitido (asegúrese de contactar a su distrito local de drenaje sanitario). La mayoría de los estados prohiben los escurrimientos de su propiedad que no provengan de la precipitación pluvial, incluyendo, pero sin limitarse a, los escurrimientos de agua para lavar, para enjuagar y de fluidos derramados. Si usted tiene permiso para usar drenajes, asegúrese que su drenaje esté conectado al drenaje sanitario. Si esto no es posible en su área, el agua para lavar debe ser manejada dentro de su propiedad. Las opciones de manejo incluyen el reciclaje, el reuso o su desecho fuera de la propiedad. Si usted deja que el agua se acumule en la tierra (filtración), tome los pasos adecuados para prevenir contaminación en la tierra o que se infeste con mosquitos u otras plagas. Para información adicional consulte su agencia reguladora local.

- Los residuos secos del agua para lavar no pueden entrar en contacto con la lluvia o drenaje de la superficie.

- **Usted debe saber hacia dónde están dirigidos sus drenajes. Tape cualquier drenaje en el suelo que pudiera dejar escurrir un derrame hacia un sistema séptico o drenaje de agua.**
  Los fluidos y solventes de los autómoviles pueden contaminar el agua potable si caen en drenajes que se descargan sobre el suelo.

- Después de lavar, recoja y limpie cualquier sedimentación acumulada, depósitos de aceite, chatarra, y partículas de pintura.
- No lave partes a vapor o a presión sin el manejo apropiado del agua para lavar.
- No lave el piso del taller con manguera si el agua va a escurrir hacia el drenaje o fuera de la propiedad.

› Sistemas de filtración de la precipitación pluvial

Los sistemas de filtración no costosos o absorbentes pueden ofrecer un nivel de defensa adicional contra la contaminación de la precipitación pluvial. Algunos ejemplos incluyen: tubos absorbentes, cercos, pacas de paja, filtros de roca, y zanjas para filtrar. El mantenimiento regular de estos productos es esencial: si no reciben mantenimiento, no van a funcionar. Además, estas medidas no sustituyen a las prácticas del buen manejo de la precipitación pluvial.

› Inspección

Inspeccione sus instalaciones con regularidad para asegurarse que se estén aplicando todas las BMPs correctas. Aumente las inspecciones durante los periodos de clima lluvioso. Basándose en el permiso o necesidades de supervisión, mantenga un registro de las inspecciones visuales. Inspeccione los contenedores de aceite, los sistemas de agua fresca, las líneas de irrigación, las áreas de abastecimiento de combustible, y demás sistemas de tuberías por posibles fugas. Si existe evidencia de alguna fuga, repárela rápidamente o reemplace las partes dañadas para prevenir escurrimientos contaminados y descargas de agua que no provengan de la precipitación pluvial.

› Educación de los clientes

Notifique a sus clientes que sustraen partes que lo hagan correctamente y que desechen los fluidos debidamente. Por ejemplo, coloque recipientes para fluidos a disposición de los clientes, coloque letreros que requieran el uso de charolas para quitar partes, y prohiba actividades que generen desperdicios, como el dar mantenimiento a vehículos en el estacionamiento.

Switches de mercurio

Los switches o interrruptores de mercurio son un aspecto importante. Muchos vehículos viejos contienen mercurio, el cual es altamente tóxico y puede causar discapacidades del aprendizaje y el retardo mental en niños recién nacidos. Cuando los vehículos son compactados y el mercurio se mantiene adentro, éste puede caer en el suelo y en las corrientes de agua. El mercurio también puede esparcirse en el aire y en los mantos acuíferos después de que los vehículos compactados van a la cortadora.

Puede obtener información acerca de como remover el mercurio de los vehículos por el internet en:

epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf

epa.gov/region5/air/mercury/autoswitch.htm

switchout.ca

Qué hacer acerca del mercurio

Los switches de mercurio se hayan normalmente debajo de los cofres y cajuelas de los vehículos y menos frecuentemente en sistemas de frenado automático (ABS). Estos switches se pueden extraer antes de compactar los vehículos. Algunas desmanteladoras de autos quitan los switches aunque no se les requiera. Si usted decidiera participar en este importante aspecto ambiental y removiera los switches de mercurio antes de compactar sus vehículos, debe almacenar los switches en un contenedor cerrado claramente marcado y a prueba de fugas. También asegúrese de que los switches no se quiebren cuando se manejen o almacenen. Una recicladora de metales con licencia que recolecte mercurio puede desechar los switches. Contacte a su agencia ambiental del estado si desea más información.

¡Usted
>> PUEDE <<
Hacer la Diferencia!

Las recicladoras de autos hacen su labor para conservar los recursos naturales al reciclar materiales valiosos. Coopere en esta buena labor y proteja al medio ambiente de los escurrimientos contaminados, aplicando las BMPs descritas en este documento. Asegúrese que sus empleados entiendan que el manejo de la precipitación pluvial es importante y que se les capacite para aplicar las BMPs.

Recuerde, ¡la protección de la precipitación pluvial

Comienza con USTED!

"Es fundamental para los propietarios poner el ejemplo y participar activamente en la aplicación de las BMPs."

— Brian Werth, Select Auto & Truck Recyclers

Dónde puede encontrar más información

Consulte las siguientes fuentes si desea más información acerca de las BMPs para recicladoras de autos:

Manuales

- An Environmental Compliance Workbook for Automotive Recyclers, Florida DEP
  www.dep.state.fl.us/central/home/ps/asyca/fl_gyb.pdf
- Environmental Compliance Guide for Motor Vehicle Salvage Yards, OH Small Bus. Assistance Office
  www.epa.state.oh.us/other/sbao/salvageguide.pdf
- Vehicle Recycling Manual: A Guide for Vehicle Recyclers, Washington State Department of Ecology
  www.ecy.wa.gov/pubs/97433.pdf
- Automotive Recyclers Guide to a Cleaner Environment, New York DEC
  www.dec.state.ny.us/website/reg8/press/autorec/autorec0.pdf
- Certified Auto Recycler (CAR) Guidance Manual, Automotive Recyclers Association
  www.autorecyc.org (Disponible para miembros solamente)

Otras fuentes

- La National Compliance Assistance Clearinghouse es su guía sobre cómo obtener información acerca de los requerimientos por el internet. Ésta le proporciona al rápido acceso a las herramientas requeridas y los contactos de la EPA y de otros proveedores de asistencia en cuanto a los requerimientos. Dicha agencia tiene una sección entera dedicada a la industria del salvamento de autos. http://cfpub.epa.gov/clearinghouse
- Puede hallar una lista de contactos ambientalistas del estado y locales por el internet en:
  epa.gov/epapages/statelocal/envrolst.htm
- El EPA Small Business Ombudsman le puede ayudar a comprender las regulaciones ambientales, o proporcionarle contactos locales. La línea libre de cobro para pequeños empresarios provee información sobre asistencia regulatoria y técnica: (800) 368 5888.

Información sobre vendedores

Techos de bajo costo:

Tuff Shed	(800) BUY-TUFF
South Bay Canopy	(408) 998-8280

Extracción de fluidos y equipo de almacenamiento:

Hy-Tec Environmental	(800) 336-4499
Spill Cleanup Direct	(800) 356-0783

Kits para derrames y materiales absorbentes:

Stormtech	(888) 549-5374
New Pig	(800) 468-4647

Nota: Sustainable Conservation y U.S. EPA no endosa ninguno de estos productos.
Esta lista no esta completa: otros vendedores pueden proveer productos y servicios similares o idénticos.

Creado por
Sustainable Conservation
www.suscon.org

Clean Water State Revolving Fund

FACT SHEET

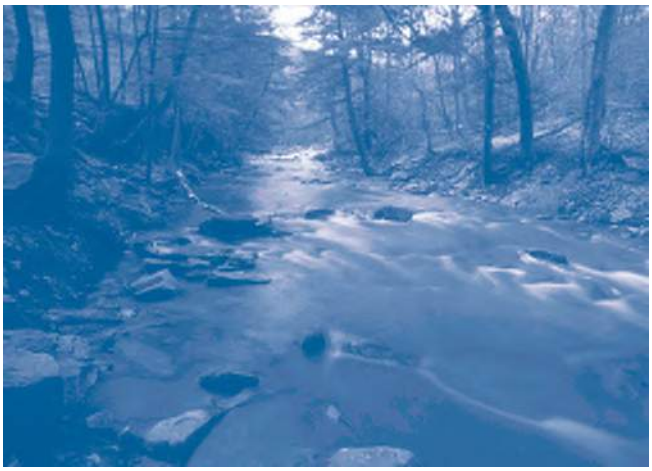
Cleaning Up Polluted Runoff with the Clean Water State Revolving Fund

What's In It For You?

The Clean Water State Revolving Fund (CWSRF) program has become a major source of funding to address polluted runoff. To date, 30 of the 51 CWSRF programs have provided funding for nonpoint source and estuary protection projects. Today annual funding to address polluted runoff exceeds $200 million. CWSRF loans are issued at below market rates (zero percent to less than market), offering borrowers significant savings over the life of the loan.

History

In creating the CWSRF program, Congress ensured that it would be able to fund most types of water quality projects, including nonpoint source, wetlands, estuary, and other types of watershed projects, as well as more traditional municipal wastewater treatment systems. The CWSRF program provisions in the Clean Water Act give no more preference to one category or type of project than any other.



Capacity of the CWSRF

The 51 CWSRF programs work like banks (each state and Puerto Rico has one). Federal and state contributions are used to capitalize or set-up the programs. These assets are used to make low-interest loans for important water quality projects. Repaid funds are then recycled to fund other important water quality projects.

The CWSRF programs have in excess of $42 billion in assets and average funding for the past three years exceedes $4 billion annually. The funding of polluted runoff projects with the CWSRF is gaining momentum. Since 1989, the CWSRF program has funded 3,400 projects, investing more than $1.6 billion in polluted runoff projects.

Who May Qualify?

Included in a long list of eligible loan recipients are communities, citizens groups, businesses, farmers, homeowners, watershed groups, and nonprofit organizations. Since the program is managed largely by the states, project eligibility may vary according to the priorities within each state. Contact your state's CWSRF program for details.

Polluted Runoff and the CWSRF

The CWSRF can fund virtually any type or category of polluted runoff that is included in a state approved nonpoint source (NPS) management plan.

Polluted runoff occurs when rainfall, snowmelt, or irrigation runs over land or through the ground, picks up pollutants, and deposits them into surface or ground

water. For instance, polluted runoff from agricultural sources is the leading contributor to water quality impairments in rivers, degrading over 60% of impaired river miles.

Terraces, conservation tillage and conservation buffers save soil and improve water quality

Here are a few actual project examples from states that demonstrate what the CWSRF can do:

- **California -** Stormwater management facilities, including sediment basins and constructed wetlands. Purchasing easements for wetland protection
- **Delaware -** Animal waste management facilities, including manure storage facilities and dead chicken composters
- **Massachusetts -** Septic system improvements and replacement
- **Minnesota -** Agricultural best management practices (BMPs) to prevent and reduce runoff. Purchasing conservation tillage equipment and implementing soil erosion controls
- **New York** - Purchasing land and easements for source water protection projects
- **Washington -** Rehabilitation of streambanks, riparian corridors and buffers
- **Wisconsin** - Water protection and improvement projects on brownfield redevelopment sites
- **Wyoming -** Removal of leaking underground storage tanks and remediation of contaminated ground water and soil

State of the art lagoon animal waste management system

These are just a sample of the projects that have been funded. Contact your state or visit the CWSRF web site for more examples and information **(www.epa.gov/owm/cwfinance/index.htm)**

Benefits of Loans

First, Funds are Available. CWSRF loans can usually be obtained much faster than grants and each year over $200 million is spent on nonpoint source projects.

Second, No Cash Up-Front. Most grant programs require significant cost shares (as much as 40 percent or more). A CWSRF loan can cover 100 percent of project costs with no cash up-front.

Third, Significant Cost Savings. CWSRF loans provide significant cost savings over the life of the loan. The total cost of a zero percent CWSRF loan will be approximately 50 percent less than the same project financed by a commercial loan at 7.5 percent.

Fourth, Loans can Complement other Funding Sources. It may be possible to combine a CWSRF loan with grant dollars from other sources. Check with your state.

Sources of Repayment

Many users of the CWSRF program have demonstrated a high level of creativity in developing sources of repayments. The source of repayment need not come from the project itself. Some possible sources include:

- Fees paid by property owner or homeowner
- Fees paid by a developer
- Dedicated portion of local, county, or state taxes or fees
- Recreational fees (fishing license, park entrance fees)
- Stormwater management fees
- Wastewater user charges
- Donations or dues made to nonprofit groups
- Business revenues

Making Funding Accessible - Ohio Examples

The state of Ohio employs several innovative funding methods to ensure a variety of watershed projects receive funding. Two unique funding methods used in Ohio are the Linked-Deposit Loan Program and the Watershed Resource Restoration Sponsorship Program (WRRSP). In both examples the state shows creativity by taking existing institutional arrangements and modifying them to achieve the state's goals and meet the needs of loan recipents.

Linked Deposit Lending Program

In Ohio's linked-deposit program, the state makes arrangements with local banks to provide loans for agricultural BMPs and on-site wastewater treatment projects. Under a linked-deposit arrangement the state agrees to buy a bank's investment (CD) and receive a lower than market rate of return on the investment. The bank agrees to provide reduced interest rate loans for eligible projects. The linked-deposit loan interest rate reflects the difference between the state's reduced rate of return on the investment and the market rate of return.

The linked-deposit approach benefits CWSRF programs because they support high priority nonpoint source projects and because they place risk and management responsibilities with local financial institutions. Financial institutions earn profits from the linked deposit agreements and add an additional service for their customers. Borrowers find linked deposit programs to be economical and comfortable; they save money with low-interest loans, and they are comfortable working with local financial institutions.

For more information on linked-deposit loans see EPA's Activity Update ***"Innovative Use of Clean Water State Revolving Funds for Nonpoint Source Pollution"*** (EPA 832-F-02-004) found on the CWSRF web site.

Watershed Resource Restoration Sponsorship Program (WRRSP)

The WRRSP offers communities very low interest rates on loans for wastewater treatment plant improvements if the communities also sponsor projects that protect or restore water resources. The end payment for the wastewater treatment plant project is the same because of the lower interest rate and the simultaneous funding for the restoration project by the wastewater treatment plant. The benefit of this program is water restoration projects that normally would not receive funding are completed with the help of the wastewater treatment plants.

To date, the WRRSP program has supported projects that have acquired wetlands and riparian lands, acquired conservation easements, restored habitat, and removed dams.

Over the past two years under the WRRSP, communities in Ohio have used $24 million of CWSRF loan funds to protect and restore 1850 acres of riparian lands and wetlands and 38 miles of Ohio's stream corridors.

For more information on Ohio's WRRSP see EPA's Activity Update ***"Ohio's Restoration Sponsor Program Integrates Point Source and Nonpoint Source Projects"*** (EPA 832-F-02-001) found on the CWSRF web site.

Challenges Ahead

With increasing emphasis on watershed-based program management and implementation of Total Maximum Daily Loads (TMDLs) in impaired water bodies, it will be even more important to take advantage of the tremendous buying power of the CWSRF program.

How to Get More From the CWSRF

- Share information on polluted runoff priorities with CWSRF managers
- Work to enhance CWSRF programs to include funding of polluted runoff projects
- Become involved in the annual CWSRF planning and priority setting process
- Help market the program and encourage loan applications

The water quality community needs to work together to increase understanding of polluted runoff issues and facilitate the use of the powerful resources of the CWSRF to address these significant problems. EPA has been encouraging the states to open their CWSRFs to the widest variety of water quality projects and to use their CWSRFs to fund the highest priority projects in targeted watersheds. Those interested in cleaning up polluted runoff must seek out their CWSRF programs, gain an understanding of how their state program works, and participate in the annual process that determines which projects are funded.

For more information about the Clean Water Revolving Fund, or for a program representative in your State, please contact:

Clean Water State Revolving Fund Branch

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW (Mailcode 4204M)

Washington, DC 20460

Phone: (202) 564-0752 **Fax:** (202) 501-2403

Internet: www.epa.gov/owm/cwfinance/index.htm

Clean Water
State Revolving Fund

What is WaterSense?

WaterSense is a voluntary public-private partnership program sponsored by the U.S. Environmental Protection Agency. Its mission is to protect the future of our nation's water supply by promoting and enhancing the market for water-efficient products and services.

www.epa.gov/watersense

U.S. EPA WaterSense

5 Simple Ways to Save Water

United States Environmental Protection Agency
(4204M)

EPA-832-F-06-007
May 2006
www.epa.gov/watersense

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Saving water is simple and smart.

1 Be smart when irrigating your lawn or landscape.

- Water the lawn or garden during the coolest part of the day. Early morning is best.
- Water plants according to their water needs; you'll have healthier plants and a lower water bill.
- Set sprinklers to water lawns and gardens only—not the street or sidewalk.
- Use soaker hoses or trickle irrigation systems for trees and shrubs.

2 Use your appliances wisely.

- Wash only full loads or set small loads to the appropriate water level.
- Scrape rather than rinse dishes before loading them into the dishwasher.
- Replace old clothes washers with ENERGY STAR qualified appliances that use less water.

3 Don't flush your money down the drain/Toilets.

- A leaky toilet can waste 200 gallons of water per day. Check your toilet for leaks by adding food coloring to the tank. If the toilet is leaking, color will appear in the bowl within 15 minutes. Look for worn out, corroded or bent parts in the leaky toilet. Most replacement parts are inexpensive, readily available and easily installed. (Flush as soon as test is done, since food coloring may stain the tank.)
- When replacing your toilet, look for high-efficiency models that use less than 1.3 gallons per flush.

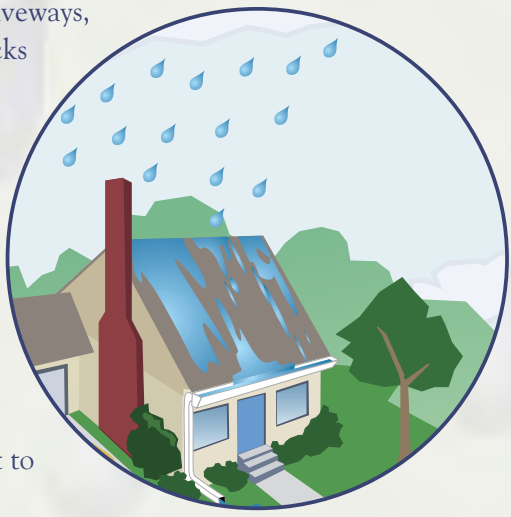
4 Conserve around the house.

- Keep drinking water in the refrigerator instead of letting the faucet run until cool. A running tap can use about 2 gallons of water per minute.
- Try not to leave the tap running while you brush your teeth or shave.
- Don't pour water down the drain if you can use it for other projects such as watering a plant or cleaning.

5 Stop those leaks.

- Verify that your home is leak-free. Many homes have hidden water leaks that can waste more than 10 percent, costing both you and the environment. Read your water meter before and after a two-hour period where no water is being used. If the meter does not read exactly the same, you probably have a leak.
- Repair dripping faucets and showers. If your faucet is dripping at the rate of one drop per second, you can expect to waste 2,700 gallons per year. This waste will add to the cost of water and sewer utilities or strain your septic system.

As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants. Stormwater can flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water. Polluted runoff is the nation's greatest threat to clean water.



By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automotive fluids off the ground and out of stormwater. Adopt these healthy household habits and help protect lakes, streams, rivers, wetlands, and coastal waters. Remember to share the habits with your neighbors!

Healthy Household Habits for Clean Water

Vehicle and Garage

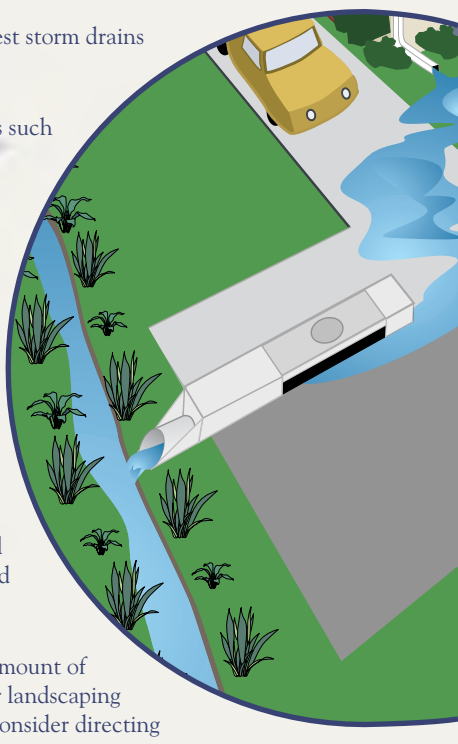
- Use a commercial car wash or wash your car on a lawn or other unpaved surface to **minimize** the amount of dirty, soapy water flowing into the storm drain and eventually into your local waterbody.

- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. Clean up **spilled fluids** with an absorbent material like kitty litter or sand, and don't rinse the spills into a nearby storm drain. Remember to properly dispose of the absorbent material.
- **Recycle** used oil and other automotive fluids at participating service stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.

Lawn and Garden

- Use pesticides and fertilizers **sparingly**. When use is necessary, use these chemicals in the recommended amounts. Avoid application if the forecast calls for rain; otherwise, chemicals will be washed into your local stream.
- Select **native** plants and grasses that are drought- and pest-resistant. Native plants require less water, fertilizer, and pesticides.
- **Sweep up** yard debris, rather than hosing down areas. Compost or recycle yard waste when possible.
- Don't overwater your lawn. Water during the **cool** times of the day, and don't let water run off into the storm drain.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. **Vegetate** bare spots in your yard to prevent soil erosion.

Home Repair and Improvement



- Before beginning an outdoor project, locate the nearest storm drains and **protect** them from debris and other materials.
- **Sweep up** and properly dispose of construction debris such as concrete and mortar.
- Use hazardous substances like paints, solvents, and cleaners in the **smallest amounts possible**, and follow the directions on the label. Clean up spills **immediately**, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Purchase and use **nontoxic**, **biodegradable**, **recycled**, and **recyclable** products whenever possible.
- **Clean** paint brushes in a sink, not outdoors. Filter and reuse paint thinner when using oil-based paints. Properly dispose of excess paints through a household hazardous waste collection program, or donate unused paint to local organizations.
- **Reduce** the amount of paved area and increase the amount of vegetated area in your yard. Use native plants in your landscaping to reduce the need for watering during dry periods. Consider directing downspouts away from paved surfaces onto lawns and other measures to increase infiltration and reduce polluted runoff.

Pet Care

- When walking your pet, remember to **pick up** the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Swimming Pool and Spa

- **Drain** your swimming pool only when a test kit does not detect chlorine levels.
- Whenever possible, drain your pool or spa into the **sanitary** sewer system.
- Properly store pool and spa chemicals to **prevent** leaks and spills, preferably in a covered area to avoid exposure to stormwater.

Septic System Use and Maintenance

- Have your septic system **inspected** by a professional at least every 3 years, and have the septic tank **pumped** as necessary (usually every 3 to 5 years).
- Care for the septic system drainfield by **not** driving or parking vehicles on it. Plant only grass over and near the drainfield to avoid damage from roots.
- Flush responsibly. Flushing household chemicals like paint, pesticides, oil, and antifreeze can **destroy** the biological treatment taking place in the system. Other items, such as diapers, paper towels, and cat litter, can **clog** the septic system and potentially damage components.

Storm drains connect to waterbodies!

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January 2003

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For more information, visit
www.epa.gov/npdes/stormwater
or

Make your home

The

SOLUTION TO STORMWATER POLLUTION!

A homeowner's guide to healthy habits for clean water

EPA United States Environmental Protection Agency

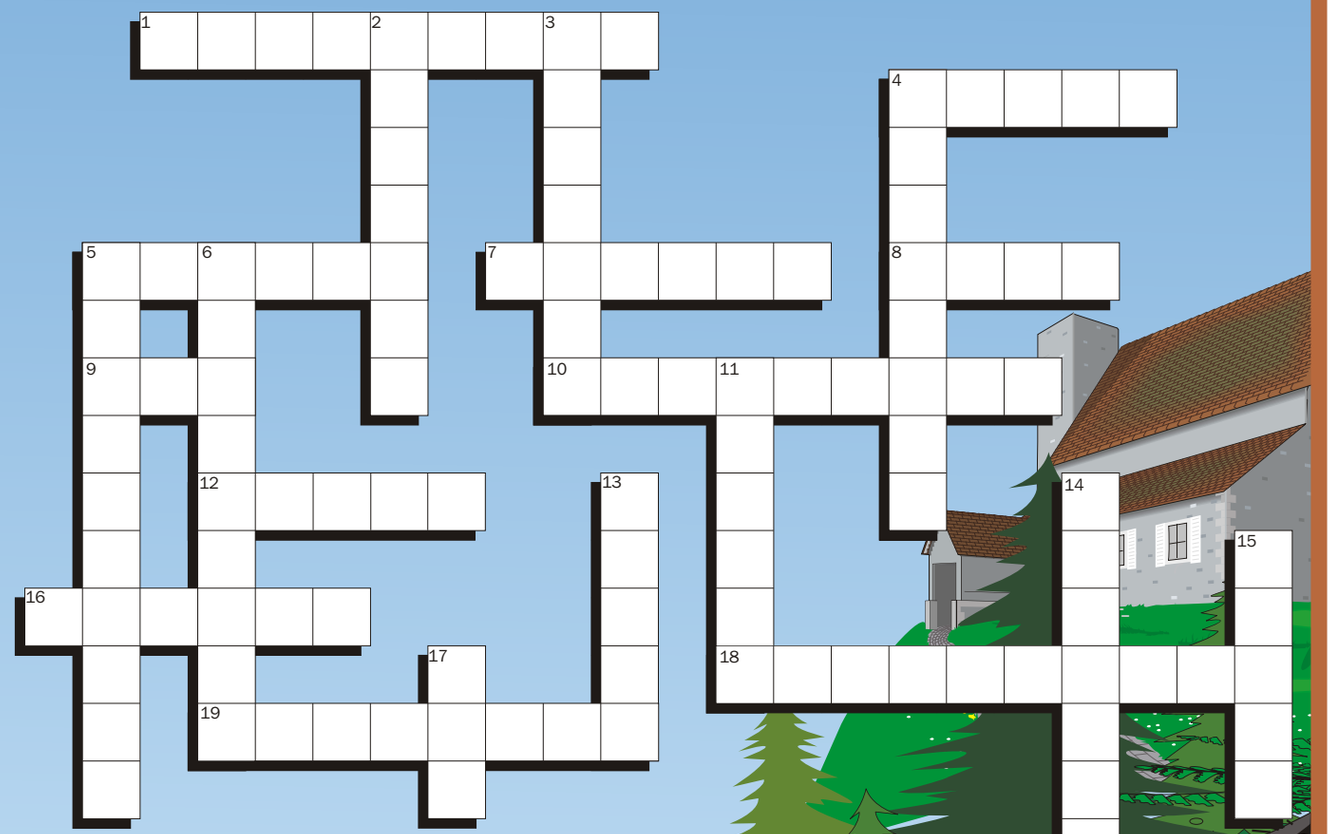
Take the Stormwater Runoff Challenge

Across:

1) The area of land that drains into an estuary, lake, stream, or groundwater is known as a _____.
4) The _____ of speeding boats can erode shorelines.
5) Maintaining your _____ tank will help to prevent bacteria and nutrients from leaking into groundwater and surface waters.
7) Wetland plants act like a natural water _____, removing harmful pollutants from stormwater runoff.
8) Leave your grass clippings on your _____ to reduce the need for commercial fertilizers.
9) A single quart of motor _____, if disposed of improperly, can pollute 2 million gallons of water.
10) Fertilizers and animal wastes contain _____ that "feed" algae and other aquatic plants harmful to water quality.
12) Polluted runoff from both rural and _____ sources has a significant impact on water quality.
16) Storm _____ don't always connect to sewage treatment plants, so runoff can flow directly to rivers, lakes, and coastal waters.
18) Follow directions carefully when applying _____ on your lawn—more isn't always better.
19) Polluted runoff (also called_____ source pollution) comes from so many places that it's hard to "pinpoint" a source.
20) Yard and vegetable food waste are suitable additions to a _____ pile.

Down:

2) Don't dump used motor oil into storm drains. _____ it!
3) _____ of soil from barren land can cloud nearby streams.
4) _____ prevent flooding, improve water quality, and provide habitat for waterfowl, fish, and wildlife.
5) Marking "Do Not Dump, Drains to Bay" on a _____ is one way to educate people about polluted runoff.
6) Excess sediment, nutrients, toxics, and pathogens are all types of runoff _____.
11) Polluted _____ is the nation's #1 water quality problem.
13) The cattail is one wetland _____ that helps purify polluted runoff.
14) Too much _____ in water can harm aquatic life.
15) Proper crop and animal management on _____ helps to control water pollution.
17) _____ impact development helps control stormwater pollution through conservation approaches and techniques.



Choices:

compost	nonpoint	sediment
drains	nutrients	septic
erosion	oil	storm drain
farms	plant	urban
fertilizer	pollution	wakes
filter	recycle	watershed
lawn	runoff	wetlands
Low		

EPA United States Environmental Protection Agency

For more information, please visit EPA's Polluted Runoff web site at www.epa.gov/nps

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Water-Efficient Landscaping:

Preventing Pollution & Using Resources Wisely

A Message from the Administrator

Christine Todd Whitman

I believe water is the biggest environmental issue we face in the 21st Century in terms of both quality and quantity. In the 30 years since its passage, the Clean Water Act has dramatically increased the number of waterways that are once again safe for fishing and swimming. Despite this great progress in reducing water pollution, many of the nation's waters still do not meet water quality goals. I challenge you to join with me to finish the business of restoring and protecting our nation's waters for present and future generations.

United States Environmental Protection Agency
Office of Water (4204M)
EPA832-F-02-002
September 2002
www.epa.gov/owm/water-efficiency/index.htm

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What is Water-efficient Landscaping?

Water, many agree, is our most precious natural resource; without it, life ceases. Yet judging by our water use and consumption practices, many of us in the United States seem to take it for granted. A typical household uses approximately 260 gallons of water per day. "Water conscious" individuals often install high-efficiency shower heads and toilets and wash only full loads of clothes and dishes to reduce consumption. But in the summer, the amount of water used outdoors by a household can exceed the amount used for all other purposes in the entire year. This is especially true in hot, dry climates.

Gardening and lawn care account for the majority of this seasonal increase, but other outdoor activities, such as washing cars and filling swimming pools, also contribute. According to the U.S. Geological Survey, of the 26 billion gallons of water consumed daily in the United States[1], approximately 7.8 billion gallons, or 30 percent[2], is devoted to outdoor uses. The majority of this is used for landscaping. In fact, it is estimated that the typical suburban lawn consumes 10,000 gallons of water above and beyond rainwater each year (Vickers, p 140).

Many mistakenly believe that stunning gardens and beautiful lawns are only possible through extensive watering, fertilization, and pesticide application. As this booklet will demonstrate, eye-catching gardens and landscapes that save water, prevent pollution, and protect the environment are, in fact, easily achieved by employing water-efficient landscaping. Water-efficient landscaping produces attractive landscapes because it utilizes designs and plants suited to local conditions.

This booklet describes the benefits of water-efficient landscaping. It includes several examples of successful projects and programs, as well as contacts, references, and a short bibliography. For specific information about how to best apply water-efficient landscaping principles to your geographical area, consult with your county extension service and local garden and nursery centers. Local governments and water utilities also possess a wealth of information and suggestions for using water more efficiently in all aspects of your life, including landscaping.

Xeriscape garden at Denver Water

1 W.B. Solley, R.R. Pierce, and H.A. Perlman. 1998. *Estimated Use of Water in the United States in 1995* (USGS Circular 1200). USGS. Reston, VA. p.27.

2 Amy Vickers. 2001. *Handbook of Water Use and Conservation*. WaterPlow Press. Amherst, MA. p. 140.

Xeriscaped front yard in Colorado Springs

Many terms and schools of thought have been used to describe approaches to water-efficient landscaping. Some examples include "water-wise," "water-smart," "low-water," and "natural landscaping." While each of these terms varies in philosophy and approach, they are all based on the same principles and are commonly used interchangeably. One of the first conceptual approaches developed to formalize these principles is known as "Xeriscape[3] landscaping." Xeriscape landscaping is defined as "quality landscaping that conserves water and protects the environment." The word "Xeriscape" was coined and copyrighted by Denver Water Department in 1981 to help make water conserving landscaping an easily recognized concept. The word is a combination of the Greek word "*xeros*," which means "dry," and "landscape."

The seven principles upon which Xeriscape landscaping is based are:

- Proper planning and design
- Soil analysis and improvement
- Appropriate plant selection
- Practical turf areas
- Efficient irrigation
- Use of mulches
- Appropriate maintenance

The eight fundamentals of water-wise landscaping, below, illustrate the similarities in the underlaying concepts and principles of Xeriscape landscaping and other water-efficient approaches.

- Group plants according to their water needs.
- Use native and low-water-use plants.
- Limit turf areas to those needed for practical uses.
- Use efficient irrigation systems.
- Schedule irrigation wisely.
- Make sure soil is healthy.
- Remember to mulch.
- Provide regular maintenance.

In short, plan and maintain your landscape with these principles of water efficiency in mind and it will continue to conserve water and be attractive.

3 Denver Water welcomes the use of the term Xeriscape in books, articles, and speeches promoting water conserving landscape. EPA is using this term with permission from Denver Water. For permission to use "Xeriscape" in your publications, call Denver Water at 303 628-6330.

Why Use Water-efficient Landscaping?

Proper landscaping techniques not only create beautiful landscapes, but also benefit the environment and save water. In addition, attractive, water-efficient, low-maintenance landscapes can increase home values.

Water-efficient landscaping offers many economic and environmental benefits, including:

- Lower water bills from reduced water use.
- Conservation of natural resources and preservation of habitat for plants and wildlife such as fish and waterfowl.
- Decreased energy use (and air pollution associated with its generation) because less pumping and treatment of water is required.
- Reduced home or office heating and cooling costs through the careful placement of trees and plants.
- Reduced runoff of stormwater and irrigation water that carries top soils, fertilizers, and pesticides into lakes, rivers, and streams.
- Fewer yard trimmings to be managed or landfilled.
- Reduced landscaping labor and maintenance costs.
- Extended life for water resources infrastructure (e.g., reservoirs, treatment plants, groundwater aquifers), thus reduced taxpayer costs.

Meadow Sage (Salvia pratensis) *is the background for New Mexico Evening Primrose* (Oenothera berlandieri 'siskiyou')

How is Water-efficient Landscaping Applied?

Landscaping that conserves water and protects the environment is not limited to arid landscapes with only rocks and cacti. Through careful planning, landscapes can be designed to be both pleasing to the senses and kind to the environment. One simple approach to achieving this is applying and adopting the basic principles of water-efficient landscaping to suit your climatic region. The seven principles of Xeriscape landscaping are used below to describe these basic concepts in greater detail.

Dragon's Blood Sedum (Sedum spurium) *under Honeylocust Trees* (Gleditsia triaconthos)

Proper planning and design

Developing a landscape plan is the first and most important step in creating a water-efficient landscape. Your plan should take into account the regional and microclimatic conditions of the site, existing vegetation, topography, intended uses of the property, and most importantly, the grouping of plants by their water needs. Also consider the plants' sun or shade requirements and preferred soil conditions. A well-thought-out landscape plan can serve as your roadmap in creating beautiful, water-efficient landscapes and allow you to continually improve your landscape over time.

Soil analysis and improvements

Because soils vary from site to site, test your soil before beginning your landscape improvements. Your county extension service can analyze the pH levels; nutrient levels (e.g., nitrogen, phosphorus, potassium); and the sand, silt, clay, and organic matter content of your soil. It can also suggest ways to improve your soil's ability to support plants and retain water (e.g., through aeration or the addition of soil amendments or fertilizers).

Appropriate plant selection

Your landscape design should take into account your local climate as well as soil conditions. Focus on preserving as many existing trees and shrubs as possible because established plants usually require less water and maintenance. Choose plants native to your region. Native plants, once established, require very little to no additional water beyond normal rainfall. Also, because they are adapted to local soils and climatic conditions, native plants commonly do not require the addition of fertilizers and are more resistant to pests and disease.

When selecting plants, avoid those labeled "hard to establish," "susceptible to disease," or "needs frequent attention," as these types of plants frequently require large amounts of supplemental water, fertilizers, and pesticides. Be careful when selecting non-indigenous species as some of them may become invasive. An invasive plant might be a water guzzler and will surely choke out native species. Your state or county extension service or local nursery can help you select appropriate plants for your area.

The key to successful planting and transplanting is getting the roots to grow into the surrounding soil as quickly as possible. Knowing when and where to plant is crucial to speeding the establishment of new plants. The best time to plant will vary from species to species. Some plants will thrive when planted in a dormant or inactive state. Others succeed when planted during the season when root generation is highest and sufficient moisture is available to support new growth (generally, spring is the best season, but check plant tags or consult with your local nursery for specific species).

Practical turf areas

How and where turf is placed in the landscape can significantly reduce the amount of irrigation water needed to support the landscape. Lawns require a large amount of supplemental water and generally greater maintenance than other vegetation. Use turf where it aesthetically highlights the house or buildings and where it has practical function, such as in play or recreation areas. Grouping turf areas can increase watering efficiency and significantly reduce evaporative and runoff losses. Select a type of grass that can withstand drought periods and become dormant during hot, dry seasons. Reducing or eliminating turf areas altogether further reduces water use.

Efficient irrigation

Efficient irrigation is a very important part of using water efficiently outdoors, and applies in any landscape—whether Xeriscape or conventional. For this reason, an entire section of this booklet addresses efficient irrigation; it can be found on page 6.

Use of mulches

Mulches aid in greater retention of water by minimizing evaporation, reducing weed growth, moderating soil temperatures, and preventing erosion. Organic mulches also improve the condition of your soil as they decompose. Mulches are typically composed of wood bark chips, wood grindings, pine straws, nut shells, small gravel, or shredded landscape clippings. Avoid using rock mulches in sunny areas or around non-arid climate plants, as they radiate large amounts of heat and promote water loss that can lead to scorching. Too much mulch can restrict water flow to plant roots and should be avoided.

Wine Cup (Callirhoe involucrata) *and Sunset Hyssop* (Agastache rupestris) *in the Denver Water Xeriscape Garden*

Appropriate maintenance

Water and fertilize plants only as needed. Too much water promotes weak growth and increases pruning and mowing requirements. Like any landscape, a water-efficient yard will require regular pruning, weeding, fertilization, pest control, and irrigation. As your water-efficient landscape matures, however, it will require less maintenance and less water. Cutting turf grass only when it reaches two to three inches promotes deeper root growth and a more drought-resistant lawn. As a rule of thumb, mow your turf grass before it requires more than one inch to be removed. The proper cutting height varies, however, with the type of grass, so you should contact your county extension service or local nursery to find out the ideal cutting height for your lawn. Avoid shearing plants or giving them high nitrogen fertilizers during dry periods because these practices encourage water-demanding new growth.

Water-efficient Landscape Irrigation Methods

With common watering practices, a large portion of the water applied to lawns and gardens is not absorbed by the plants. It is lost through evaporation, runoff, or being pushed beyond the root zone because it is applied too quickly or in excess of the plants' needs. The goal of efficient irrigation is to reduce these losses by applying only as much water as is needed to keep your plants healthy. This goal is applicable whether you have a Xeriscape or a conventional landscape.

To promote the strong root growth that supports a plant during drought, water deeply and only when the plant needs water. For clay soils, watering less deeply and more often is recommended. Irrigating with consideration to soil type, the condition of your plants, the season, and weather conditions—rather than on a fixed schedule—significantly increases your watering efficiency. Grouping plants according to similar water needs also makes watering easier and more efficient.

Purple Fountain Grass (Pennisetum setaceum "Rubrum") *and Marigolds* (Calendula officinalis) *in planter bed*

Irrigating lawns, gardens, and landscapes can be accomplished either manually or with an automatic irrigation system. Manual watering with a hand-held hose tends to be the most water-efficient method. According to the AWWA Research Foundation's outdoor end use study, households that manually water with a hose typically use 33 percent less water outdoors than the average household. The study also showed that households with in-ground sprinkler systems used 35 percent more water, those with automatic timers used 47 percent more water, and those with drip irrigation systems used 16 percent more water than households without these types of systems. These results show that in-ground sprinkler and drip irrigation systems must be operated properly to be water-efficient.

You can use a hand-held hose or a sprinkler for manual irrigation. To reduce water losses from evaporation and wind, avoid sprinklers that produce a fine mist or spray high into the air. Soaker hoses can also be very efficient and effective when used properly. Use a hand-held soil moisture probe to determine when irrigation is needed.

To make automatic irrigation systems more efficient, install system controllers such as rain sensors that prevent sprinkler systems from turning on during and immediately after rainfall, or soil moisture sensors that activate sprinklers only when soil moisture levels drop below pre-programmed levels. You can also use a weather-

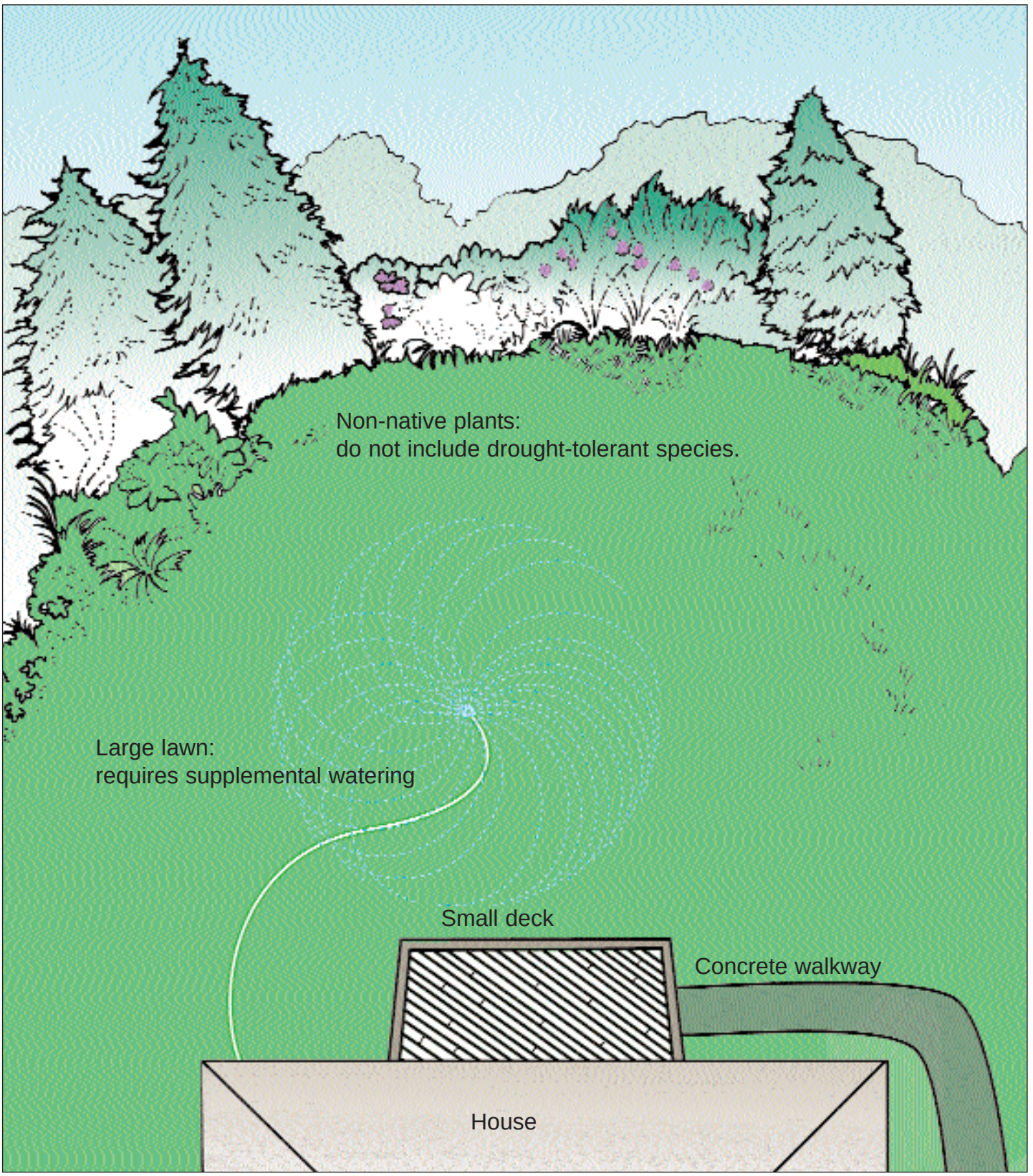
driven programming system. Drip-type irrigation systems are considered the most efficient of the automated irrigation methods because they deliver water directly to the plants' roots. It is also important to revise your watering schedule as the seasons change. Over-watering is most common during the fall when summer irrigation schedules have not been adjusted to the cooler temperatures.

To further reduce your water consumption, consider using alternative sources of irrigation water, such as gray water, reclaimed water, and collected rainwater. According to the AWWA Research Foundation, homes with access to alternative sources of irrigation reduce their water bills by as much as 25 percent.[4] Graywater is untreated household waste water from bathroom sinks, showers, bathtubs, and clothes washing machines. Graywater systems pipe this used water to a storage tank for later outdoor watering use. State and local graywater laws and policies vary, so you should investigate what qualifies as gray water and if any limitations or restrictions apply. Reclaimed water is waste water that has been treated to levels suitable for nonpotable uses. Check with local water officials to determine if it is available in your area. Collected rainwater is rainwater collected in cisterns, barrels, or storage tanks. Commercial rooftop collection systems are available, but simply diverting your downspout into a covered barrel is an easy, low-cost approach. When collecting rainwater, cover all collection vessels to prevent animals and children from entering and to prevent mosquito breeding. Some states might have laws which do not allow collection of rainwater, so be sure to check with your state's water resource agency before implementing a rainwater collection system.

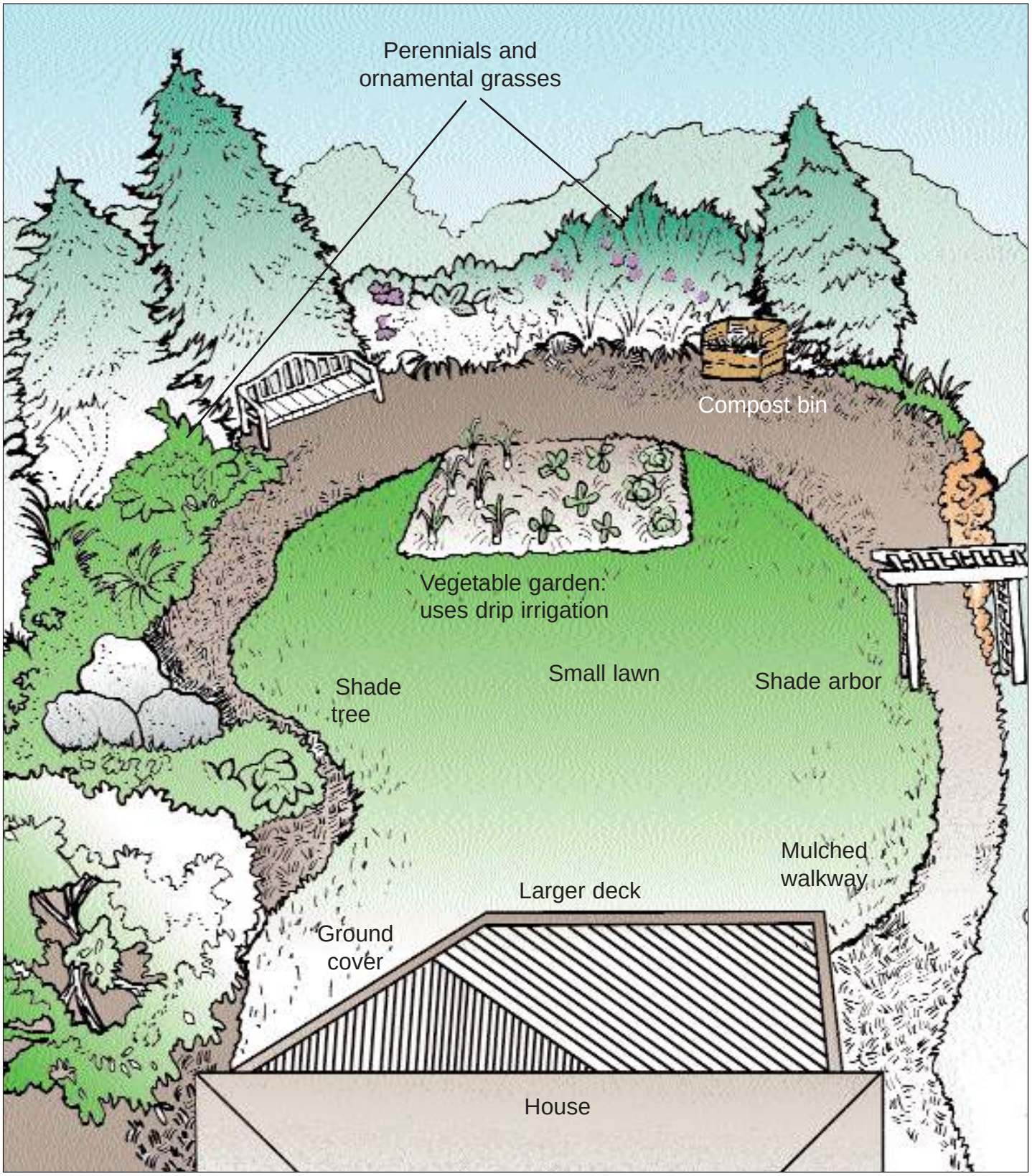
Red Valerian (Centranthus ruber)

4 AWWA Research Foundation. 1999. *Residential End Uses of Water*. <www.waterwiser.org>

Non-xeriscaping



Xeriscaping



Examples of Successful Water-efficient Landscaping Projects

Water-efficient landscaping techniques can be used by individuals, companies, state, tribal, and local governments, and businesses to physically enhance their properties, reduce long-term maintenance costs, and create environmentally conscious landscapes. The following examples illustrate how water-efficient landscapes can be used in various situations.

Oriental Poppies (Paparer orientale)

Homeowner–public/private partnership

- The South Florida Water Management District, the Florida Nurserymen and Growers Association, the Florida Irrigation Society, and local businesses worked together to produce a television video called "Plant It Smart with Xeriscape." The video shows how a typical Florida residential yard can be retrofitted with Xeriscape landscaping to save energy, time, and money. The showcase yard (selected from 70 applicants) had a history of heavy water use—more than 90,000 gallons per month. After the retrofit, the yard's aesthetic value was enhanced; plus it now uses 75 percent less water and relies on yard trimmings for mulch and compost.
- The Southwest Florida Water Management District (SWFWMD), the City of St. Petersburg, and Pinellas County, Florida, produced a video called "Xeriscape It!" It shows a landscape being installed using the seven Xeriscape principles. The SWFWMD also funded several Xeriscape demonstration sites and maintains a Xeriscape demonstration garden at its Brooksville, Florida, headquarters. The garden features a variety of native and non-native plants and is available for public viewing, along with a landscape plant identification guide.
- Residents of Glendale, Arizona, can receive a $100 cash rebate for installing or converting more than half of their landscapable area to non-grass vegetation. The Glendale Water Conservation Office conducts an inspection of the converted lawn to ensure compliance with rebate requirements and then issues a rebate check to the homeowner. The purpose of the Landscape Rebate Program is to permanently reduce the amount of water used to irrigate grass throughout Glendale.

State government

- Although perceived as a water-rich state, Florida became the first to enact a statewide Xeriscape law. Florida's legislature recognized that its growing population and vulnerable environment necessitated legal safeguards for its water resources. The Xeriscape law requires Florida's Departments of Management Ser-

vices and Transportation to use Xeriscape landscaping on all new public properties and to develop a 5-year program to phase in Xeriscape on properties constructed before July 1992. All local governments must also consider requiring the use of Xeriscape and offering incentives to install Xeriscaping.

- Texas also developed legislation requiring Xeriscape landscaping on new construction projects on state property beginning on or after January 1994. Additional legislation, enacted in 1995, requires the Department of Transportation to use Xeriscape practices in the construction and maintenance of roadside parks. All municipalities may consider enacting ordinances requiring Xeriscape to conserve water.

City government

In Las Vegas, Nevada, homeowners can receive up to $1,000 for converting their lawn to Xeriscape, while commercial landowners can receive up to a $50,000 credit on their water bill. The city and several other surrounding communities hope these eye-catching figures will help Las Vegas meet its goal of saving 25 percent of the water it would otherwise have used by the year 2010; to date, it has saved 17 percent. Local officials plan to reach the target with the assistance of incentive programs encouraging Xeriscape, a city ordinance limiting turf to no more than 50 percent of new landscapes, grassroots information programs, and a landscape awards program specifically for Xeriscaped properties. Preliminary results of a five-year study show that residents who converted a portion of their lawns to Xeriscape reduced total water consumption by an average of 33 percent. The xeric vegetation required less than a quarter of the water typically used and one-third the maintenance (both in labor and expenditures) compared to traditional turf.

Yellow Ice Plant (Delosperma nubigenum) *close-up*

Developers

Howard Hughes Properties (HHP), a developer and manager of more than 25,000 acres of residential, commercial, and office development property, has enthusiastically used drought tolerant landscaping on all of its properties since 1990. Most of the company's properties are located in Las Vegas, one of the country's fastest growing metropolitan areas. To conserve resources, the city and county have implemented regulations requiring developers to employ certain Xeriscape principles in new projects. Specifically, a limited percentage of grass can be used on projects, and it must be kept away from streets. As the area's first large-scale developer to recognize the need and value in incorporating drought tolerant landscaping in parks, streetscapes, and open spaces, HHP uses native and desert-adaptive plants that survive and thrive in the Las Vegas climate with minimal to moderate amounts of water.

Drip system irrigation controllers are linked to weather stations that monitor the evapotranspiration rate. This allows HHP to determine the correct amount of water to be applied to plants at any given time. HHP tests the irrigation systems regularly and adds appropriate soil amendments to promote healthy plant growth. The maintenance program also includes pest management, the use of mulching mowers, and the use of rock mulch top dressing on all non-turf planting areas. These measures combine to ensure a beautiful, healthy, and responsible landscape.

Public/private partnerships

Even the most water-conscious homeowners in Southern California are over-watering by 50 to 70 gallons per day. The excess water washes away fertilizers and pesticides, which pollute natural waterways. The quantity of water wasted (and the dollars that pay for it) are even more substantial for large-scale commercial properties and developments.

An innovative partnership in Orange County links landscape water management, green material management, and non-point source pollution prevention goals into one program—the Landscape Performance Certification Program. This program emphasizes efficient landscape irrigation and features a "landscape irrigation budget" based on a property's landscape area, type, and the daily weather. The Municipal Water District monitors actual water use through a system of 12,000 dedicated water meters installed by participating landscape managers.

Participants, including landscapers, property managers, and homeowner associations, can compare the actual cost of water used on their property with the calculated budget. Those staying within budget are awarded certification, a proven marketing tool. This new voluntary program is implemented by the Municipal Water District with input from the California Landscape Contractors' Association, the Orange County Integrated Management Department, the Metropolitan Water District of Southern California, and local nurseries and has the support of 32 retailing water suppliers. The program is already credited with increasing the use of arid-climate shrubs and landscaping to accommodate drip irrigation, and has resulted in cost savings to water customers.

Miscanthus sinensis (Miscanthus grass, also called Maiden grass) *variety with leaves turning yellow for fall.*

For More Information

The following list of organizations can provide more information on water-efficient landscaping. This is not meant to be an exhaustive list, rather it is intended to help you locate local information sources and possible technical assistance.

Turkish Speedwell (Veronica liwanensis) *in background and tulips in foreground.*

Water Management Districts or Utilities

Your local water management district often can provide information on water conservation, including water efficient landscaping practices. Your city, town, or county water management district can be found in the Blue Pages section of your local phone book or through your city, town, or county's Web site if it has one. If you do not know your city, town, or county's Web site, check for a link on your state's Web site. URLs for state Web sites typically follow this format: <www.state.(two letter state abbreviation).us>.

State/County Extension Services

Your state or county extension service is also an excellent source of information. Many extension services provide free publications and advice on home landscaping issues including tips on plant selection and soil improvement. Some also offer a soil analysis service for a nominal fee. Your county extension service can be found in the Blue Pages section of your local phone book under the county government section or through your county's Web site if it has one. The U.S. Department of Agriculture's Cooperative State Research, Education, and Extension Service (www.reeusda.gov/statepartners/usa.htm) provides an online directory of land-grant universities which can help you locate your state extension service. Government Guide (www.governmentguide.com) is yet another online resource that might prove helpful in locating state or local agencies.

Organizations

The following is a partial list of organizations located across the United States that provide helpful information on water-efficient landscaping.

American Water Works Association (AWWA)
6666 West Quincy Avenue
Denver, CO 80235
Telephone: 303 794-7711
and
1401 New York Avenue, NW, Suite 640
Washington, DC 20005
Telephone: 202 628-8303
Web: <www.awwa.org>

Arizona Municipal Water Users Association (AMWUA)
Web: <www.amwua.org/program-xeriscape.htm>

BASIN
City of Boulder Environmental Affairs
P.O. Box 791
Boulder, CO 80306
Phone: 303 441-1964
E-mail: basin@bcn.boulder.co. us
Web: <bcn.boulder.co.us/basin/local/seven.html>

Denver Water
1600 West 12th Avenue
Denver, CO 80204
Phone: 303 628-6000
Fax: 303 628-6199
TDDY: 303 534-4116
Office of Water Conservation hotline:
303 628-6343
E-mail: jane.earle@denverwater.org
Web: <www.water.denver.co.gov/conservation/conservframe.html>

New Mexico Water Conservation Program/Water Conservation Clearinghouse
P. O. Box 25102
Santa Fe, NM 87504
Phone: 800 WATER-NM
E-mail: waternm@ose.state.nm.us
Fax: 505 827-3813
Web: <www.ose.state.nm.us/water-info/conservation/index.html>

Project WET - Water Education for Teachers
201 Culbertson Hall
Montana State University
Bozeman, MT 59717
Phone: 406 994-5392
Web: <www.montana.edu/wwwwet>

Rocky Mountain Institute
1739 Snowmass Creek Road
Snowmass, CO 81654-9199
Phone: 970 927-3851
Web: <www.rmi.org>

Southern Nevada Water Authority
1001 S. Valley View Boulevard, Mailstop #440
Las Vegas, NV 89153
Phone: 702 258-3930
Web: <www.snwa.com>

Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899
Phone: 352 796-7211 or 800 423-1476 (Florida only)
Web: <www.swfwmd.state.fl.us/watercon/xeris/swfxeris.html>

Sustainable Sources Green Building Program: Sustainable Building Source Book
E-mail: info@greenbuilder.com
Web: <www.greenbuilder.com/sourcebook/xeriscape.html>

Water Conservation Garden – San Diego County
12122 Cuyamaca College Drive West
El Cajon, CA 92019
Phone: 619 660-0614
Fax: 619 660-1687
E-mail: info@thegarden.org
Web: <www.thegarden.org/garden/xeriscape/index.html> and <www.sdcwa.org/manage/conservation-xeriscape.phtml>\

WaterWiser: The Water Efficiency Clearing House
(Operated by AWWA in cooperation with the U.S. Bureau of Reclamation)
6666 West Quincy Avenue
Denver, CO 80235
Phone: 800 559-9855
Fax: 303 794-6303
E-mail: bewiser@waterwiser.org
Web: <www.waterwiser.org>

Xeriscape Colorado!, Inc.
P.O. Box 40202
Denver, CO 80204-0202
Web: <www.xeriscape.org>

Resources

The following is a partial list of publications on resource efficient landscaping. For even more information, particularly on plants suited to your locale, consult your local library, county extension service, nursery, garden clubs, or water utility.

Ball, Ken and American Water Works Association Water Conservation Committee. *Xeriscape Programs for Water Utilities*. Denver: American Water Works Association, 1990.

Bennett, Jennifer. *Dry-Land Gardening: A Xeriscaping Guide for Dry-Summer, Cold-Winter Climates*. Buffalo: Firefly, 1998.

Bennett, Richard E. and Michael S. Hazinski. *Water-Efficient Landscape Guidelines*. Denver: American Water Works Association, 1993.

Brenzel, Kathleen N., ed. *Western Garden Book*, 2001 Edition. Menlo Park: Sunset Publishing Corporation, 2001.

City of Aurora, Colorado Utilities Department. *Landscaping for Water Conservation: Xeriscape!* Aurora: Colorado Utilities Department, 1989.

Johnson, Eric and Scott Millard. *The Low-Water Flower Gardener: 270 Unthirsty Plants for Color, Including Perennials, Ground Covers, Grasses & Shrubs*. Tucson: Ironwood Press, 1993.

Knopf, James M. *The Xeriscape Flower Gardener*. Boulder: Johnson Books, 1991.

Knopf, James M., ed. *Waterwise Landscaping with Trees, Shrubs, and Vines: A Xeriscape Guide for the Rocky Mountain Region, California, and the Desert Southwest*. Boulder: Chamisa Books, 1999.

Knox, Kim, ed. *Landscaping for Water Conservation: Xeriscape*. Denver: City of Aurora and Denver Water, 1989.

Nellis, David W. *Seashore Plants of South Florida and the Caribbean: A Guide to Identification and Propagation of Xeriscape Plants*. Sarasota: Pineapple Press, Inc., 1994.

Perry, Bob. *Landscape Plants for Western Regions: An Illustrated Guide to Plants for Water Conservation*. Claremont: Land Design Publishing, 1992.

Phillips, Judith. *Natural by Design: Beauty and Balance in Southwest Gardens*. Santa Fe: Museum of New Mexico Press, 1995.

Phillips, Judith. *Plants for Natural Gardens: Southwestern Native & Adaptive Trees, Shrubs, Wildflowers & Grasses*. Santa Fe: Museum of New Mexico Press, 1995.

Robinette, Gary O. *Water Conservation in Landscape Design and Maintenance*. New York: Nostrand Reinhold, 1984.

Rumary, Mark. *The Dry Garden*. New York: Sterling Publishing Co., Inc., 1995.

Springer, Lauren. *The Undaunted Garden: Planting for Weather-Resilient Beauty*. Golden: Fulcrum Publishing, 1994.

Springer, Lauren. *Waterwise Gardening*. New York: Prentice Hall Gardening, 1994.

Stephens, Tom, Doug Welsh, and Connie Ellefson. *Xeriscape Gardening, Water Conservation for the American Landscape*. New York: Macmillan Publishing, 1992.

Sunset Books, eds. *Waterwise Gardening: Beautiful Gardens with Less Water*. Menlo Park: Lane Publishing Company, 1989.

Vickers, Amy. *Handbook of Water Use and Conservation*. Amherst, MA: WaterPlow Press, 2001.

Weinstein, Gayle. *Xeriscape Handbook : A How-To Guide to Natural, Resource-Wise Gardening*. Golden: Fulcrum Publishing, 1998.

Williams, Sara. *Creating the Prairie Xeriscape*. Saskatchewan: University Extension Press, 1997.

Winger, David, ed. *Xeriscape Plant Guide: 100 Water-Wise Plants for Gardens and Landscapes*. Golden: Fulcrum Publishing, 1998.

Winger, David, ed. *Xeriscape Color Guide*. Golden: Fulcrum Publishing, 1998.

Winger, David, ed. *Evidence of Care: The Xeriscape Maintenance Journal, 2002, Vol. 1*, Colorado WaterWise Council, 2001.

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For copies of this publication contact:
EPA Water Resources Center (RC-4100)
U.S. Environmental Protection Agency
Ariel Rios Building, 1200 Pennsylvania Avenue, NW.
Washington, DC 20460

For more information regarding water efficiency, please contact:
Water Efficiency Program (4204M)
U.S. Environmental Protection Agency
Ariel Rios Building, 1200 Pennsylvania Avenue, NW.
Washington, DC 20460
<www.epa.gov/OWM/water-efficiency/index.htm>

United States
Environmental Protection Agency (4204M)
Washington, DC 20460

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Drainage System Maintenance SC-44

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).

- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.

- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.

- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.

- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.

- Regulations may include adoption of substantial penalties for illegal dumping and disposal.

- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.

- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:

  - Purchase and installation of signs.

  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.

  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.

  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line:
http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Waste Handling & Disposal SC-34

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Accomplish reduction in the amount of waste generated using the following source controls:
  - ✓ Production planning and sequencing;
  - ✓ Process or equipment modification;
  - ✓ Raw material substitution or elimination;
  - ✓ Loss prevention and housekeeping;
  - ✓ Waste segregation and separation; and
  - ✓ Close loop recycling.
- ☐ Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- ☐ Recycle materials whenever possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

- Use the entire product before disposing of the container.
- To the extent possible, store wastes under cover or indoors after ensuring all safety concerns such as fire hazard and ventilation are addressed.
- Provide containers for each waste stream at each work station. Allow time after shift to clean area.

Good Housekeeping

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain. Clean in a designated wash area that drains to a clarifier.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- If possible, move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Preventative Maintenance

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.

- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, vacuuming, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Spill Response and Prevention Procedures

- Keep your spill prevention and plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - ✓ Vehicles equipped with baffles for liquid waste; and
  - ✓ Trucks with sealed gates and spill guards for solid waste.

Material Handling and Waste Management

Litter Control

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.

- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for waste handling and disposal, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.

- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and the types of waste handled. Significant capital costs may be associated with reducing wastes by modifying processes or implementing closed-loop recycling.
- Many facilities will already have indoor covered areas where waste materials will be stored and will require no additional capital expenditures for providing cover.
- If outdoor storage of wastes is required, construction of berms or other means to prevent stormwater run-on and runoff may require appropriate constructed systems for containment.
- Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

References and Resources

Minnesota Pollution Control Agency, *Industrial Stormwater Best Management Practices Guidebook*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315,* Revised. Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities

Oregon Department of Environmental Quality, 2013. *Industrial Stormwater Best Management Practices Manual- BMP 26 Fueling and Liquid Loading/Unloading Operations.* Available online at: http://www.deq.state.or.us/wq/wqpermit/docs/IndBMP021413.pdf.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control.* Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Sacramento County Environmental Management Stormwater Program: Best Management Practices. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Outdoor Liquid Container Storage SC-31

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

Accidental releases of materials from above ground liquid storage tanks, drums, and dumpsters present the potential for contaminating stormwaters with many different pollutants. Tanks may store many potential stormwater runoff pollutants, such as gasoline, aviation gas, diesel fuel, kerosene, oils, greases, lubricants and other distilled, blended and refined products derived from crude petroleum. Materials spilled, leaked, or lost from storage tanks may accumulate in soils or on other surfaces and be carried away by rainfall runoff. These source controls apply to containers located outside of a building used to temporarily store liquid materials and include installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Approach

Pollution Prevention

- Educate employees about pollution prevention measures and goals.
- Keep an accurate, up-to-date inventory of the materials delivered and stored on-site.
- Try to keep chemicals in their original containers, and keep them well labeled.

Suggested Protocols

General

- Develop an operations plan that describes procedures for loading and/or unloading. Refer to SC-30 – Outdoor

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Loading/Unloading of Materials for more detailed BMP information pertaining to loading and unloading of liquids.

- Protect materials from rainfall, run-on, runoff, and wind dispersal:
  - Cover the storage area with a roof.
  - Minimize stormwater run-on by enclosing the area or building a berm around it.
  - Use a "doghouse" structure for storage of liquid containers.
  - Use covered dumpsters for waste product containers.
- Employ safeguards against accidental releases:
  - Provide overflow protection devices to warn operator or automatic shut down transfer pumps.
  - Provide protection guards (bollards) around tanks and piping to prevent damage from a vehicle or forklift.
  - Provide clear tagging or labeling, and restrict access to valves to reduce human error.
- Berm or surround tank or container with secondary containment system, including dikes, liners, vaults, or double walled tanks.
- Be aware and ready to address the fact that some municipalities require secondary containment areas to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.
- Contact the appropriate regulatory agency regarding environmental compliance for facilities with "spill ponds" designed to intercept, treat, and/or divert spills.
- Have registered and specifically trained professional engineers identify and correct potential problems such as loose fittings, poor welding, and improper or poorly fitted gaskets for newly installed tank systems.

Storage Areas

- Provide storage tank piping located below product level with a shut-off valve at the tank; ideally this valve should be an automatic shear valve with the shut-off located inside the tank.
- Provide barriers such as posts or guardrails, where tanks are exposed, to prevent collision damage with vehicles.
- Provide secure storage to prevent vandalism-caused contamination.
- Place tight-fitting lids on all containers.
- Enclose or cover the containers where they are stored.

- Raise the containers off the ground by use of pallet or similar method, with provisions for spill control.
- Contain the material in such a manner that if the container leaks or spills, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters or groundwater.
- Place drip pans or absorbent materials beneath all mounted container taps, and at all potential drip and spill locations during filling and unloading of containers. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.
- Ensure that any underground or aboveground storage tanks are designed and managed in accordance with applicable regulations, identified as a potential pollution source, and have secondary containment such as a berm or dike with an impervious surface.

Inspection

- Provide regular inspections:
  - Inspect storage areas regularly for leaks or spills.
  - Conduct routine inspections and check for external corrosion of material containers. Also check for structural failure, spills and overfills due to operator error, failure of piping system.
  - Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.
  - Visually inspect new tank or container installations for loose fittings, poor welding, and improper or poorly fitted gaskets.
  - Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
  - Replace containers that are leaking, corroded, or otherwise deteriorating with ones in good condition. If the liquid chemicals are corrosive, containers made of compatible materials must be used instead of metal drums.
  - New or secondary containers must be labeled with the product name and hazards.

Training

- Train employee (e.g., fork lift operators) and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.
- Train employees in proper storage measures.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment, and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Prevent operator errors by using engineering safeguards and thus reducing accidental releases of pollutants.
- Store and maintain appropriate spill cleanup materials in a location near the tank storage area and known to all.

Other Considerations

- Storage sheds often must meet building and fire code requirements.
- The local fire district must be consulted for limitations on clearance of roof covers over containers used to store flammable materials.
- All specific standards set by Federal and State laws concerning the storage of oil and hazardous materials must be met.
- Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code.
- Storage of oil and hazardous materials must meet specific Federal and State standards including:
  - Spill Prevention Control and Countermeasure Plan (SPCC) Plan
  - Secondary containment
  - Integrity and leak detection monitoring
  - Emergency preparedness plans

Requirements

Costs

Costs will vary depending on the size of the facility and the necessary controls, such as berms or safeguards against accidental controls.

Maintenance

- Conduct weekly inspection.
- Sweep and clean the storage area regularly if it is paved, do not hose down the area to a storm drain.

Supplemental Information

The most common causes of unintentional releases are:

- Installation problems
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- External corrosion and structural failure
- Spills and overfills due to operator error
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa

Further Detail of the BMP

Aboveground Tank Leak and Spill Control

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be paved with Portland cement concrete, free of cracks and gaps, and impervious in order to contain leaks and spills,
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10% of the volume of all of the containers or 110% of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator

Maintenance is critical to preventing leaks and spills. Conduct routine weekly inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa

- Inspect new tank or container installation visually for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently release accumulated stormwater during the wet season.
- Have periodic integrity testing conducted by a qualified professional.

Container Management

- To limit the possibility of stormwater pollution, containers used to store dangerous waste or other liquids should be kept inside the building unless this is impractical due to site constraints. If the containers are placed outside, the following procedures should be employed:
  - Dumpsters used to store items awaiting transfer to a landfill should be placed in a lean-to structure or otherwise covered. Dumpsters shall be kept in good condition without corrosion or leaky seams.
  - Garbage dumpsters shall be replaced if they are deteriorating to the point where leakage is occurring. Dumpsters should be kept undercover to prevent the entry of stormwater. Employees should be made aware of the importance of keeping the dumpsters covered and free from leaks.
  - Waste container drums should be kept in an area such as a service bay. If drums are kept outside, they must be stored in a lean-to type structure, shed or walk-in container to keep rainfall from reaching the drums.

Dikes

One of the best protective measures against contamination of stormwater is diking. Containment dikes are berms or retaining walls that are designed to hold spills. Diking is an effective pollution prevention measure for above ground storage tanks and railcar or tank truck loading and unloading areas. The dike surrounds the area of concern and holds the spill, keeping spill materials separated from the stormwater side of the dike area. Diking can be used in any industrial or municipal facility, but it is most commonly used for controlling large spills or releases from liquid storage areas and liquid transfer areas.

- For single-wall tanks, containment dikes should be large enough to hold the contents of the storage tank for the facility plus rain water.
- For trucks, diked areas should be capable of holding an amount equal to the volume of the tank truck compartment. Diked construction material should be strong enough to safely hold spilled materials.
- Dike materials can consist of earth, concrete, synthetic materials, metal, or other impervious materials.
- Strong acids or bases may react with metal containers, concrete, and some plastics.

- Where strong acids or bases or stored, alternative dike materials should be considered. More active organic chemicals may need certain special liners for dikes.
- Dikes may also be designed with impermeable materials to increase containment capabilities.
- Dikes should be inspected during or after significant storms or spills to check for washouts or overflows.
- Regular checks of containment dikes to insure the dikes are capable of holding spills should be conducted.
- Inability of a structure to retain stormwater, dike erosion, soggy areas, or changes in vegetation indicate problems with dike structures. Damaged areas should be patched and stabilized immediately.
- Earthen dikes may require special maintenance of vegetation such as mulching and irrigation.

Curbing

Curbing is a barrier that surrounds an area of concern. Curbing is similar to containment diking in the way that it prevents spills and leaks from being released into the environment. Curbing is usually small scaled and does not contain large spills like diking. Curbing is common at many facilities in small areas where handling and transfer of liquid materials occur. Curbing can redirect contaminated stormwater away from the storage area. It is useful in areas where liquid materials are transferred from one container to another. Asphalt is a common material used for curbing; however, curbing materials can include earth, concrete, synthetic materials, metal, or other impenetrable materials.

- Spilled materials should be removed immediately from curbed areas to allow space for future spills.
- Curbs should have manually-controlled pump systems rather than common drainage systems for collection of spilled materials.
- The curbed area should be inspected regularly to clear clogging debris.
- Maintenance should also be conducted frequently to prevent overflow of any spilled materials as curbed areas are designed only for smaller spills.
- Curbing has the following advantages:
  - Excellent run-on control
  - Inexpensive
  - Ease of installment
  - Provides option to recycle materials spilled in curb areas
  - Common industry practice

Examples

The "doghouse" design has been used to store small liquid containers. The roof and flooring design prevent contact with direct rain or runoff. The doghouse has two solid structural walls and two canvas covered walls. The flooring is wire mesh about secondary containment. The unit has been used successfully at Lockheed Missile and Space Company in Sunnyvale.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Fueling Areas SD-30

Photo Credit: Geoff Brosseau

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- ☑ Collect and Convey

Description

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the stormwater conveyance system. Spills at vehicle and equipment fueling areas can be a significant source of pollution because fuels contain toxic materials and heavy metals that are not easily removed by stormwater treatment devices.

Approach

Project plans must be developed for cleaning near fuel dispensers, emergency spill cleanup, containment, and leak prevention.

Suitable Applications

Appropriate applications include commercial, industrial, and any other areas planned to have fuel dispensing equipment, including retail gasoline outlets, automotive repair shops, and major non-retail dispensing areas.

Design Considerations

Design requirements for fueling areas are governed by Building and Fire Codes and by current local agency ordinances and zoning requirements. Design requirements described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements.

Designing New Installations

Covering

Fuel dispensing areas should provide an overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area should drain to the project's treatment control BMP(s) prior to discharging to the stormwater conveyance system. Note - If fueling large equipment or vehicles that would prohibit the use of covers or roofs, the fueling island should be designed to sufficiently accommodate the larger vehicles and equipment and to prevent stormwater run-on and runoff. Grade to direct stormwater to a dead-end sump.

Surfacing

Fuel dispensing areas should be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete should be prohibited. Use asphalt sealant to protect asphalt paved areas surrounding the fueling area. This provision may be made to sites that have pre-existing asphalt surfaces.

The concrete fuel dispensing area should be extended a minimum of 6.5 ft from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 ft, whichever is less.

Grading/Contouring

Dispensing areas should have an appropriate slope to prevent ponding, and be separated from the rest of the site by a grade break that prevents run-on of urban runoff. (Slope is required to be 2 to 4% in some jurisdictions' stormwater management and mitigation plans.)

Fueling areas should be graded to drain toward a dead-end sump. Runoff from downspouts/roofs should be directed away from fueling areas. Do not locate storm drains in the immediate vicinity of the fueling area.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

- In the case of an emergency, provide storm drain seals, such as isolation valves, drain plugs, or drain covers, to prevent spills or contaminated stormwater from entering the stormwater conveyance system.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Non-Stormwater Discharges SC-10

Description

Non-stormwater discharges (NSWDs) are flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain if local regulations allow. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include: potable water sources, fire hydrant flushing, air conditioner condensate, landscape irrigation drainage and landscape watering, emergency firefighting, etc. as discussed in Section 2.

However there are certain non-stormwater discharges that pose an environmental concern. These discharges may originate from illegal dumping of industrial material or wastes and illegal connections such as internal floor drains, appliances, industrial processes, sinks, and toilets that are illegally connected to the nearby storm drainage system through on-site drainage and piping. These unauthorized discharges (examples of which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains.

Non-stormwater discharges will need to be addressed through a combination of detection and elimination. The ultimate goal is to effectively eliminate unauthorized non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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pollutants on streets and into the storm drain system and downstream water bodies.

Approach

Initially the Discharger must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is the elimination of unauthorized non-stormwater discharges. See other BMP Fact Sheets for activity-specific pollution prevention procedures.

General Pollution Prevention Protocols

- Implement waste management controls described in SC-34 Waste Handling and Disposal.
- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" or similar stenciled or demarcated next to them to warn against ignorant or unintentional dumping of pollutants into the storm drainage system.
- Manage and control sources of water such as hose bibs, faucets, wash racks, irrigation heads, etc. Identify hoses and faucets in the SWPPP, and post signage for appropriate use.

Non-Stormwater Discharge Investigation Protocols

Identifying the sources of non-stormwater discharges requires the Discharger to conduct an investigation of the facility at regular intervals. There are several categories of non-stormwater discharges:

- Visible, easily identifiable discharges, typically generated as surface runoff, such as uncontained surface runoff from vehicle or equipment washing; and
- Non-visible, (e.g., subsurface) discharges into the site drainage system through a variety of pathways that are not obvious.

The approach to detecting and eliminating non-stormwater discharges will vary considerably, as discussed below:

Visible and identifiable discharges

- Conduct routine inspections of the facilities and of each major activity area and identify visible evidence of unauthorized non-stormwater discharges. This may include:
  - ✓ Visual observations of actual discharges occurring;

- ✓ Evidence of surface staining, discoloring etc. that indicates that discharges have occurred;
- ✓ Pools of water in low lying areas when a rain event has not occurred; and
- ✓ Discussions with operations personnel to understand practices that may lead to unauthorized discharges.

- ☐ If evidence of non-stormwater discharges is discovered:
  - ✓ Document the location and circumstances using Worksheets 5 and 6 (Section 2 of the manual), including digital photos;
  - ✓ Identify and implement any quick remedy or corrective action (e.g., moving uncovered containers inside or to a proper location); and
  - ✓ Develop a plan to eliminate the discharge. Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge.

- ☐ Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge. Make sure the facility SWPPP is up-to-date and includes applicable BMPs to address the non-stormwater discharge.

Other Illegal Discharges (Non visible)

Illicit Connections

- ☐ Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- ☐ Isolate problem areas and plug illicit discharge points.
- ☐ Locate and evaluate discharges to the storm drain system.
- ☐ Visual Inspection and Inventory:
  - ✓ Inventory and inspect each discharge point during dry weather.
  - ✓ Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system.
  - ✓ Non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- ☐ A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.

- Inspect the path of loading/unloading area drain inlets and floor drains in older buildings.

- Never assume storm drains are connected to the sanitary sewer system.

Monitoring for investigation/detection of illegal discharges

- If a suspected illegal or unknown discharge is detected, monitoring of the discharge may help identify the content and/or suggest the source. This may be done with a field screening analysis, flow meter measurements, or by collecting a sample for laboratory analysis. Section 5 and Appendix D describe the necessary field equipment and procedures for field investigations.

- Investigative monitoring may be conducted over time. For example if, a discharge is intermittent, then monitoring might be conducted to determine the timing of the discharge to determine the source.

- Investigative monitoring may be conducted over a spatial area. For example, if a discharge is observed in a pipe, then monitoring might be conducted at accessible upstream locations in order to pinpoint the source of the discharge.

- Generally, investigative monitoring requiring collection of samples and submittal for lab analysis requires proper planning and specially trained staff.

Smoke Testing

Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two piping systems. Smoke testing is generally performed at a downstream location and the smoke is forced upstream using blowers to create positive pressure. The advantage to smoke testing is that it can potentially identify multiple potential discharge sources at once.

- Smoke testing uses a harmless, non-toxic smoke cartridges developed specifically for this purpose.

- Smoke testing requires specialized equipment (e.g., cartridges, blowers) and is generally only appropriate for specially trained staff.

- A Standard Operating Procedure (SOP) for smoke testing is highly desirable. The SOP should address the following elements:

  - ✓ Proper planning and notification of nearby residents and emergency services is necessary since introducing smoke into the system may result in false alarms;

  - ✓ During dry weather, the stormwater collection system is filled with smoke and then traced back to sources;

- ✓ Temporary isolation of segments of pipe using sand bags is often needed to force the smoke into leaking pipes; and
- ✓ The appearance of smoke in a waste vent pipe, at a sewer manhole, or even the base of a toilet indicates that there may be a connection between the sanitary and storm water systems.

- Most municipal wastewater agencies will have necessary staff and equipment to conduct smoke testing and they should be contacted if cross connections with the sanitary sewer are suspected. See SC-44 Drainage System Maintenance for more information.

Dye Testing

- Dye testing is typically performed when there is a suspected specific pollutant source and location (i.e., leaking sanitary sewer) and there is evidence of dry weather flows in the stormwater collection system.
- Dye is released at a probable upstream source location, either the facility's sanitary or process wastewater system. The dye must be released with a sufficient volume of water to flush the system.
- Operators then visually examine the downstream discharge points from the stormwater collection system for the presence of the dye.
- Dye testing can be performed informally using commercially available products in order to conduct an initial investigation for fairly obvious cross-connections.
- More detailed dye testing should be performed by properly trained staff and follow SOPs. Specialized equipment such as fluorometers may be necessary to detect low concentrations of dye.
- Most municipal wastewater agencies will have necessary staff and equipment to conduct dye testing and they should be contacted if cross connections with the sanitary sewer are suspected.

TV Inspection of Drainage System

- Closed Circuit Television (CCTV) can be employed to visually identify illicit connections to the industrial storm drainage system. Two types of CCTV systems are available: (1) a small specially designed camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping, or (2) a larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe.
- CCTV systems often include a high-pressure water jet and camera on a flexible cable. The water jet cleans debris and biofilm off the inside of pipes so the camera can take video images of the pipe condition.

- CCTV units can detect large cracks and other defects such as offsets in pipe ends caused by root intrusions or shifting substrate.
- CCTV can also be used to detect dye introduced into the sanitary sewer.
- CCTV inspections require specialized equipment and properly trained staff and are generally best left to specialized contractors or municipal public works staff.

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks may include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. These wastes can cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ Illegal dumping hot spots;
  - ✓ Types and quantities (in some cases) of wastes;
  - ✓ Patterns in time of occurrence (time of day/night, month, or year);
  - ✓ Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills);
  - ✓ An anonymous tip/reporting mechanism; and
  - ✓ Evidence of responsible parties (e.g., tagging, encampments, etc.).
- One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Spill and Leak Prevention and Response

- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.
- See SC-11 Spill Prevention Control and Cleanup.

Employee Training Program

- Training of technical staff in identifying and documenting illegal dumping incidents is required. The frequency of training must be presented in the SWPPP, and depends on site-specific industrial materials and activities.
- Consider posting a quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.
- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan. Employees should be able to identify work/jobs with high potential for spills and suggest methods to reduce possibility.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.

- Conduct spill response drills annually (if no events occurred) in order to evaluate the effectiveness of the plan.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Quality Assurance and Record Keeping

Performance Evaluation

- Annually review internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.
- Develop document and data management procedures.
- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Annually document and report the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.
- Document training activities.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Many facilities do not have accurate, up-to-date 'as-built' plans or drawings which may be necessary in order to conduct non-stormwater discharge assessments.
  - ✓ Online tools such as Google Earth™ can provide an aerial view of the facility and may be useful in understanding drainage patterns and potential sources of non-stormwater discharges
  - ✓ Local municipal jurisdictions may have useful drainage systems maps.

- Video surveillance cameras are commonly used to secure the perimeter of industrial facilities against break-ins and theft. These surveillance systems may also be useful for capturing illegal dumping activities. Minor, temporary adjustments to the field of view of existing surveillance camera systems to target known or suspected problem areas may be a cost-effective way of capturing illegal dumping activities and identifying the perpetrators.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital facility cost requirements may be minimal unless cross-connections to storm drains are detected.
- Indoor floor drains may require re-plumbing if cross-connections are detected.
- Leaky sanitary sewers will require repair or replacement which can have significant costs depending on the size and industrial activity at the facility.

Maintenance (including administrative and staffing)

- The primary effort is for staff time and depends on how aggressively a program is implemented.
- Costs for containment, and disposal of any leak or discharge is borne by the Discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Permit Requirements

The IGP authorizes certain Non-Storm Water Discharges (NSWDs) provided BMPs are included in the SWPPP and implemented to:

- Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
- Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
- Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards (WQS); and,

- Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability."

References and Resources

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Project Specific Water Quality Management Plan – Building 2

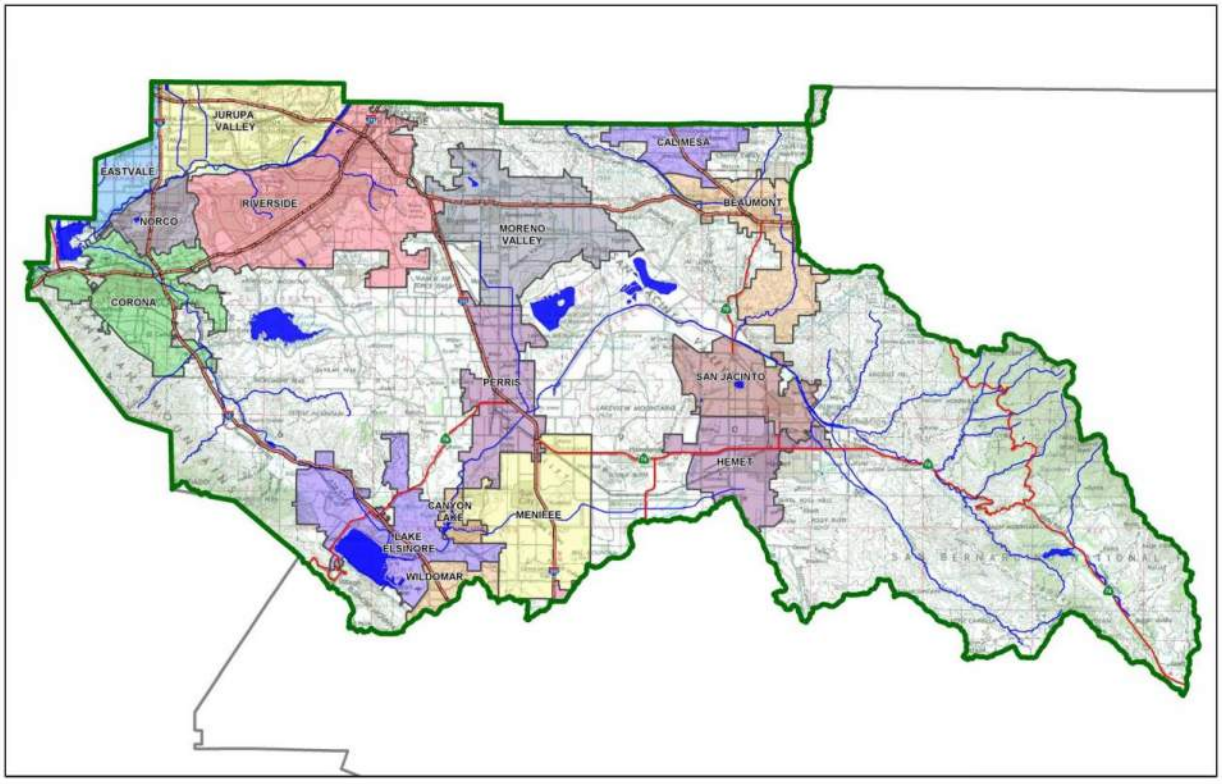
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Beaumont Summit Station – Building 2

Development No:

Design Review/Case No: PW2021-0770



☒ **Preliminary**
☐ **Final**

Original Date Prepared: August 2021

Revision Date(s): April 2022

Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**
Template revised June 30, 2016

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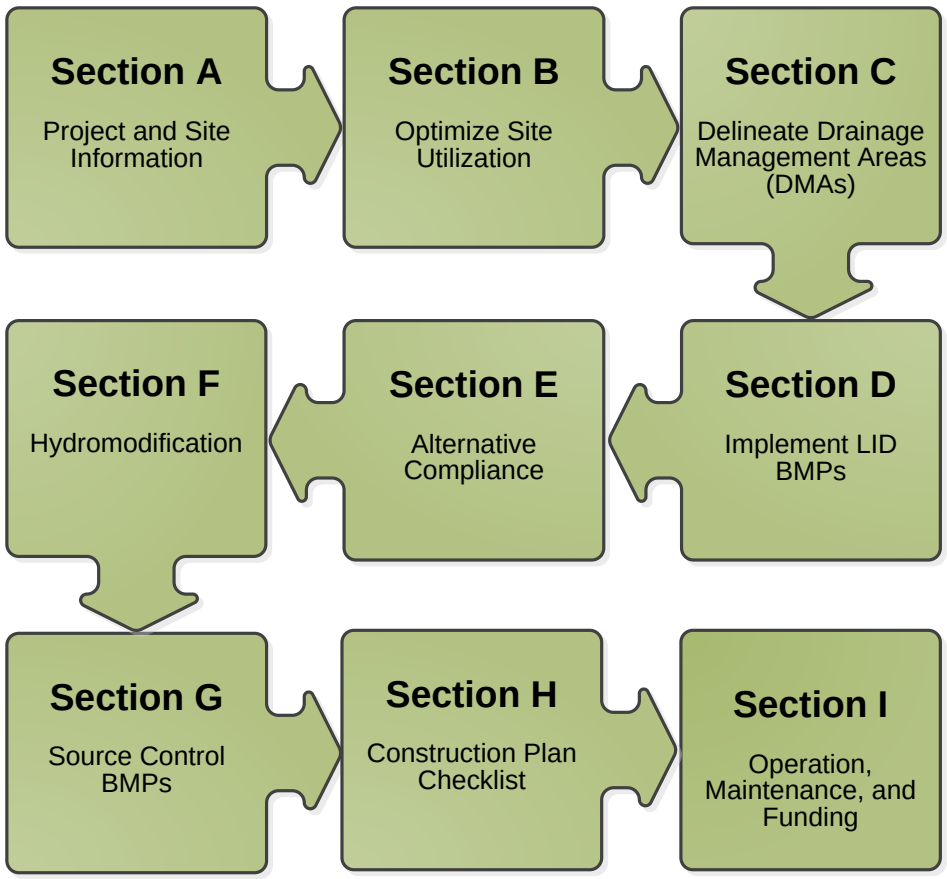
A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Exeter Cherry Valley Land, LLC by Albert A. Webb Associates for the Beaumont Summit Station- Building 2 project.

This WQMP is intended to comply with the requirements of City of Beaumont, County of Riverside for County of Riverside Ordinance No. 754 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under Riverside County Water Quality Ordinance (Municipal Code Section 13.12 – Stormwater Drainage System Protection Regulations).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	Date
Byanka Velasco	Senior Engineer
Preparer's Printed Name	Preparer's Title/Position

Preparer's Licensure:

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	E-commerce
Planning Area:	Sunny Cal Specific Plan
Community Name:	Beaumont Summit Station
Development Name:	Beaumont Summit Station – Building 2
PROJECT LOCATION	
Latitude & Longitude (DMS): 33˚ 57’ 53.37” N, 117˚ 1’ 2.39” W	
Project Watershed and Sub-Watershed: Santa Ana Watershed	
Gross Acres: 67.9	
APN(s): 407-230-0(22-28), 407-190-016, 407-190-017	
Map Book and Page No.: Thomas Bros. Map Book Page: 690, Grids: C5, D5	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	E-commerce
Proposed or Potential SIC Code(s)	1541 – General Contractors – Industrial Buildings and Warehouses
Area of Impervious Project Footprint (SF)	2,377,821
Total Area of proposed Impervious Surfaces within the Project Footprint (SF)/or Replacement	2,377,821
Does the project consist of offsite road improvements?	☐ Y ☒ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the Project limits Footprint (SF)	807,951
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	N/A
Are there any natural hydrologic features on the project site?	☐ Y ☒ N
Is a Geotechnical Report attached?	☒ Y ☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	B, D
What is the Water Quality Design Storm Depth for the project?	0.79 in

Project Description

The Beaumont Summit Station (BSS)– Building 2 project proposes an e-commerce development in the City of Beaumont on approximately 67.9 acres of mostly vacant land within the boundaries of the 188-acre TPM 38223 (overall BSS project site). The overall BSS project site consists of approximately 188 acres of TPM 38223 which currently contains mostly vacant land with some pavement and structures and is bounded by Cherry Valley Boulevard to the north, Brookside Avenue to the south, residential lots to the east and vacant land to the west. TPM 38223 consists of approximately 145.4 acres of e-commerce, 11.4 acres of commercial, and 31.2 acres of open space areas. The BSS – Building 2 project is bounded by the future BSS -Building 3 development to the north (Design Review No. PW2021-0771), residential lots to the east, vacant Parcel 5 of TPM 38223 to the south and the future BSS – Building 1

development (Design Review No. PW2021-0769) to the west. The overall project site is currently mostly vacant with some buildings and paved areas in the eastern portion of the site.

Runoff from the onsite area currently runs through the site to the southwest. The runoff is conveyed into a natural streambed area that runs along the south of the project. This streambed ultimately discharges into a concrete ditch to the northwest of the overall project site.

For the proposed condition, runoff is captured through a series of inlets located throughout the site at low points. Captured flows are directed towards a proposed infiltration basin at the southwest corner of the site in order to treat for water quality requirements. The infiltration basin has been sized for increased runoff mitigation as well as the water quality volume. Flows generated by the BSS – Building 2 project development will ultimately discharge from the infiltration basin to the existing natural streambed to the west of the site.

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling
- BMP Locations (Lat/Long)

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Timoteo Creek Reach 3 (HUC 801.62)	N/A	GWR, REC1, REC2, WARM, WILD, RARE	N/A
Santa Ana River (Reach 5)	N/A	MUN, AGR, GWR, REC1, REC2, WARM, WILD, RARE	N/A
Santa Ana River (Reach 4)	Pathogens	GWR, REC1, REC2, WARM, WILD, RARE, SPWN	N/A
Santa Ana River (Reach 3)	Copper, Lead, Pathogens	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN	N/A
Prado Basin Management Zone	N/A	REC1, REC2, WARM, WILD, RARE	N/A

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☒ Y	☐ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* *City of Beaumont Grading Permit*	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, **constraints** might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. **Opportunities** might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Consideration of "highest and best use" of the discharge should also be considered. For example, Lake Elsinore is evaporating faster than runoff from natural precipitation can recharge it. Requiring infiltration of 85% of runoff events for projects tributary to Lake Elsinore would only exacerbate current water quality problems associated with Pollutant concentration due to lake water evaporation. In cases where rainfall events have low potential to recharge Lake Elsinore (i.e. no hydraulic connection between groundwater to Lake Elsinore, or other factors), requiring infiltration of Urban Runoff from projects is counterproductive to the overall watershed goals. Project proponents, in these cases, would be allowed to discharge Urban Runoff, provided they used equally effective filtration-based BMPs.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

The current site generally drains from northeast to southwest towards an existing natural streambed. In this existing condition, runoff generally sheet flows towards the streambed which runs northwest along the southwestern project boundary. In the developed condition, a network of inlets will capture flows generated onsite. After being treated by a proposed infiltration basin, flows are conveyed into the existing streambed area to the southwest of the project site, preserving the existing drainage pattern.

Did you identify and protect existing vegetation? If so, how? If not, why?

The existing project site has minimal vegetation, so no vegetation is proposed to be protected.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

Yes, based on a geotechnical investigation, the infiltration capacity for the proposed basin area has a recommended infiltration rate of 11.5 in/hr. This value allows for the implementation of an infiltration basin in order to treat for water quality requirements.

Did you identify and minimize impervious area? If so, how? If not, why?

The impervious areas will be minimized as much as possible while maintaining safe and usable facilities onsite. Landscaped areas have been provided throughout the projects site along concrete walkways, around the proposed building, adjacent to parking areas, and in other feasible locations throughout the site.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

Yes, however, based on the nature of the e-commerce development, not all runoff can feasibly be directed towards a pervious area before being captured. Pervious landscaped areas are proposed throughout the site where possible in order to maximize the chances of runoff dispersing into landscaped areas before being captured. All runoff that is captured onsite will be directed towards an infiltration basin to provide water quality treatment.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1][2]	Area (Sq. Ft.)	DMA Type
DMA 2 - Concrete	Concrete or Asphalt	1,162,617	D
DMA 2 - L/S	Ornamental Landscaping	609,769	D
DMA 2 – Roofs	Roofs	1,212,810	D
DMA 2 – Self-Treating	Ornamental Landscaping	7,700	A
DMA 2 – Basin (Self-Treating)	Ornamental Landscaping	106,388	A

[1]*Reference Table 2-1 in the WQMP Guidance Document to populate this column*
[2]*If multi-surface provide back-up*

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
DMA 2	7,700	Grasses/shrubs	Reclaimed water

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet)	Post-project surface type	Impervious fraction	Product		Area (square feet)	Ratio
	[A]		[B]	[C] = [A] x [B]	DMA name /ID	[D]	[C]/[D]

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA 2	Infiltration Basin

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site; proceed to section D.3

If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?	X*	
If Yes, list affected DMAs: DMA 2		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

**The geotechnical investigation found infiltration rates of 0.8 in/hr to 19.4 in/hr throughout the proposed basin area. Of the 6 locations tested within the proposed basin area, only one location had an infiltration rate below 1.6 in/hr. The infiltration report recommended the average infiltration rate within the basin of 11.5 in/hr to be used for this infiltration system (see the infiltration report in Appendix 3).*

D.2 Harvest and Use Assessment

Please check what applies*:*

☒ Reclaimed water will be used for the non-potable water demands for the project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If none of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: N/A

Type of Landscaping (Conservation Design or Active Turf): N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: N/A

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
N/A	N/A

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: N/A

Project Type: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-2 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: N/A

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	**Projected number of toilet users (Step 1)**
N/A	N/A

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-4 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-4: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the projected average daily use (Step 1) to the minimum required non-potable use (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**
N/A	N/A

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment per Section 3.4.2 of the WQMP Guidance Document.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☒ **Infiltration will be used.** LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA 2	☒	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*DMA 2*		
	[A]		[B]	[C]	[A] x [C]			
Roof	*1,212,810*	*Roofs*	*1*	*0.89*	*1,081,826.6*			
Concrete/Asphalt	*1,162,617*	*Concrete/Asphalt*	*1*	*0.89*	*1,037,054.1*			
Landscaping	*609,769*	*Ornamental Landscaping*	*0.1*	*0.11*	*67,353.8*			
Basin	*106,388*	*Self-Treating*				*Design Storm Depth (in)*	*Design Capture Volume,* $\mathbf{V_{BMP}}$ *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	$A_T = \Sigma[A]$ **3,091,583.4**				Σ= [D] **2,186,234.5**	[E] **0.7**	$[F] = \frac{[D]x[E]}{12}$ **143,927.1**	[G] ***144,000***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

N/A

E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☒ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☐ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☒	☒	☒	☒	☒	☒	☒

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	N/A
Total Credit Percentage[1]	

[1]Cannot Exceed 50%

[2]Obtain corresponding data from Table 3-8 in the WQMP Guidance Document

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
N/A						*Design Storm Depth (in)*	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document

[E] is for Flow-Based Treatment Control BMPs [E] = .2, for Volume-Based Control Treatment BMPs, [E] obtained from Exhibit A in the WQMP Guidance Document

[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12

[H] is from the Total Credit Percentage as Calculated from Table E.2 above

[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
N/A		

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.
[2] Cross Reference Table E.1 above to populate this column.
[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	N/A	N/A	N/A
Volume (Cubic Feet)	N/A	N/A	N/A

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Susceptibility Maps.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

The site does not meet the HCOC exemption criteria listed in Section F.1, therefore the site has been designed to mitigate the proposed flows to be no more than 10% of the pre-development 2-year peak flow rate generated by the BSS – Building 2 site, as allowed by option C listed above. Unit hydrograph analysis was performed for the 2-year storm event. A detention system comprised of a basin is proposed along with an orifice outlet to mitigate the proposed condition flows. In the existing condition, approximately 50.4 acres were analyzed as Area B and include the BSS – Building 2 site. In the proposed condition, Area B is referred to as the South Area and includes 17.4 acres which were a part of Area A (to the north and west of Area B) in the existing condition. The unit hydrograph results show that Area B generates a 24-hour, 2-year peak flow of 6.4 cfs. The proposed condition analyses resulted in the South Area generating a 24-hour, 2-year peak flow of 16.0 cfs. The proposed basin has a constant infiltration rate of 9.4 cfs based on the results of a geotechnical investigation (see infiltration report in Appendix 3). Accounting for the constant infiltration, the BSS – Building 2 site is discharging 6.6 cfs which is within 10% of the predevelopment flow. Therefore, the site meets the HCOC requirements with the proposed infiltration basin system. A routing analysis was performed for the increased runoff generated by the 5-year and 10-year storm events. Each of the Beaumont Summit Station building sites were analyzed along with the overall site to ensure that while some building sites are over mitigating or under mitigating due to the breakdown of the site based on grading constraints, overall the project will be fully mitigated once developed. The results for the 2-year storm event of BSS – Building 2 have been included in Appendix 7 and

detailed information regarding the analyses for other storm events can be found in the "Beaumont Summit Station – Building 2 Preliminary Drainage Study".

	EXISTING CONDITION 2-YEAR, 24-HOUR STORM		
		VOL (AC-FT)	PEAK FLOW (CFS)
	AREA A	2.7	4.3
	83.4% AREA A (PROP. WEST AREA)	-	3.6
	16.6% AREA A (PROP. NORTH AREA)	-	0.7
X	AREA B (PROP. SOUTH AREA)	3.9	6.4

	PROPOSED CONDITION 2-YEAR, 24-HOUR STORM			
		VOL (AC-FT)	PEAK FLOW (CFS)	ROUTING PEAK FLOW (CFS)
	WEST AREA	7.7	12.7	3.3
	NORTH AREA	5.0	8.2	0.7
	EX. AREA A COMBINED	12.7	20.9	4.0
X	SOUTH AREA (EX. AREA B)	9.7	16.0	0*

**South Area is tributary to a proposed infiltration basin with a factored infiltration rate of 9.4 cfs. The South Area 2-yr, 24-hour runoff is fully infiltrated by the basin at the factored rate. The effective runoff leaving the South Area tributary is 0 cfs.*

*Note: **X** signals area for Building-2. Matching colors from existing and proposed conditions are the same site outlet; the contributory tributaries are different and can span multiple building areas.*

*The entire site is shown for continuity, but only those areas with **X** will have Unit Hydrograph and Routing output included in Appendix 7.*

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	*Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.*	*Maintain and periodically repaint or replace inlet markings.* *Provide stormwater pollution prevention information to new site owners, lessees, or operators.* *See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*

Interior floor drains and elevator shaft sump	*The interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer*	*Inspect and maintain drains to prevent blockages and overflow.*
Landscape/Outdoor Pesticide Use	*Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.* *Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.* *Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.* *Consider using pest-resistant plants, especially adjacent to hardscape.* *To ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.*	*Maintain landscaping using minimum or no pesticides.* *See applicable operational BMPs in "What you should know for…..Landscape and Gardening" at http://rcflood.org/stormwater/* *Provide IPM information to new owners, lessees and operators.* *Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*
Refuse Areas	*Trash container storage areas shall be paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements from the surrounding area, and screened or walled to prevent off-site transport of trash.* *Trash dumpsters (containers) shall be leak proof and have attached covers or lids.* *Trash enclosures shall be roofed per City standards.* *Trash compactors shall be roofed and set on a concrete pad per City standards. The pad shall be a minimum of one foot larger all around than the trash compactor and sloped to drain to a sanitary sewer line. Connection of trash area drains to the MS4 is prohibited.* *See CASQA SD-32 BMP Fact Sheets in Appendix 10 for additional information.*	*Adequate number of receptacles shall be provided. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, in Appendix 10, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbook at www.cabmphandbooks.com*

	Signs shall be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	
Plazas, Sidewalks and parking lots.		*Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*
Loading Docks	*Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.* *Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.* *Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.*	*Move loaded and unloaded items indoors as soon as possible.* *See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*
Fire Sprinkler Test Water	*Water discharged from the fire sprinkler systems shall not enter the storm drain system. Discharged water from fire sprinkler testing shall be collected and used for onsite landscape or disposed of at a local waste water treatment plant.*	*See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	BMP Location (Lat/Long)
DMA 2	Infiltration Basin	Appendix 6	

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section H will be completed and addressed during Final WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: WQMP Covenant and Agreement

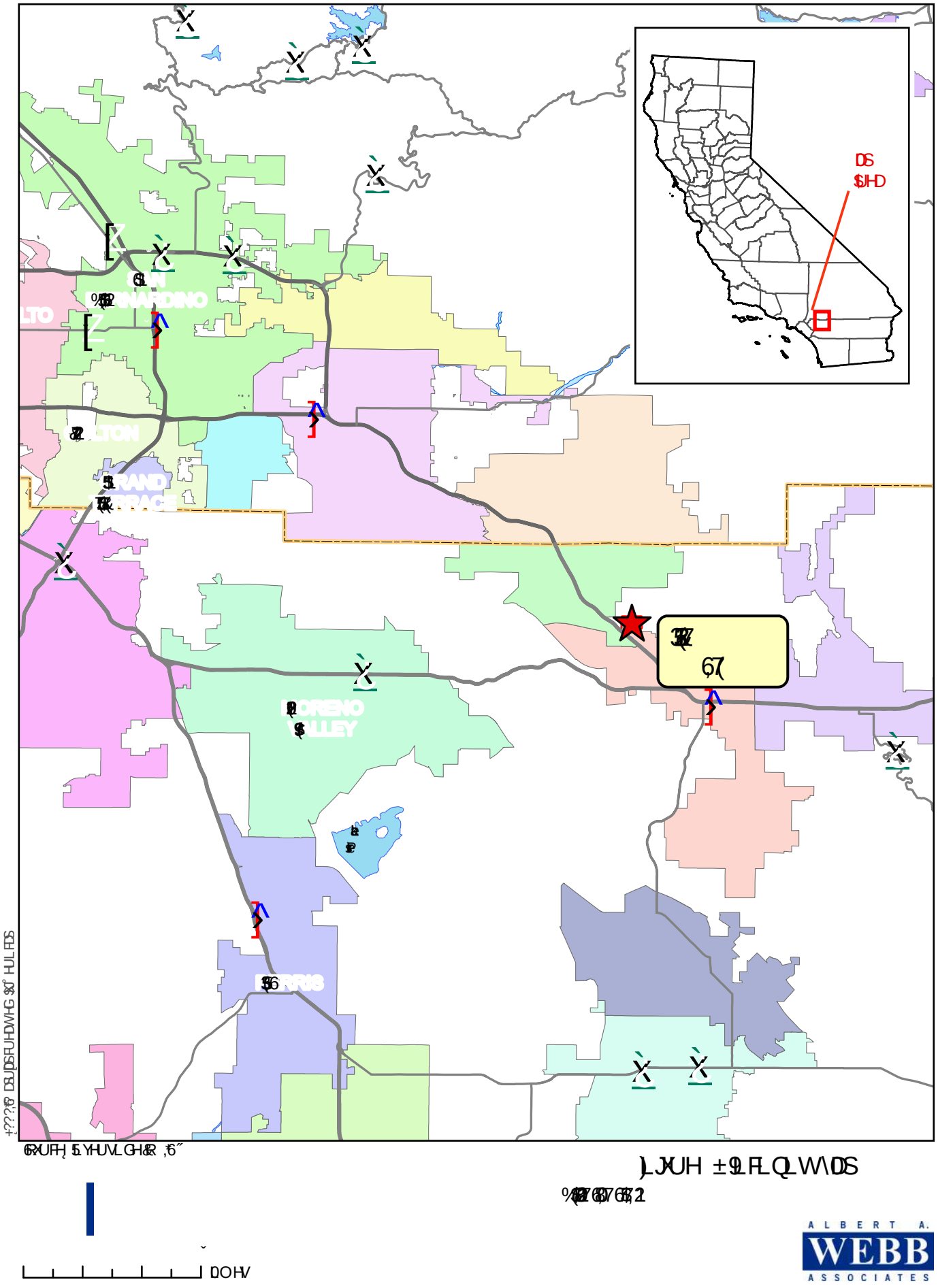
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☒ Y ☐ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map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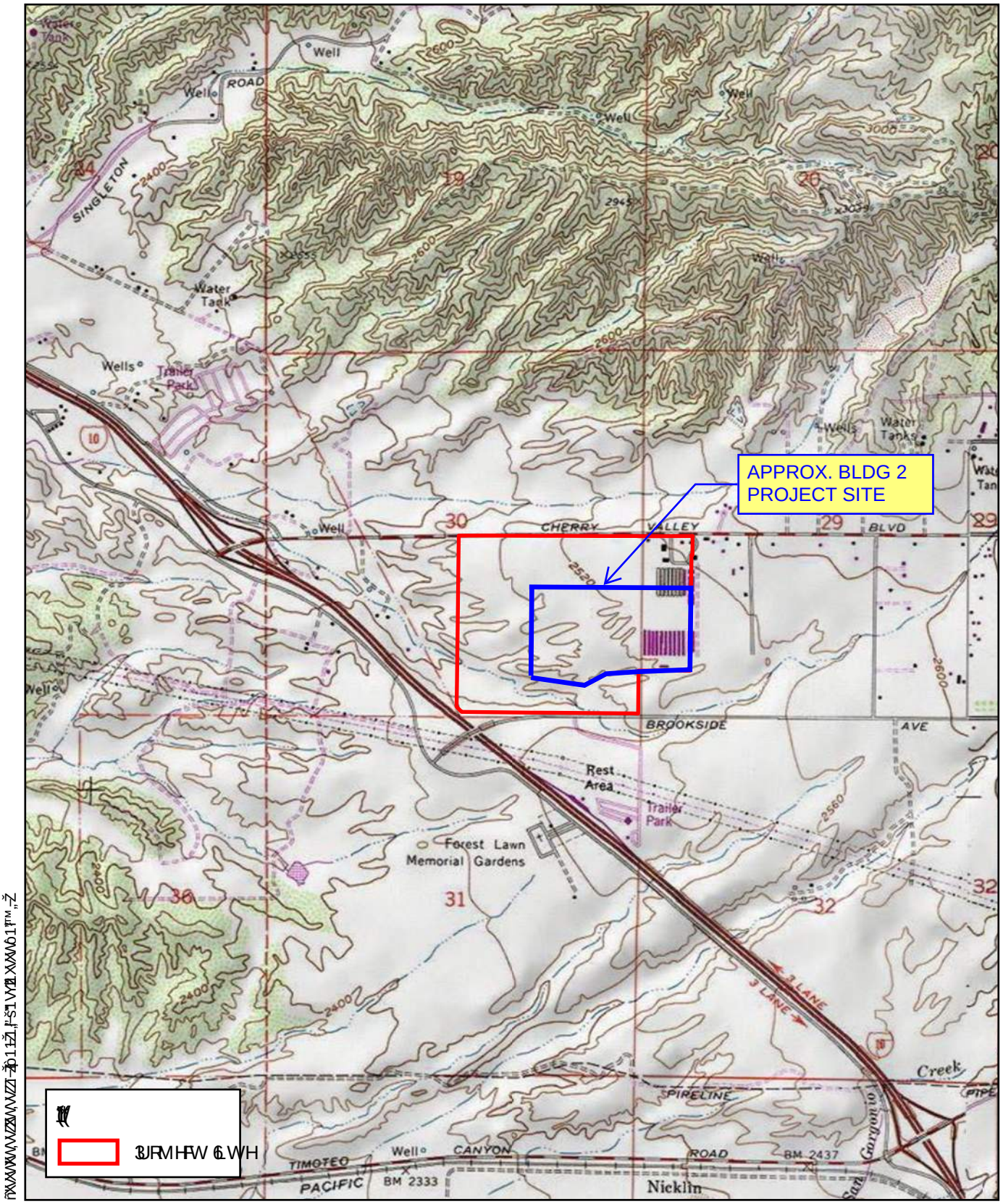
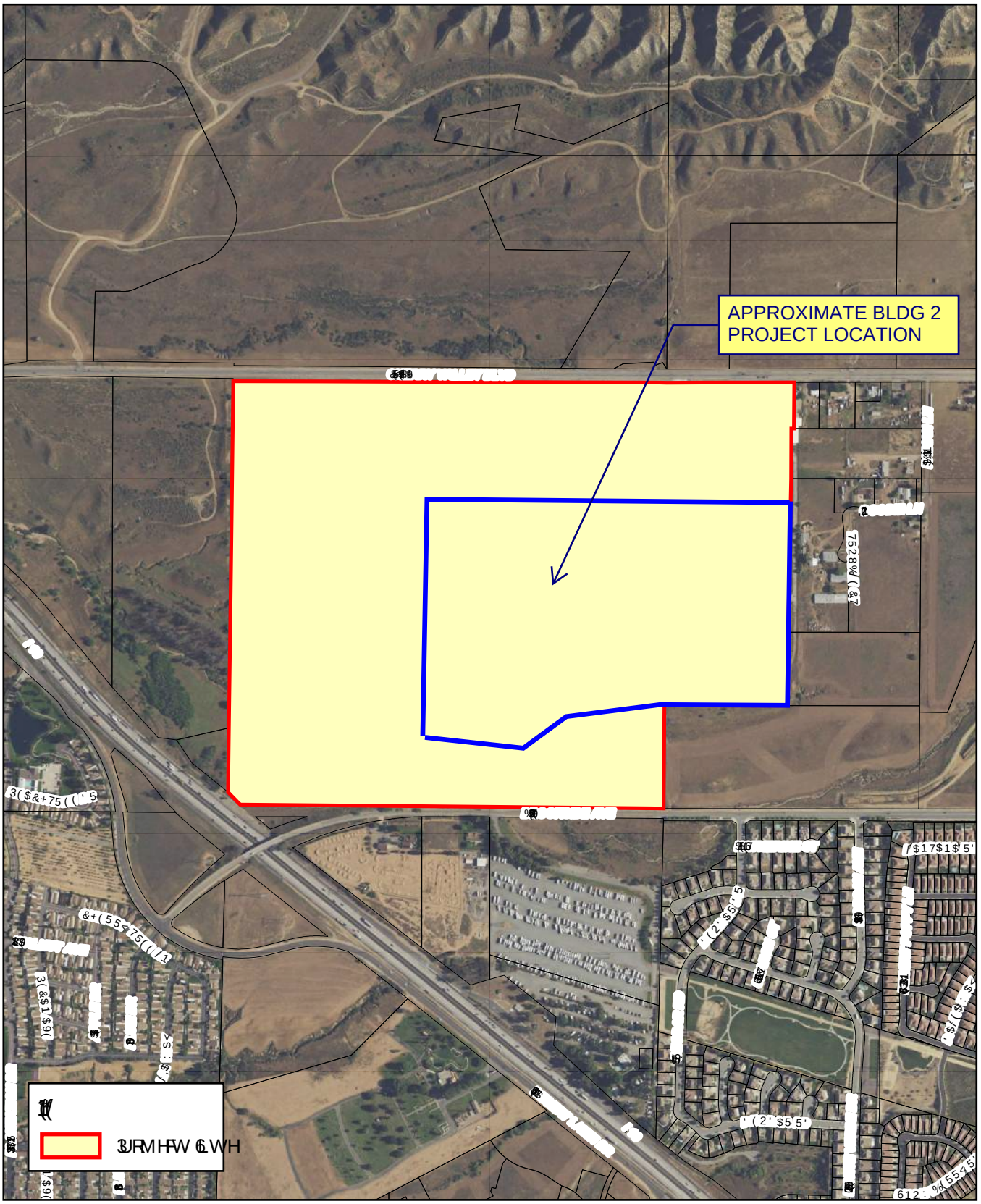
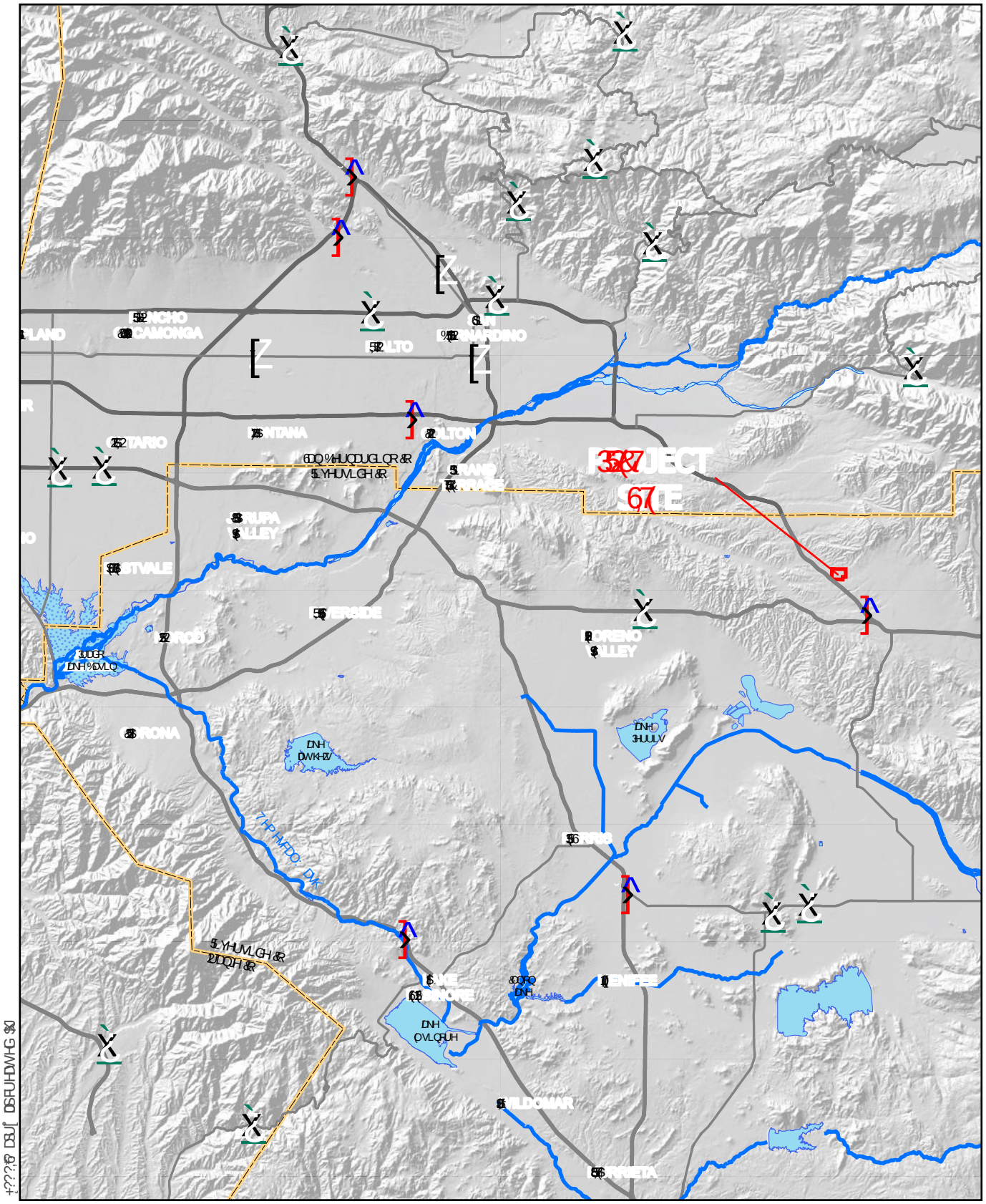

APPROX. BLDG 2
PROJECT SITE
CHERRY
VALLEY
BLVD
BROOKSIDE
AVE
Rest
Area
Trailer
Park
Forest Lawn
Memorial Gardens
SINGLETON
ROAD
Water
Tank
Wells
Well
TIMOTEO
CANYON
PACIFIC
BM 2333
BM 2437
Nicklin
Creek
PIPELINE
3 LANE
3 LANE


APPROXIMATE BLDG 2
PROJECT LOCATION



6RXUFH6 8 6 (3

)LJXUH ±5HFHLYLQJZDWHUERGLHV

%6 6 7 6 2

DOHV

ALBERT A. WEBB ASSOCIATES

CHERRY VALLEY BLVD

CHERRY VALLEY BLVD

"A" STREET

"B" STREET

"C" STREET

BUILDING 1

BUILDING 2

BUILDING 3

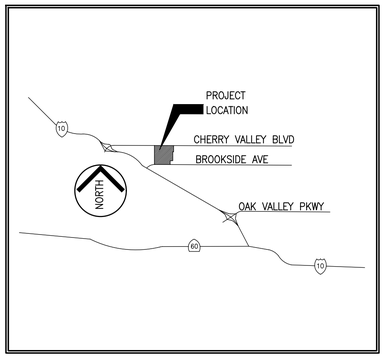
PARCEL 4

BROOKSIDE AVE

1" = 150'

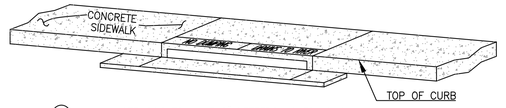
150 0 150 300 450

N W WEBB E S

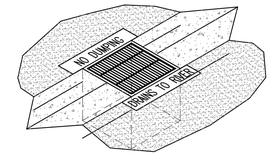


VICINITY MAP

NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30



1. STENCILS TO HAVE 2" LETTERS AS FOLLOWS: "NO DUMPING – DRAINS TO RIVER"
2. PLACE BOTH STENCILS CENTERED WITHIN THE CATCHBASIN OPENINGS AND WITHIN THE TOP OF THE CURB.
3. SPRAY BOTH STENCILS WITH WHITE PAINT.
4. REMOVE STENCILS WHEN PAINT IS DRY.



CATCH BASIN STENCILING DETAIL

NTS

LEGEND

- ROOF
- CONCRETE/ASPHALT
- LANDSCAPE
- BASIN
- SELF-TREATING
- DMA BOUNDARY
- PROJECT BOUNDARY
- FLOWLINE
- PROPOSED ONSITE STORM DRAIN
- NRCS SOIL BOUNDARY
- PROPOSED INLET

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
PRELIMINARY WQMP EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/3/2021			SHEET 1
DESIGNED: EP			OF 2 SHEETS
CHECKED: BJV			
PLN CK REF:			DWG. NO.
F.B.			

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SEE BUILDING 1 PWQMP

SEE BUILDING 3 PWQMP

POTENTIAL FOR LANDSCAPING/OUTDOOR PESTICIDE USE AT LANDSCAPED AREAS (TYP). MAINTAIN LANDSCAPING USING MINIMUM OR NO PESTICIDES.

MAINTAIN AND PERIODICALLY REPAINT INLET MARKINGS. NO DISCHARGE SHALL BE DUMPED INTO THE CATCH BASIN (TYP.)

SWEEP ROADWAYS REGULARLY TO PREVENT ACCUMULATION OF LITTER AND DEBRIS.

INSPECT TRASH ENCLOSURE AND CLEAN AS NEEDED (TYP)

DISCHARGE POINT TO EXISTING CONDITIONS

PROP. INFILTRATION BASIN

DMA 2

2499.42 LP
2504.64 HP
2506.22 HP
2554.48 HP
2501.62 LP
2501.64 LP
2494.23 LP
2501.24 HP
2490.95 LP
2499.88 HP
2497.18 LP
2497.17 LP
2504.52 LP
2497.04 LP
2488.17 LP
N33.962793
W117.019914

DMA 2 AREA TABLE	
ROOFS (SF)	1,212,810
CONCRETE (SF)	1,162,617
LANDSCAPE (SF)	609,769
SELF-TREAT (SF)	7,700
BASIN (SF)	106,388
VBMP (CF)	144,000

LEGEND

- ROOF
- CONCRETE/ASPHALT
- LANDSCAPE
- SELF-TREATING
- BASIN (SELF-TREATING)
- DMA BOUNDARY
- PROJECT BOUNDARY
- FLOWLINE
- PROPOSED ONSITE STORM DRAIN
- NRCS SOIL BOUNDARY
- PROPOSED INLET
- ROOF DRAIN DOWNSPOUT
- PROPOSED TRASH ENCLOSURE
- OVERFLOW DIRECTION

1" = 100'

100 0 100 200 300

N W WEBB E S

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 2
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
PRELIMINARY WQMP EXHIBIT

SCALE: 1" = 100'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/3/2021			SHEET 2
DESIGNED: EP			OF 2 SHEETS
CHECKED: BJV			
PLN CK REF:			DWG. NO.
F.B.			

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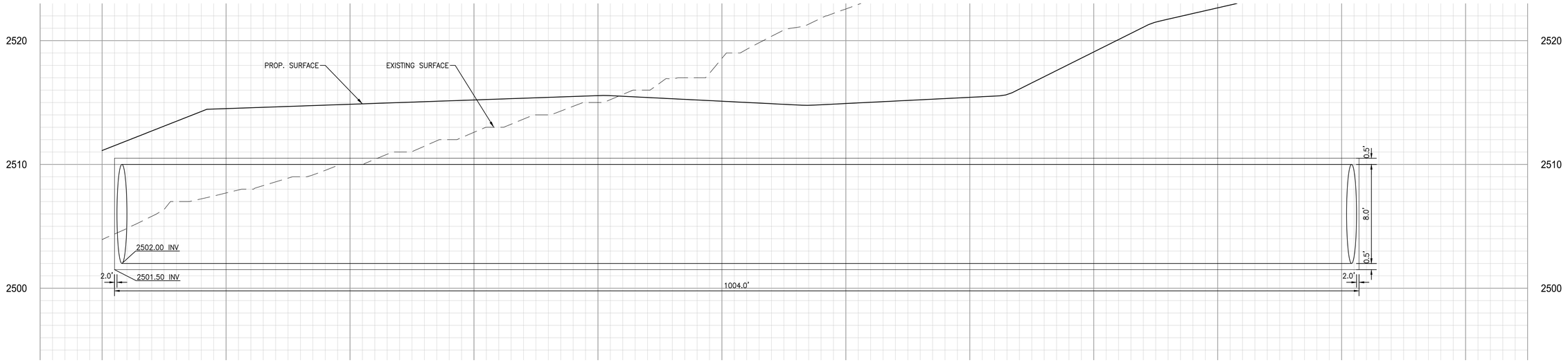
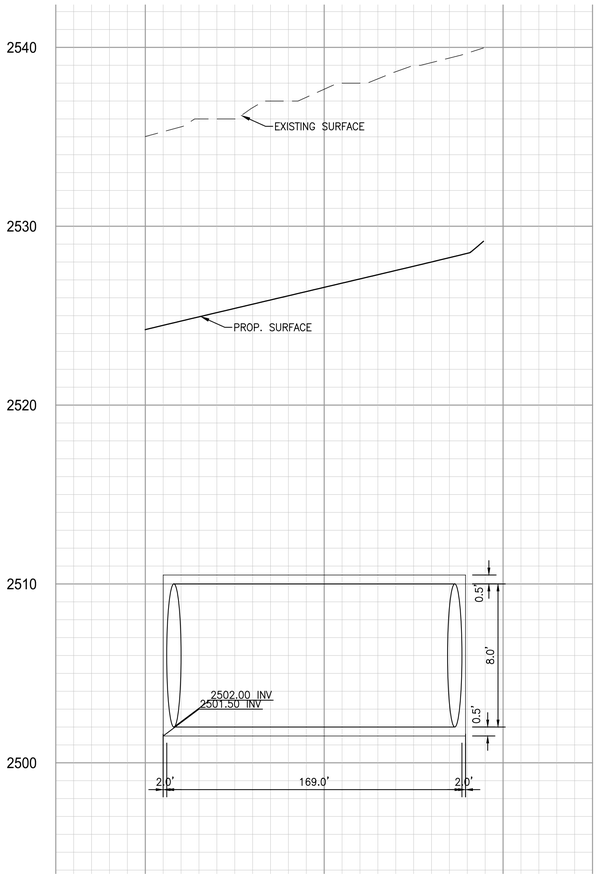
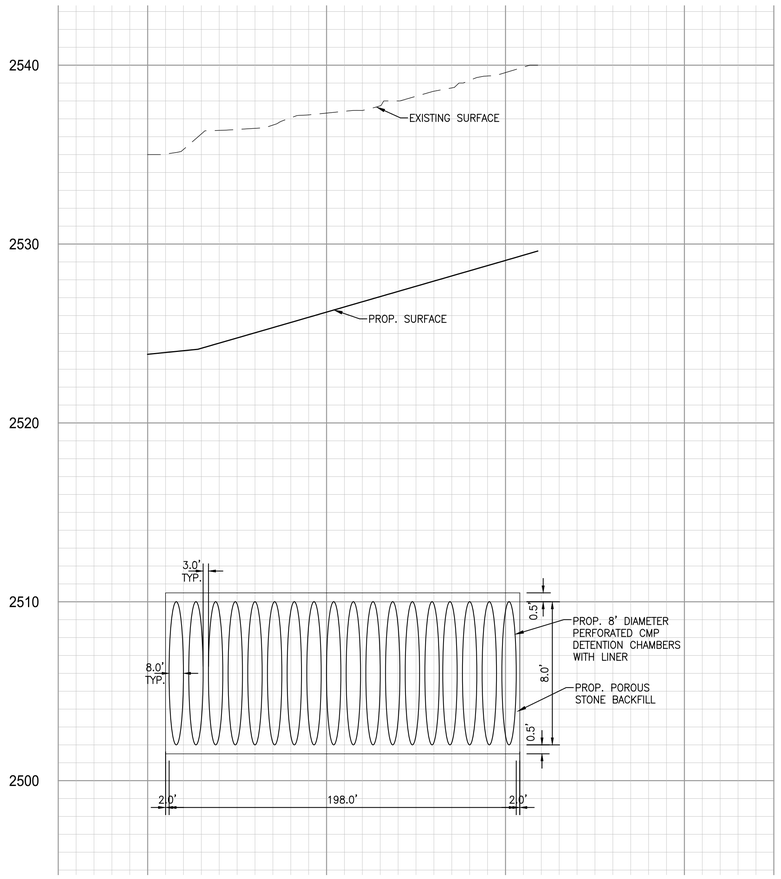


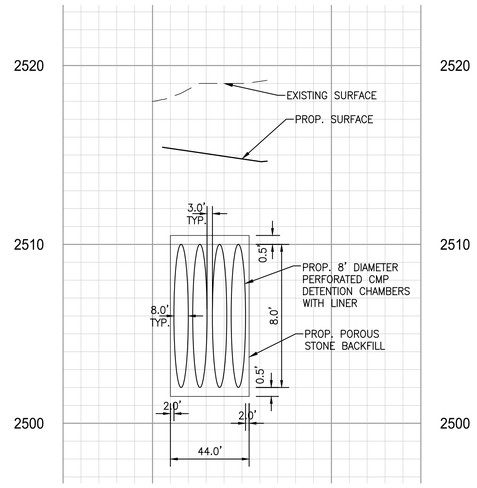
C–C
HORIZ: 1"=40'
VERT: 1"=4'



E–E
HORIZ: 1"=40'
VERT: 1"=4'



F–F
HORIZ: 1"=40'
VERT: 1"=4'



D–D
HORIZ: 1"=40'
VERT: 1"=4'

PRELIMINARY

H:\2021\21-0044\DRAINAGE\HYD\DWG FOLDER\21-0044 HYD MAP.DWG 4/12/2022 4:42:12 PM

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 3
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
CMP CHAMBER DETAILS

SCALE:	1"=40'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/2/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 3
DESIGNED:	EP		OF 3 SHEETS
CHECKED:	BJV		DWG. NO.
PLN CK REF:			
F.B.			

Appendix 2: Construction Plans

Grading and Drainage Plans

Construction plans to be completed during Final Engineering.
This report is for preliminary approval.

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

August 13, 2021

Exeter Property Group
4602 East University Drive, Suite 185
Phoenix, Arizona 85034

Attention: Mr. Andrew Greybar
Senior Project Manager

Project No.: **21G133-2**

Subject: **Results of Infiltration Testing**
Proposed E-Commerce Development
Cherry Valley Avenue, West of Fabian Lane
Beaumont, California

Reference: Geotechnical Investigation, Proposed E-Commerce Development, Beaumont, California, prepared by Southern California Geotechnical, Inc. (SCG), prepared for Exeter Property Group, SCG Project No. 21G133-1.

Mr. Greybar:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Change Order No. 21G133-CO, dated July 14, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located on the south side of Cherry Valley Boulevard, 1,500± feet west of the intersection of Cherry Valley Boulevard and Fabian Lane in Beaumont, California. The site is bounded to the north by Cherry Valley Boulevard, to the east by single-family residences (SFRs) and vacant lots, to the south by Brookside Avenue, to the southwest by the Redlands Freeway (Interstate 10) and to the west by vacant land. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several irregular to rectangular-shaped parcels which total 178.4± acres in size. The site is presently developed with three (3) single-family residences and several small abandoned buildings located in the northeastern area of the site. Remnants of shade structures including Portland cement concrete panels and sawed-off poles are present

throughout the northeastern areas of the site. Several above-ground storage tanks are also present throughout the northeastern area of the site. One of the smaller abandoned structures possesses a below-grade room with what appears to be a turbine. The remaining areas of the site are presently vacant and undeveloped. Five (5) circular to oval-shaped leech ponds are located in the west-central area of the site. Two (2) additional leech ponds are located in the south-central area of the site. Ground surface cover consist of exposed soil and moderate to dense native grass and weed growth. Several large trees are located in the southern areas of the site. Limited areas of trash and debris are located throughout the site.

Detailed topographic information was obtained from the conceptual grading plan prepared by Albert A. Webb Associates (Webb). Based on the provided plan, the northeastern to northern two-thirds of the site slopes downward to the southwest at a gradient of 4± percent. The seven (7) circular leech ponds located in the west-central and south-central areas of the site are surrounded by a berm that is 5± feet higher than the surrounding topography. The northwestern area of the site possesses several east-west and southeast-northwest trending drainage courses. The drainage features possess gradual to steep side walls with elevation differences of up to 15± feet below the surrounding topography. To the south of the leech pits, the site slopes towards the south to southwest at a gradient of 10± percent. The topography descends by 50± feet in this area. Another significant east-west trending drainage is located at the base of the descending slope, located in the southern-most region of the site. The drainage possesses gradual to steep side walls with an elevation difference up 10± feet below the surrounding topography. A hill, located to the southeast of this drainage, is approximately 20 to 30 feet higher than the surrounding topography. The hill possesses slope gradients ranging from 14 to 40± percent. To the south of the hill, the site topography slopes gently to the west at a gradient of 3.5± percent, where it meets up with a tributary drainage to the previously mentioned bisecting drainage. The area to the southwest of the bisecting drainage slopes to the west a gradient of 2.5± percent. Another hill with a north-facing descending slope is located at the southwest corner of the site. The slope has a gradient of 20± percent. The maximum site elevation is 2581± feet mean sea level (msl), in the northeast corner of the site. The minimum site elevation is 2406± feet msl, located in drainage swale channel located in the southern-most region of the site.

Proposed Development

Based on the conceptual site plan prepared by Webb, the site will be developed with three (3) new E-Commerce buildings. Building 1 will be 985,860± ft^2 in size, located in the western area of the site. Building 2 will be 1,254,000± ft^2 in size, located in the east-central region of the site. Lastly, Building 3 will be 358,370± ft^2 in size, located in the north-central area of the site. A cross-dock configuration will be constructed on Building 1 and Building 2, along the east/west and north/south building walls, respectively. Dock-high doors will be constructed along a portion of the southern building wall of Building 3. The buildings will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete (PCC) pavements in the truck court, and areas of concrete flatwork and landscape planters. Several new fill and cut slopes will be constructed along all permitters, as well as within the site. The new fill slopes will range from 10 to 40± feet in height and will possess slope inclinations not to exceed 2h:1v (horizontal to vertical). New retaining walls will also be required to establish the

new site grades. The new retaining walls will possess maximum retained heights ranging from 10 to 50± feet.

The proposed development will include on-site stormwater infiltration. Based on our conversations with the project civil engineer and the proposed site plan, infiltration systems will consist of two (2) below-grade chambers and one (1) detention basin. One of the infiltration chamber systems will be located in the northern area of the site (south of Building 3). The bottom of the chambers are expected to range from 28 to 34± feet below the existing site grades. The second infiltration chamber system will be located in the southern area of the site (south of Building 2). The bottom of the chambers are expected to range from 24 to 36± feet below the existing site grades. The detention basin will be located in the south-central area of the site. The bottom of the basin will be at an elevation of, approximately 10 to 43± feet, below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site, also referenced above. The investigation conducted for this project consisted of forty-four (44) borings advanced to depths of 10 to 50± feet, and seven (7) trenches excavated to depths of 6½ to 10½± feet below the existing site grades. Artificial fill soils were encountered at the ground surface of several boring and trench locations. The fill soils generally consist of loose to medium dense silty fine sands and clayey fine to medium sands. The fill soils possess a disturbed and mottled appearance, resulting in their classification as artificial fill. Native alluvium was encountered beneath the artificial fill soils or at the ground surface at several of the borings and trench locations. The alluvial soils extend to depths of 2½ to 10± feet below ground surface in the northern areas of the site, and 25 to 50± feet below ground surface in the southern areas of the site. The alluvial soils generally consist of loose to very dense silty fine sands and silty fine to medium sands. Older alluvial soils were encountered at the ground surface, beneath the artificial fill, and/or beneath the alluvium of the boring and trench locations, extending to at least the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of medium dense to very dense silty fine sands, silty fine to medium sands, silty fine to coarse sands and silty fine sands to fine sandy silts.

Groundwater

Groundwater was not encountered at any of the boring or trench locations. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet below existing site grades at the time of the subsurface investigation.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level and recent groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring wells in this database are located in the northeast corner of the site. Water level readings within one of these monitoring wells indicates a historic high groundwater level of 317± feet below the ground surface in September 1990. Water level readings within another of these monitoring

wells indicates a recent high groundwater level of 412± feet below the ground surface in December 2020.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of sixteen (16) infiltration test borings, advanced to depths ranging from 10 to 43± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-1 through I-16) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Upon the completion of the infiltration borings, the bottom of each test boring was covered with 2± inches of clean ¾-inch gravel. A sufficient length of 3-inch-diameter perforated PVC casing was then placed into each test hole so that the PVC casing extended from the bottom of the test hole to the ground surface. Clean ¾-inch gravel was then installed in the annulus surrounding the PVC casing.

Geotechnical Conditions

Alluvial soils were encountered at the ground surface some of the infiltration borings, extending to depths of 4 to 32± feet below existing site grades. The alluvial soils in generally consist of loose to dense silty fine sands, silty fine to medium sands, clayey sands, fine to coarse sands, and fine to coarse sandy silts with variable gravel content. Older alluvium was encountered at the ground surface or beneath the alluvium at most of the boring locations. The older alluvium generally consists of medium dense to dense fine sands, fine to coarse sands, silty fine sands, silty fine to medium sands, and clayey fine to medium sands, extending to the maximum depth explored of 43± feet.

Infiltration Testing

As previously mentioned, the infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards all sixteen (16) of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak. Based on the results of the pre-soaking process, different infiltration procedures were used during the infiltration testing at the infiltration boring locations.

Infiltration Testing

Following the pre-soaking process of the infiltration test borings, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole, and less than or equal to the water level used during the pre-soaking process. In accordance with the Riverside County guidelines, since "sandy soils" and "non-sandy" conditions were encountered at the bottom of the infiltration borings tests were run for an additional hour with measurements taken at 10-minute intervals for "sandy" conditions and 30-minute intervals for six hours in "non-sandy" conditions. After each reading, the borings were refilled to the correct water level above the gravel at the bottom of each test hole. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Test Elevation (feet) MSL	Soil Description	Infiltration Rate (inches/hour)
I-1	22	2496	Red Brown fine to coarse Sandy Silt	4.0
I-2	25	2495	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-3	31	2494	Red Brown Clayey fine to coarse Sand, trace Silt	0.0
I-4	34	2496	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-5	24	2474½	Red Brown Silty fine to medium Sand, trace coarse Sand	4.4
I-6	25	2474	Red Brown Silty fine to medium Sand, trace coarse Sand	3.6
I-7	30	2474	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel	3.7
I-8	30	2474	Brown Gravelly fine to coarse Sand, little Silt	8.0
I-9	36	2475	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel	4.2
I-10	35	2475	Brown fine to coarse Sand, trace fine Gravel, trace Silt	8.7
I-11	10	2446	Brown Silty fine to medium Sand, trace fine Gravel	0.8

I-12	14	2443	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel	4.8
I-13	28	2445	Brown fine to coarse Sand, little fine Gravel, little Silt	19.4
I-14	16	2444	Gray Brown Gravelly fine to coarse Sand, little Silt	13.5
I-15	27	2449	Red Brown Silty fine to coarse Sand, trace fine Gravel	15.7
I-16	43	2445	Red Brown Silty fine to medium Sand, trace coarse Sand	14.6

Laboratory Testing

Moisture Content

The moisture contents for the recovered soil samples within the borings were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the bottom of each infiltration test boring have been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these tests are presented on Plates C-1 through C-17 of this report.

Design Recommendations

Sixteen (16) infiltration tests were performed at the subject site. As noted above, the infiltration rates at these locations range from 0 to 19.4 inches per hour.

Based on the results of the infiltration testing, we recommend the following infiltration rates for the proposed infiltration systems:

Infiltration System	Site Location	Infiltration Rate (Inches per Hour)
A	North-Central	0
B	South-Central	5.4
C	South-Central	11.5

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the chamber system. It should be confirmed that the soils at the base of the proposed

infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the proposed storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Beaumont and/or County of Riverside guidelines. However, it is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rate recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rates are based on infiltration testing at sixteen (16) discrete locations and the overall infiltration rate of the storm water infiltration system could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the City of Beaumont and/or County of Riverside guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the basins. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration systems

correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within basins. As such, the bottom 24 inches of the infiltration systems should be excavated with non-rubber-tired equipment, such as excavators.

Basin Maintenance

The proposed project may include infiltration basins. Water flowing into these basins will carry some level of sediment. Wind-blown sediments and erosion of the basin side walls will also contribute to sediment deposition at the bottom of the basin. This layer has the potential to significantly reduce the infiltration rate of the basin subgrade soils. Therefore, a formal basin maintenance program should be established to ensure that these silt and clay deposits are removed from the basin on a regular basis. Appropriate vegetation on the basin sidewalls and bottom may reduce erosion and sediment deposition.

Basin maintenance should also include measures to prevent animal burrows, and to repair any burrows or damage caused by such. Animal burrows in the basin sidewalls can significantly increase the risk of erosion and piping failures.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration systems may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and

preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

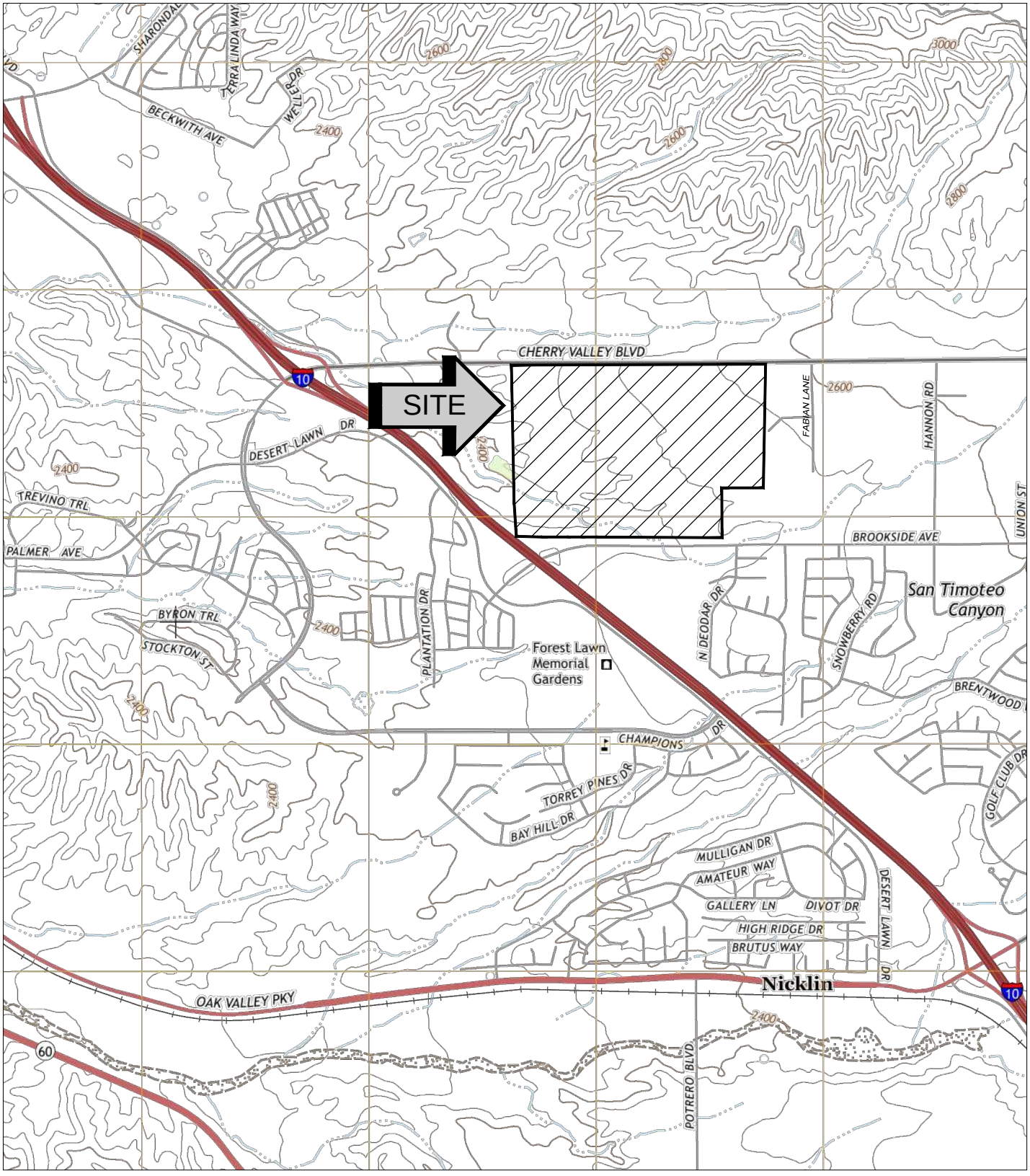
SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Jose A. Zuniga
Staff Engineer

Robert G. Trazo, GE 2655
Principal Engineer

Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Boring Log Legend and Logs (20 pages)
Infiltration Test Results Spreadsheets (16 pages)
Grain Size Distribution Graphs (17 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE EL CASCO QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2015.

SITE LOCATION MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

CHERRY VALLEY BOULEVARD

BROOKSIDE AVENUE

PROPOSED BUILDING 3
358,370 S.F.

INFILTRATION SYSTEM "A"

PROPOSED BUILDING 1
985,860 S.F.

PROPOSED BUILDING 2
1,254,000 S.F.

INFILTRATION SYSTEM "B"

INFILTRATION SYSTEM "C"

PROPOSED INFILTRATION BASIN

PROPOSED RETAINING WALL

PROPOSED RETAINING WALL

PARCEL 4
RETAIL

NAP

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-33 B-34 B-35 B-36 B-37 B-38 B-39 B-40 B-41 B-42 B-43 B-44

T-1 T-2 T-3 T-4 T-5 T-6 T-7

I-1 I-2 I-3 I-4 I-5 I-6 I-7 I-8 I-9 I-10 I-11 I-12 I-13 I-14 I-15 I-16

NORTH

SoCalGeo

GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 21G133-1)
- APPROXIMATE TRENCH LOCATION (SCG PROJECT NO. 21G133-1)

INFILTRATION TEST LOCATION PLAN

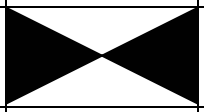
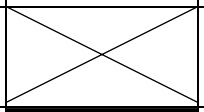
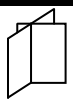
PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 300'	
DRAWN: JAZ CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 2	

SoCalGeo SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

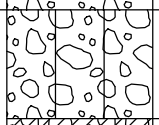
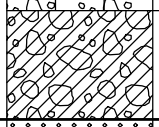
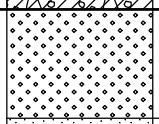
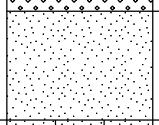
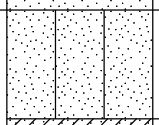
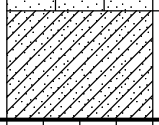
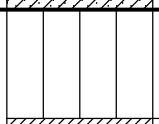
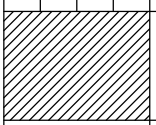
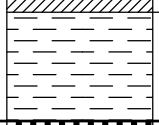
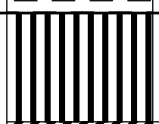
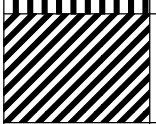
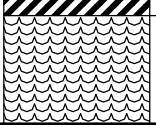
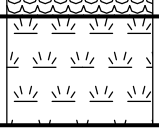
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-1

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2518 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, medium dense-damp to moist							
		12					9					
5												
		12					10					
10												
					Brown fine Sand, trace medium to coarse Sand, trace fine Gravel, trace Silt, medium dense-damp							
		17					7					
15												
					Brown Silty fine to medium Sand, medium dense-damp							
		14					6					
20												
		18			Red Brown Silty fine to coarse Sand, medium dense-damp		6			26		
					Red Brown fine to coarse Sandy Silt, medium dense-damp to moist		10			51		
					Boring Terminated at 22'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-2

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2520 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Gray Brown Clayey fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist							
		10					10					
5												
					Brown Silty fine Sand, trace medium Sand, medium dense-damp							
		16					7					
10												
		13					6					
15												
					Red Brown fine Sandy Silt to Silty fine Sand, loose to medium dense-moist							
		10					11					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-moist							
		16					11			48		
25												
					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-3

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2525 feet MSL							
					ALLUVIUM: Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, loose to medium dense-damp to moist							
5		8					12					
10		10					8					
15		13					10					
20		20					10					
					OLDER ALLUVIUM: Red Brown Clayey fine to medium Sand, medium dense-moist							
25		21					13					
					Red Brown Clayey fine to coarse Sand, trace Silt, medium dense-moist							
30		22					12			49		
					Boring Terminated at 31'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-4

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2530 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		8			ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist		6					
10		19					11					
15		16					9					
20		10			Red Brown fine to coarse Sand, trace fine to coarse Gravel, trace Silt, loose to medium dense-damp to moist		8					
25		15			Gray Brown fine to coarse Sand, medium dense-damp		3					
30		10			Red Brown fine Sandy Silt, trace coarse Gravel, loose to medium dense-moist		15					
		16			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, slightly cemented, medium dense-moist		12			39		
					Boring Terminated at 34'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-4**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-5

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2498.5 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		14					6					
5					OLDER ALLUVIUM: Brown fine to coarse Sandy Silt, trace fine to coarse Gravel, trace Clay, medium dense-damp		7					
					Brown Silty fine to coarse Sand, trace coarse Gravel, slightly cemented, medium dense-damp							
		27					8					
10												
					Brown fine Sand, little medium Sand, trace coarse Sand, medium dense-damp							
		26					5					
15												
					Brown fine to coarse Sand, trace fine Gravel, dense-damp							
		37					4					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
		26					7			28		
					Boring Terminated at 24'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-6

JOB NO.: 21G133-2 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2499 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown fine Sandy Clay, little medium Sand, slightly cemented, very stiff-damp							
5		19					9					
					Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
10		24					5					
					Red Brown fine Sand, trace to little Silt, medium dense-damp							
15		20					6					
					Red Brown Silty fine Sand, trace calcareous veining, medium dense-moist							
20		29					10					
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
25		29					7			35		
					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-7

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp							
5		33					5					
					Red Brown Clayey fine to medium Sand, slightly cemented, medium dense-moist							
10		16					12					
					Red Brown fine to coarse Sand, little Silt, medium dense to dense-damp							
15		24					4					
		48					3					
20					Gray Brown fine Sand, dense-damp							
		32					5					
25					Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp							
		25					7			36		
30					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-7**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-8

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, medium dense-damp							
		24					3					
5					Red Brown fine Sandy Silt, trace medium Sand, trace fine Gravel, trace Clay, medium dense-damp		5					
					Brown fine to medium Sand, trace coarse Sand, little Silt, medium dense-damp							
		17					5					
10												
		28					7					
15					Brown fine to medium Sandy Silt, trace coarse Sand, medium dense-damp		7					
					Brown Silty fine Sand, little medium Sand, trace fine to coarse Gravel, medium dense-damp							
		22					5					
20												
		24					6					
25												
					Brown fine to coarse Sand, little Silt, very dense-damp							
		65					6					
					Brown Gravelly fine to coarse Sand, little Silt, very dense-damp		4			12		
30												
					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-8**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2511 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Clayey fine Sand, little Silt, slightly cemented, medium dense to dense-damp to moist							
5		30					8					
10		21					11					
15		36			Brown Clayey fine to medium Sand, slightly cemented, dense-damp		8					
20		38			Brown fine to medium Sand, little coarse Sand, trace Silt, dense-damp		4					
25		19			Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		8					
30		27					12					
					Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel, medium dense-damp							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	27					7			34		
					Boring Terminated at 36'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-10

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2510 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, porous, trace fine root fibers, medium dense-damp							
5		20					4					
					Red Brown Clayey fine to medium Sand, trace coarse Gravel, slightly cemented, dense-moist							
10		33					11					
					Red Brown Silty fine to medium Sand, dense-damp							
15		31					6					
					Brown fine to coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					4					
					Red Brown fine to medium Sand, trace fine Gravel, dense-damp							
25		37					5					
					Red Brown Silty fine Sand, dense-moist							
30		36					11					
					Brown fine to coarse Sand, trace fine Gravel, trace Silt, dense-dry to damp							
		43					3			9		
					Boring Terminated at 35'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-10**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-11

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2456 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine to medium Sand, trace fine root fibers, medium dense-dry to damp							
		14					2					
5												
					Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp							
		21					7			37		
10												
					Boring Terminated at 10'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-11**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-12

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2457 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		69			ALLUVIUM: Light Gray fine to coarse Sand, little fine to coarse Gravel, very dense-damp		4					
10		20			Gray Brown Silty fine Sand, medium dense- damp to moist		9					
		41			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp		7			38		
					Boring Terminated at 14'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-12**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-13

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2473 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Light Gray fine to coarse Sand, little fine Gravel, trace fine root fibers, dense-dry to damp							
5		41			@ 5 to 6½ feet, slightly cemented		2					
					Brown Silty fine Sand, trace fine Gravel, medium dense-damp							
10		29					6					
15		25					8					
					Gray Brown fine to medium Sand, little coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					6					
					Brown fine to coarse Sand, little fine Gravel, little Silt, very dense-damp							
25		50/4"					4			14		
					Boring Terminated at 28'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-13**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-14

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2460 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown to Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, medium dense-damp							
5		22					4					
10		21			@ 10 to 11½ feet, trace fine Gravel		8					
					Gray Brown Gravelly fine to coarse Sand, little Silt, very dense-dry to damp							
15		50/5"					3			14		
					Boring Terminated at 16'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-14**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-15

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2476 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, trace coarse Gravel, trace fine root fibers, dense-damp							
5		49					6					
					Brown fine to medium Sand, little coarse Sand, dense-dry to damp							
10		37					3					
					Red Brown Silty fine Sand, trace medium Sand, dense-damp							
15		35					9					
					Gray Brown fine to coarse Sand, trace fine Gravel, very dense-damp							
20		50/5"					9					
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine Gravel, slightly cemented, very dense-damp							
25		70					4			27		
					Boring Terminated at 27'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-15**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2488 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine to medium Sand, medium dense-damp							
5		27					5					
					Red Brown Silty fine Sand, medium dense-damp							
10		23					8					
15		30			@ 15 to 16½ feet, trace medium Sand, dense-moist		11					
20		26					11					
					OLDER ALLUVIUM: Brown fine to coarse Sand, trace fine Gravel, trace Silt, very dense-dry to damp							
25		63					3					
30		59					4					
					Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		50/5"			Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist		3					
40												
		35					11					
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, dense-very moist		18			39		
					Boring Terminated at 43'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16b**

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	22.00	(ft)

Infiltration Test Hole: I-1

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:00 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	11:25 AM		20.92			
2	Initial	11:28 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	11:53 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:00 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:10 PM		19.90			
2	Initial	12:11 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:21 PM		19.91			
3	Initial	12:22 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:32 PM		19.90			
4	Initial	12:33 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:43 PM		19.91			
5	Initial	12:44 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:54 PM		19.90			
6	Initial	12:55 PM	10.00	19.00	0.90	2.55	3.98
	Final	1:05 PM		19.90			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-2

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	10:50 AM		22.47			
2	Initial	10:51 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	11:16 AM		22.47			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:18 AM	30.00	22.20	0.32	2.64	0.46
	Final	11:48 AM		22.52			
2	Initial	11:50 AM	30.00	22.20	0.30	2.65	0.43
	Final	12:20 PM		22.50			
3	Initial	12:22 PM	30.00	22.20	0.30	2.65	0.43
	Final	12:52 PM		22.50			
4	Initial	12:55 PM	30.00	22.20	0.30	2.65	0.43
	Final	1:25 PM		22.50			
5	Initial	1:28 PM	30.00	22.50	0.00	2.50	0.00
	Final	1:58 PM		22.50			
6	Initial	2:00 PM	30.00	22.50	0.00	2.50	0.00
	Final	2:30 PM		22.50			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	31.00	(ft)

Infiltration Test Hole: I-3

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:00 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		29.00			
2	Initial	9:28 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:53 AM		29.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	10:30 AM		29.00			
2	Initial	10:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:00 AM		29.00			
3	Initial	11:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:30 AM		29.00			
4	Initial	11:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	12:00 PM		29.00			
5	Initial	12:00 PM	30.00	29.00	0.00	2.00	0.00
	Final	12:30 PM		29.00			
6	Initial	12:30 PM	30.00	29.00	0.00	2.00	0.00
	Final	1:00 PM		29.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	34.00	(ft)

Infiltration Test Hole: I-4

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:30 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	8:55 AM		32.30			
2	Initial	9:00 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		32.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	10:00 AM		32.30			
2	Initial	10:00 AM	30.00	32.00	0.30	1.85	0.60
	Final	10:30 AM		32.30			
3	Initial	10:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:00 AM		32.30			
4	Initial	11:00 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:30 AM		32.30			
5	Initial	11:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	12:00 PM		32.30			
6	Initial	12:00 PM	30.00	32.30	0.00	1.70	0.00
	Final	12:30 PM		32.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	24.00	(ft)

Infiltration Test Hole: I-5

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:00 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:25 AM		24.00			
2	Initial	8:26 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:51 AM		24.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:52 AM	10.00	22.00	1.62	1.19	14.33
	Final	9:02 AM		23.62			
2	Initial	9:03 AM	10.00	22.00	1.00	1.50	7.20
	Final	9:13 AM		23.00			
3	Initial	9:14 AM	10.00	22.00	0.75	1.63	5.02
	Final	9:24 AM		22.75			
4	Initial	9:25 AM	10.00	22.00	0.64	1.68	4.16
	Final	9:35 AM		22.64			
5	Initial	9:36 AM	10.00	22.00	0.68	1.66	4.47
	Final	9:46 AM		22.68			
6	Initial	9:47 AM	10.00	22.00	0.67	1.67	4.39
	Final	9:57 AM		22.67			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-6

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:45 PM	25.00	21.00	43.80	YES	SANDY SOILS
	Final	4:10 PM		24.65			
2	Initial	4:12 PM	25.00	21.00	37.80	YES	SANDY SOILS
	Final	4:37 PM		24.15			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:38 PM	10.00	21.00	1.30	3.35	4.44
	Final	4:48 PM		22.30			
2	Initial	4:49 PM	10.00	21.00	1.10	3.45	3.65
	Final	4:59 PM		22.10			
3	Initial	5:00 PM	10.00	21.00	1.20	3.40	4.04
	Final	5:10 PM		22.20			
4	Initial	5:11 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:21 PM		22.10			
5	Initial	5:22 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:32 PM		22.10			
6	Initial	5:33 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:43 PM		22.10			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-7

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:30 AM	25.00	28.20	14.16	YES	SANDY SOILS
	Final	9:55 AM		29.38			
2	Initial	9:56 AM	25.00	28.20	14.40	YES	SANDY SOILS
	Final	10:21 AM		29.40			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:22 AM	10.00	28.20	0.60	1.50	4.32
	Final	10:32 AM		28.80			
2	Initial	10:33 AM	10.00	28.20	0.41	1.60	2.79
	Final	10:43 AM		28.61			
3	Initial	10:44 AM	10.00	28.00	0.71	1.65	4.70
	Final	10:54 AM		28.71			
4	Initial	10:55 AM	10.00	28.00	0.60	1.70	3.86
	Final	11:05 AM		28.60			
5	Initial	11:06 AM	10.00	28.00	0.66	1.67	4.31
	Final	11:16 AM		28.66			
6	Initial	11:17 AM	10.00	28.00	0.58	1.71	3.71
	Final	11:27 AM		28.58			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-8

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:25 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	9:50 AM		30.30			
2	Initial	9:51 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	10:16 AM		30.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:18 AM	10.00	28.30	1.35	1.03	13.59
	Final	10:28 AM		29.65			
2	Initial	10:29 AM	10.00	28.30	1.03	1.19	9.14
	Final	10:39 AM		29.33			
3	Initial	10:40 AM	10.00	28.30	0.97	1.22	8.42
	Final	10:50 AM		29.27			
4	Initial	10:51 AM	10.00	28.30	0.94	1.23	8.08
	Final	11:01 AM		29.24			
5	Initial	11:02 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:12 AM		29.23			
6	Initial	11:13 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:23 AM		29.23			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	36.00	(ft)

Infiltration Test Hole: I-9

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	1:10 PM	25.00	31.00	51.60	YES	SANDY SOILS
	Final	1:35 PM		35.30			
2	Initial	1:36 PM	25.00	31.00	45.60	YES	SANDY SOILS
	Final	2:01 PM		34.80			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	2:02 PM	10.00	31.00	1.70	4.15	4.73
	Final	2:12 PM		32.70			
2	Initial	2:13 PM	10.00	31.00	1.60	4.20	4.40
	Final	2:23 PM		32.60			
3	Initial	2:24 PM	10.00	31.00	1.57	4.22	4.30
	Final	2:34 PM		32.57			
4	Initial	2:25 PM	10.00	31.00	1.55	4.23	4.24
	Final	2:35 PM		32.55			
5	Initial	2:36 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:46 PM		32.54			
6	Initial	2:47 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:57 PM		32.54			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	35.00	(ft)

Infiltration Test Hole: I-10

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:10 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	11:35 AM		35.00			
2	Initial	11:36 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	12:01 PM		35.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:02 PM	10.00	33.00	1.43	1.29	11.82
	Final	12:12 PM		34.43			
2	Initial	12:13 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:23 PM		34.20			
3	Initial	12:24 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:34 PM		34.20			
4	Initial	12:35 PM	10.00	33.00	1.15	1.43	8.67
	Final	12:45 PM		34.15			
5	Initial	12:46 PM	10.00	33.00	1.14	1.43	8.57
	Final	12:56 PM		34.14			
6	Initial	12:57 PM	10.00	33.00	1.15	1.43	8.67
	Final	1:07 PM		34.15			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	10.00	(ft)

Infiltration Test Hole	I-11

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:20 AM	25.00	3.00	31.80	YES	SANDY SOILS
	Final	10:45 AM		5.65			
2	Initial	10:46 AM	25.00	3.00	12.60	YES	SANDY SOILS
	Final	11:11 AM		4.05			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:12 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:22 AM		3.50			
2	Initial	11:23 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:33 AM		3.50			
3	Initial	11:34 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:44 AM		3.50			
4	Initial	11:45 AM	10.00	3.00	0.45	6.78	0.78
	Final	11:55 AM		3.45			
5	Initial	11:56 AM	10.00	3.00	0.45	6.78	0.78
	Final	12:06 PM		3.45			
6	Initial	12:07 PM	10.00	3.00	0.45	6.78	0.78
	Final	12:17 PM		3.45			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where: Q = Infiltration Rate (in inches per hour)

ΔH = Change in Height (Water Level) over the time interval

r = Test Hole (Borehole) Radius

Δt = Time Interval

H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	14.00	(ft)

Infiltration Test Hole: I-12

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:15 PM	25.00	10.00	33.60	YES	SANDY SOILS
	Final	3:40 PM		12.80			
2	Initial	3:41 PM	25.00	10.00	32.40	YES	SANDY SOILS
	Final	4:06 PM		12.70			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:07 PM	10.00	10.00	1.50	3.25	5.27
	Final	4:17 PM		11.50			
2	Initial	4:18 PM	10.00	10.00	1.47	3.27	5.14
	Final	4:28 PM		11.47			
3	Initial	4:38 PM	10.00	10.00	1.45	3.28	5.06
	Final	4:48 PM		11.45			
4	Initial	4:49 PM	10.00	10.00	1.44	3.28	5.01
	Final	4:59 PM		11.44			
5	Initial	5:00 PM	10.00	10.00	1.43	3.29	4.97
	Final	5:10 PM		11.43			
6	Initial	5:11 PM	10.00	10.00	1.40	3.30	4.85
	Final	5:21 PM		11.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	28.00	(ft)

Infiltration Test Hole	I-13

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:35 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:00 PM		29.20			
2	Initial	1:01 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:26 PM		29.20			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:27 PM	10.00	26.20	2.15	0.73	28.93
	Final	1:37 PM		28.35			
2	Initial	1:38 PM	10.00	26.20	2.44	0.58	39.21
	Final	1:48 PM		28.64			
3	Initial	1:49 PM	10.00	26.20	1.77	0.92	19.64
	Final	1:59 PM		27.97			
4	Initial	2:00 PM	10.00	26.20	1.74	0.93	19.04
	Final	2:10 PM		27.94			
5	Initial	2:11 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:21 PM		27.96			
6	Initial	2:22 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:32 PM		27.96			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	16.00	(ft)

Infiltration Test Hole: I-14

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:15 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	8:40 AM		16.00			
2	Initial	8:41 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	9:06 AM		16.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:07 AM	10.00	12.00	3.20	2.40	14.96
	Final	9:17 AM		15.20			
2	Initial	9:18 AM	10.00	12.00	3.10	2.45	14.22
	Final	9:28 AM		15.10			
3	Initial	9:29 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:39 AM		15.00			
4	Initial	9:40 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:50 AM		15.00			
5	Initial	9:51 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:01 AM		15.00			
6	Initial	10:02 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:12 AM		15.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	27.00	(ft)

Infiltration Test Hole: I-15

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:54 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:19 PM		27.00			
2	Initial	1:20 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:45 PM		27.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:48 PM	10.00	23.00	3.60	2.20	18.25
	Final	1:58 PM		26.60			
2	Initial	1:59 PM	10.00	23.00	3.50	2.25	17.38
	Final	2:09 PM		26.50			
3	Initial	2:10 PM	10.00	23.00	3.45	2.28	16.96
	Final	2:20 PM		26.45			
4	Initial	2:21 PM	10.00	23.00	3.38	2.31	16.38
	Final	2:31 PM		26.38			
5	Initial	2:32 PM	10.00	23.00	3.35	2.33	16.13
	Final	2:42 PM		26.35			
6	Initial	2:43 PM	10.00	23.00	3.30	2.35	15.74
	Final	2:53 PM		26.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	43.00	(ft)

Infiltration Test Hole: I-16

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	40.00	33.84	YES	SANDY SOILS
	Final	10:50 AM		42.82			
2	Initial	10:51 AM	25.00	40.00	34.80	YES	SANDY SOILS
	Final	11:16 AM		42.90			

Test Data

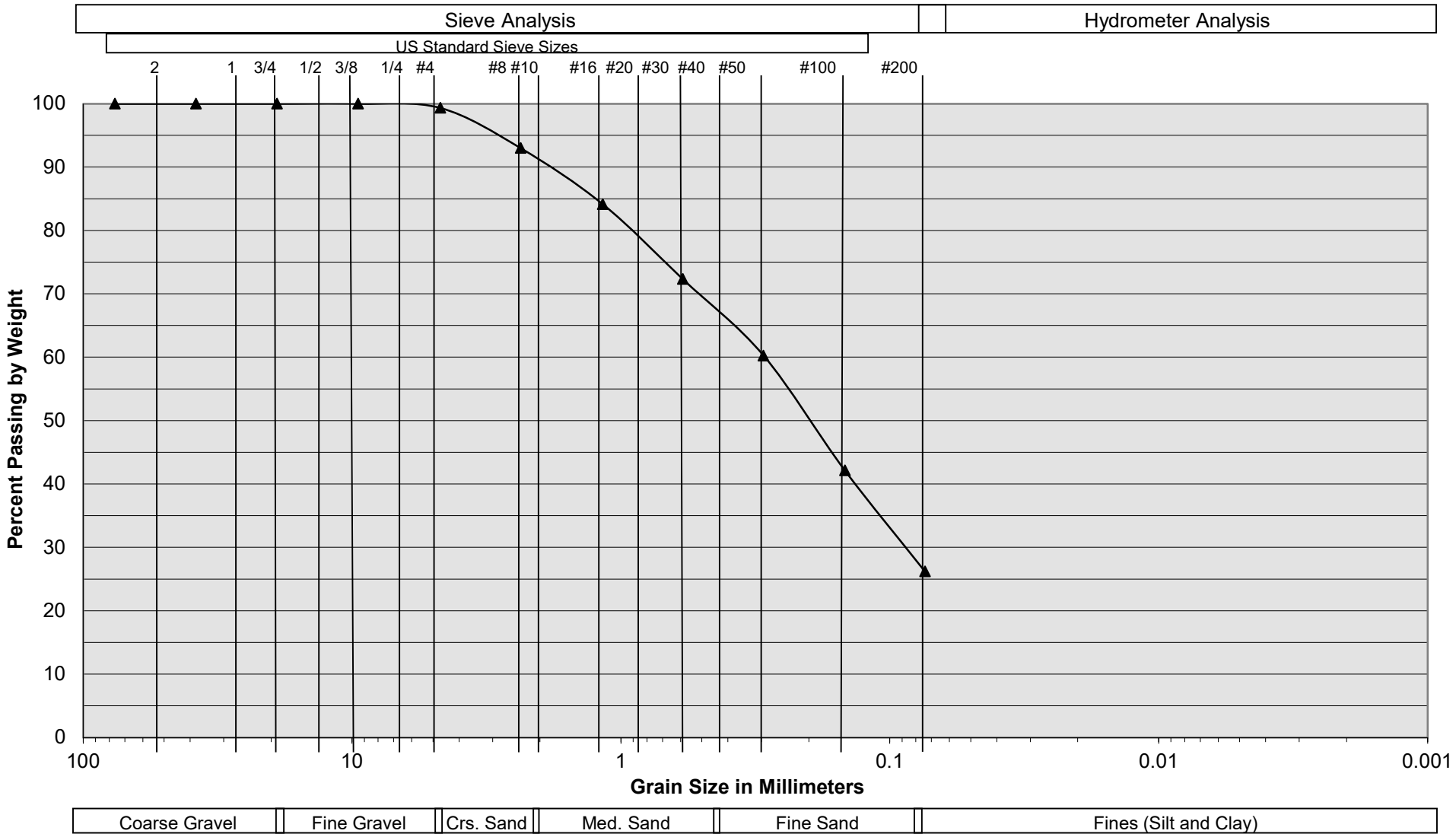
Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:17 AM	10.00	40.00	2.80	1.60	19.02
	Final	11:27 AM		42.80			
2	Initial	11:28 AM	10.00	40.00	2.90	1.55	20.27
	Final	11:38 AM		42.90			
3	Initial	11:39 AM	10.00	40.00	2.35	1.83	14.16
	Final	11:49 AM		42.35			
4	Initial	11:50 AM	10.00	40.00	2.20	1.90	12.77
	Final	12:00 PM		42.20			
5	Initial	12:01 PM	10.00	40.00	2.35	1.83	14.16
	Final	12:11 PM		42.35			
6	Initial	12:12 PM	10.00	40.00	2.40	1.80	14.64
	Final	12:22 PM		42.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

Grain Size Distribution



Sample Description	I-1 @ 20½'
Soil Classification	Red Brown Silty fine to coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 1

SoCalGeo
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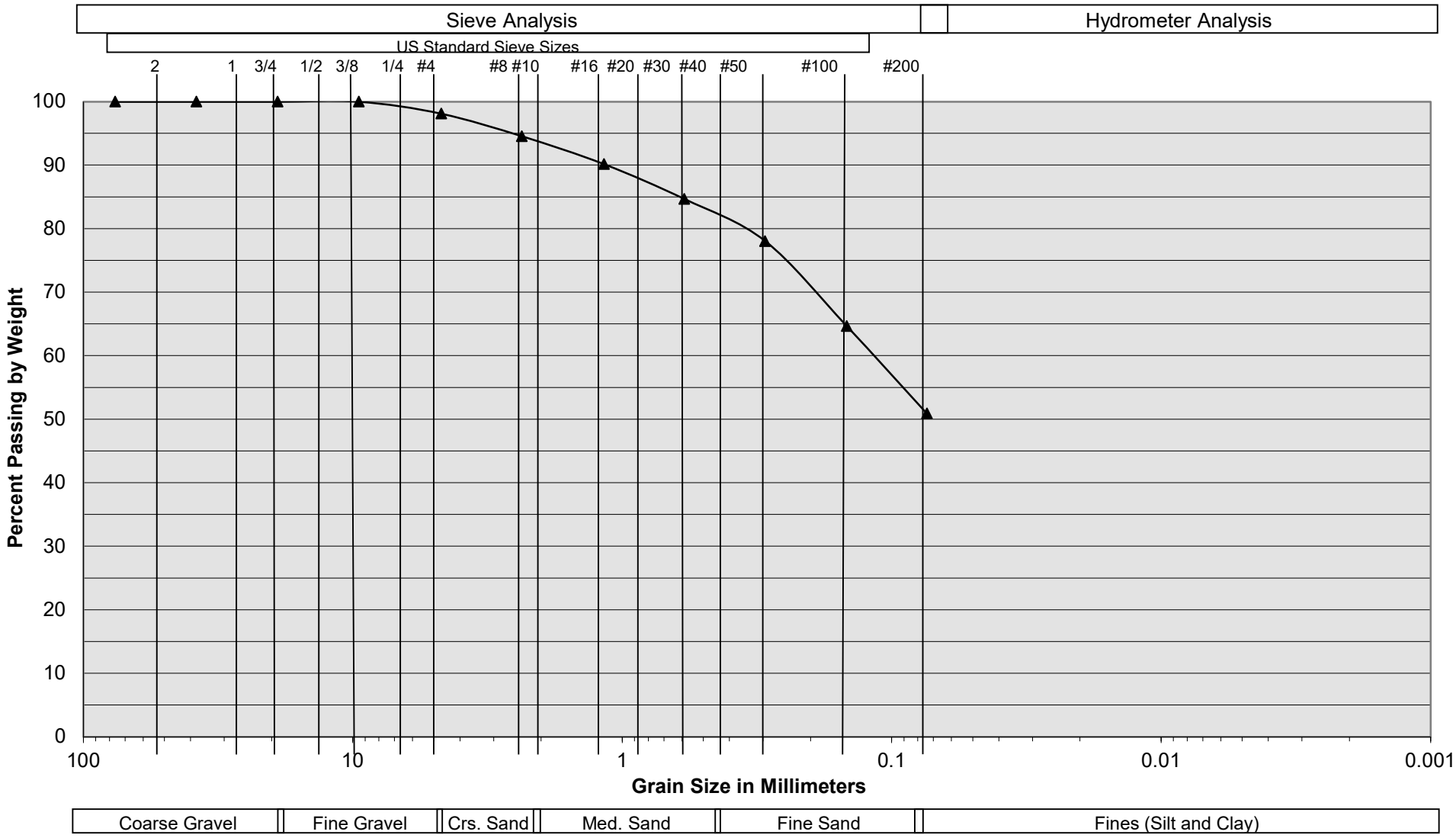
Grain Size Distribution

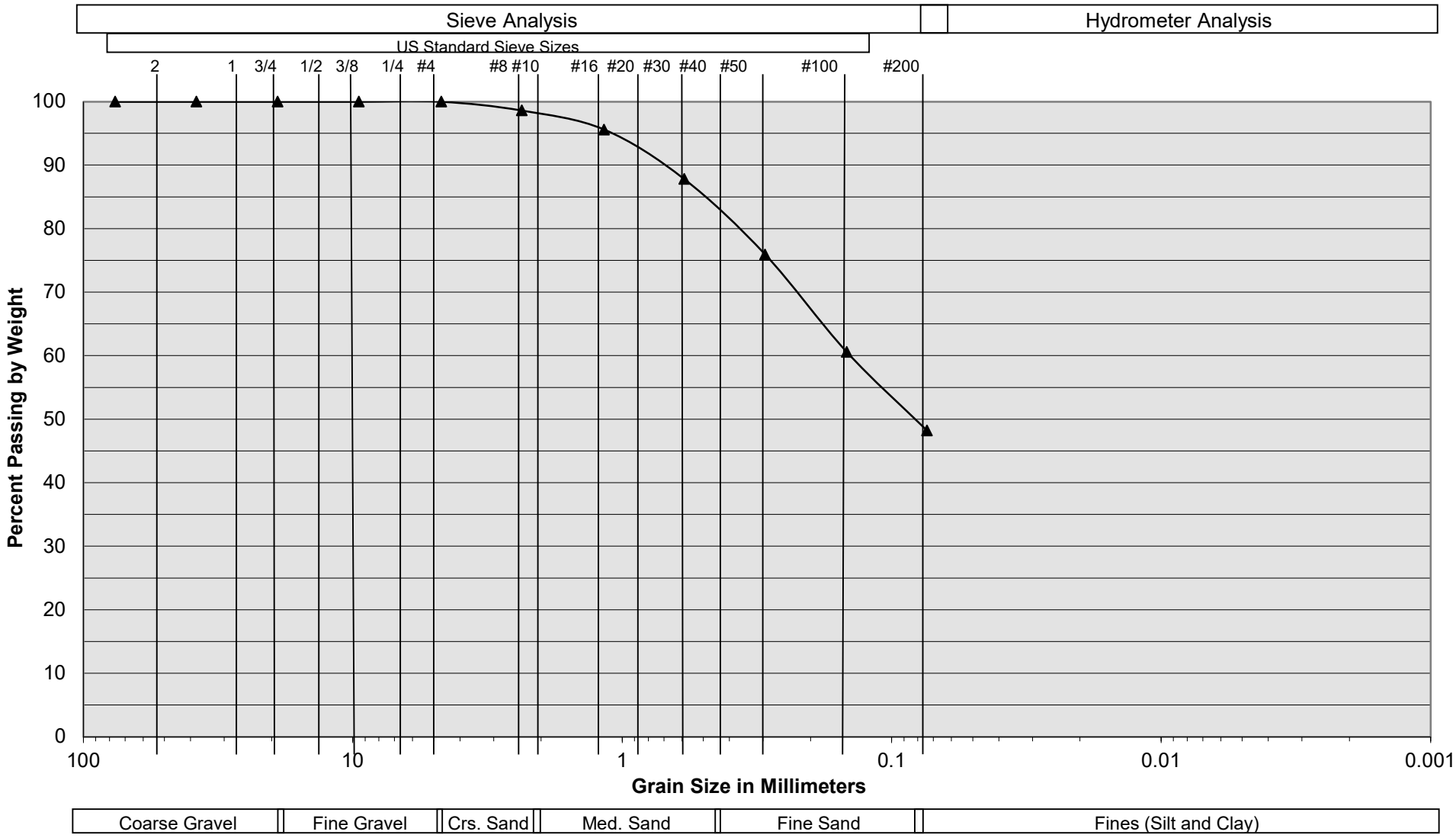


Sample Description	I-1 @ 21½'
Soil Classification	Red Brown fine to coarse Sandy Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

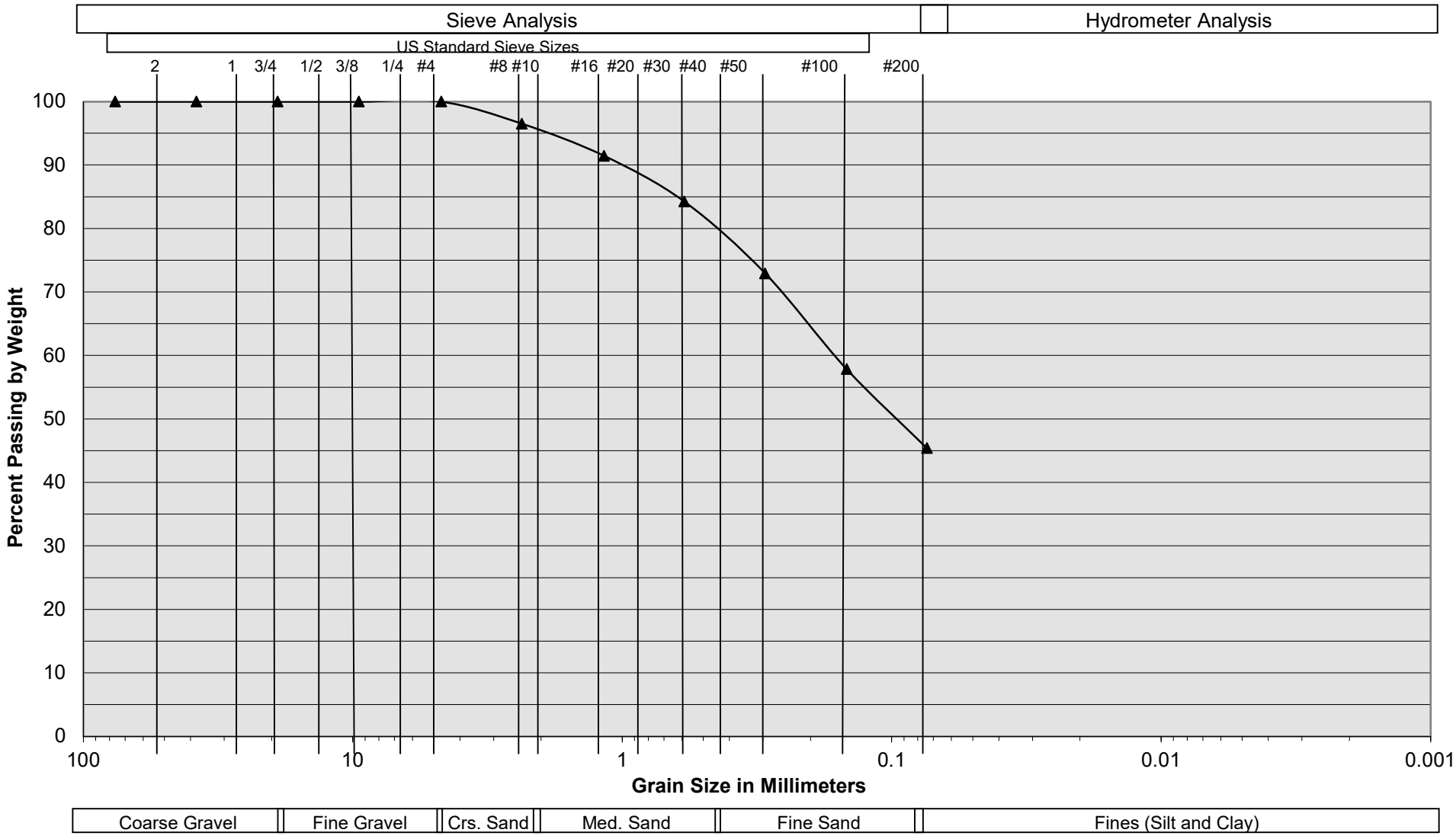


Sample Description	I-2 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

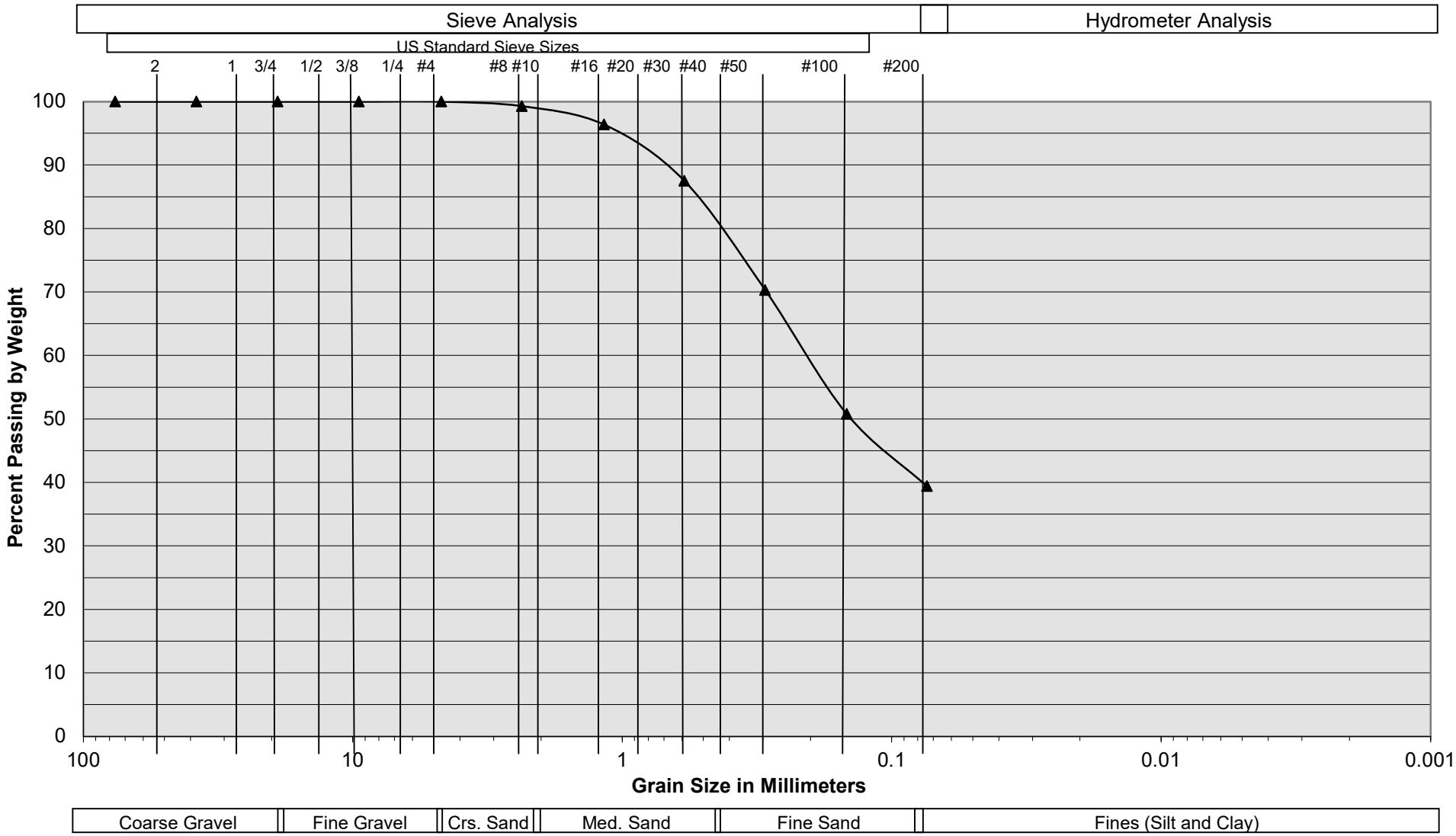


Sample Description	I-3 @ 29½'
Soil Classification	Red Brown Clayey fine to coarse Sand, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

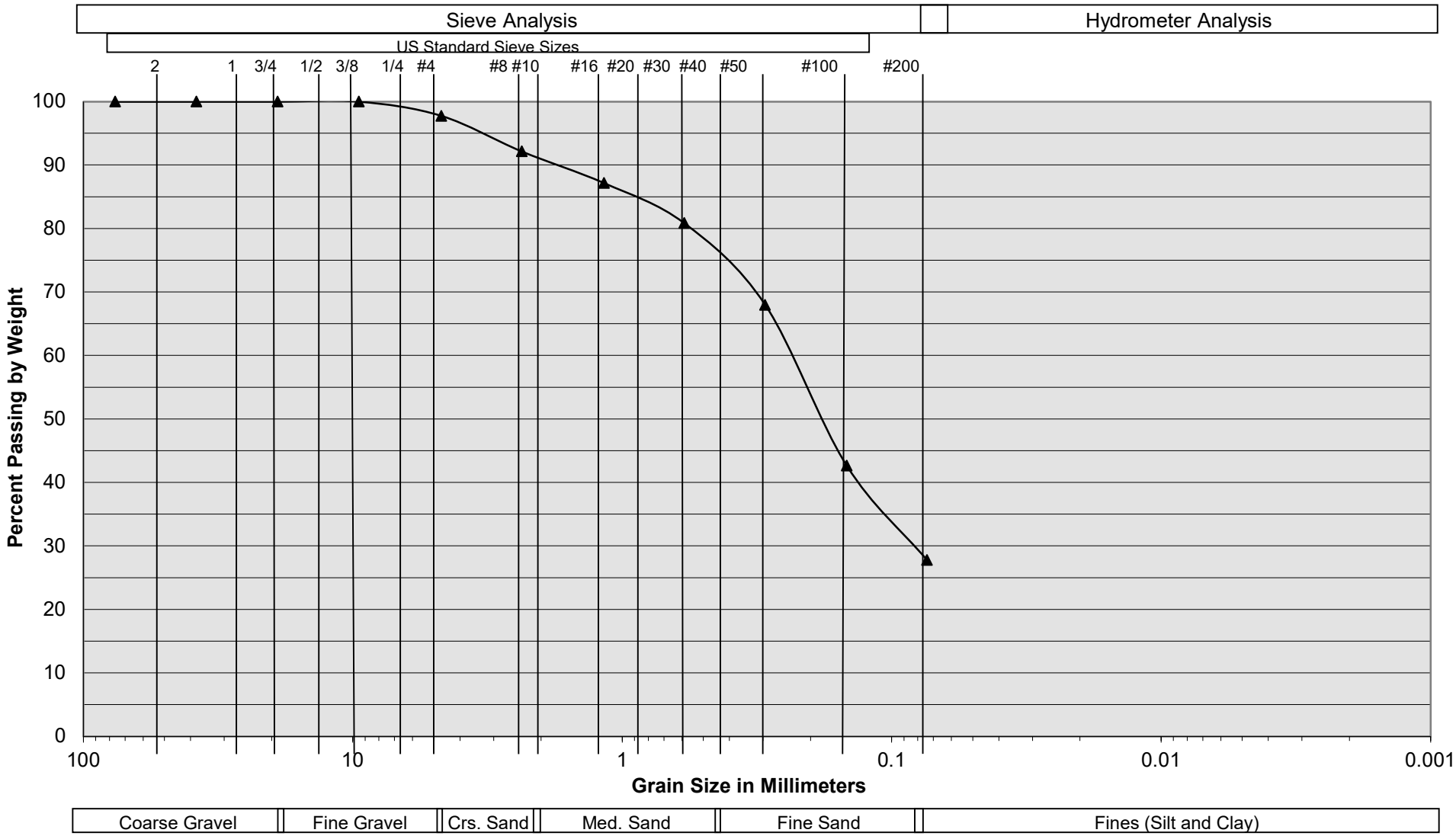


Sample Description	I-4 @ 32½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-5 @ 22½'
Soil Classification	Red Brown Silty fine to medium Sand, little coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

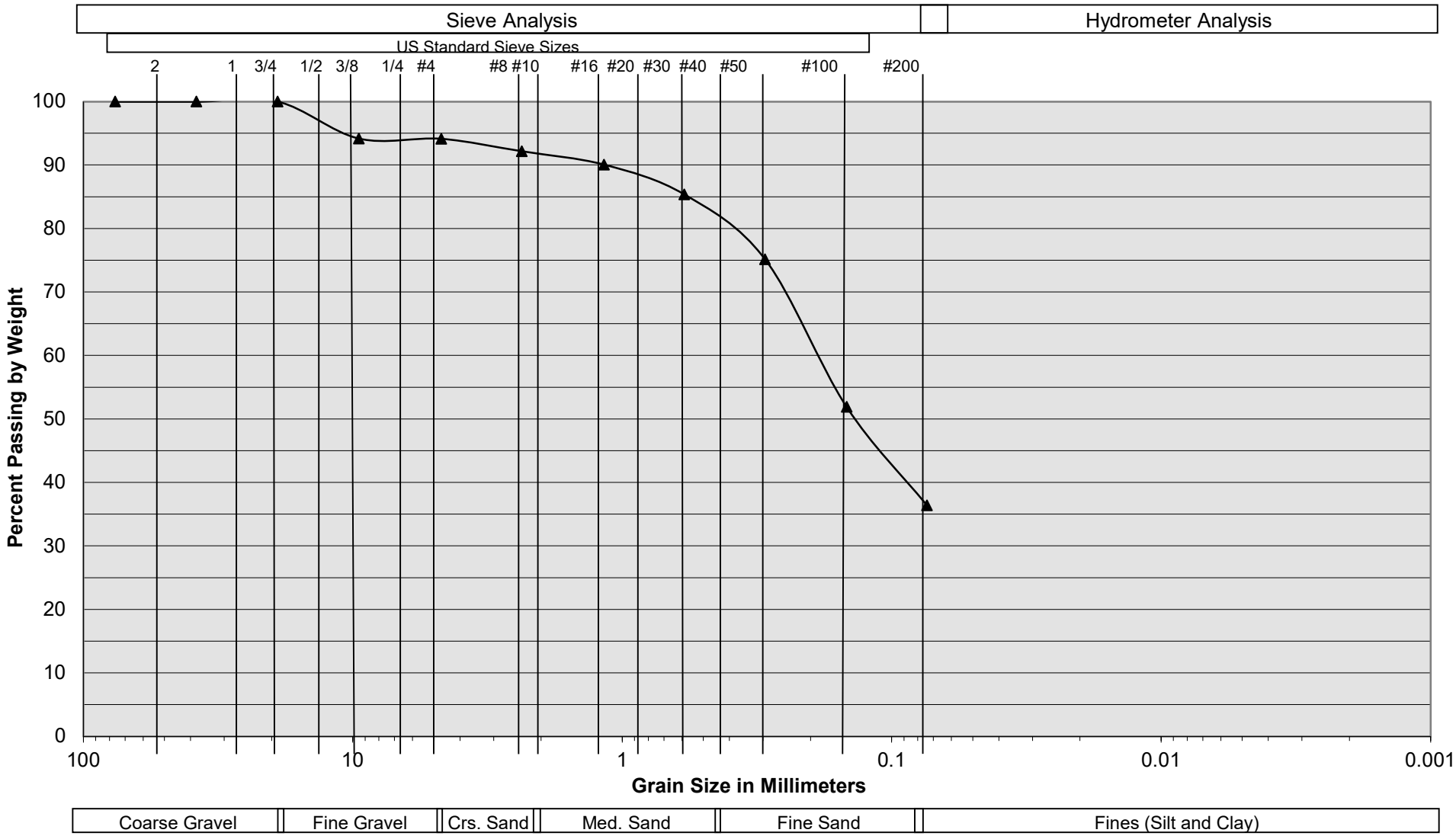
Grain Size Distribution

Sample Description	I-6 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

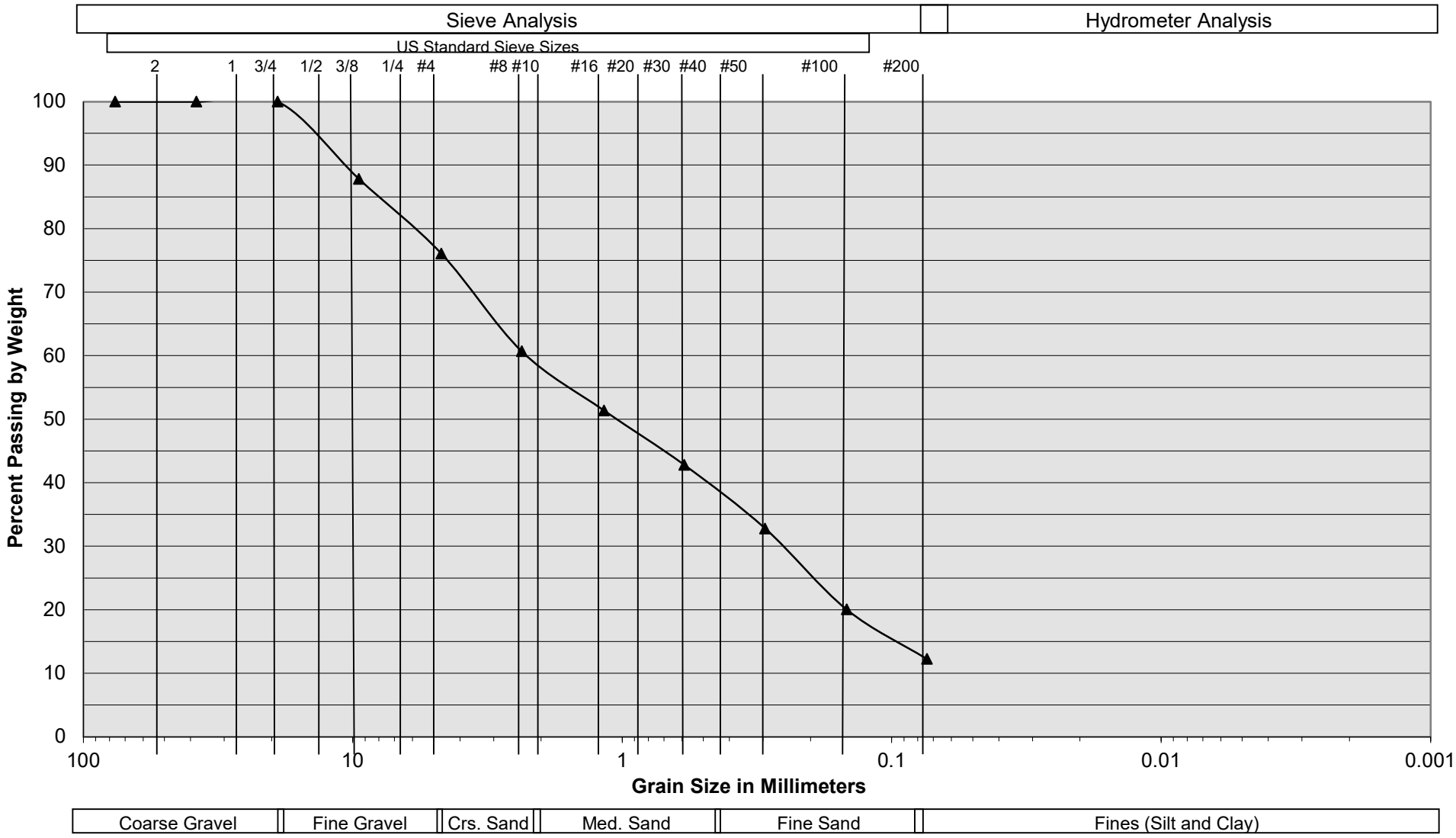


Sample Description	I-7 @ 28½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

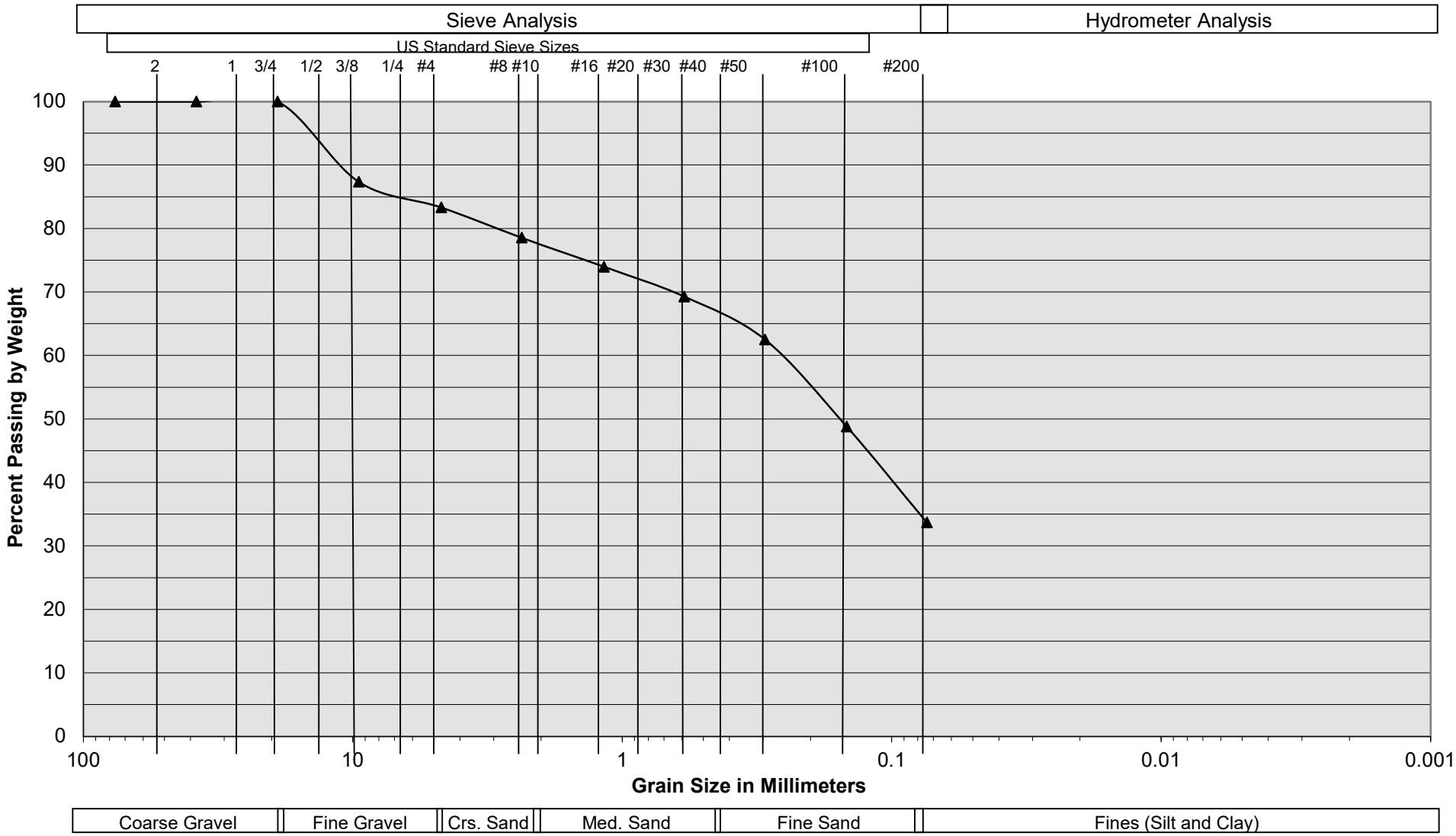


Sample Description	I-8 @ 29'
Soil Classification	Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 9

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

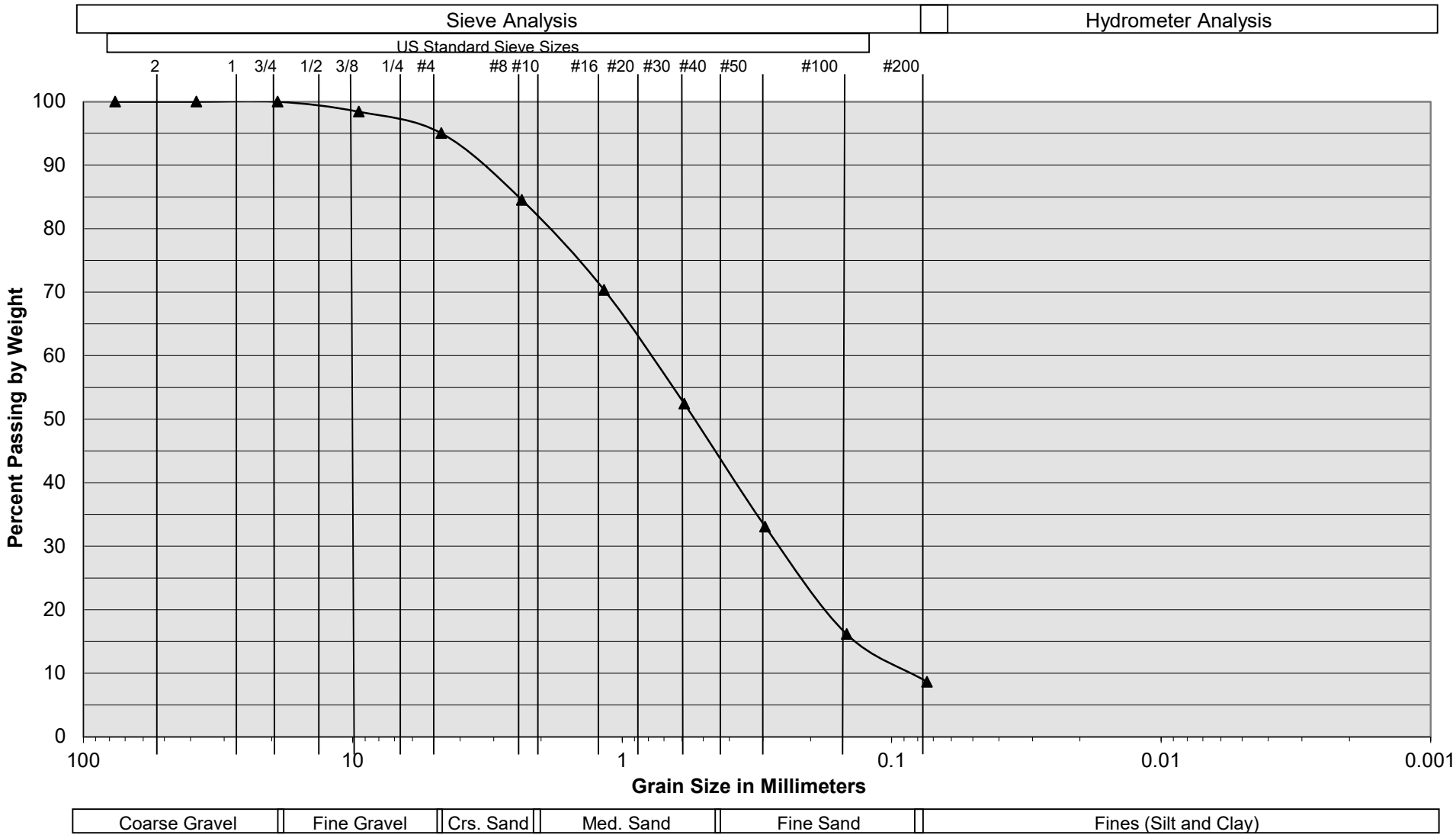


Sample Description	I-9 @ 34½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 10

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

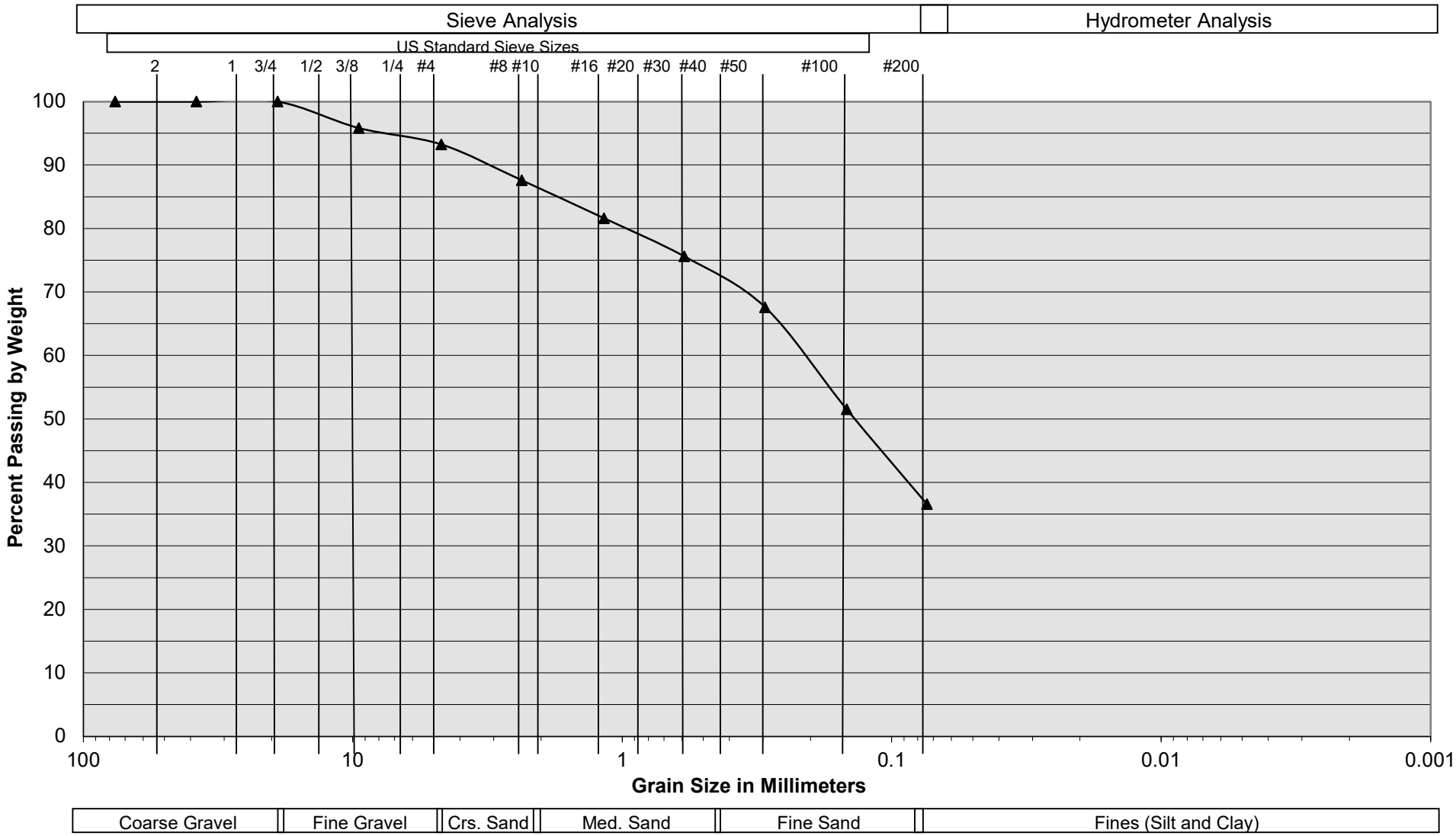


Sample Description	I-10 @ 33½'
Soil Classification	Brown fine to coarse Sand, trace fine Gravel, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 11

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

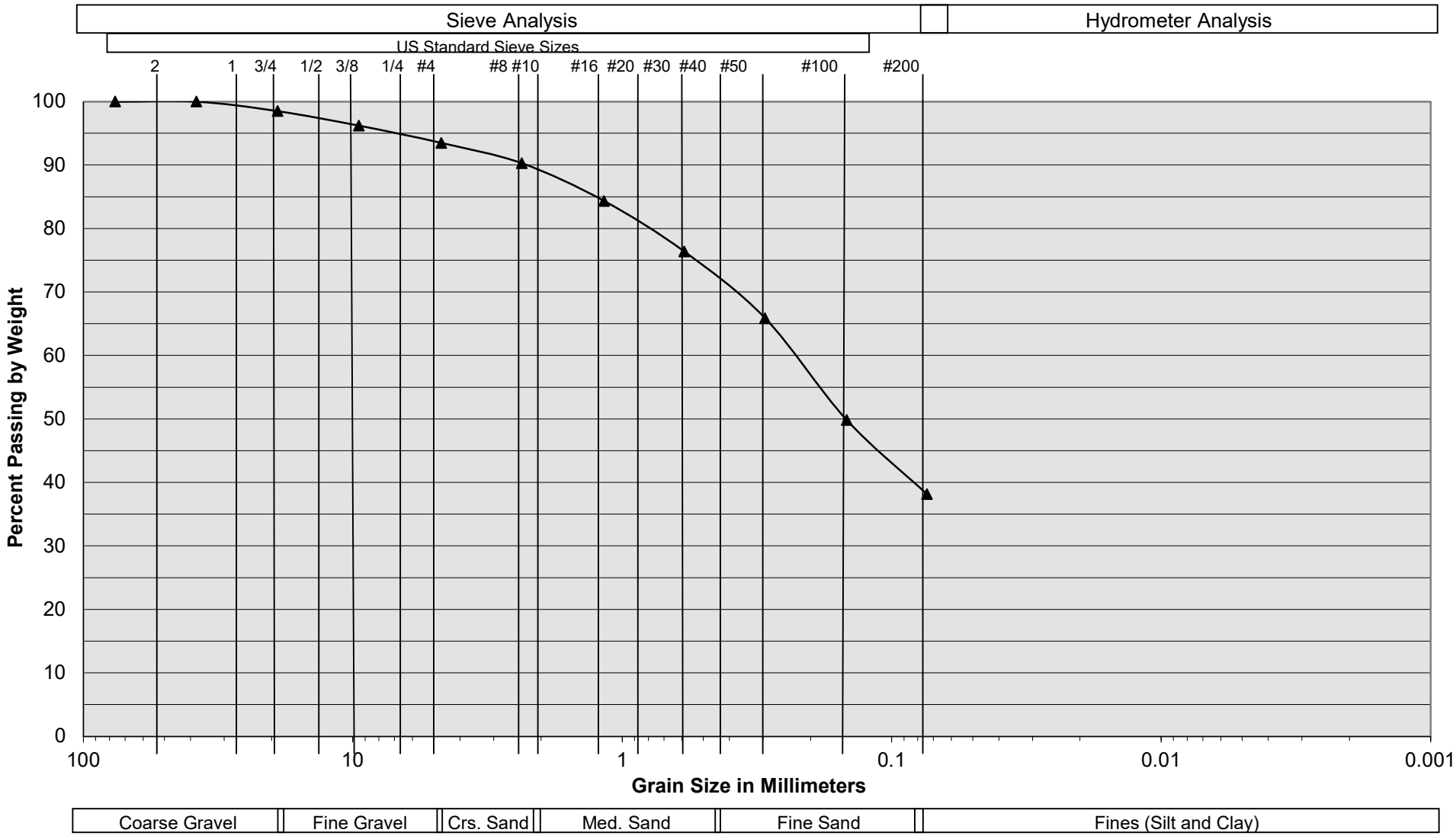


Sample Description	I-11 @ 8½'
Soil Classification	Brown Silty fine to medium Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 12

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

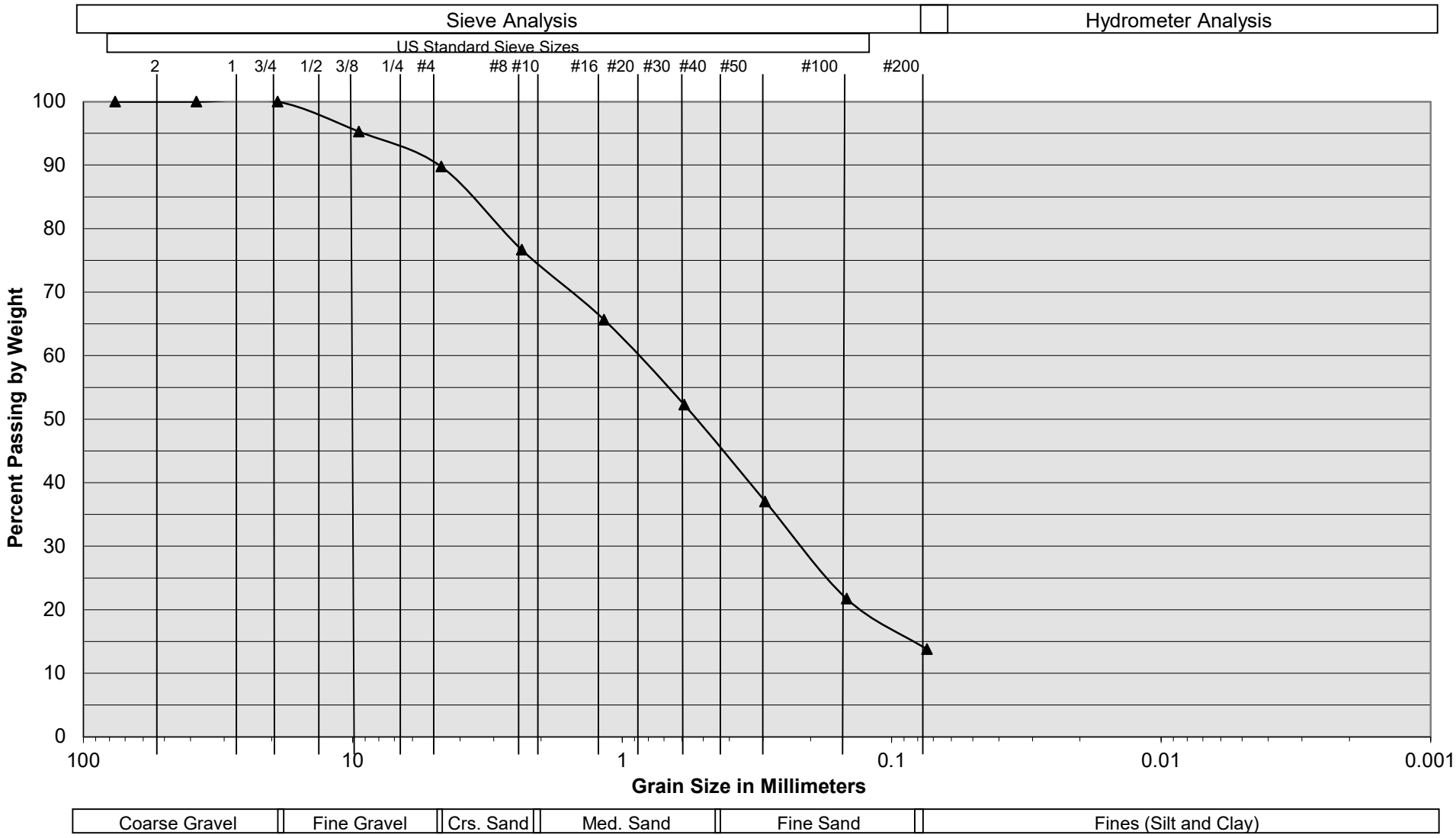


Sample Description	I-12 @12½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 13

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-13 @ 26½'
Soil Classification	Brown fine to coarse Sand, little fine Gravel, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 14

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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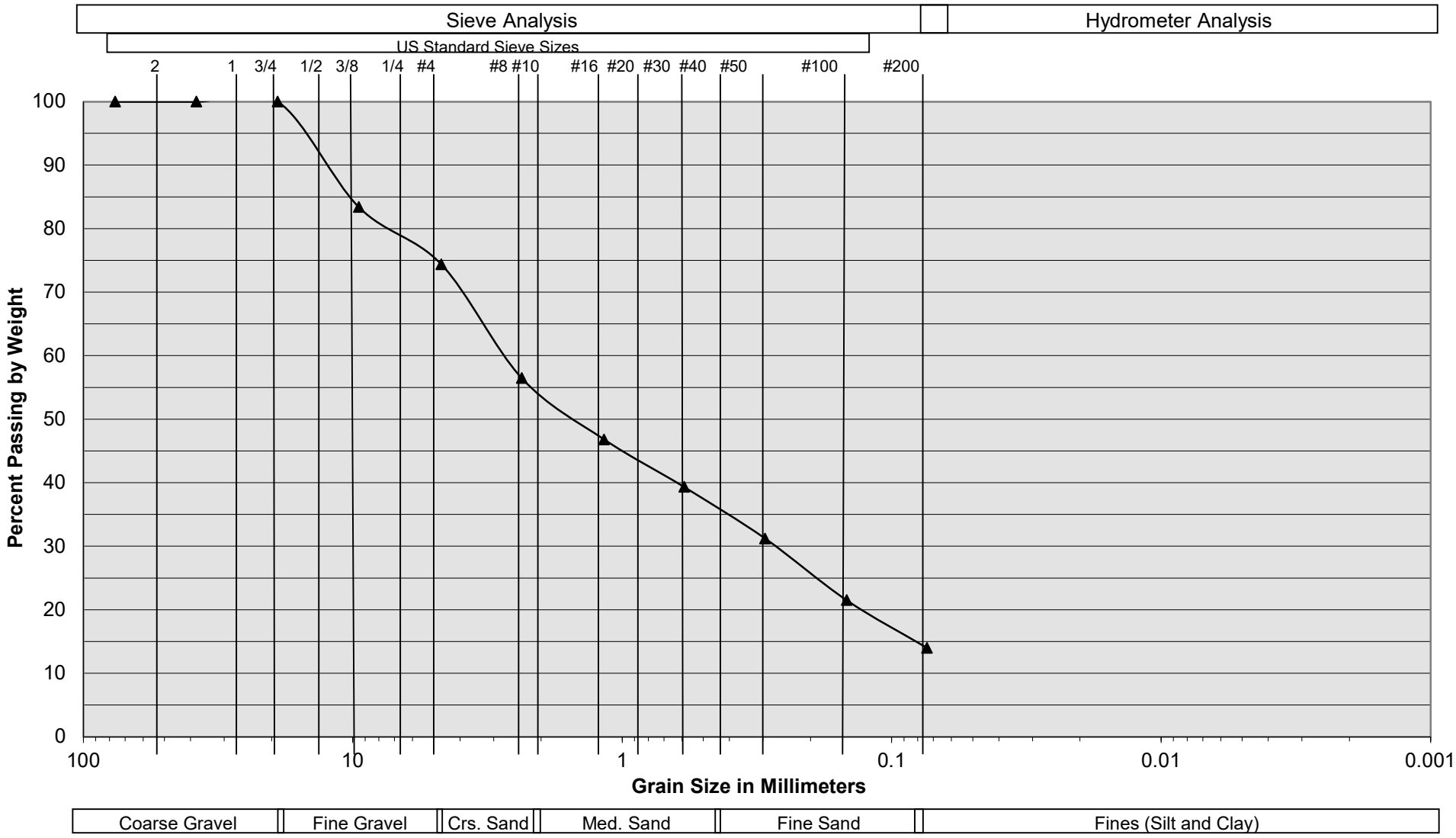
Grain Size Distribution

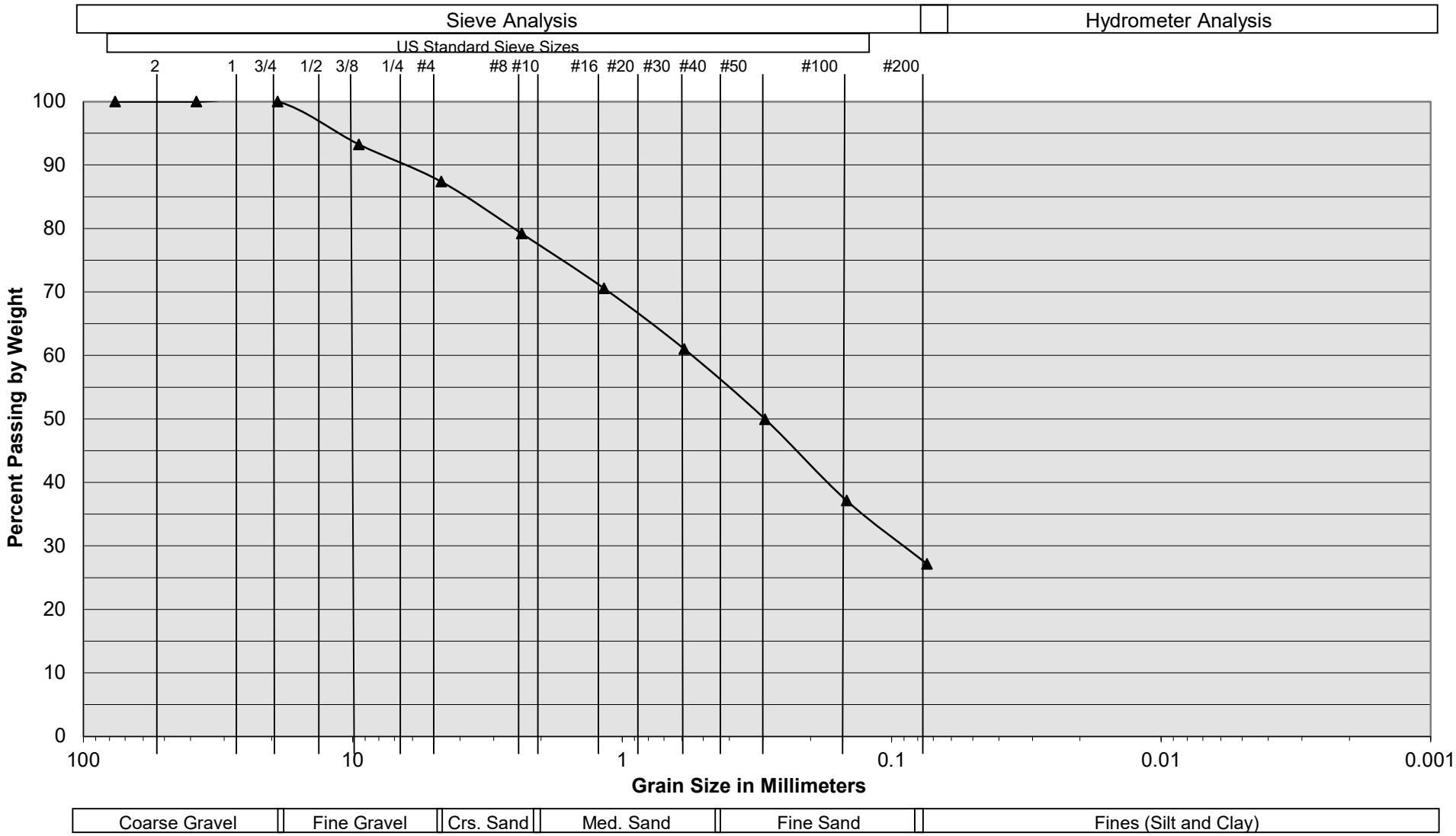


Sample Description	I-14 @ 14½'
Soil Classification	Gray Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 15

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-15 @ 25½'
Soil Classification	Red Brown Silty fine to coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 16

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

Sample Description	I-16 @ 41½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 17

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

GEOTECHNICAL INVESTIGATION
PROPOSED E-COMMERCE DEVELPOMENT

Cherry Avenue, West of Fabian Way
Beaumont, California
For
Exeter Property Group

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

August 12, 2021

Exeter Property Group
4602 East University Drive, Suite 185
Phoenix, Arizona 85034

Attention: Mr. Andrew Greybar
Senior Project Manager

Project No.: **21G133-1**

Subject: **Geotechnical Investigation**
Proposed E-Commerce Development
Cherry Valley Avenue, West of Fabian Lane
Beaumont, California

Mr. Greybar

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Pablo Montes Jr.
Staff Engineer

Daryl Kas, CEG 2467
Senior Geologist

PROFESSIONAL GEOLOGIST
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CERTIFIED ENGINEERING GEOLOGIST
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REGISTERED PROFESSIONAL ENGINEER
ROBERT TRAZO
No. 2655
GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (1) Addressee

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Plate 2: Geotechnical Map
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Plate 4: Recommended Depths of Overexcavation
B Boring and Trench Logs
C Laboratory Test Results
D Grading Guide Specifications
E Seismic Design Parameters

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Geotechnical Design Considerations.

- Portions of the western and southern areas of the subject site are located within mapped zones of moderate liquefaction hazard. However, based on the subsurface profile identified in this report, the proposed grading, and the available groundwater data, liquefaction is not considered a design concern for this project.
- Artificial fill soils were encountered at several of the boring and trench locations, extending to depths of 1½ to 12± feet. These soils are considered to consist of undocumented fill materials. One of the borings identified artificial fill soils, extending to a depth of 29½± feet. The deeper fill soils are located within a former drainage canyon which appears to have been filled-in to establish the currently existing site grades. The fill soils are underlain by native alluvium, extending at least to the maximum depth explored of 50± feet.
- The proposed buildings will require cuts of up to 45 feet and fills of up to 65 feet to achieve the new building pad elevations.
- Field and laboratory testing indicates that some of the younger alluvial soils are moderately compressible, especially when exposed to the loads that will be exerted by the relatively deep new fills.
- The alluvial soils located within the southwest draining canyons and the existing undocumented fill materials are not considered suitable for support of the proposed fills and structures.
- Remedial grading is recommended to consist of overexcavation of existing fill, and alluvial soils, due to collapse/consolidation potential. These soils should be replaced as compacted fill.

Site Preparation

- Initial site preparation should include stripping of any surficial vegetation. The surficial vegetation, trees, and any organic soils should be properly disposed of off-site.
- Remedial grading is recommended to be performed within the new building pad areas. The existing soils within the building pad areas should be overexcavated to a depth of 6 feet below proposed pad grade. All existing artificial fill materials should also be removed from the new building pad areas. The soils within the proposed foundation influence zones should be overexcavated to a depth of at least 6 feet below proposed foundation bearing grades.
- Additional remedial grading (10 to 30 feet below existing grade) should be performed in the proposed deep fill areas to remove compressible alluvial soils that could result in significant settlements if allowed to remain in place.
- The recommended areas and depths of overexcavation are illustrated on Plate 4 of this report.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.
- 3,000 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slabs

- Conventional Slab-on-Grade, 6 inches thick.
- Modulus of Subgrade Reaction: k = 100 psi/in.
- Reinforcement is not required for geotechnical conditions. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed slab loading.

Pavement Design Recommendations

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R=40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0 or less)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 21P157, dated February 11, 2021 and our Change Order No. 21G133-CO, dated July 14, 2021. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

Based on the grading plan prepared by Albert A. Webb Associates, the project will utilize new retaining walls ranging from 10 to 50± feet in height. These walls will be utilized in conjunction with new cut and fill slopes which will be required to establish the new site grades. It is recommended that an analysis be performed once grading and foundation plans become available to determine the stability of the proposed retaining wall and slope configurations. It may be necessary to perform an additional subsurface exploration in order to provide specific geotechnical design considerations for the new retaining wall systems.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located on the south side of Cherry Valley Boulevard, 1,500± feet west of the intersection of Cherry Valley Boulevard and Fabian Lane in Beaumont, California. The site is bounded to the north by Cherry Valley Boulevard, to the east by single-family residences (SFRs) and vacant lots, to the south by Brookside Avenue, to the southwest by the Redlands Freeway (Interstate 10) and to the west by vacant land. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several irregular to rectangular-shaped parcels which total 178.4± acres in size. The site is presently developed with three (3) single-family residences and several small abandoned buildings located in the northeastern area of the site. Remnants of shade structures including Portland cement concrete panels and sawed-off poles are present throughout the northeastern areas of the site. Several above-ground storage tanks are also present throughout the northeastern area of the site. One of the smaller abandoned structures possesses a below-grade room with what appears to be a turbine. The remaining areas of the site are presently vacant and undeveloped. Five (5) circular to oval-shaped leech ponds are located in the west-central area of the site. Two (2) additional leech ponds are located in the south-central area of the site. Ground surface cover consist of exposed soil and moderate to dense native grass and weed growth. Several large trees are located in the southern areas of the site. Limited areas of trash and debris are located throughout the site.

Detailed topographic information was obtained from the conceptual grading plan prepared by Albert A. Webb Associates (Webb). Based on the provided plan, the northeastern to northern two-thirds of the site slopes downward to the southwest at a gradient of 4± percent. The seven (7) circular leech ponds located in the west-central and south-central areas of the site are surrounded by a berm that is 5± feet higher than the surrounding topography. The northwestern area of the site possesses several east-west and southeast-northwest trending drainage courses. The drainage features possess gradual to steep side walls with elevation differences of up to 15± feet below the surrounding topography. To the south of the leech pits, the site slopes towards the south to southwest at a gradient of 10± percent. The topography descends by 50± feet in this area. Another significant east-west trending drainage is located at the base of the descending slope, located in the southern-most region of the site. The drainage possesses gradual to steep side walls with an elevation difference up 10± feet below the surrounding topography. A hill, located to the southeast of this drainage, is approximately 20 to 30 feet higher than the surrounding topography. The hill possesses slope gradients ranging from 14 to 40± percent. To the south of the hill, the site topography slopes gently to the west at a gradient of 3.5± percent, where it meets up with a tributary drainage to the previously mentioned bisecting drainage. The area to the southwest of the bisecting drainage slopes to the west a gradient of 2.5± percent. Another hill with a north-facing descending slope is located at the southwest corner of the site. The slope has a gradient of 20± percent. The maximum site elevation is 2581± feet mean sea level (msl), in the northeast corner of the site. The minimum site elevation is 2406± feet msl, located in drainage swale channel located in the southern-most region of the site.

3.2 Proposed Development

Based on the conceptual site plan prepared by Webb, the site will be developed with three (3) new E-Commerce buildings. Building 1 will be 985,860± ft^2 in size, located in the western area of the site. Building 2 will be 1,254,000± ft^2 in size, located in the east-central region of the site. Lastly, Building 3 will be 358,370± ft^2 in size, located in the north-central area of the site. A cross-dock configuration will be constructed on Building 1 and Building 2, along the east/west and north/south building walls, respectively. Dock-high doors will be constructed along a portion of the southern building wall of Building 3. The buildings will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete (PCC) pavements in the truck court, and areas of concrete flatwork and landscape planters. Several new fill and cut slopes will be constructed along all permitters, as well as within the site. The new fill slopes will range from 10 to 40± feet in height and will possess slope inclinations not to exceed 2h:1v (horizontal to vertical). New retaining walls will also be required to establish the new site grades. The new retaining walls will possess maximum retained heights ranging from 10 to 50± feet.

Detailed structural information has not been provided. We assume that the new buildings will be single-story structures of tilt-up concrete construction, typically supported on a conventional shallow foundation system with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 5 to 7 kips per linear foot, respectively.

No significant amounts of below-grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the assumed topography, cuts of 45± feet and fills of up to 65± feet are expected to be necessary to achieve the proposed site grades.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of forty-four (44) borings advanced to depths of 10 to 50± feet, and seven (7) trenches excavated to depths of 6½ to 10½± feet below the existing site grades. Four (4) of the borings were advanced to a depth of 50± feet, as a part of the liquefaction evaluation. All of the borings and trenches were logged during the drilling and excavation by members of our staff.

The borings were advanced with hollow-stem augers, by a truck-mounted drilling rig. The trenches were excavated using a backhoe with a 36-inch-wide bucket. Representative bulk and undisturbed soil samples were taken during drilling. Relatively undisturbed samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. Samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings (identified as Boring Nos. B-1 through B-44) and trenches (identified as Trench Nos. T-1 through T-7) are indicated on the Boring and Trench Location Plan, included as Plate 2 in Appendix A of this report. The Boring and Trench Logs, which illustrate the conditions encountered at the boring and trench locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Pavements

Portland Cement Concrete (PCC) was encountered at the ground surface of Boring Nos. B-14, B-19 and B-25. The pavement sections consist of 2± inches of PCC. Boring Nos. B-19 and B-25 encountered 2± inches of slurry beneath the existing PCC pavements.

Artificial Fill

Artificial fill soils were encountered at the ground surface of several boring locations and one trench location, extending to depths of 1½ to 29½± feet below ground surface. The fill soils generally consist of loose to medium dense silty fine sand and clayey fine to medium sand. Occasional layers of medium dense silty fine to coarse sand and soft to stiff fine sandy clays were encountered. Varying amounts of fine root fibers were encountered in the silty fine sand layers. The fill soil possesses a disturbed and mottled appearance, resulting in their classification as

artificial fill. The deepest fill soils were encountered within Boring No. B-43, in the area of a former drainage channel. At this locations, the artificial fill soils included rubber and concrete debris.

Alluvium

Native alluvium was encountered beneath the artificial fill soils or at the ground surface at all of the boring locations. The alluvial soils extend to depths of 1½ to 12± feet below ground surface in the northern areas of the site, and 25 to 50± feet below ground surface in the southern areas of the site. The alluvial soils generally consist of loose to very dense silty fine sands and silty fine to medium sands. These soils possess fine root fibers near the ground surface and occasional porosity. Occasional layers of medium dense silty fine sand to fine sandy silt, fine to coarse sand, clayey silt, fine sandy silt and medium stiff silty clay were encountered in the deeper borings located in the southern areas.

Older Alluvium

Older alluvial deposits were encountered at the ground surface, or beneath the artificial fill and alluvium at all of the boring locations, extending to at least the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of medium dense to very dense silty fine sands, silty fine to medium sands, silty fine to coarse sands and silty fine sands to fine sandy silts. Several layers of medium dense to dense clayey fine sands, clayey fine to coarse sands and very stiff to hard fine sandy clays were encountered. Occasional layers of medium dense to dense fine sandy silts, fine to coarse sands and stiff fine to medium sandy clay were encountered.

Groundwater

Groundwater was not encountered at any of the boring or trench locations. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet below existing site grades at the time of the subsurface investigation.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level and recent groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring wells in this database are located in the northeast corner of the site. Water level readings within one of these monitoring wells indicates a historic high groundwater level of 317± feet below the ground surface in September 1990. Water level readings within another of these monitoring wells indicates a recent high groundwater level of 412± feet below the ground surface in December 2020.

4.3 Regional Geology

The subject site is located within the Peninsular Ranges province. The Peninsular Ranges province consists of several northwesterly-trending ranges in the southwestern California. The province is truncated to the north by the east-west trending Transverse Ranges. Prior to the mid-Mesozoic, the region was covered by seas and thick marine sedimentary and volcanic sequences were deposited. The bedrock geology that dominates the elevated areas of the Peninsular Ranges

consists of high-grade metamorphic rocks intruded by Mesozoic plutons. During the Cretaceous, extensive mountain building occurred during the emplacement of the southern California batholith. The Peninsular Ranges have been significantly disrupted by Tertiary and Quaternary strike-slip faulting along the Elsinore and San Jacinto faults. This tectonic activity has resulted in the present terrain.

4.4 Geologic Conditions

Regional geologic conditions were obtained from the Geologic Map of the El Casco 7.5' Quadrangle, Riverside County, California, by Thomas W. Dibblee, Jr., 2003 (Plate 3a) and Geologic and Geophysical Map of the El Casco 7.5' Quadrangle, Riverside County, California, with Accompanying Geologic-Map Database, Geologic Map by Jonathan C. Matti and Pamela M. Cossette, Digital Database by Douglas M. Hirshchberg, Jordan G. Matti and Pamela M. Cossette, 2015 (Plate 3b). Plate 3a indicates that the site is underlain by alluvial deposits (Map Symbol Qa) in the southwestern area of the site and older alluvium (Map Symbol Qoa) in the northeastern area of the site. The alluvium is described as alluvial sand, gravel and clay, covered by residual soil. The older alluvium is described as light reddish brown alluvial gravel and sand, of granitic and gneissic detritus of San Bernardino Mountains in north areas, and brownish gray in south areas. Plate 3b indicates that the site is underlain by young axial-valley deposits and very young wash deposits (Map Symbols Qvywm and Qya5) in southwestern area of the site and old alluvial-fan deposits and very old alluvial-fan deposits (Map Symbols Qof2 and Qvof3) in the northwestern area of the site. The very young wash deposits are described as very slightly to slightly consolidated sandy and gravelly sediment in active channels. The remaining units were not described in detail.

Based on the materials encountered at the boring locations, the northeastern portion of the site is underlain by older alluvium and the southwestern portion of the site is underlain by alluvium. It is in our opinion that the material encountered throughout the site is consistent with the mapped geologic units.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. The field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring and Trench Logs.

Consolidation

Selected soil samples were tested to determine their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-42 in Appendix C of this report.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	Expansion Index	Expansive Potential
B-20 @ 0 to 5 feet	45	Low
B-22 @ 0 to 5 feet	28	Low

Maximum Dry Density and Optimum Moisture Content

Representative bulk samples have been tested for their maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557 and are presented on Plates C-43 through C-45 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Direct Shear

Direct shear testing was performed on one representative sample to determine its shear strength parameters. The test was performed in accordance with ASTM D-3080. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each of the three samples are then loaded with different normal loads and the resulting shear strength is determined for that particular normal load. The shearing of the samples is performed at a rate slow enough to permit the dissipation of excess pore water pressure. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The results of the direct shear test are presented on Plate C-46 in Appendix C of this report

Soluble Sulfates

Representative samples of the near-surface soil were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
B-4 @ 0 to 5 feet	0.001	Not Applicable (S0)
B-20 @ 0 to 5 feet	0.002	Not Applicable (S0)
B-25 @ 0 to 5 feet	0.002	Not Applicable (S0)

Corrosivity Testing

Representative bulk samples of the near-surface soils were submitted to a subcontracted corrosion engineering laboratory to identify potentially corrosive characteristics with respect to common construction materials. The corrosivity testing included a determination of the electrical resistivity, pH, and chloride and nitrate concentrations of the soils, as well as other tests. The results of some of these tests are presented below.

Sample Identification	Saturated Resistivity (ohm-cm)	pH	Chlorides (mg/kg)	Nitrates (mg/kg)
B-4 @ 0 to 5 feet	4,800	7.3	5.5	4.3
B-20 @ 0 to 5 feet	4,800	7.5	7.7	17
B-25 @ 0 to 5 feet	5,200	7.6	5.6	4.1

R-value Testing

R-value testing was conducted on one (1) representative soil sample recovered from the site. The R-(resistance) value was determined for representative soils samples in accordance with CA Test Method 301. This test provides a measure of the pavement support characteristics of the soils, and is used in the pavement thickness design procedure. The results of the R-value testing are as follows:

Sample Identification	**Soil Classification**	**R-Value**
B-4 @ 0 to 5 feet	Brown Silty Sand	60

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site-specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. In addition, our review of the Riverside County RCIT GIS website that the site is not located within a Riverside County fault zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

Based on standards in place at the time of this report, the proposed development is expected to be designed in accordance with the requirements of the 2019 edition of the California Building Code (CBC), which was adopted on January 1, 2020. The 2019 California Building Code (CBC) provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural

system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2019 CBC Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool, a web-based software application available at the website www.seismicmaps.org. This software application calculates seismic design parameters in accordance with several building code reference documents, including ASCE 7-16, upon which the 2019 CBC is based. The application utilizes a database of risk-targeted maximum considered earthquake (MCE_R) site accelerations at 0.01-degree intervals for each of the code documents. The table below was created using data obtained from the application. The output generated from this program is included as Plate E-1 in Appendix E of this report.

The 2019 CBC requires that a site-specific ground motion study be performed in accordance with Section 11.4.8 of ASCE 7-16 for Site Class D sites with a mapped S_1 value greater than 0.2. However, Section 11.4.8 of ASCE 7-16 also indicates an exception to the requirement for a site-specific ground motion hazard analysis for certain structures on Site Class D sites. The commentary for Section 11 of ASCE 7-16 (Page 534 of Section C11 of ASCE 7-16) indicates that "In general, this exception effectively limits the requirements for site-specific hazard analysis to very tall and or flexible structures at Site Class D sites." **Based on our understanding of the proposed development, the seismic design parameters presented below were calculated assuming that the exception in Section 11.4.8 applies to the proposed structure at this site. However, the structural engineer should verify that this exception is applicable to the proposed structure.** Based on the exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2019 CBC.

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	2.091
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.718
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	2.509
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.221
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.673
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.814

It should be noted that the site coefficient F_v and the parameters S_{M1} and S_{D1} were not included in the SEAOC/OSHPD Seismic Design Maps Tool output for the 2019 CBC. We calculated these parameters-based on Table 1613.2.3(2) in Section 16.4.4 of the 2019 CBC using the value of S_1 obtained from the Seismic Design Maps Tool, assuming that a site-specific ground motion hazards analysis is not required for the proposed building at this site.

Liquefaction

Liquefaction is the loss of the strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and grain size characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Clayey (cohesive) soils or soils which possess clay particles (d<0.005mm) in excess of 20 percent (Seed and Idriss, 1982) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The Riverside County GIS website indicates that an isolated portions of the western and southern-most regions of the site are located within a zone of moderate liquefaction susceptibility. However, based on underlying soil conditions (which include moderate strength older alluvium), the proposed grading which includes fills of up to 65± feet, and the groundwater research performed for this site which indicates that the long-term groundwater table is considered to exist at a depth in excess of 50± feet, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

The ground surface of the subject site is generally underlain by younger native alluvial soils, which are underlain at depth by moderate strength older alluvium. Some areas of the site are covered with a layer of undocumented fill soils extending to depths of 1½ to 12± feet. These soils are considered to consist of undocumented fill materials. One of the borings identified artificial fill soils, extending to a depth of 29½± feet. These deeper fill soils are located within a former drainage canyon which is expected to have been filled-in to establish the currently existing site grades. These undocumented fill soils are not suitable to support the foundations loads of the new structures, and should be removed in their entirety.

Based on the grading plan prepared by Webb, the proposed grading will require deep fill soils ranging from 15 to 65± feet in order to establish the new site grades in the western region of the site. The western region of the site includes several south-west drainage canyons which will require removal of the moderately compressible younger native alluvium, extending between the depths of 12 to 22± feet below the existing site grades. The existing older alluvium at greater depths possess moderate strengths and are expected to be encountered following removal of the younger alluvium. In addition, the deep cuts located in the eastern region of the site are expected to encounter the moderate strength alluvium. Some of the buildings, will be underlain by older alluvium on one side, and deep fill soils on the other side. This condition increases the possibility of excessive differential settlements. Remedial grading will be necessary to mitigate this condition.

Settlement

The recommended remedial grading will remove all of the existing undocumented fill soils and most of the near-surface compressible/collapsible younger alluvial soils, and replace these materials as compacted fill soils. The underlying moderate strength older alluvium which will remain in-place are note expected to be susceptible to settlement from the foundations of the proposed structures. Provided that the recommended remedial grading is completed, the post-construction static settlements of the proposed structures are expected to be within tolerable limits.

Deep Fill Areas

Based on the conceptual grading plan prepared by Webb, the proposed grading will include fills of up to 65± feet within the building pads. In order to reduce the settlement potential of the newly placed fill soils to acceptable levels and avoid excessive differential settlements, fill soils placed at depths greater than 20 feet below proposed pad grade within the building pads should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density.

Settlement of Deep Fill Soils

Subsequent to the proposed grading, the proposed development areas will be underlain by engineered fill soils (design plus remedial), extending to depths of 50 to 85± feet. The primary settlement associated with these fill soils is expected to occur relatively quickly due to the generally granular nature of the on-site soils. Minor amounts of additional settlement may occur due to secondary consolidation effects. The extent of secondary consolidation is difficult to assess precisely, and will be reduced by the proposed mitigation measures recommended herein, but may be in the range of 0.1 to 0.3 percent of the fill thickness. Based on the differential fill thickness that will exist across the building footprints, the structural design will need to consider the distortions that could be caused by the secondary consolidation of the fill soils. Provided that the grading and foundation design recommendations presented in this report are implemented, these settlements are expected to be within the structural tolerances of the proposed buildings.

This report includes recommendations to install settlement monuments within the deep fill areas of Buildings 1 and 2. These monuments will be used to verify that primary consolidation of the remaining alluvial soils is complete, prior to initiating construction of the new buildings.

Cut/Fill Transitions

The conceptual grading plan indicates that several cut/fill transitions will be created within the proposed building pads by the proposed grading. The differing support conditions of the native soils versus the newly compacted fill soils may result in excessive differential settlements if not mitigated. Remedial grading will be required to eliminate the cut/fill transitions which will occur at building pad and foundation bearing grade as well as to reduce the inclinations of the underlying cut/fill contacts.

Expansion

The near-surface soils consist of silty sands and sandy silts with no appreciable clay content. However, some isolated strata of sandy clays and clayey sands were encountered. Expansion

Index (EI) values at the site range from 28 to 45. Mass grading of the site is expected to blend the on-site soils, resulting in a very low to low expansive potential. We recommend that additional expansion index testing be performed at the time of rough grading in order to confirm the expansion potential of the near-surface soils at this site.

Slope Stability

The grading plan indicates that the new slopes (both cut and fill) will occur at inclinations of 2h:1v or flatter. Newly constructed fill slopes, comprised of properly compacted engineered fill, at inclinations of 2h:1v will possess adequate gross and surficial stability.

Cut slopes excavated within the existing granular alluvial soils may be subject to surficial instability due to the lack of cohesion within these materials. Therefore, stability fills may be required within these areas. This condition may affect the proposed cut slopes at the site. The need for stability fills should be determined by SCG as part of the future detailed grading plan review.

Based on the grading plan prepared by Webb, new retaining walls ranging from 10 to 50± feet in height will be utilized in conjunction with new cut and fill slopes at the site. An additional review of the proposed site configuration may be required once detailed grading and foundation plans become available in order to determine the stability of the new retaining wall systems. An additional subsurface exploration may also be required as part of the analysis of the new retaining wall structures.

Soluble Sulfates

The result of the soluble sulfate testing indicates that the selected samples of the on-site soils possess concentrations of sulfates that correspond to Class S0 with respect to the American Concrete Institute (ACI) Publication 318-05 Building Code Requirements for Structural Concrete and Commentary, Section 4.3. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building areas.

Corrosion Potential

The results of laboratory testing indicate that the tested samples of the on-site soils possess saturated resistivity values of 4,800 to 5,200 ohm-cm, and pH values of 7.3 to 7.6. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Sulfides, and redox potential are factors that are also used in the evaluation procedure. We have evaluated the corrosivity characteristics of the on-site soils using resistivity, pH, and moisture content. Based on these factors, and utilizing the DIPRA procedure, the on-site soils are not considered to be corrosive to ductile iron pipe.

Relatively low concentrations (5.5 to 7.7 mg/kg) of chlorides were detected in the samples submitted for corrosivity testing. In general, soils possessing chloride concentrations in excess of 500 parts per million (ppm) are considered to be corrosive with respect to steel reinforcement

within reinforced concrete. Based on the lack of any significant chlorides in the tested samples, the site is considered to have a C1 chloride exposure in accordance with the American Concrete Institute (ACI) Publication 318 Building Code Requirements for Structural Concrete and Commentary. Therefore, a specialized concrete mix design for reinforced concrete for protection against chloride exposure is not considered warranted.

Nitrates present in soil can be corrosive to copper tubing at concentrations greater than 50 mg/kg. The tested samples possess nitrate concentrations ranging from 4.1 to 17 mg/kg. Based on this test result, the on-site soils are not considered to be corrosive to copper pipe.

It should be noted that SCG does not practice in the area of corrosion engineering. Therefore, the client may also wish to contact a corrosion engineer to provide a more thorough evaluation of these conditions.

Shrinkage/Subsidence

Removal and recompaction of the near-surface fill and younger alluvial soils (located in the southwestern region of the site) is estimated to result in an average shrinkage of 6 to 14 percent. This assumes average compaction of 92 percent within the new engineered fill soils. Removal and recompaction of the existing older alluvial soils located in the south and west regions of the site is estimated to result in an average shrinkage of 0 to 8 percent. Engineering fills more than 20 feet below finished grade, where 95 percent compaction is recommended, should be assumed to result in shrinkage of 13 to 20 percent. It should be noted that these shrinkage estimates are based on dry density testing performed on small-diameter samples taken at the boring locations. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test pits where in-place densities are determined using in-situ testing methods instead of laboratory density testing on small-diameter samples. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

These estimates are based on previous experience with nearby projects and the subsurface conditions encountered at the boring and trench locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Foundation and Grading Plan Review

Based on our review of the preliminary grading plans prepared by Webb, new retaining walls with maximum heights of up to 50± feet will be constructed as part of the new development. It is recommended that additional review of the global stability of the proposed site grading be performed by SCG once more detailed rough grading plans become available. An additional subsurface exploration may be required to evaluate the geotechnical design considerations of the retaining wall and new slope configurations.

It is recommended that we be provided with copies of all future foundation and grading plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring and trench locations, and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site stripping should include removal of any surficial vegetation and topsoil. This should include any weeds, grasses, shrubs, and trees. Removal of trees should also include any associated root masses. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered. The scattered trash and debris that is present on the site should be collected and disposed of off-site.

Demolition of minor existing improvements such as buildings, retaining walls, concrete slabs and foundations will be required. Demolition debris should be disposed of off-site. Concrete may also be crushed to a maximum 2-inch particle size and incorporated into new structural fills.

Treatment of Existing Soils: Building Pads

Remedial grading should be performed within the proposed development area in order to remove all of the existing undocumented fill soils. Based on conditions encountered at the boring and trench locations, the undocumented fill soils extend to depths of up to 12± feet. At one of the boring locations, the existing undocumented fill soils extend to a depth of 29½± feet. It is possible that undocumented fill soils may extend to greater depths in unexplored areas of the site. Additional remedial grading should be performed in the deep proposed fill areas (the west and southwest areas of Buildings 1 and 2) to remove the compressible younger alluvial soils that could result in significant settlements if allowed to remain in place. These recommended overexcavations generally range from 12 to 22± feet below existing grade.

Within the influence zones of the new foundations, the overexcavation should extend to a depth of at least 6 feet below proposed foundation bearing grades. The overexcavation area should extend at least 5 feet beyond the building and foundation perimeters, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Additional remedial grading is also recommended to mitigate the native/fill transitions that will be created by the proposed grading. There for the proposed buildings within the cut portion of the site are recommended to be overexcavated to a depth of 10 feet below proposed pad grade and 6 feet below footing grade.

The recommended areas and depths of overexcavation are illustrated on Plate 4 of this report.

To mitigate the relatively steep inclination of the underlying cut/fill contact in the areas of the southwest draining canyons, benching of the sidewalls will be required during fill placement. The horizontal extent of the benching should be sufficient to reduce the inclination of the native fill contact to 3h:1v or flatter. This additional benching is not required outside the areas of the proposed building foundation influence zones.

Following completion of the overexcavations, the subgrade should be evaluated by the geotechnical engineer to verify its suitability to serve as the structural fill subgrade. Some localized areas of deeper excavation may be required if loose, porous, or low-density materials are encountered at the base of the overexcavation. Materials suitable to serve as the structural fill subgrade within the building area should consist of moderate strength alluvial soils which possess an in-situ density equal to at least 85 percent of the ASTM D-1557 maximum dry density. These materials should be moisture conditioned to 0 to 4 percent above optimum moisture content prior to placement of any new fill soils. The previously excavated soils may then be replaced as compacted structural fill.

Deep Fill Areas

In order to reduce the settlement potential of the newly placed fill soils to acceptable levels and avoid excessive differential settlements, fill soils placed at depths greater than 20 feet below proposed building pad grades should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density.

Treatment of Existing Soils: Cut and Fill Slopes

New cut and fill slopes will be constructed within and around the perimeter of the project. All slopes should be at an inclination of 2h:1v or flatter. A keyway should be excavated at the toe of new fill slopes which are not located in fill areas. The keyway should be at least 15 feet wide and 3 feet deep. The recommended width of the keyway is based on 1.5 times the width of typical grading equipment. If smaller equipment is utilized, a smaller keyway may be suitable, at the discretion of the geotechnical engineer. The base of the keyway should slope at least 1 foot downward into the slope. Following completion of the keyway cut, the subgrade soils should be evaluated by the geotechnical engineer to verify that the keyway is founded into competent materials. The resulting subgrade soils should then be scarified to a depth of 10 to 12 inches, moisture conditioned to 0 to 4 percent above optimum moisture content and recompacted. During construction of the new fill slopes, any existing slopes should be benched in accordance with the detail presented on Plate D-4. Benches less than 4 feet in height may be used at the discretion of the geotechnical engineer.

Stability fills for cut slopes will provide a more uniform appearance and allow landscaping on the slope. Should a stability fill for cut slope be necessary, the recommendations for the stability fill will be the same as the recommendations for the fill slopes, mentioned above.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining walls and site walls should be overexcavated to a depth of 3 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. Any undocumented fill soils or disturbed native alluvium within any of these foundation areas should be removed in their

entirety. Retaining wall footings may also be supported directly within bedrock materials, with no overexcavation required. The overexcavation areas should extend at least 5 feet beyond the foundation perimeters, and to an extent equal to the depth of fill below the new foundations. Any erection pads for tilt-up concrete walls are considered to be part of the foundation system. Therefore, these overexcavation recommendations are applicable to erection pads. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning to within 0 to 4 percent above the optimum moisture content, and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

If the full lateral recommended remedial grading cannot be completed for the proposed retaining walls and site walls located along property lines, the foundations for those walls should be designed using a reduced allowable bearing pressure. Furthermore, the contractor should take necessary precautions to protect the adjacent structures during rough grading. Specialized grading techniques, such as A-B-C slot cuts, will likely be required during remedial grading. The geotechnical engineer of record should be contacted if additional recommendations, such as shoring design recommendations, are required during grading.

Treatment of Existing Soils: Flatwork, Parking and Drive Areas

Based on economic considerations, overexcavation of the existing near-surface existing soils in the new flatwork, parking and drive areas is not considered warranted, with the exception of areas where lower strength or unstable soils are identified by the geotechnical engineer during grading. Subgrade preparation in the new flatwork, parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations.

The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. Any such materials should be removed to a level of firm and unyielding soil. The exposed subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 0 to 4 percent above the optimum moisture content, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength surficial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed flatwork, parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within these areas. The grading recommendations presented above do not mitigate the extent of undocumented fill or compressible/collapsible native alluvium in the flatwork, parking and drive areas. As such, some settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the flatwork, parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 0 to 4 percent of the optimum moisture content, and compacted.

- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the current CBC and the grading code of the city of Beaumont.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density, unless noted otherwise. Fill soils placed at depths greater than 20 feet below proposed rough grade should be compacted to at least 95 percent of the ASTM d-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low to non-expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the city of Beaumont. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches. Any soils used to backfill voids around subsurface utility structures, such as manholes or vaults, should be placed as compacted structural fill. If it is not practical to place compacted fill in these areas, then such void spaces may be backfilled with lean concrete slurry. Uncompacted pea gravel or sand is not recommended for backfilling these voids since these materials have a potential to settle and thereby cause distress of pavements placed around these subterranean structures.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of silty sands and clayey sands. These materials will be subject to caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, temporary excavation slopes should be made no steeper than 2h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate

moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

The static groundwater table is considered to exist at a depth greater than 50± feet or more below the existing grades. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

Slopes

Cut slopes within the native alluvium, and manufactured fill slopes will be prone to erosion. Provisions for surface drainage, terrace drains, slope planting and other measures in accordance with CBC requirements should be provided to improve long-term protection of the new slopes. These measures may include installation and maintenance of Hydro seed, polymers or other erosion control measures to provide slope protection until healthy plant grown is established.

Subdrains

Subdrains may be required at the site, particularly in the canyon/drainage areas where deep removals will be required. Specific subdrain recommendations can be provided based on a review of the final development plans, and based on conditions encountered during grading.

Settlement Monitoring

Based upon our understanding of proposed grading, fills on the order of about 80± feet deep (design plus remedial grading will be required. Engineered fills deeper than 20 feet should incorporate a minimum relative compaction of 95 percent, and a moisture content of at least two percentage points above optimum moisture content. A settlement monitoring program should be implemented, consisting of the surveying of surface monuments to monitor settlement of alluvial soils left in-place and/or proposed fills deeper than 30 feet (design plus remedial grading). Survey monument readings for both deep fill areas and for fill over compressible natural ground (Qal) should be conducted following the completion of fill placement. Survey monument locations should be selected by the geotechnical consultant. Survey readings should be taken weekly for the first month and on a weekly basis thereafter until vertical movement of the fill mass achieve 90 percent of primary compression, begin secondary compression or the estimated remaining settlement is less than one inch. Construction of proposed structures should not commence until approved by the geotechnical consultant based on the results of the settlement monitoring. The survey bench marks used for the monitoring should be confirmed with the geotechnical consultant prior to initial readings being performed.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pads will be underlain by newly placed structural fill soils, extending to a depth of at least 6 feet below foundation bearing grade, which are underlain by native alluvial soils. Based on this subsurface profile, the proposed structures may be supported on shallow foundations.

Conventional Spread Footing Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 3,000 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom), due to the differential fill depths.
- Minimum foundation embedment: 12 inches into newly placed structural fill soils, and at least 24 inches below adjacent exterior grade.
- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressure presented above may be increased by one-third when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill or suitable native alluvium (where reduced bearing pressures are utilized), with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 0 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 60-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch (1/500 deflection ratio).

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 2,500 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floors of the proposed structures may be constructed as a conventional slabs-on-grade supported on newly placed structural fill, which is underlain by moderate strength alluvium. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of Subgrade Reaction: k = 100 psi/in.

- Minimum slab reinforcement: Reinforcement is not required for geotechnical conditions. However, slab reinforcement may be required for structural design considerations. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading, and the settlement estimates provided previously.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire slab area where such moisture sensitive floor coverings are expected. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as 15 mil Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 0 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

- The floor slabs should be structurally connected to the foundations as detailed by the structural engineer.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

The grading plan prepared by Webb indicates that the site will utilize several retaining walls along the perimeters of the site. Retaining walls are also expected within the truck dock areas of the proposed buildings. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the trench and boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. These near-surface soils generally consist of sands and silty sands and occasional clayey sands. These materials are expected to possess friction angles of at least 30 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		Soil Type
		On-Site Silty Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		132 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	44 lbs/ft^3
	At-Rest Condition (level backfill)	66 lbs/ft^3
	Active Condition (2h:1v backfill)	71 lbs/ft^3

The walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2019 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. The recommended seismic pressure distribution is triangular in shape, assumed to occur at the top of the wall, decreasing to 0 at the base of the wall. For a level backfill condition behind the top of the wall, the seismic lateral earth pressure is 44H lbs/ft^2, where H is the overall height of the wall. Where the ground surface above the wall consists of a 2h:1v sloping condition, the seismic lateral earth pressure is 71H lbs/ft^2. The seismic pressure distribution is based on the Mononobe-Okabe equation, utilizing the PGA_M ground acceleration of 1.024g. The 2019 CBC does not provide definitive guidance on determination of the design acceleration to be used in generating the seismic lateral earth pressure. In accordance with standard geotechnical practice, we have calculated the design acceleration as $^2/_3$ of the PGA_M. However, for combinations of high ground motion and steep slopes above the wall, the Mononobe-Okabe equation gives unrealistic high estimates of active earth pressures. Therefore, the seismic earth pressure for the sloping condition presented above was calculated using a design acceleration equal to 50% of the PGA_M.

Retaining Wall Foundation Design

The retaining wall foundations should be underlain by at least 3 feet of newly placed structural fill. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site sands and silty sands may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a minimum 1-foot thick layer of free-draining granular material (less than 5 percent passing the No. 200 sieve) be placed against the face of the retaining walls. This material should extend from the top of the retaining wall footing to within 1 foot of the ground surface on the back side of the retaining wall. This material should be approved by the geotechnical engineer. In lieu of the 1-foot thick layer of free-draining material, a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls, may be used. If the layer of free-draining material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The layer of free draining granular material should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557-91). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 20-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The near-surface soils generally consist of silty sands and clayey sands. Based on their classification, these materials are expected to possess good pavement support characteristics. The results of the R-value testing indicate that a sample of these soils possesses an R-value of 60. In order to allow for areas of lower strength soils, the subsequent pavement design is based upon an assumed R-value of 40. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering-controlled conditions. It is recommended that R-value testing be performed after completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R=40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0 or less)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. Any reinforcement within the PCC pavements should be determined by the project structural engineer. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

7.0 GENERAL COMMENTS

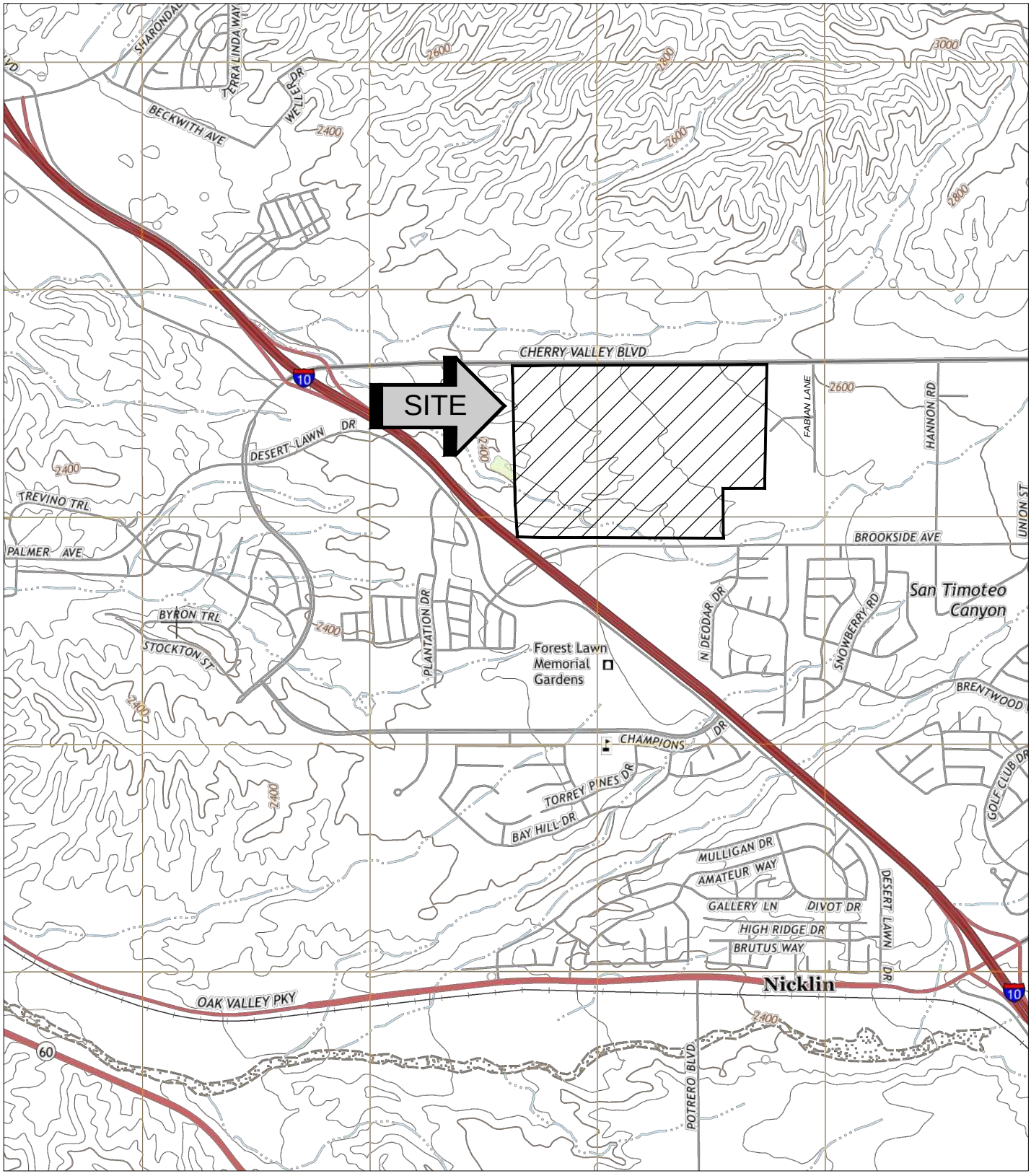
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: USGS TOPOGRAPHIC MAP OF THE EL CASCO QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2015.

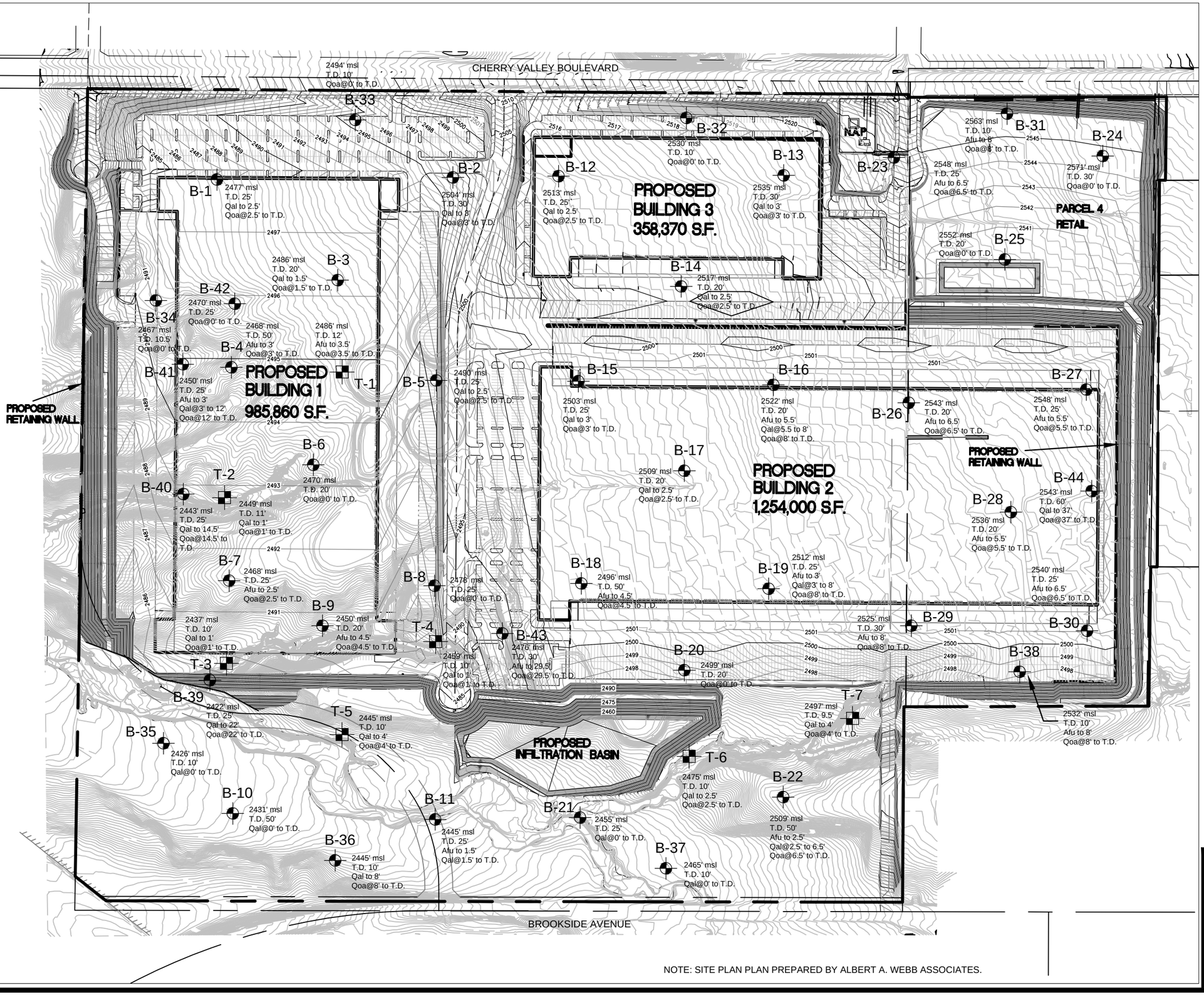
SITE LOCATION MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 1	

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

BORING LOCATION

TRENCH LOCATION

Afu - ARTIFICIAL FILL
Qal - ALLUVIUM
Qoa - OLDER ALLUVIUM

NOTE: SITE PLAN PLAN PREPARED BY ALBERT A. WEBB ASSOCIATES.

BORING AND TRENCH LOCATION PLAN

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

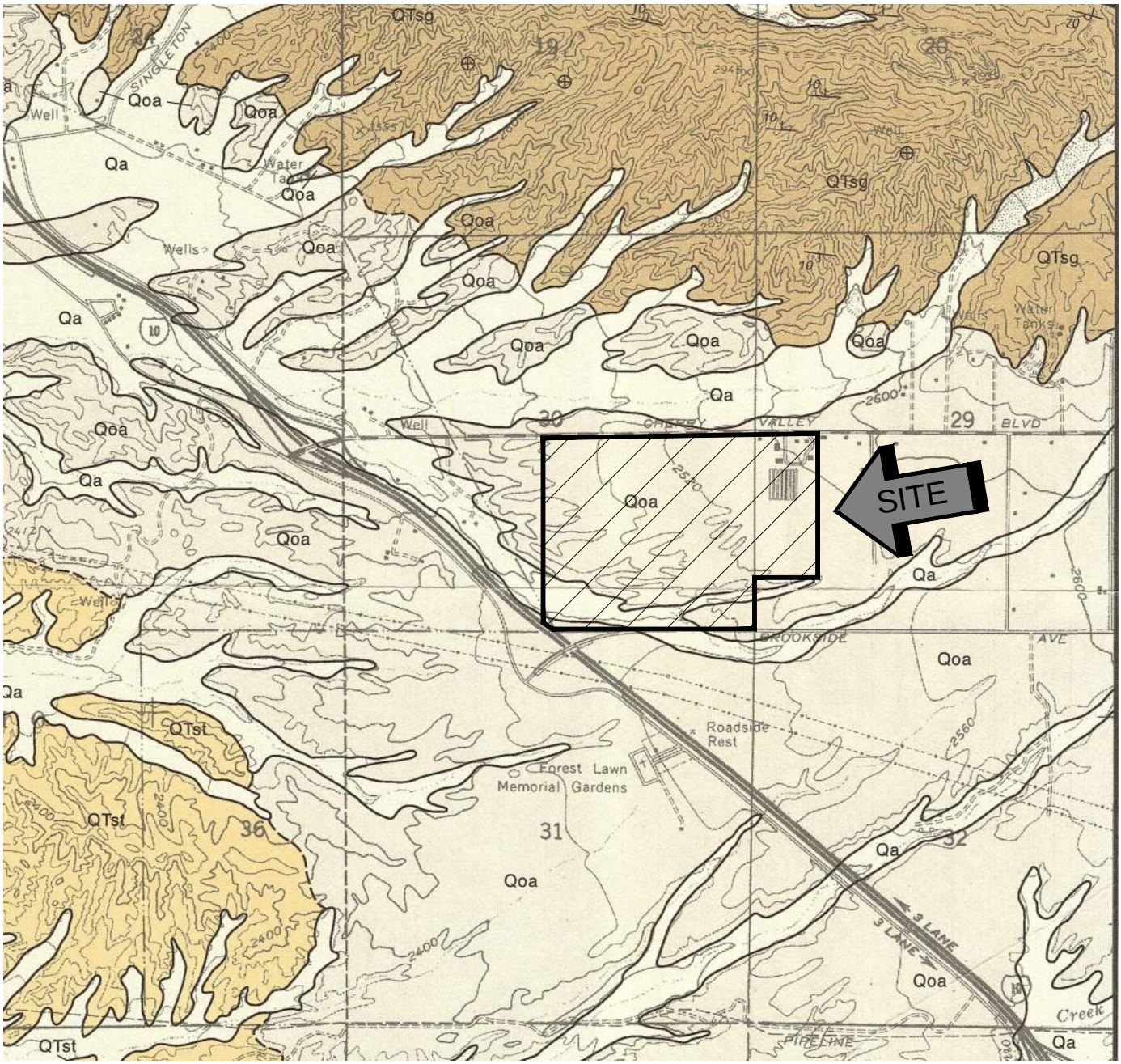
SCALE: 1" = 300'

DRAWN: JAH
CHKD: RGT

SCG PROJECT
21G133-1

PLATE 2

SOUTHERN CALIFORNIA GEOTECHNICAL



LEGEND

Qa / Qg

SURFICIAL SEDIMENTS
Unindurated, undissected

Qg *Alluvial gravel and sand of stream channels*
Qa *Alluvial sand, gravel and clay of level areas, covered by residual soil*

Qoa

OLDER SURFICIAL SEDIMENTS
Weakly indurated alluvial fan deposits derived from local terrains

Qoa *Alluvial gravel and sand, light reddish brown and of granitic and gneissic detritus of San Bernardino Mountains in north areas, brownish gray in south area; top surface slopes slightly from source terrains*

SOURCE: "GEOLOGIC MAP OF THE EL CASCO 7.5' QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA" BY THOMAS W. DIBBLE, JR., 2003.

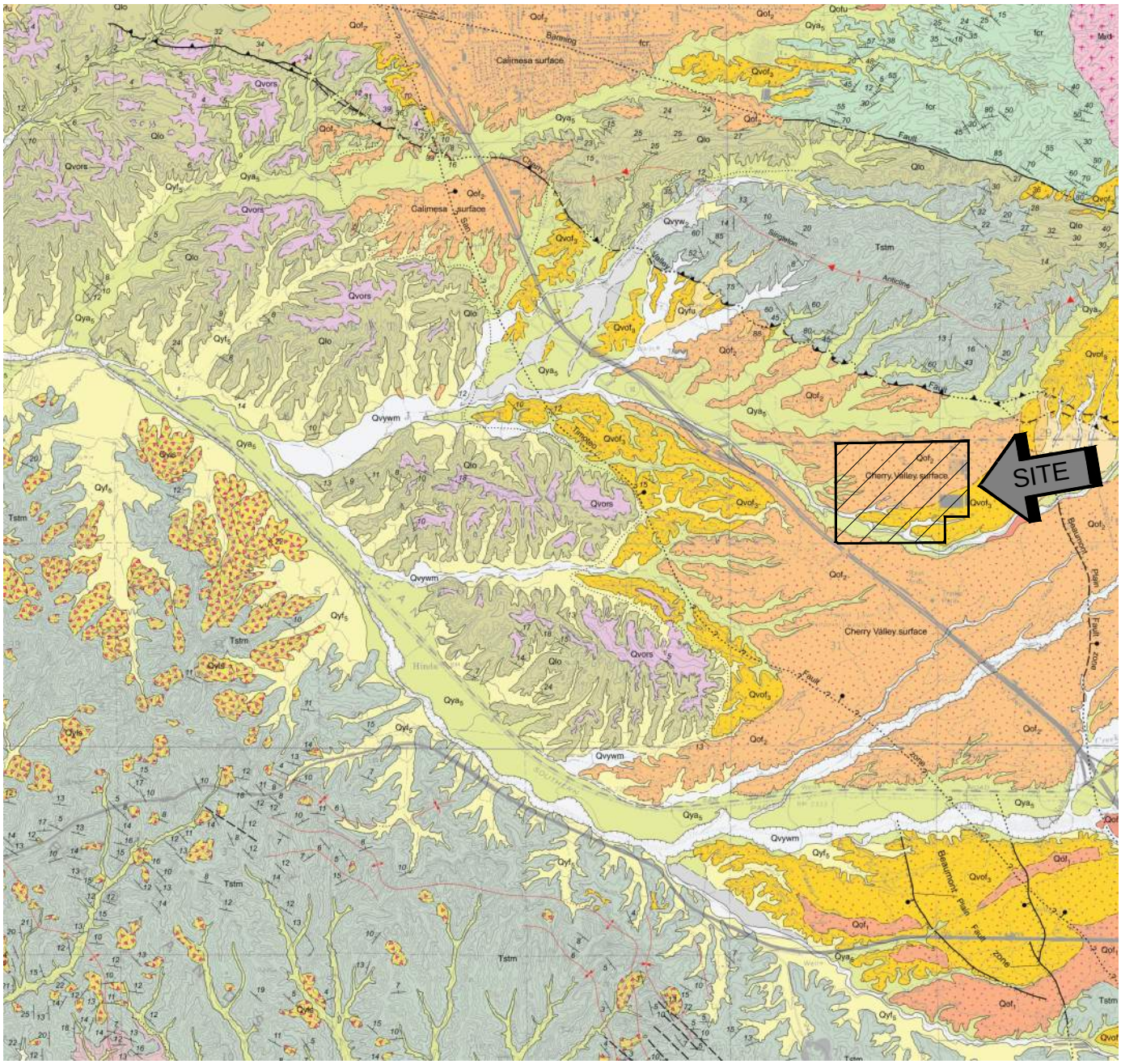
GEOLOGIC MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: JAH CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 3a	

SOUTHERN CALIFORNIA GEOTECHNICAL



CORRELATION OF MAP UNITS

Qvywm	**Very young wash deposits, modern**—Very slightly to slightly consolidated sandy and gravelly sediment in active channels
Qya5	**Young axial-valley deposits, unit 5 (uppermost Holocene)**
Qof2	**Old alluvial-fan deposits, unit 2 (upper to middle Pleistocene)**
Qvof3	**Very old alluvial-fan deposits, unit 3 (middle Pleistocene)**

SOURCE: "GEOLOGIC AND GEOPHYSICAL MAP OF THE EL CASCO 7.5' QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, WITH ACCOMPANYING GEOLOGIC-MAP DATABASE" GEOLOGIC MAP BY JONATHAN C. MATTI, AND PAMELA M. COSSETTE, DIGITAL DATABASE BY DOUGLAS M. HIRSHCHBERG, JORDAN G. MATTI, AND PAMELA M. COSSETTE, 2015.

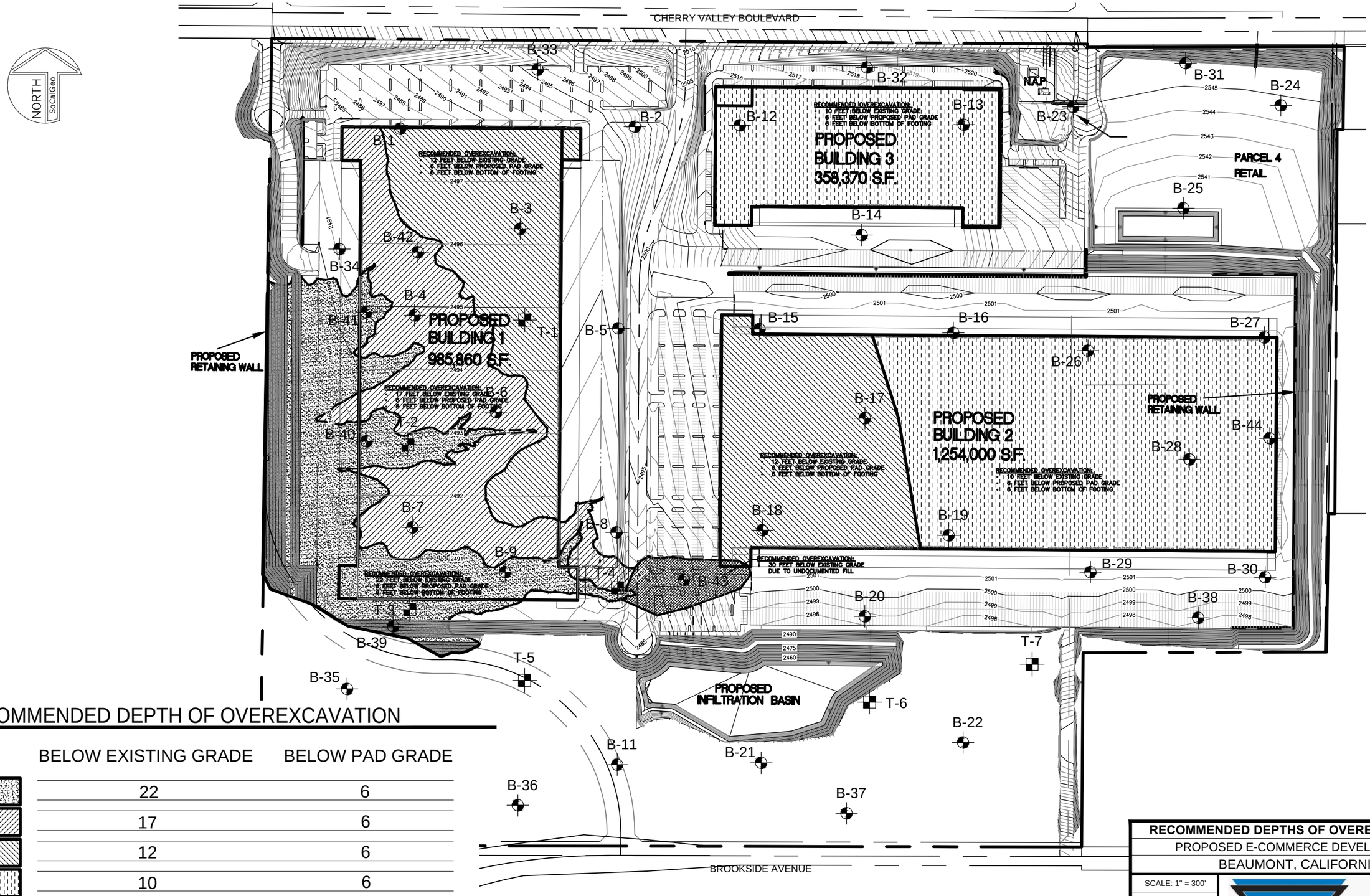
GEOLOGIC MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: JAH CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 3b	

SOUTHERN CALIFORNIA GEOTECHNICAL



RECOMMENDED DEPTH OF OVEREXCAVATION

BELOW EXISTING GRADE	BELOW PAD GRADE
22	6
17	6
12	6
10	6
30	6

NOTE: SITE PLAN PLAN PREPARED BY ALBERT A. WEBB ASSOCIATES.

RECOMMENDED DEPTHS OF OVEREXCAVATION

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 300'

DRAWN: PM
CHKD: RGT

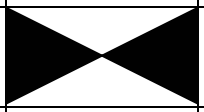
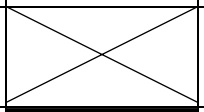
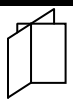
SCG PROJECT
21G133-1

PLATE 4

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

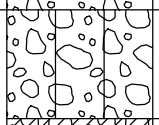
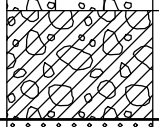
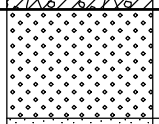
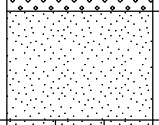
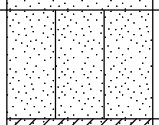
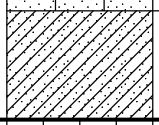
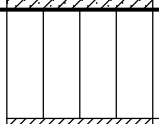
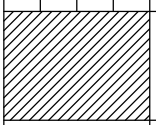
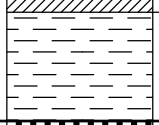
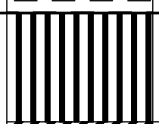
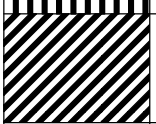
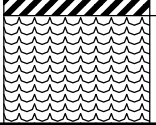
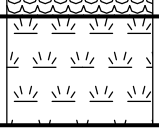
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 17 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2477 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		28			ALLUVIUM: Brown Silty fine Sand, trace clay, little fine root fibers, porous, medium dense-damp	108	8					
		64			OLDER ALLUVIUM: Red Brown Clayey fine Sand, little Silt, trace medium Sand, dense-damp	114	7					
5		76/11"			Red Brown Silty fine Sand, trace medium Sand, medium dense to very dense-damp	116	8					
		76				108	5					
		64					5					
10												
		22					6					
15												
		18			Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp to moist		10					
20												
		19					3					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Brown Silty fine Sand, trace to little Clay, little fine root fibers, medium dense-damp to moist		8					EI = 41 @ 0 to 5 feet
		28			OLDER ALLUVIUM: Brown Clayey fine Sand, little Silt, trace medium Sand, medium dense to dense-damp to moist		10					
5		36					8					
		19			Brown to Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		4					
10												
		27			@13½ feet, trace Clay, trace, trace fine to coarse Gravel		10					
15												
		22					6					
20												
		26					6					
25												
		21	4.5		Red Brown fine Sandy Clay, little medium Sand, trace coarse Sand, medium dense-moist		11					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 17 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2486 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Dark Brown Silty fine Sand, slightly porous, little fine root fibers, medium dense-damp to moist							
		21				104	8					
					OLDER ALLUVIUM: Red Brown Silty fine Sand, trace Clay, trace medium Sand, medium dense-moist							
		42				112	10					
5					Red Brown Clayey fine Sand, little Silt, slightly cemented, medium dense-moist							
		44				115	9					
					Red Brown, Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		42				108	7					
		44				119	6					
10												
		10			@ 13½ feet, little medium to coarse Sand, trace fine Gravel		5					
15												
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist							
		14					9					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2468 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		26			FILL: Red Brown Silty fine Sand, little Clay, trace fine root fibers, mottled, medium dense-moist		10					
					FILL: Red Brown fine to medium Sandy Clay, cemented, very stiff-moist							
		50/5"	1.5		OLDER ALLUVIUM: Red Brown fine to medium Sand, cemented, very dense-dry		11					
5		78	4.5		Red Brown fine to medium Sandy Clay, cemented, very dense-damp		6 7					
		32			Red Brown Silty fine to medium Sand, trace to little Clay, dense-damp		7					
10		37			@ 9 feet, little fine to coarse Gravel		6					
					Red Brown Silty fine to coarse Sand, little fine to coarse Gravel, dense-damp							
15		43					5					
					Red Brown Silty fine Sand, medium dense-moist to very moist							
		20					10					
20												
		36					15					
25												
		34					14					
30					Gray Brown fine to coarse Sand, little to fine Gravel, dense-dry							
					Red Brown fine Sandy Silt, medium dense-moist							
		22					15					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-4a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown fine Sandy Silt, medium dense-moist to very moist							
					Gray Brown Silty fine to coarse Sand, trace fine Gravel, very dense-damp							
40		58					6					
					Red Brown to Gray Brown fine to coarse Sand, very dense-dry to damp							
45		57					4					
		50/5"					6					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-4b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2489 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		32			ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, slightly porous, trace fine root fibers, medium dense-moist	95	11					
		38	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay, medium dense-moist	107	10					
5		34			Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist	104	10					
		42				115	10					
		37			@ 9 feet, little Clay, trace fine Gravel	105	16					
10												
					Red Brown Silty fine Sand, trace to little Clay, dense to very dense-moist							
		50					12					
15												
					Gray Brown fine to coarse Sand, little fine to coarse Gravel, trace Clay, medium dense-dry to damp							
		20					3					
20												
					Gray Brown Silty fine Sand, dense-damp							
		32					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2470 feet MSL							
		61	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay to Clayey fine Sand, trace fine root fibers, slightly cemented, hard to dense-damp to moist	100	8					
		67	4.5			124	10					
5		50	4.5			107	9					
		49	4.5			112	9					
		41			Red Brown Silty fine to medium Sand, trace coarse Gravel, medium dense-moist	94	12					
10												
					Red Brown Silty fine to coarse Sand, trace coarse Gravel, medium dense to dense-damp							
		28					8					
15												
					Red Brown Clayey fine Sand, 2" Clay lense, dense-moist							
		38					13					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-7

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2468 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		32			FILL: Red Brown Clayey fine to medium Sand, little Silt, medium dense-moist	115	14					
		72/10"			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, dense to very dense-damp to moist	116	7					
5		49				113	8					
		58			Gray Brown Silty fine to medium Sand, little Clay , trace coarse Sand, dense-damp	113	6					
		23			Light Brown Silty fine Sand, trace to little medium to coarse Sand, medium dense-damp	105	5					
10												
		38			Red Brown Silty fine Sand to fine Sandy Silt, trace Calcareous nodules, dense-moist		10					
15												
		74/11"			Light Brown Silty fine to coarse Sand, trace fine to coarse Gravel, very dense-damp		4					
20												
		73/11"			@23½ feet, trace fine Gravel		6					
25												
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-7**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-8

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 11 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2478 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		16			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace to little Silt, medium dense to dense-moist		13					
		42					13					
5		23			Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist		9					
		36			Brown Silty fine to coarse Sand, trace fine Gravel, dense-damp		6					
10												
					Red Brown Silty fine Sand, trace medium Sand, trace fine root fibers, medium dense-moist							
		24					12					
15												
		27			@18½ feet, trace Clay nodules		10					
20												
					Gray Brown Silty fine to coarse Sand, trace fine Gravel, dense-damp							
		36					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-8**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-9

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 12 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2450 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			FILL: Dark Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, trace Clay, medium dense-moist	114	11					
		40			FILL: Brown Clayey fine to coarse Sand, little Silt, medium dense-damp	114	6					
5		27			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace Calcareous nodules, medium dense-damp	100	6					
		51			Red Brown Silty fine to coarse Sand, trace Calcareous nodules, dense-damp	96	5					
		48				111	5					
10												
		46			Red Brown Silty fine Sand, trace to little medium to coarse Sand, trace Calcareous nodules, dense-moist		9					
15												
		53			Gray Brown Silty fine to coarse Sand, trace Calcareous nodules, very dense-damp		5					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-9**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-10

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2431 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		10			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, trace fine root fibers, loose to medium dense-damp to moist		10					
		12			@3½ feet, trace fine Gravel, little to medium Sand		3					
5		13					5					
		16					5					
10												
		10			Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, trace fine Gravel, medium dense-damp		7					
15												
		14			Red Brown to Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-damp		7					
20												
		15			Gray Brown fine to coarse Sand, trace Silt, trace fine Gravel, medium dense-damp		3					
25												
		11			Dark Red Brown Silty fine to medium Sand, trace to little Clay, trace coarse Sand, little fine Gravel, medium dense-moist		9					
30												
		20			Gray Brown fine to coarse Sand, little to some fine to coarse Gravel, medium dense-damp		5					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-10a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-10

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Gray Brown fine to coarse Sand, little to some fine to coarse Gravel, medium dense-damp							
		74/10"			@ 38½ feet, very dense		6					
40												
		24	2.0		Brown Clayey Silt, very stiff to hard-moist to very moist		20					
45												
		46					13					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-10b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-11

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2445 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		10			FILL: Dark Brown Silty fine Sand, some fine root fibers, loose-very moist	112	17					
		26			ALLUVIUM: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace coarse Gravel, trace fine root fibers, loose to medium dense-moist	113	14					
5		23			Red Brown Silty fine Sand, trace Clay, slightly porous, medium dense-damp to moist	100	6					
		15				108	5					
		26			@ 9 feet, little medium Sand	98	11					
10												
		18			Gray Brown fine to coarse Sand, trace Silt, trace fine Gravel, medium dense-damp	118	5					
15												
		21			@ 18½ feet, little Silt		8					
20												
		19					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-11**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-12

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 19 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2513 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		5			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, little Clay, very loose-very moist	112	17					
		58	4.5		OLDER ALLUVIUM: Dark Red Brown fine Sandy Clay, trace medium Sand, little Silt, hard-moist	113	14					
5		42			Red Brown Silty fine Sand, trace medium Sand, slightly porous, trace fine root fibers, medium dense-damp	100	6					
		28			Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp	108	5					
10		20			Red Brown Silty fine Sand, medium dense-moist	98	11					
					Gray Brown Silty fine to coarse Sand, medium dense-damp							
15		36				118	5					
		18					8					
20												
		30			Light Brown Silty fine to medium Sand, little Clay, dense-damp		7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-12**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-13

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 23 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2534 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		13			ALLUVIUM: Brown Silty fine Sand, trace Clay, little fine root fibers, medium dense-moist		11					
		21			OLDER ALLUVIUM: Red Brown Clayey fine Sand, trace medium Sand, medium dense-moist		11					
5		15			Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		7					
		15					10					
10					Brown Silty fine to medium Sand, trace fine to coarse Gravel, medium dense-damp							
		20					7					
15												
		19					7					
20					Red Brown Silty fine Sand to fine Sandy Silt, medium dense to dense-damp to moist							
		19					10					
25												
		34					8					
30					Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, dense-very moist		43					
					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-13**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-14

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 13 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2516 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete							
		26	3.5		ALLUVIUM: Brown fine Sandy Clay, trace medium to coarse Sand, little Silt, very stiff-very moist	115	16					
		31			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-very moist	96	15					
5		25			@ 5 feet, trace Clay, no fine Gravel	117	13					
		29			Brown Silty fine Sand, trace medium Sand, medium dense-moist	113	10					
		45				119	11					
10												
		16					9					
15												
		28			@ 18½ feet, little medium to coarse Sand		6					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-14**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-15

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2503 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Brown Silty fine Sand, medium dense-damp		7					
		15			OLDER ALLUVIUM: Red Brown Silty fine Sand, little Clay, medium dense-moist		13					
5		17					11					
		28			Red Brown Silty fine Sand to fine Sandy Silt, trace Clay, medium dense-damp		14					
10					Red Brown fine Sandy Silt, little to some Clay, medium dense-moist to very moist							
		26					17					
15					Red Brown Silty fine Sand to fine Sandy Silt, medium dense to dense-moist							
		31					11					
20												
		23					10					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-15**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-16

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2522 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		7			FILL: Dark Brown Silty fine Sand, little Clay, trace medium to coarse Sand, occasional Cobbles, loose-very moist		17					
		24			FILL: Dark Brown Silty fine Sand, trace Clay, trace fine to coarse Gravel, medium dense-moist		12					
5		16			ALLUVIUM: Brown Silty fine to medium Sand, little Clay, trace coarse Sand, medium dense-moist		11					
		43			OLDER ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, little Clay, dense-moist		13					
10												
		16			Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp		7					
15												
		20			Red Brown Silty fine Sand, trace to little medium to coarse Sand, medium dense-damp to moist		8					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-16**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-17

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2509 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		17			ALLUVIUM: Dark Brown Silty fine Sand, trace medium to coarse sand, trace fine Gravel, medium dense-moist	106	11					
		42			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp to moist	111	14					
5		25				116	6					
		31			Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, trace Clay, medium dense-moist	119	11					
		31			Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, medium dense to dense-moist to very moist	99	24					
10												
		24					11					
15												
		48			@ 18½ feet, little medium to coarse Sand		12					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-17**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-18

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2496 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		6	3.0		FILL: Red Brown fine to medium Sandy Clay, trace fine root fibers, medium stiff to stiff-very moist	101	15					
		15	3.0			116	14					
5		14			OLDER ALLUVIUM: Red Brown SIlty fine to coarse Sand, little Clay, trace fine to coarse Gravel, loose to medium dense-damp to moist	114	12					
		24				95	8					
		13			Red Brown fine to medium Sandy Clay, medium stiff to stiff-very moist	109	16					
10												
		10	1.5				15					
15												
		20					17					
20												
		24			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-damp		5					
25												
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist							
		15					13					
30												
					Red Brown Silty fine Sand, dense-damp							
		36					7					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-18a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-18

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown Silty fine Sand, dense-damp							
					Red Brown Silty fine Sand to fine Sandy Silt, dense-damp							
		41					7					
40												
		24			@ 43½ feet, trace medium to coarse Sand, medium dense		6					
45												
					Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace to little coarse Sand, medium dense-damp to moist							
		19					9					
50												
					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-18b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-19

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2512 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete 2± inches Slurry							
		4			FILL: Brown Silty fine Sand, little medium Sand, very loose-very moist		31					Poor Recovery
		9			ALLUVIUM: Brown Silty fine to medium Sand, little Silt, trace coarse Sand, trace Calcareous nodules, loose to medium dense-very moist		14					
5		23					14					
		10			OLDER ALLUVIUM: Red Brown Silty fine Sand, little Clay, trace medium to coarse Sand, trace fine to coarse Gravel, loose to medium dense-moist		11					
10												
					Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, dense-damp							
		40					4					
15												
					Brown Silty fine Sand, trace Clay, little medium to coarse Sand, medium dense-moist							
		29					10					
20												
		21					12					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-19**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-20

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2498 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		52			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, little Silt, dense-moist	119	8					EI = 45 @ 0 to 5 feet
		38			Red Brown Clayey fine Sand little Silt, trace fine root fibers, trace fine Gravel, medium dense-moist	118	12					
5		73			Red Brown Silty fine to coarse Sand, trace fine Gravel, dense-moist	119	12					
		42			Gray Brown Silty fine to coarse Sand, trace fine Gravel, medium dense to dense-damp	114	6					
10		67				121	4					
		25					4					
15												
		58					8					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-20**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-21

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2458 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		14			ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, medium dense-damp to moist		10					
		13			@ 3½ to 12 feet, little medium to coarse Sand		6					
5		17					7					
		10					7					
10												
					Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, loose to medium dense-damp to moist		9					
15		116					7					
		23				107	8					
20												
					Gray Brown Silty fine to coarse Sand, little fine to coarse Gravel, very dense-damp to moist							
		71					9					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-21**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-22

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2508 feet MSL							
		22	4.5		FILL: Brown fine Sandy Clay, trace medium Sand, little to some fine root fibers, stiff-very moist	112	14					EI = 28 @ 0 to 5 feet
		13			ALLUVIUM: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, slightly cemented, loose to medium dense-damp	102	5					
5		30				112	5					
		74	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay, trace fine root fibers, hard-moist	112	12					
		31/11"	4.5			119	9					
10												
		31			Gray Brown to Red Brown Silty fine to coarse Sand, little fine to Coarse Gravel, medium dense to dense-damp to moist		8					
15												
		23					7					
20												
		23			Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist		11					
25												
		18					12					
30												
		24					8					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-22a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-22

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-damp							
					Gray Brown fine Sandy Silt, trace medium Sand, dense-damp							
40		32					7					
					Gray Brown Silty fine Sand, trace medium Sand, medium dense-damp							
45		23					7					
					Gray Brown Silty fine Sand to fine Sandy Silt, medium dense-damp							
		18					15					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-22b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-23

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2547 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		15			FILL: Red Brown Silty fine Sand, trace medium to coarse Sand, slightly porous, loose to medium dense-damp	105	6					
		42				117	6					
5		20			@ 5 feet, trace to little Clay, trace fine Gravel	103	7					
		18			OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, medium dense-damp	112	4					
		24			Red Brown Silty fine Sand, trace medium Sand, medium dense-moist	108	9					
10												
		27			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-damp		5					
15												
		18					3					
20												
		16			Red Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, medium dense-damp		7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-23**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-24

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2570 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		13			ALLUVIUM: Red Brown Silty fine to medium Sand, trace medium to coarse Sand, loose-very moist		15					
		6			Red Brown Silty fine Sand, trace medium to coarse Sand, loose-moist		10					
5		13			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-moist		10					
		12			Brown Silty fine Sand, trace medium to coarse Sand, trace fine to coarse Gravel, medium dense-damp		10					
10												
		16			Red Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-damp to moist		6					
15												
		14					8					
20												
		15					7					
25												
		15					11					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-24**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-25

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2551 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete 2± inches slurry							
		9			ALLUVIUM: Red Brown Clayey fine Sand, trace medium Sand, little Silt, loose to medium dense-very moist	115	15					
		10			@ 3 feet, trace fine coarse Gravel	121	15					
5		22				116	10					
		17			Red Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist	117	9					
		28			Gray Brown Silty fine to coarse Sand, trace fine Gravel, loose to medium dense-moist	121	9					
10												
					Brown Silty fine Sand, trace medium to coarse Sand, loose to medium dense-moist							
		12					10					
15												
		9					12					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-25**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-26

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2533 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Red Brown Silty fine Sand, trace fine root fibers, trace medium Sand, loose-damp							
		9				107	7					
		9			FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand, loose to medium dense-moist	123	11					
5		40				121	12					
		22			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, trace Clay, medium dense-moist	117	13					
		22			@ 9 feet, little Clay	117	12					
10												
		11			@ 13½ to 20 feet, trace fine to coarse Gravel, medium dense-damp		8					
15												
		16					7					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-26**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-27

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2548 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		28			FILL: Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, trace fine root fibers, medium dense-moist		9					
		16			@ 3½ feet, little medium to coarse Sand		9					
5		12			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-moist		11					
		14			Red Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist		10					
10												
		13					9					
15												
		10					9					
20												
		46			Red Brown Clayey fine to coarse Sand, little Silt, little fine to coarse Gravel, dense-moist		11					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-27**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-28

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2536 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0		16			FILL: Red Brown Clayey fine to coarse Sand, little Silt to fine root fibers, medium dense-moist		13					
		22			@ 3½ feet, fine to little fine to coarse Gravel, medium dense-damp		13					
5		19			OLDER ALLUVIUM: Brown Silty fine Sand, little Clay, little medium to coarse Sand, trace fine Gravel, medium dense-moist		12					
		11					9					
10												
		14					7					
15												
		14					10					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-28**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-29

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2524 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		6			FILL: Dark Brown Silty fine Sand, trace medium to coarse Sand, loose-moist		12					
		11			@ 3½ feet. trace Clay		11					
5		12			FILL: Red Brown Silty fine Sand, trace to little medium to coarse Sand, trace fine Gravel, trace Clay nodules, medium dense-moist		14					
		20			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace fine Gravel, medium dense-moist to very moist		16					
10												
		35			Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, trace calcareous nodules, dense-moist		12					
15												
		63			Red Brown Silty fine to coarse Sand, little Clay, trace fine Gravel, very dense-moist		9					
20												
		21			Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense to dense-damp to moist		14					
25												
		32					8					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-29

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-30

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2540 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Brown Silty fine to coarse Sand, trace fine root fibers, dense-damp to moist							
		56				125	7					
		50			@ 3 feet, trace fine to coarse Gravel, trace rope	126	8					
5		49				118	11					
		39			OLDER ALLUVIUM: Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp	104	7					
		40			@ 9 feet, occasional Cobbles		5					Disturbed Sample
10												
					Brown Silty fine Sand, little Clay, trace to little medium to coarse Sand, trace fine to coarse Gravel, medium dense-moist							
		15					15					
15												
					Brown Silty fine Sand to fine Sandy Silt, trace Clay, medium dense-moist							
		17					17					
20												
					Red Brown Clayey fine to coarse Sand, little Silt, trace fine to coarse Gravel, dense-moist							
		38					14					
25												
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-30**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-31

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 9 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2562 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9			FILL: Red Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace fine root fibers, loose to dense-damp		7					
		19					7					
5		36					7					
		18			OLDER ALLUVIUM: Light Red Brown Silty fine to coarse Sand, medium dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-31**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-32

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 8 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2530 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		14			OLDER ALLUVIUM: Red Brown to Brown Silty fine Sand, trace medium to coarse Sand, medium dense to very dense-damp		7					
		57			@ 3½ feet little medium to coarse Sand		6					
5		25					6					
		36			@ 8½ feet, trace fine Gravel		6					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-32**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-33

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 9 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2494 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		20			OLDER ALLUVIUM: Red Brown, Silty fine Sand, trace medium Sand, trace Clay, trace fine root fibers, medium dense-damp		5					
		32	4.5		Red Brown Clayey fine Sand to fine Sandy Clay, trace fine Gravel, dense-dry to damp		3					
5		58	2.5				6					
		40			Red Brown Silty fine Sand, trace Clay, dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-33**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-34

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2467 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		34			OLDER ALLUVIUM: Red Brown Silty fine Sand, little fine root fibers, dense-damp		6					
		55	4.5		Red Brown Clayey fine Sand to fine Silty Clay, little Silt, trace medium to coarse Sand, dense to very dense-dry		8					
5		60	4.5				8					
		37	4.5				8					
		26			Red Brown Silty fine Sand, dense-damp		7					
10					Boring Terminated at 10½'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-34**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-35

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2425 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		8			ALLUVIUM: Brown Silty fine Sand, trace to little medium Sand, trace fine root fibers, loose to medium dense-dry		5					
		8					3					
5		13					4					
		7					7					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-35**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-36

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 8 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2445 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		4			ALLUVIUM: Dark Brown to Brown, Silty fine to medium Sand, trace to little coarse Sand, trace to little coarse Sand, trace fine root fibers, loose to medium dense-damp		8					
		12			@ 3½ feet, slightly porous		5					
5		12					6					
		16	2.0		OLDER ALLUVIUM: Red Brown fine Sandy Clay, slightly cemented, very stiff-damp		6					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-36**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-37

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2465 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Dark Brown to Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace fine root fibers, medium dense-moist		9					
		13			@ 3½ feet, trace Clay		10					
5		16					7					
		15			Brown fine Sandy Silt, trace medium to coarse Sand, medium dense-damp to moist		8					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-37**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-38

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2532 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9	1.5		FILL: Red Brown fine Sandy Clay, trace medium to coarse Sand, trace fine root fibers, trace fine Gravel, loose-very moist		19					
		20			FILL: Red Brown Silty fine to coarse Sand, little Clay, medium dense-moist		13					
5		20					10					
		18			OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-38**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-39

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2421 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, medium dense-dry to damp							
		17				105	2					
					Gray Brown fine Sand, medium dense-dry to damp							
					Brown Silty fine Sand, medium dense-dry to damp							
		20				108	2					
5					Gray Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-dry							
					Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp							
		19				104	6					
10												
					Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, loose to medium dense-damp to moist							
		14				104	7					
15												
		21				105	11					
20					Gray Brown fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-moist							
					OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, medium dense-very moist							
		39				99	21					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-39**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-40

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2443 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, medium dense-dry to damp							
		22				113	2					
					Brown Clayey fine Sand, trace medium Sand, medium stiff-dry to damp							
		20				103	2					
5												
					Brown Silty fine Sand, trace medium Sand, medium dense-damp							
		18				105	4					
10												
		25				107	4					
15					OLDER ALLUVIUM: Gray Brown fine to coarse Sand, medium dense to dense-damp							
		57				117	3					
20												
					Gray Brown Silty fine Sand, trace Silt, trace medium to coarse Sand, medium dense-damp to moist							
		37				115	8					
25					Red Brown fine Sandy Clay, little to some Silt, trace medium to coarse Sand, slightly cemented, very stiff-damp							
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-40

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-41

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2450 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		12			FILL: Brown Silty fine Sand, trace medium to coarse Sand, mottled, loose-moist	126	9					
5		14			ALLUVIUM: Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, loose to medium dense-damp	102	4					
		16				102	5					
10					Brown to Red Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp							
					OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, trace medium to coarse Sand, medium dense-dry to damp							
15		27				105	2					
		30				94	6					
20												
					Gray Brown Silty fine to coarse Sand, medium dense-damp							
		34				110	4					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-41**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-42

JOB NO.: 21G133-1 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2470 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine Sand, medium dense-damp							
		19			Red Brown fine Sandy Clay, little medium Sand, weakly cemented, slightly porous, very stiff-damp	100	5					
5		31				113	7					
10		34			@ 9 feet, little medium Sand	108	5					
					Brown Silty fine Sand, medium dense-damp							
15		24				109	6					
					Gray Brown fine Sand, trace Silt, medium dense-very moist							
20		40			Brown Silty fine Sand, medium dense-very moist	97	15					
25		62			@ 24 feet, trace coarse Sand, trace fine Gravel, dense-damp	113	6					
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-42**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-43

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 26 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2476 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		53	4.5		FILL: Brown to Red Brown fine Sandy Clay, trace medium Sand, trace fine Gravel, slightly cemented, mottled, medium stiff to hard-damp to very moist	114	6					
		47	4.5		@ 4 feet, little Portland cement concrete (PCC) fragments	92	7					
5												
		8	4.5			104	18					
10												
		26	4.5		@ 14 feet, little PCC fragments	118	5					
15												
		12	3.5			110	11					
20												
		54	4.5				10					Poor Recovery
25					@ 27 feet, trace tire tread							
		50/5"	4.5			121	11					
30					OLDER ALLUVIUM: Brown fine to medium Sand, little Silt, trace coarse Sand, trace coarse Gravel, slightly cemented, very dense-moist Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-43

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-44

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 53 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2543 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9			ALLUVIUM: Brown to Red Brown Silty fine Sand, trace fine root fibers, loose-damp		6					
		19			Brown fine Sandy Clay, trace medium Sand, slightly cemented, stiff to very stiff-damp to moist		8					
5												
		12					9					
10												
		12			Red Brown Silty fine Sand, little Clay, trace medium to coarse Sand, trace fine Gravel, medium dense-moist		9					
15												
		12			Red Brown fine Sandy Clay, little Silt, stiff-moist		10					
20												
		11			Red Brown Silty fine Sand, medium dense-moist		10					
25												
		19					12					
30												
		24			Brown fine to medium Sand, trace coarse Sand, medium dense-damp		3					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-44a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-44

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 53 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Brown fine to medium Sand, trace coarse Sand, medium dense-damp							
					OLDER ALLUVIUM: Gray Brown fine to coarse Sand, trace fine to coarse Gravel, dense-damp							
40		43					3					
		45					4					
45												
		56			Gray Brown fine Sand, trace Silt, dense-damp	107	6					
		67/12"			Brown Silty fine to coarse Sand, trace fine to coarse Gravel, slightly cemented, dense to very dense-damp	121	7					
50		97/11"				110	5					
		50/5"				113	4					
		50/4"				112	3					
55												
		32										No Sample Recovery
60					Boring Terminated at 60'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-44b**

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-1

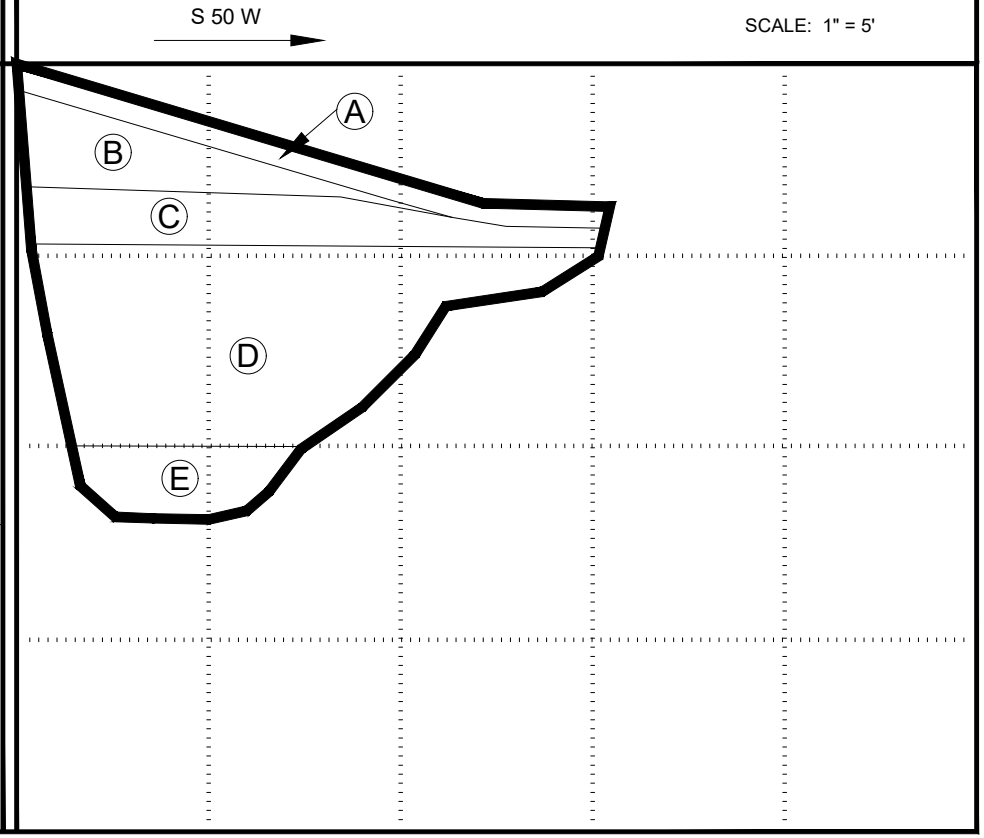
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 50 W
ELEVATION: 2485 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		6	A: FILL: Dark Brown Silty fine Sand, trace fine root fibers, abundantly porous, damp - loose
				B: FILL: Gray Brown fine Sandy Silt, damp - medium dense
	b		10	
				C: OLDER ALLUVIUM: Brown Clayey fine Sand, moist - medium dense
5	b		9	
				D: OLDER ALLUVIUM: Brown Silty fine Sand, damp - medium dense
	b		7	
10				E: OLDER ALLUVIUM: Brown Clayey fine Sand, moist - medium dense to dense
	b		12	
				Trench Terminated @ 12 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-45

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-2

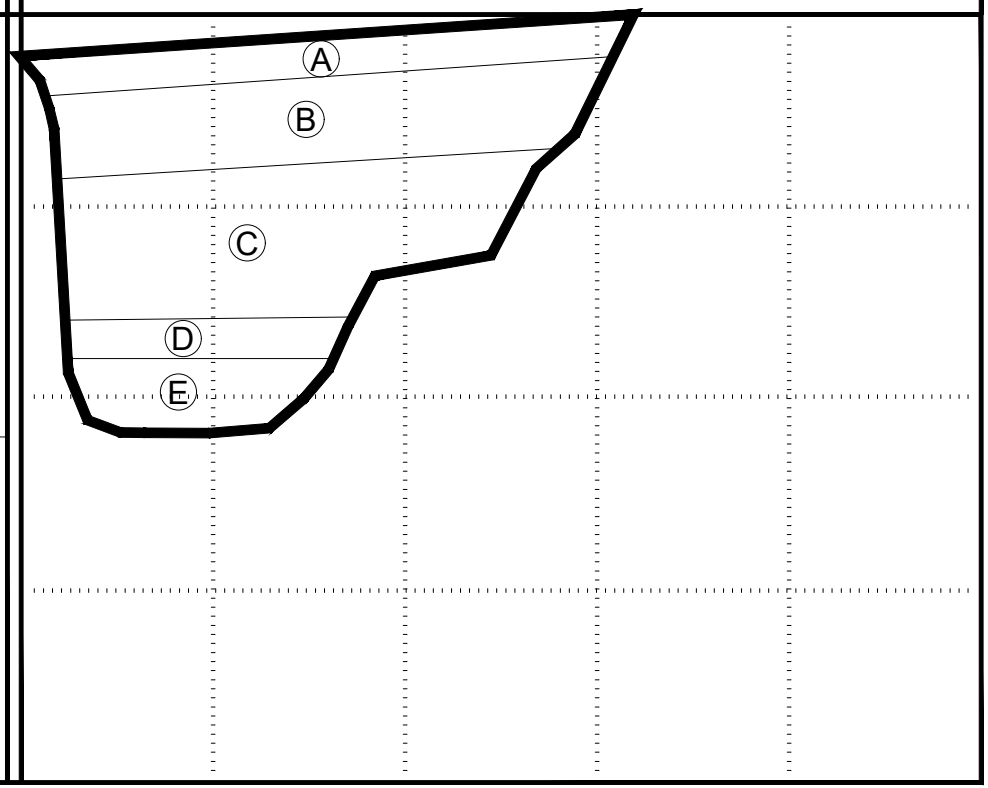
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: N 20 E
ELEVATION: 2448 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		6	
	b		5	A: ALLUVIUM: Gray Brown Silty fine Sand, abundant root fibers, abundantly porous, damp - loose B: OLDER ALLUVIUM: Red Brown Clayey fine Sand, little medium to coarse Sand, moist - medium dense
	b		10	
5	b		4	C: OLDER ALLUVIUM: Brown Silty fine Sand, little medium Sand, damp - medium dense
	b		3	D: OLDER ALLUVIUM: Brown fine to coarse Sand, trace Silt, dry to damp - medium dense
10	b		5	E: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, damp - medium dense
				Trench Terminated @ 11 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-46

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-3

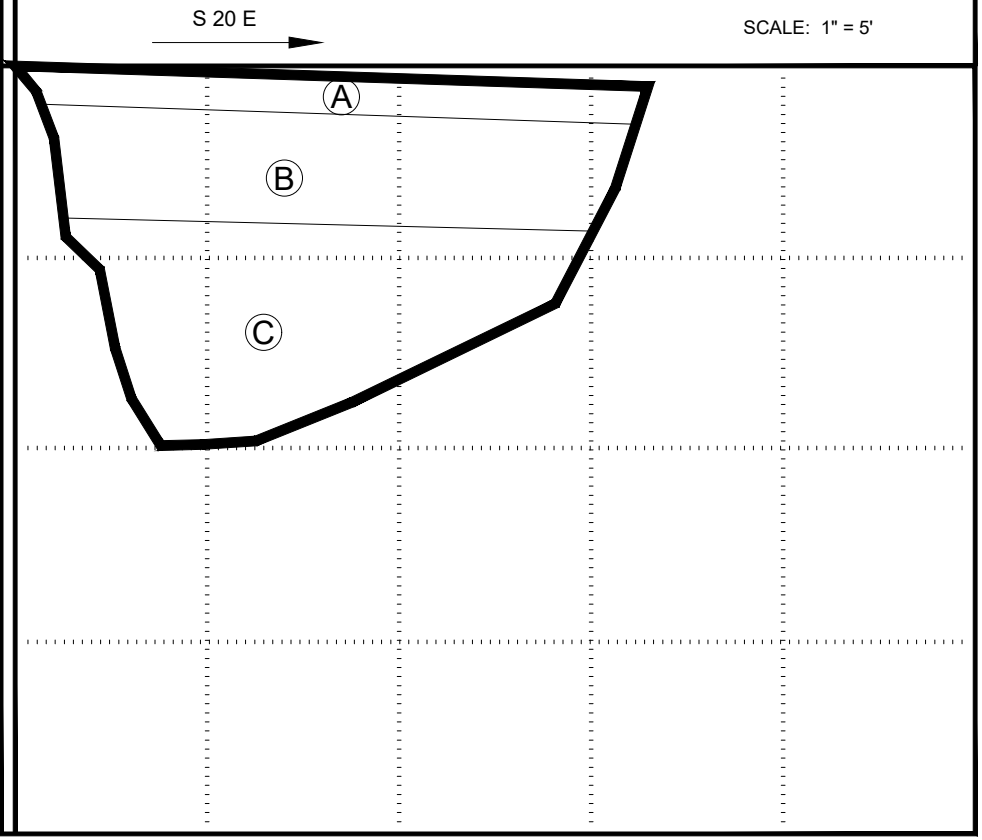
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 20 E
ELEVATION: 2435 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		4	A: ALLUVIUM: Gray Brown Silty fine Sand, abundant root fibers, porous, damp - loose
	b		10	B: OLDER ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, moist - moist
5	b		5	
				C: OLDER ALLUVIUM: Red Brown to Gray Brown Clayey fine to medium Sand, trace coarse Sand, slightly cemented, damp - dense
	b		5	
	b		5	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-47

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-4

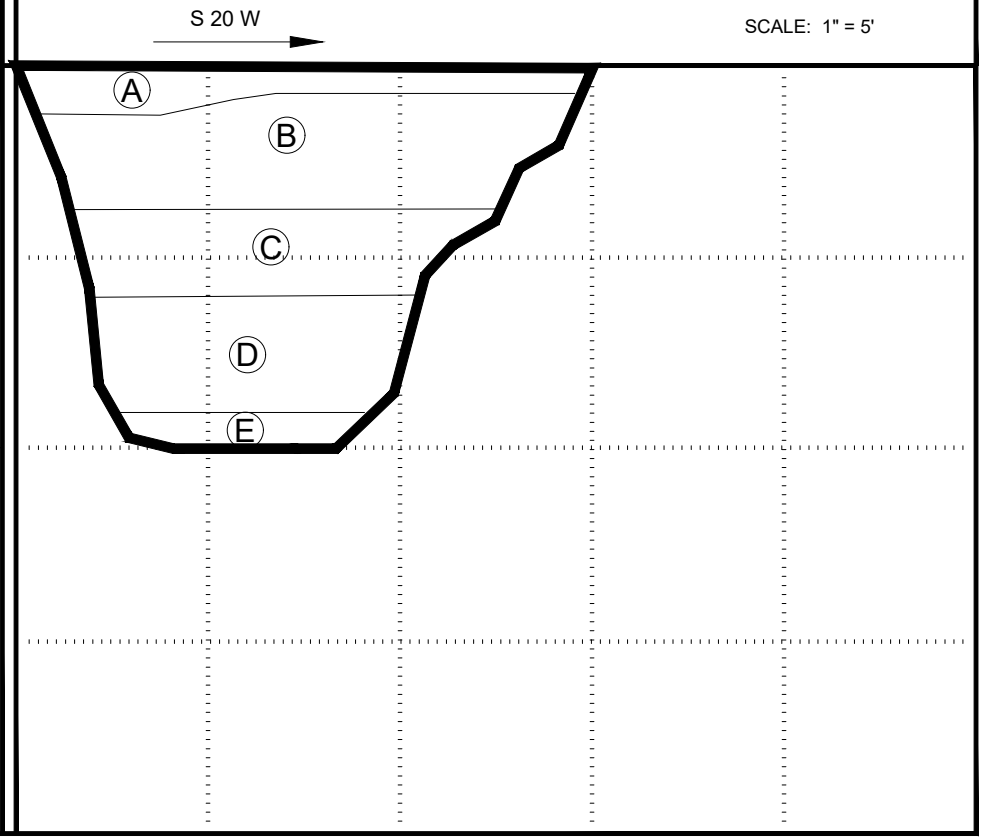
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION:Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 20 W
ELEVATION: 2470 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		17	A: ALLUVIUM: Dark Brown Clayey fine to medium Sand, trace fine root fibers, abundantly porous, moist to very moist - loose
	b		10	B: OLDER ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, moist - medium dense
5	b		5	C: OLDER ALLUVIUM: Red Brown Clayey fine to medium Sand, damp - dense
	b		3	D: OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, slightly cemented, damp - dense
				E: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, slightly cemented, damp - dense
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-48

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-5

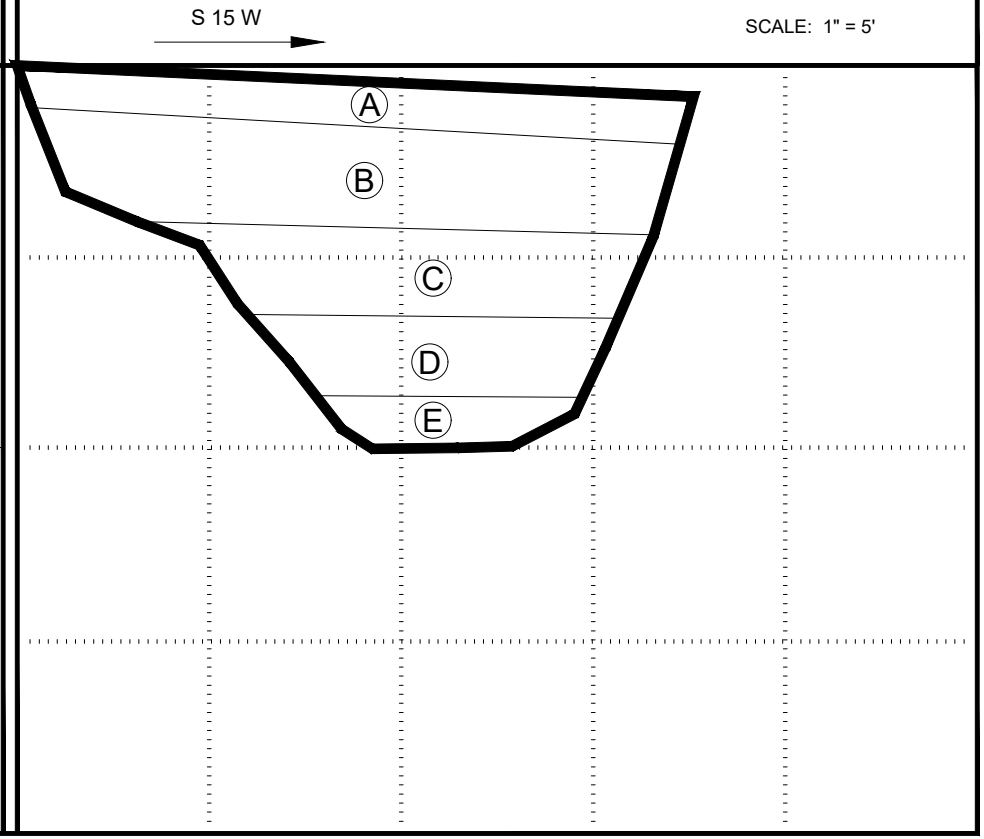
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 15 W
ELEVATION: 2444 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		11	A: ALLUVIUM: Dark Brown Silty fine to medium Sand, abundant fine root fibers, porous, moist - loose
	b		10	B: ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, trace fine root fibers, moist - loose to medium dense
5				C: OLDER ALLUVIUM: Red Brown to Gray Brown Clayey fine Sand, damp to moist - dense
	b		4	D: OLDER ALLUVIUM Brown Clayey fine to medium Sand, little coarse Sand, damp - dense
	b		2	E: OLDER ALLUVIUM: Brown fine to coarse Sand, little fine to coarse Gravel, trace Silt, dry to damp - dense
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-49

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-6

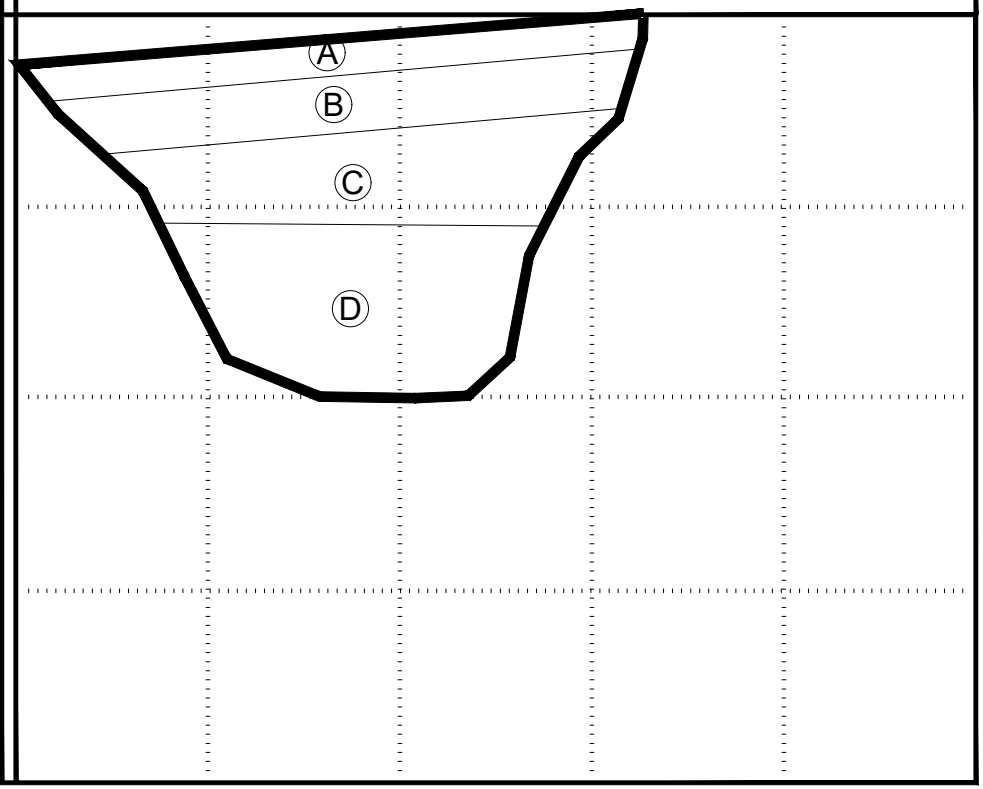
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: N 15 E
ELEVATION: 2475 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		12	A: ALLUVIUM: Brown Clayey fine Sand, trace medium to coarse Sand, trace fine root fibers, slightly porous, moist - loose
				B: ALLUVIUM: Brown Silty fine to medium Sand, moist - damp
	b		10	C: OLDER ALLUVIUM: Red Brown to Brown Clayey fine to medium sand, trace coarse Sand, slightly cemented, damp - dense
5	b		5	
	b		5	D: OLDER ALLUVIUM: Silty fine to medium Sand: Brown Silty fine to coarse Sand, damp - dense
10	b		5	Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-50

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-7

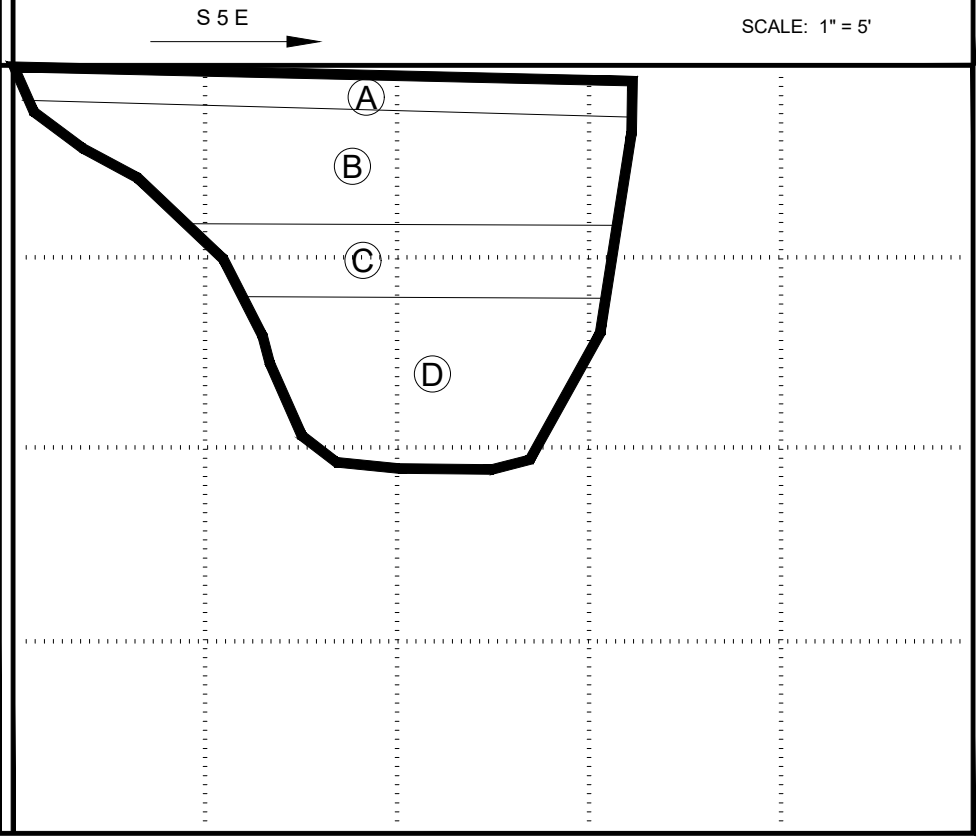
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 5 E
ELEVATION: 2497 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		10	A: ALLUVIUM: Dark Brown Clayey fine to medium Sand, abundant root fibers, porous, damp to moist - loose
	b		10	B: ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, slightly porous, damp to moist - loose to medium dense
5	b		7	C: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, damp - medium dense
	b		4	D: OLDER ALLUVIUM: Brown fine to coarse Sand, little fine to coarse Sand, trace Silt, damp - medium dense
	b		4	
10				Trench Terminated @ 9.5 feet
15				

GRAPHIC REPRESENTATION



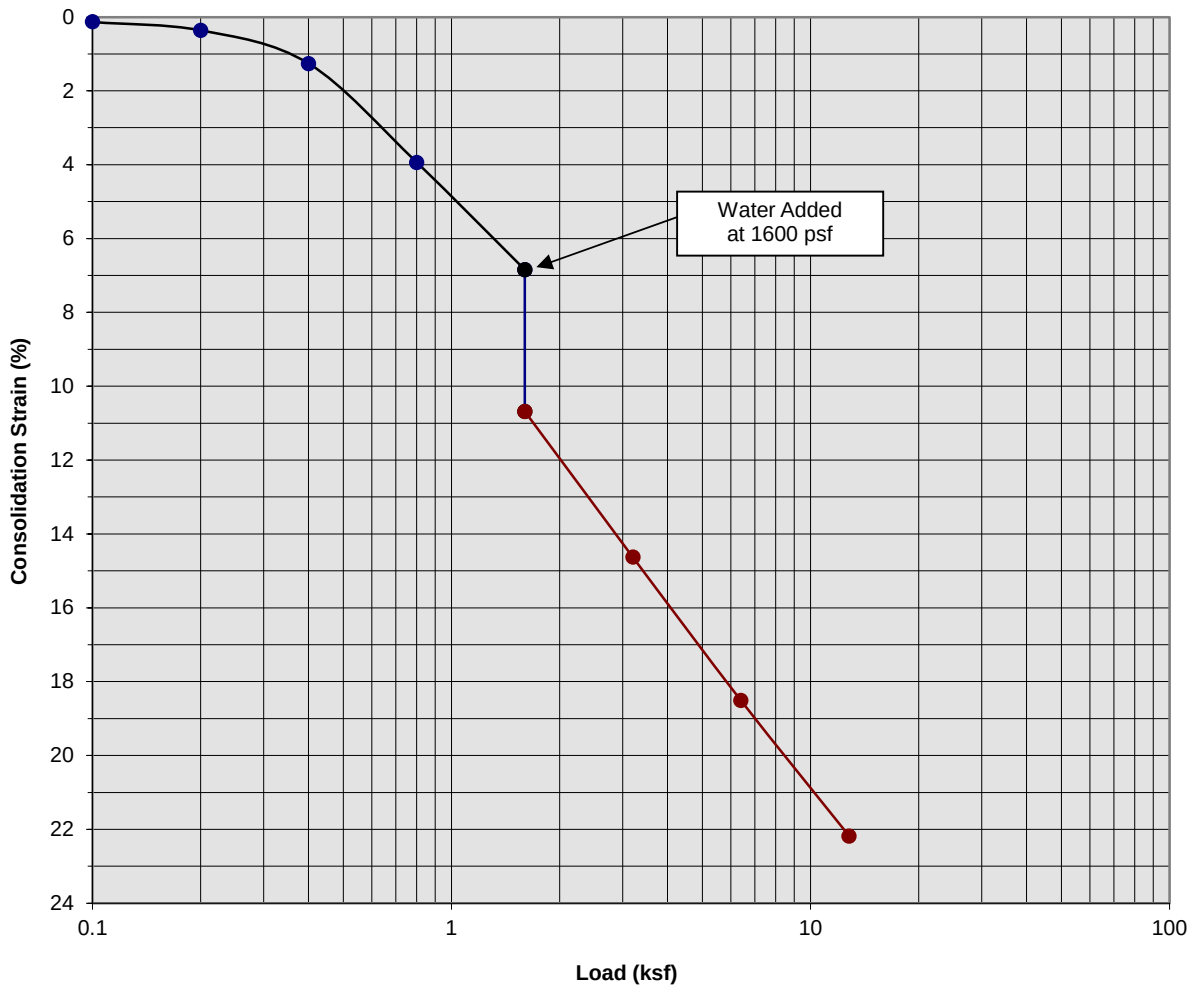
KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-51

APPENDIX C

Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay

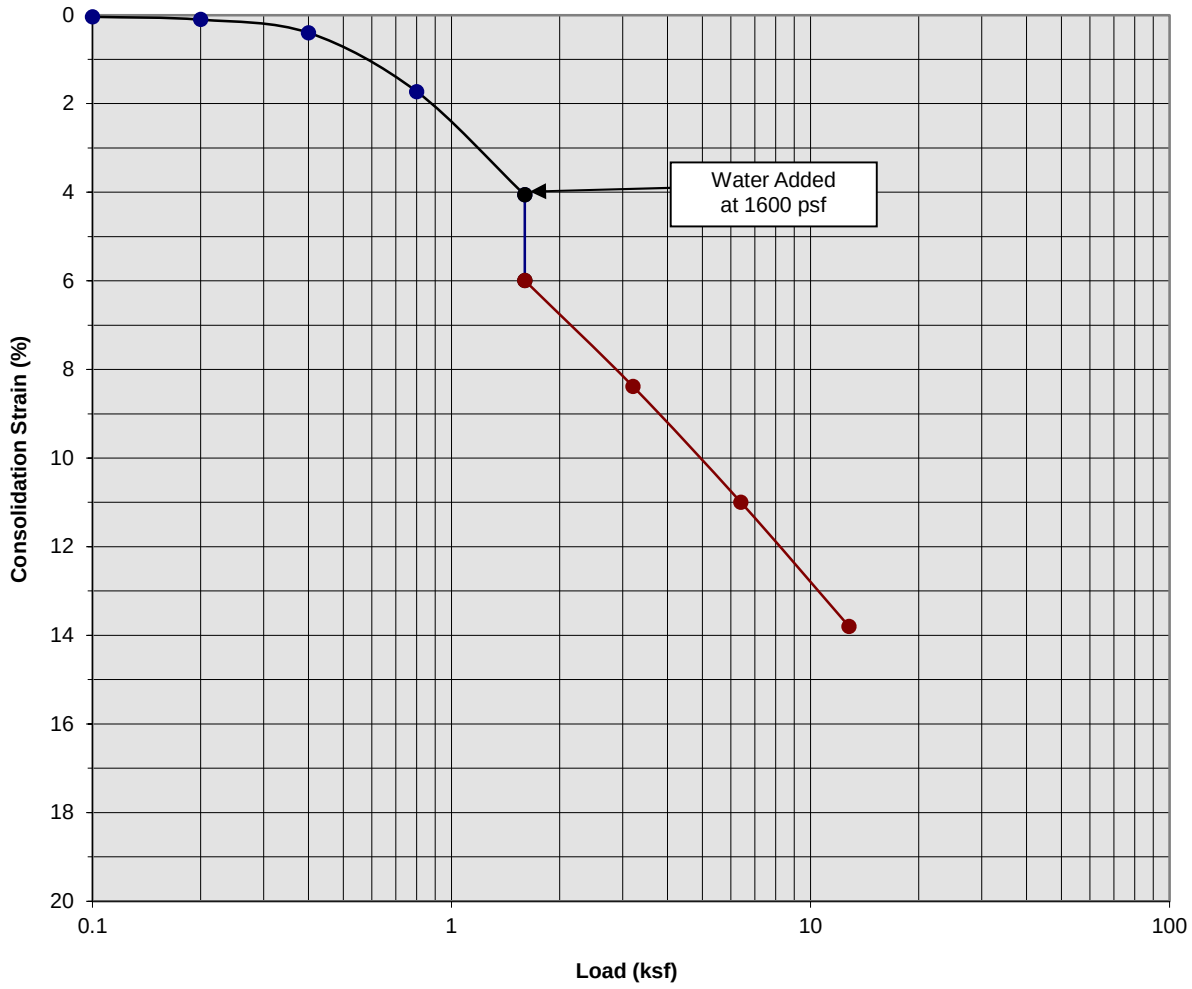
Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	3 to 4	Initial Dry Density (pcf)	107.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	137.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.84

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt

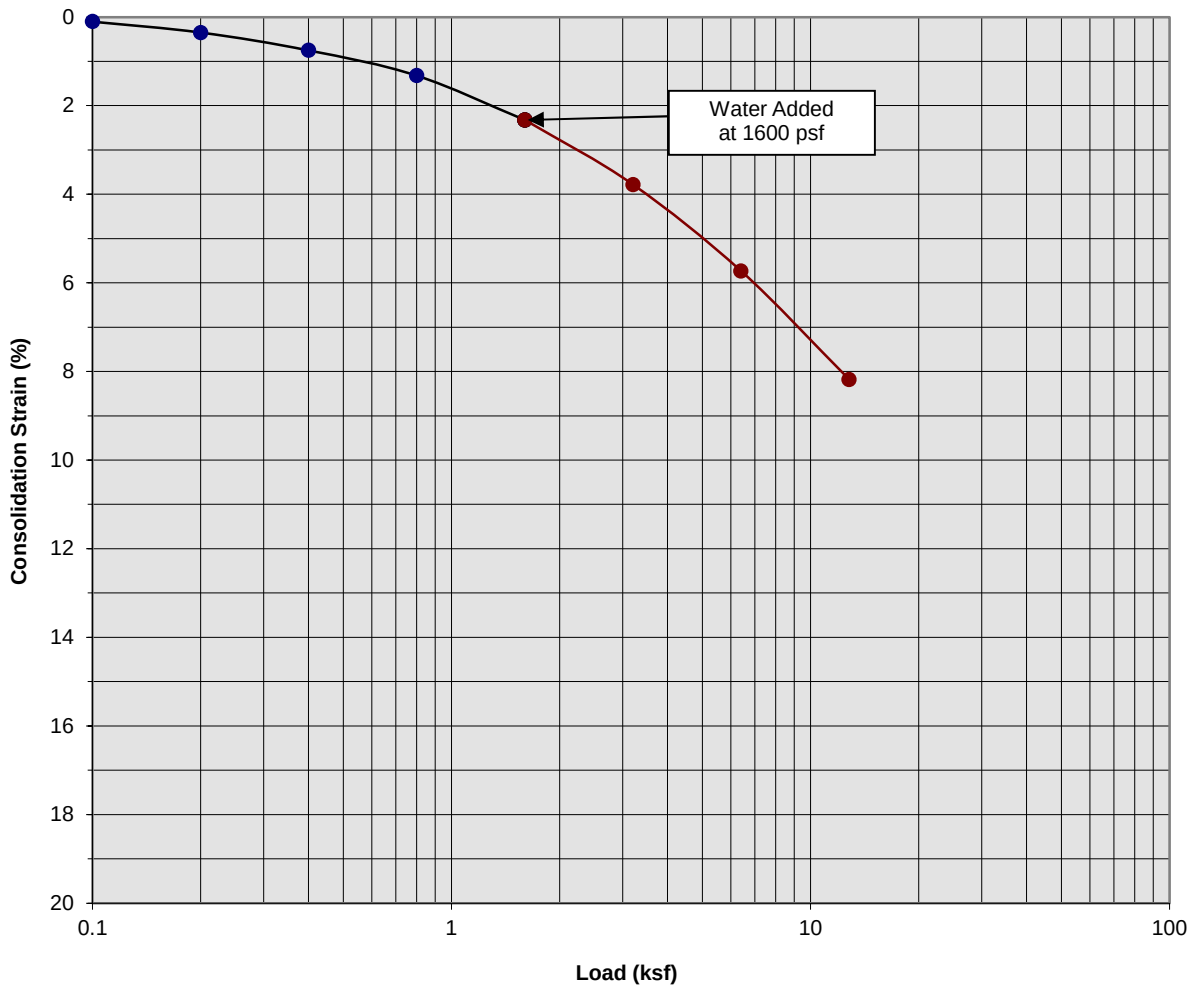
Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	5 to 6	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.93

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt

Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	115.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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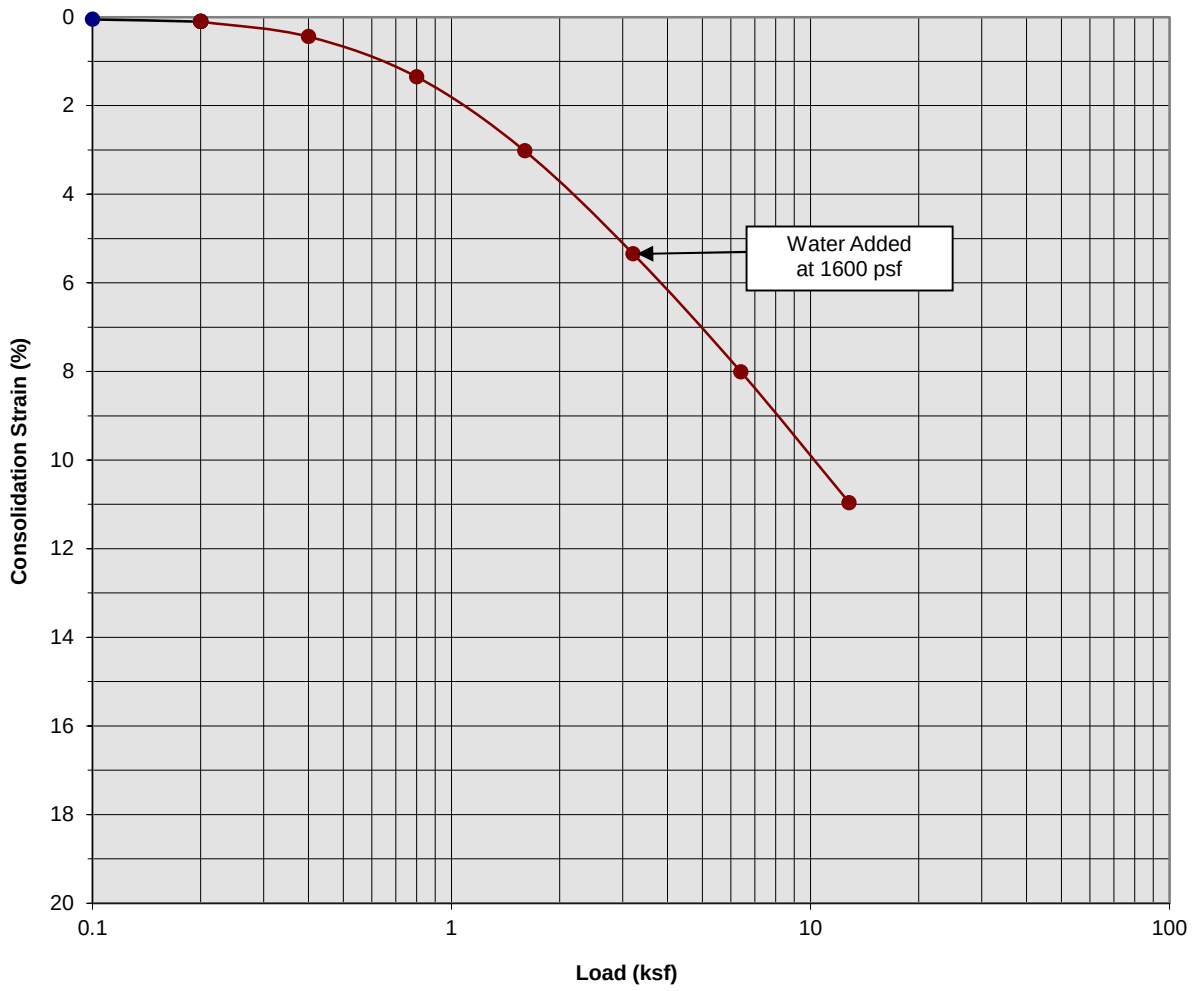
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt, little Clay, trace fine Gravel

Boring Number:	B-5	Initial Moisture Content (%)	16
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	9 to 10	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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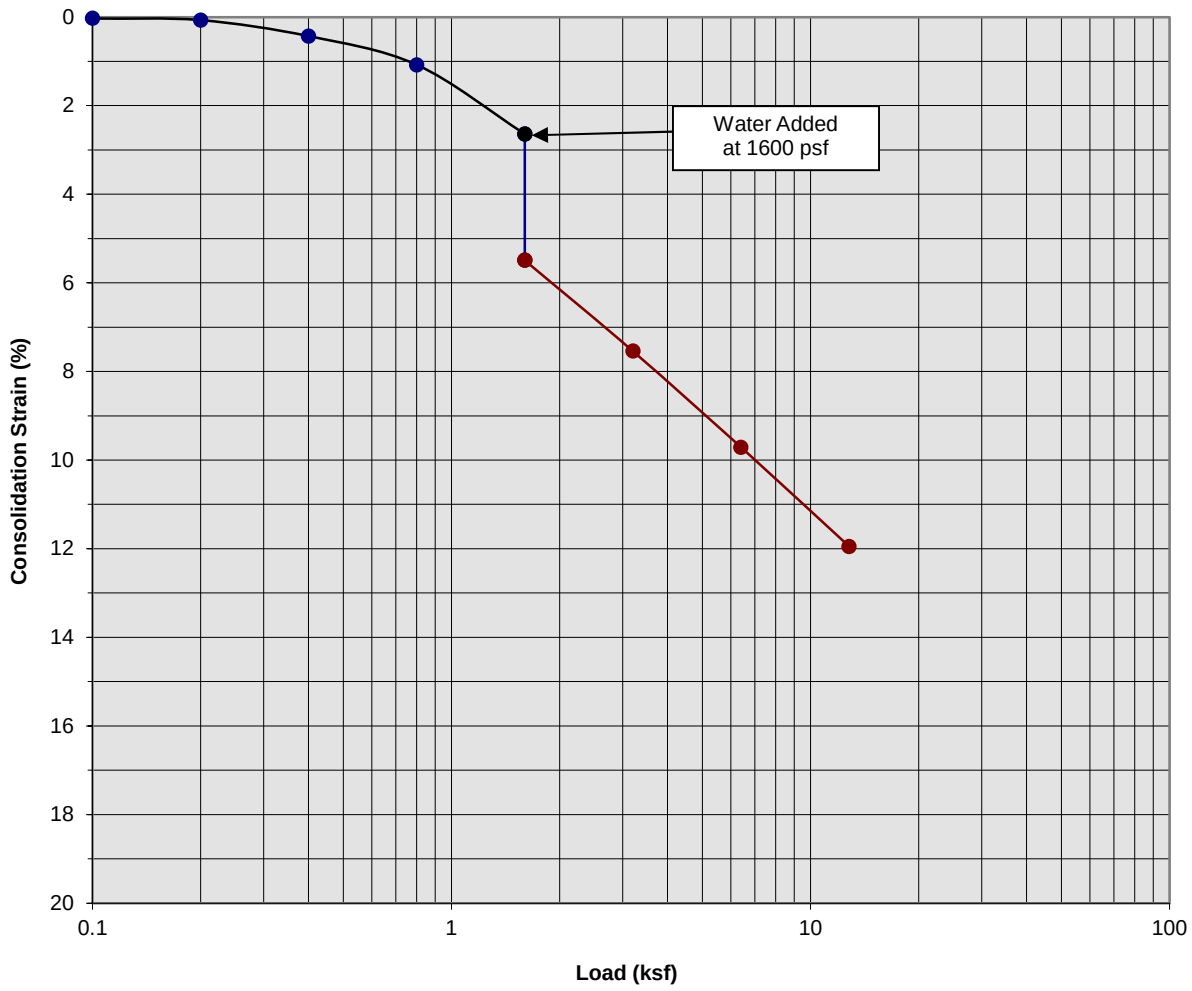
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace coarse Gravel

Boring Number:	B-11	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	3 to 4	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.85

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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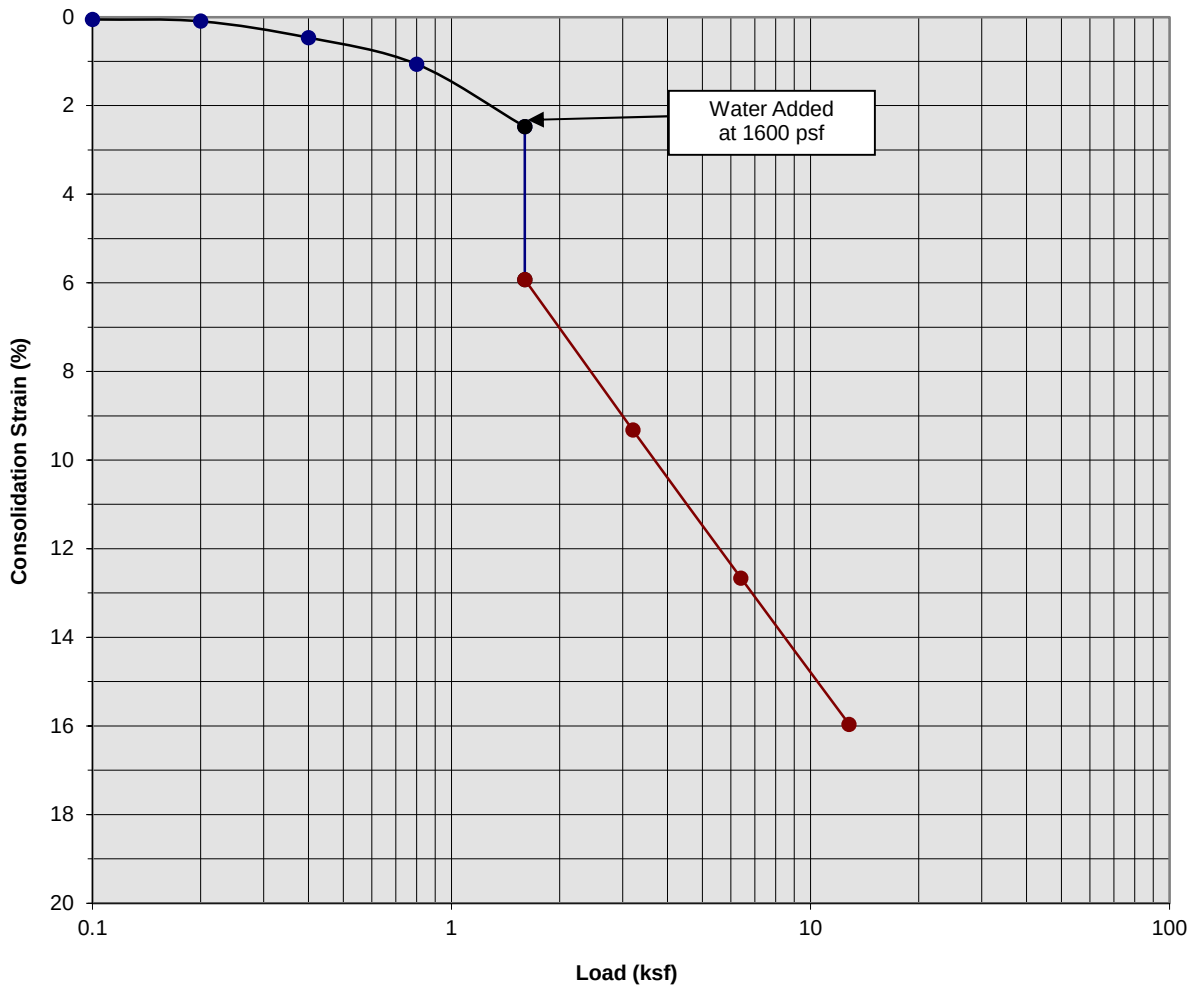
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

Boring Number:	B-11	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	5 to 6	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.45

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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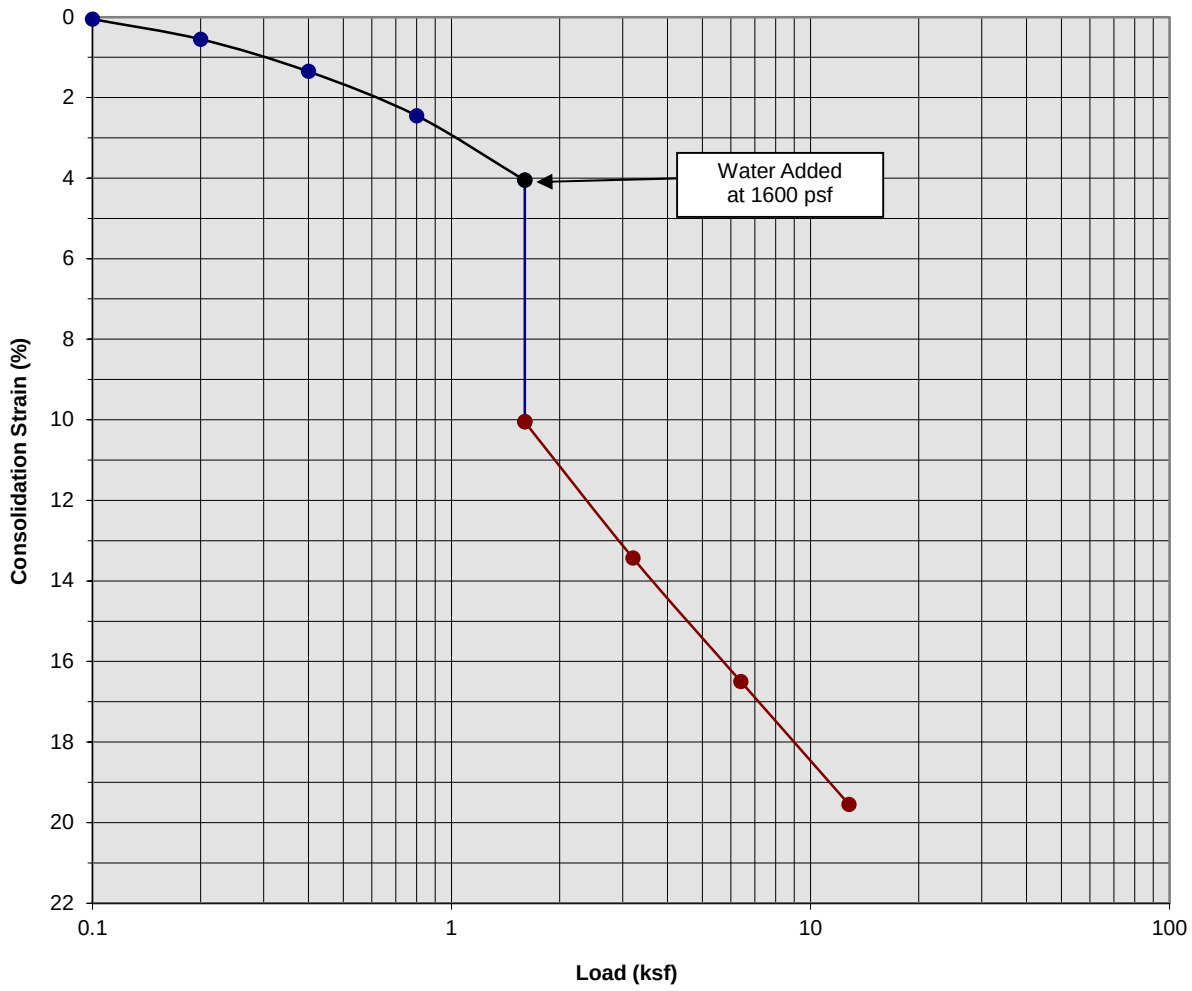
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

Boring Number:	B-11	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	7 to 8	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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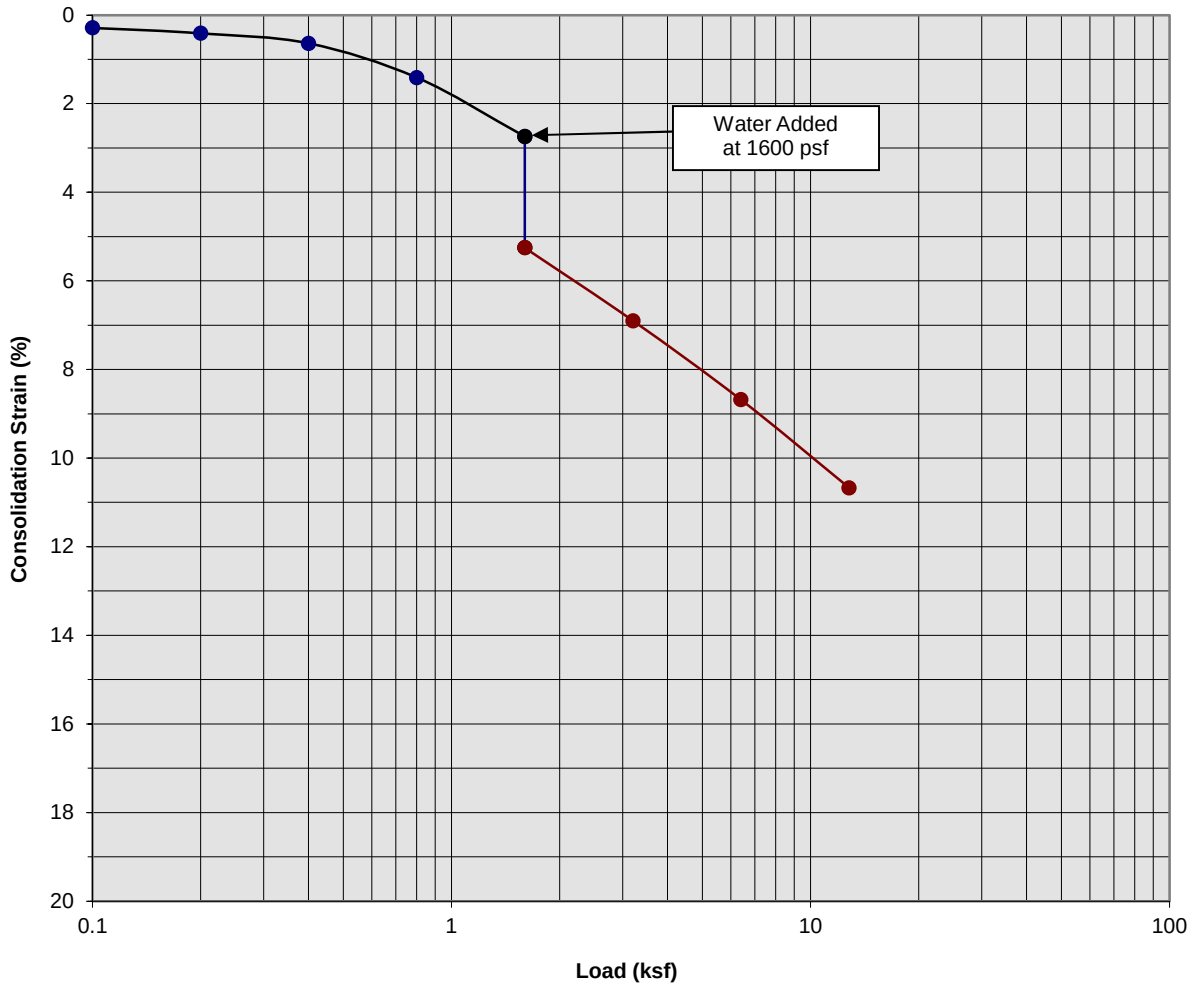
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

Boring Number:	B-11	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	98.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	109.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.51

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 8

SoCalGeo
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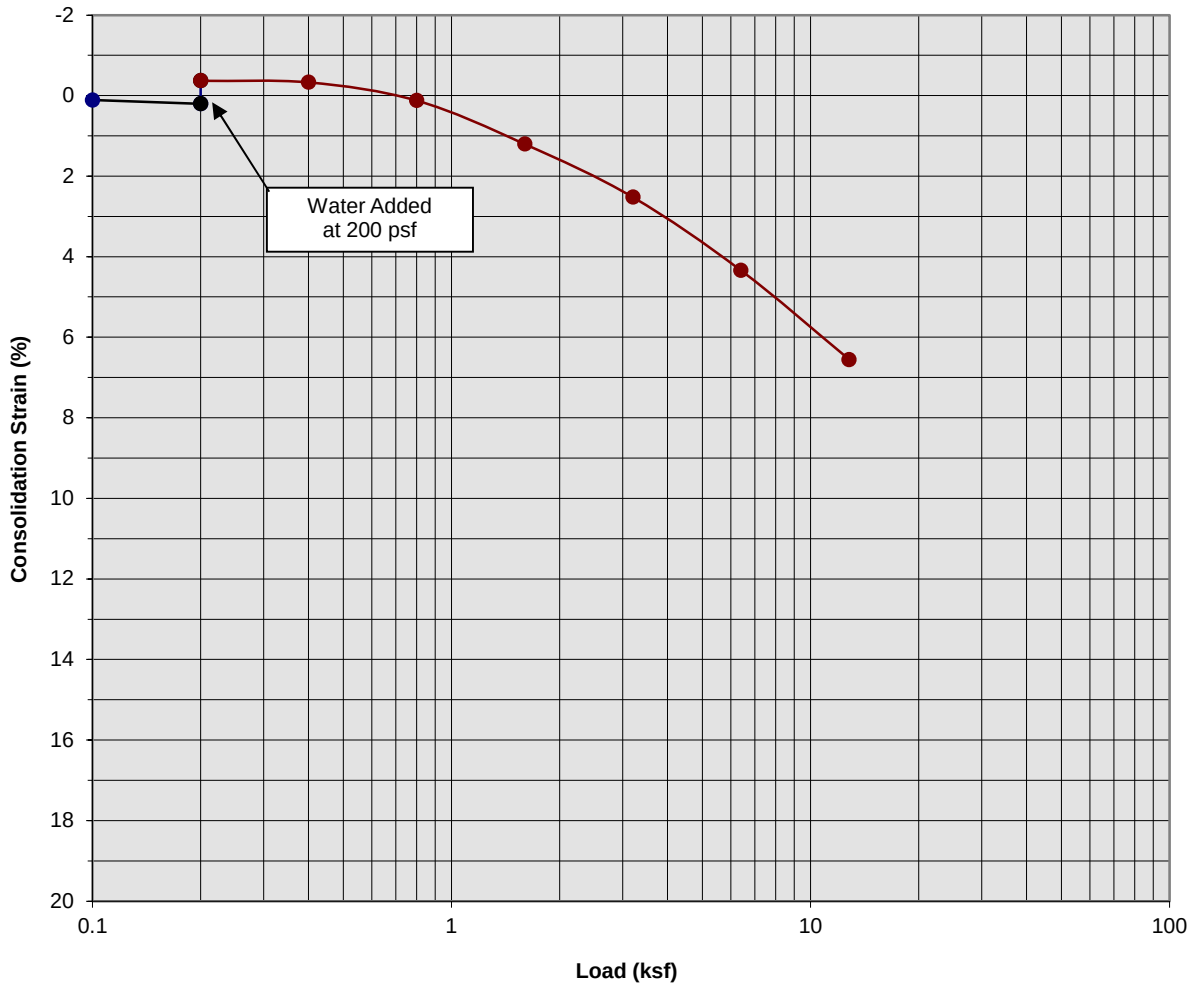
Consolidation/Collapse Test Results



Classification: Dark Red Brown fine Sandy Clay, trace medium Sand, trace Silt

Boring Number:	B-12	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	3 to 4	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	-0.57

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 9

SoCalGeo
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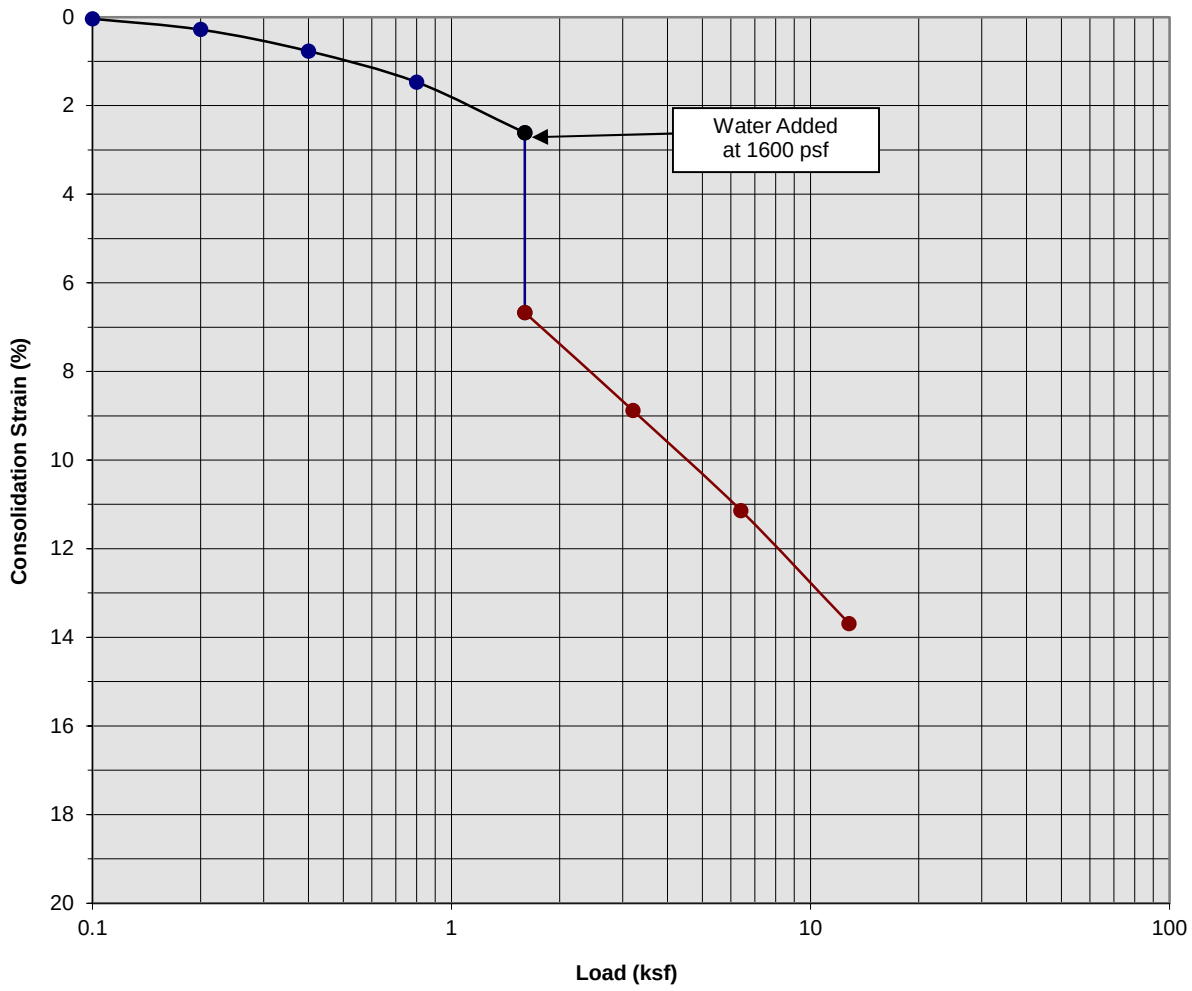
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace medium Sand

Boring Number:	B-12	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	5 to 6	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.06

Proposed E-Commerce Development
Beaumont, California
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PLATE C- 10

SoCalGeo
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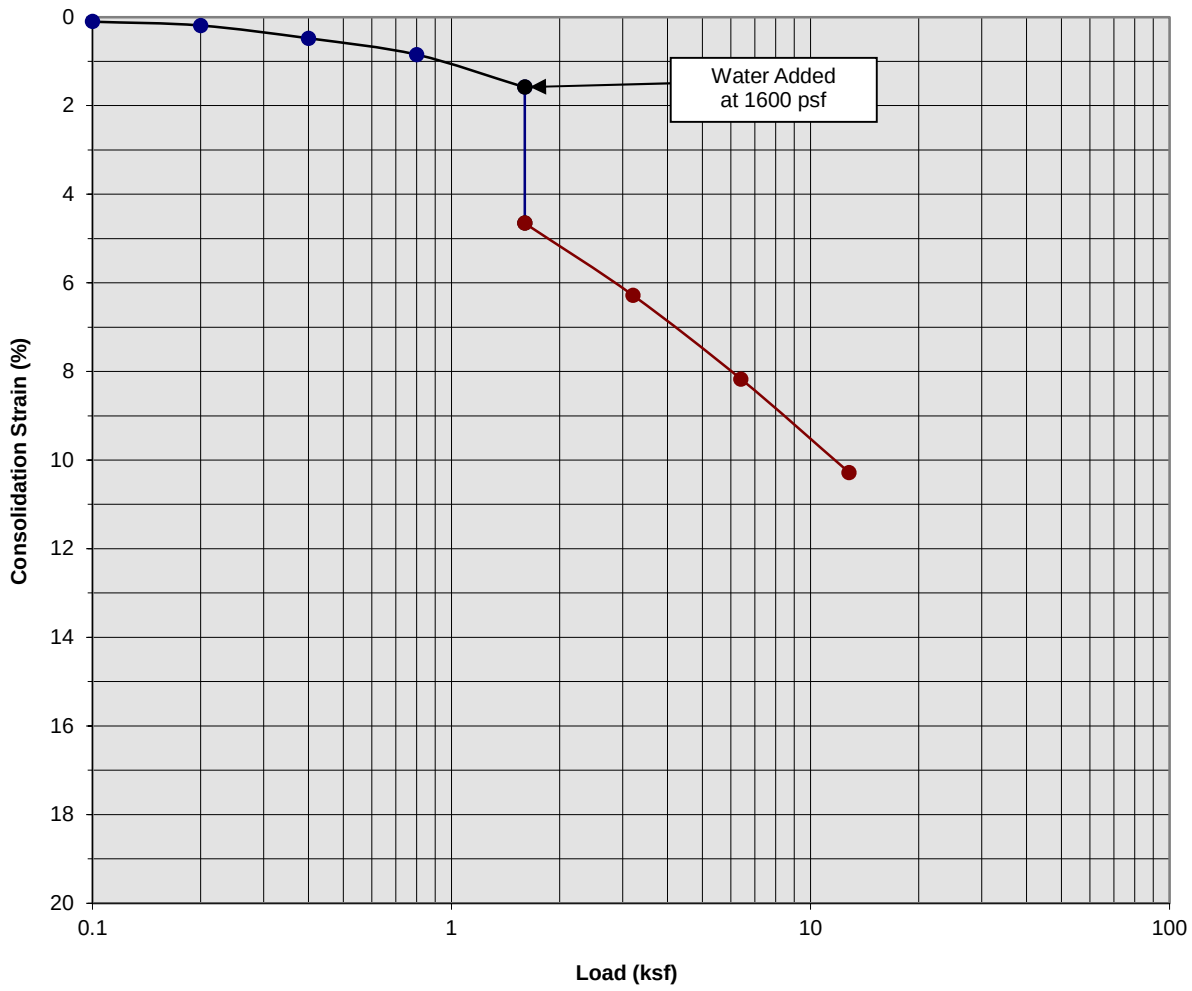
Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace coarse Sand

Boring Number:	B-12	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	108.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.07

Proposed E-Commerce Development
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PLATE C- 11

SoCalGeo
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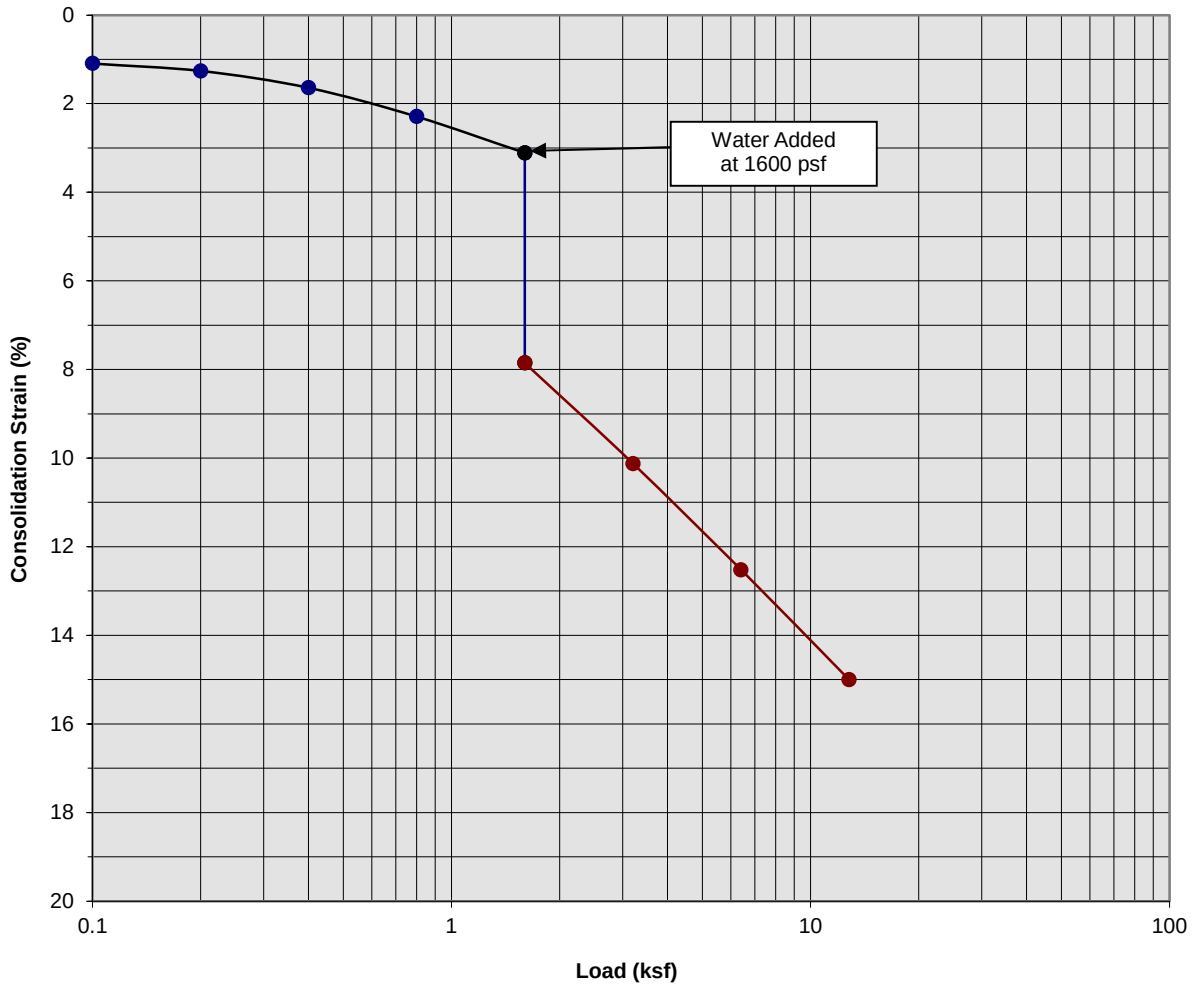
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand

Boring Number:	B-12	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	98.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.74

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PLATE C- 12

SoCalGeo
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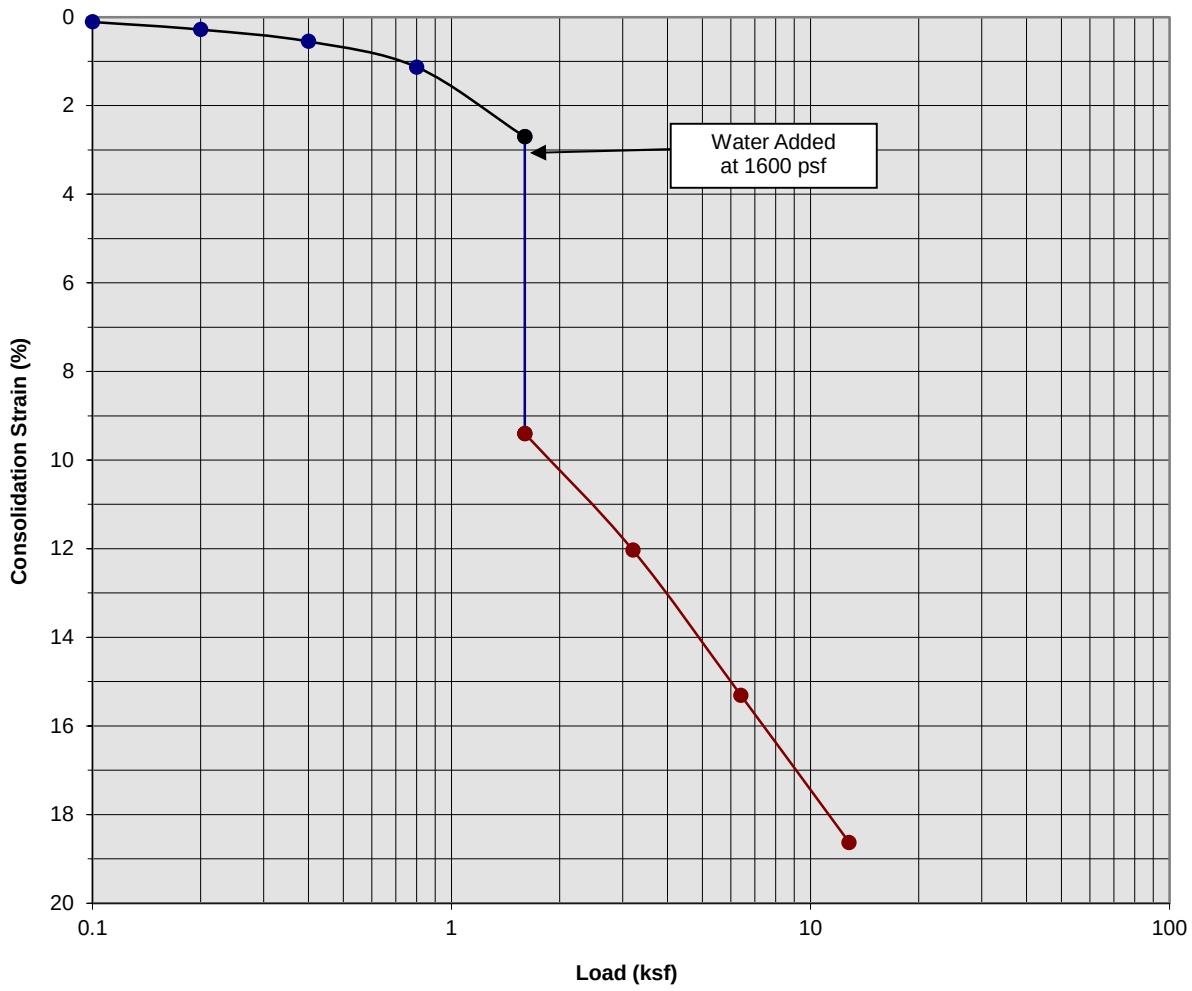
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to coarse Sand

Boring Number:	B-12	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	118.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.70

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PLATE C- 13

SoCalGeo
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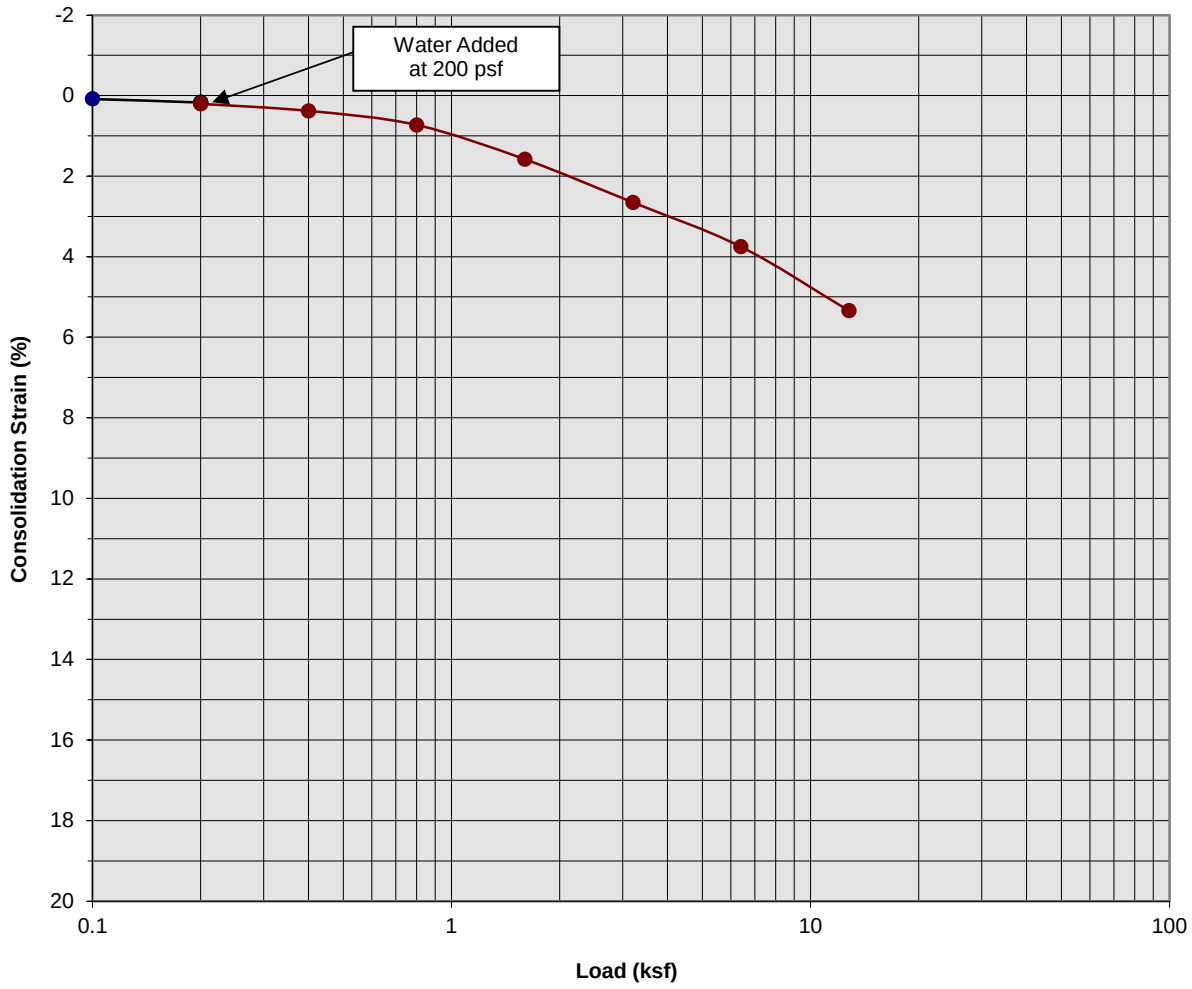
Consolidation/Collapse Test Results



Classification: FILL: Red Brown fine to medium Sandy Clay

Boring Number:	B-18	Initial Moisture Content (%)	15
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	3 to 4	Initial Dry Density (pcf)	114.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.03

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PLATE C- 14

SoCalGeo
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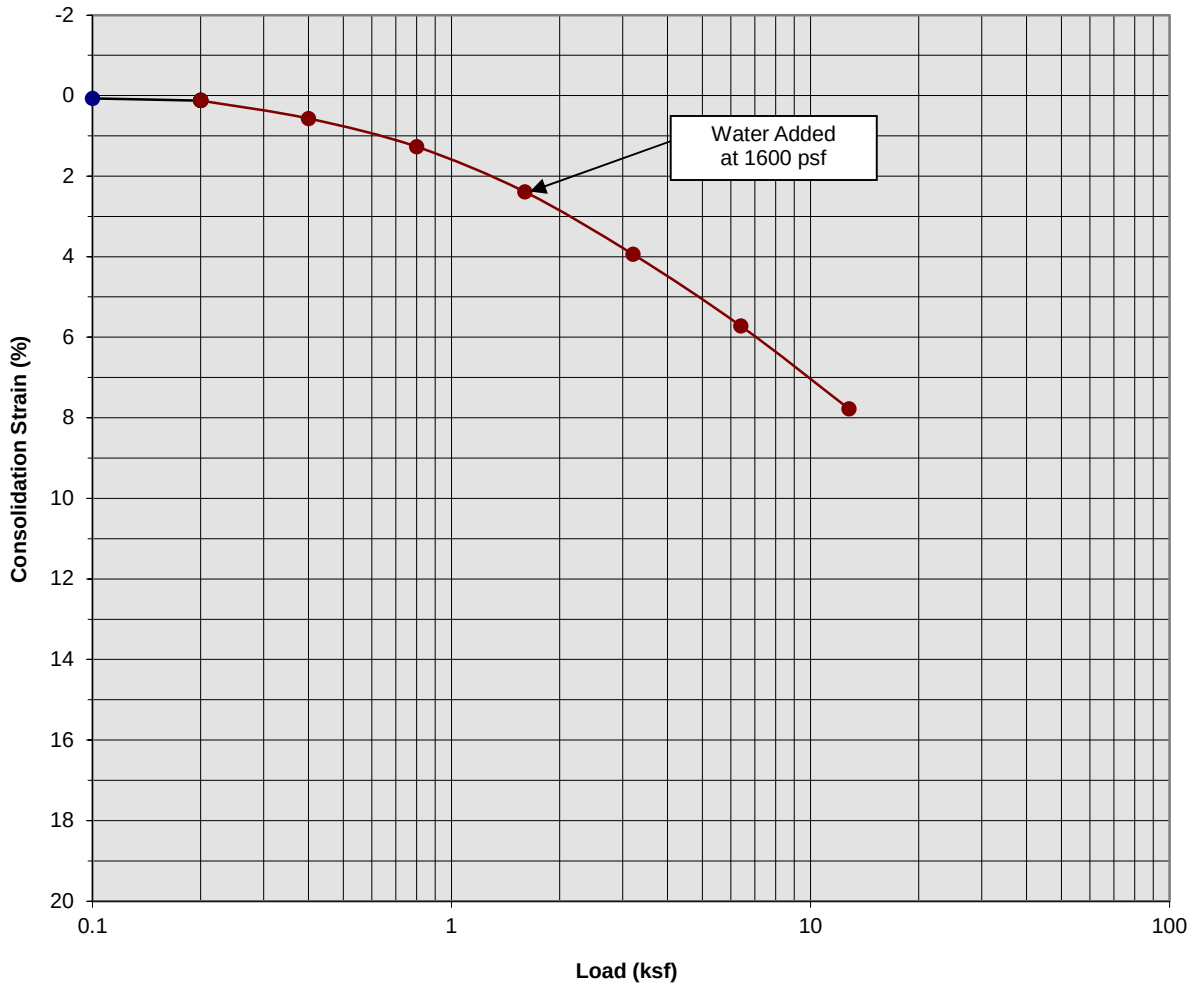
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine to coarse Sand, little Clay

Boring Number:	B-18	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	5 to 6	Initial Dry Density (pcf)	114.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

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PLATE C- 15

SoCalGeo
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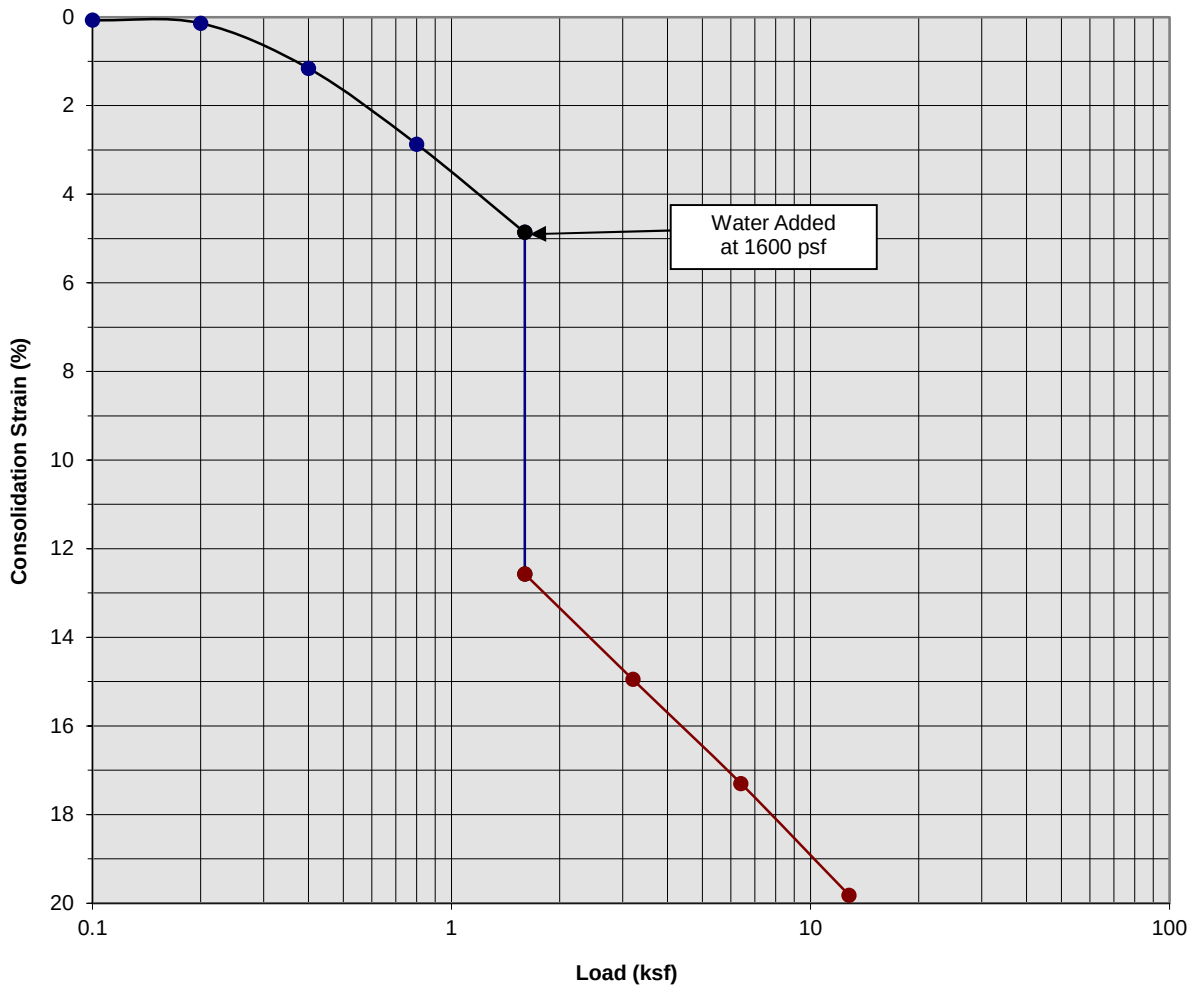
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine to coarse Sand, little Clay

Boring Number:	B-18	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	7 to 8	Initial Dry Density (pcf)	94.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.71

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PLATE C- 16

SoCalGeo
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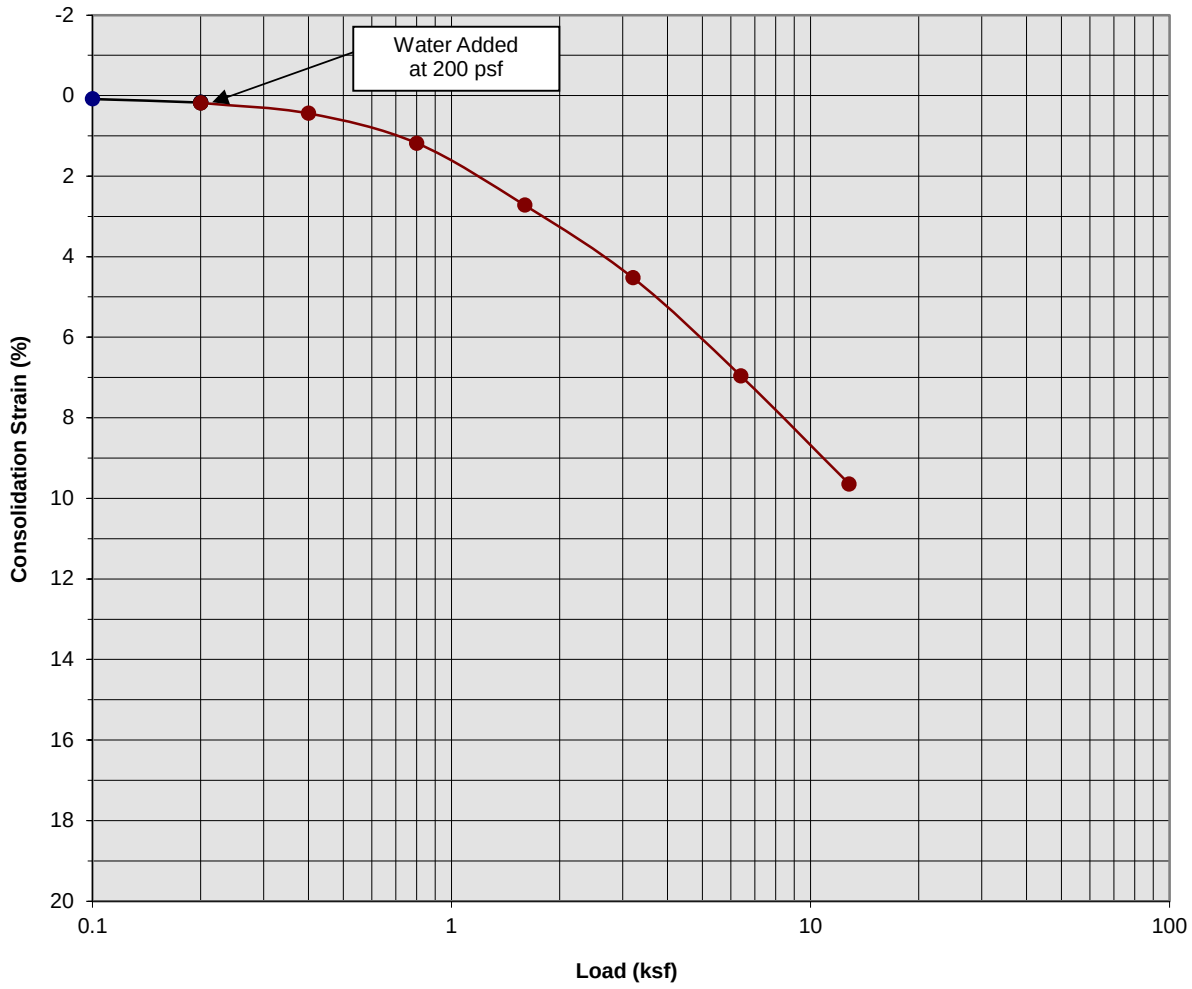
Consolidation/Collapse Test Results



Classification: Red Brown fine to medium Sandy Clay

Boring Number:	B-18	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	108.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.01

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Beaumont, California
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PLATE C- 17

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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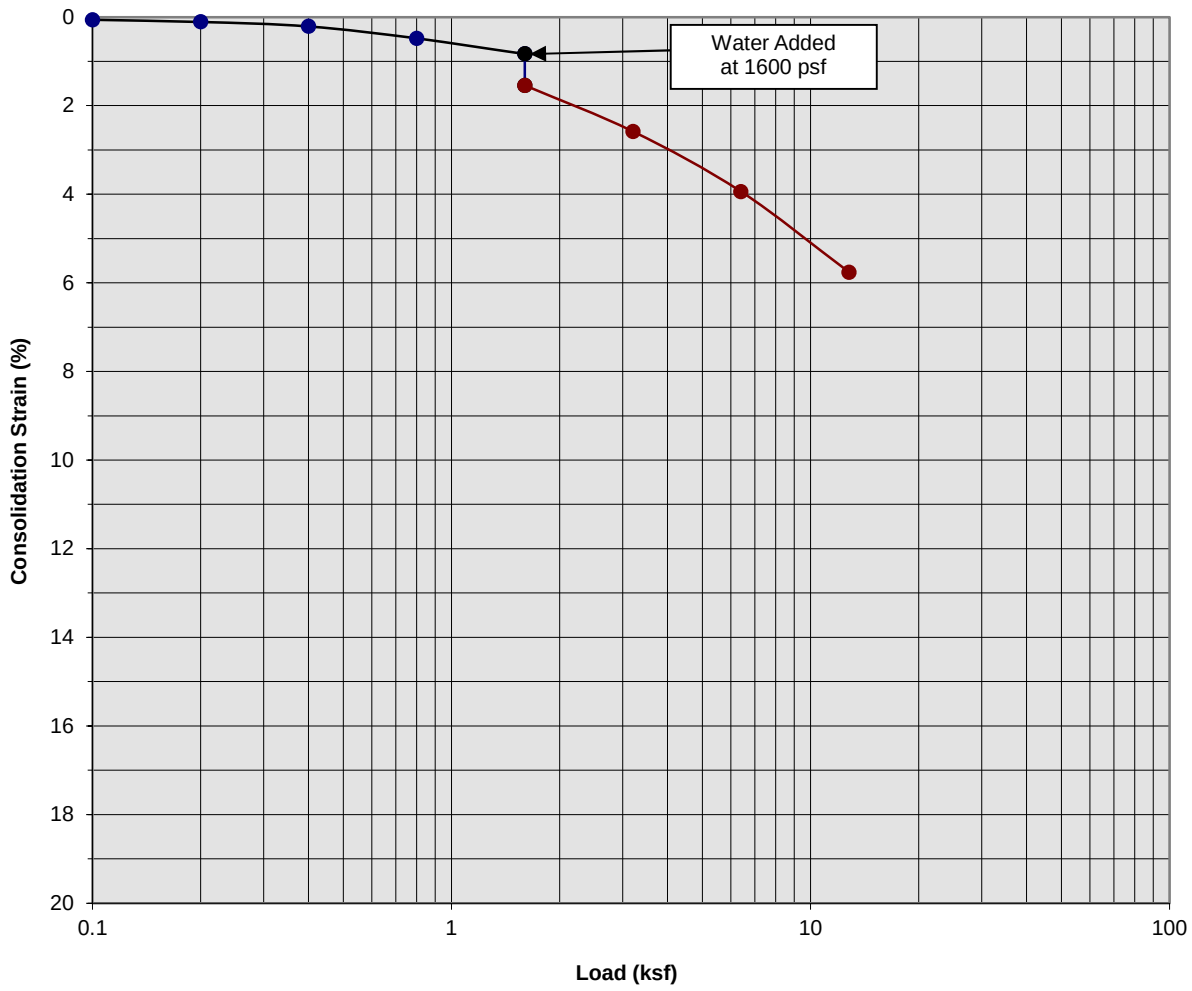
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand to fine Sandy Silt

Boring Number:	B-21	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	19 to 20	Initial Dry Density (pcf)	107.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.71

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Beaumont, California
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PLATE C- 18

SoCalGeo
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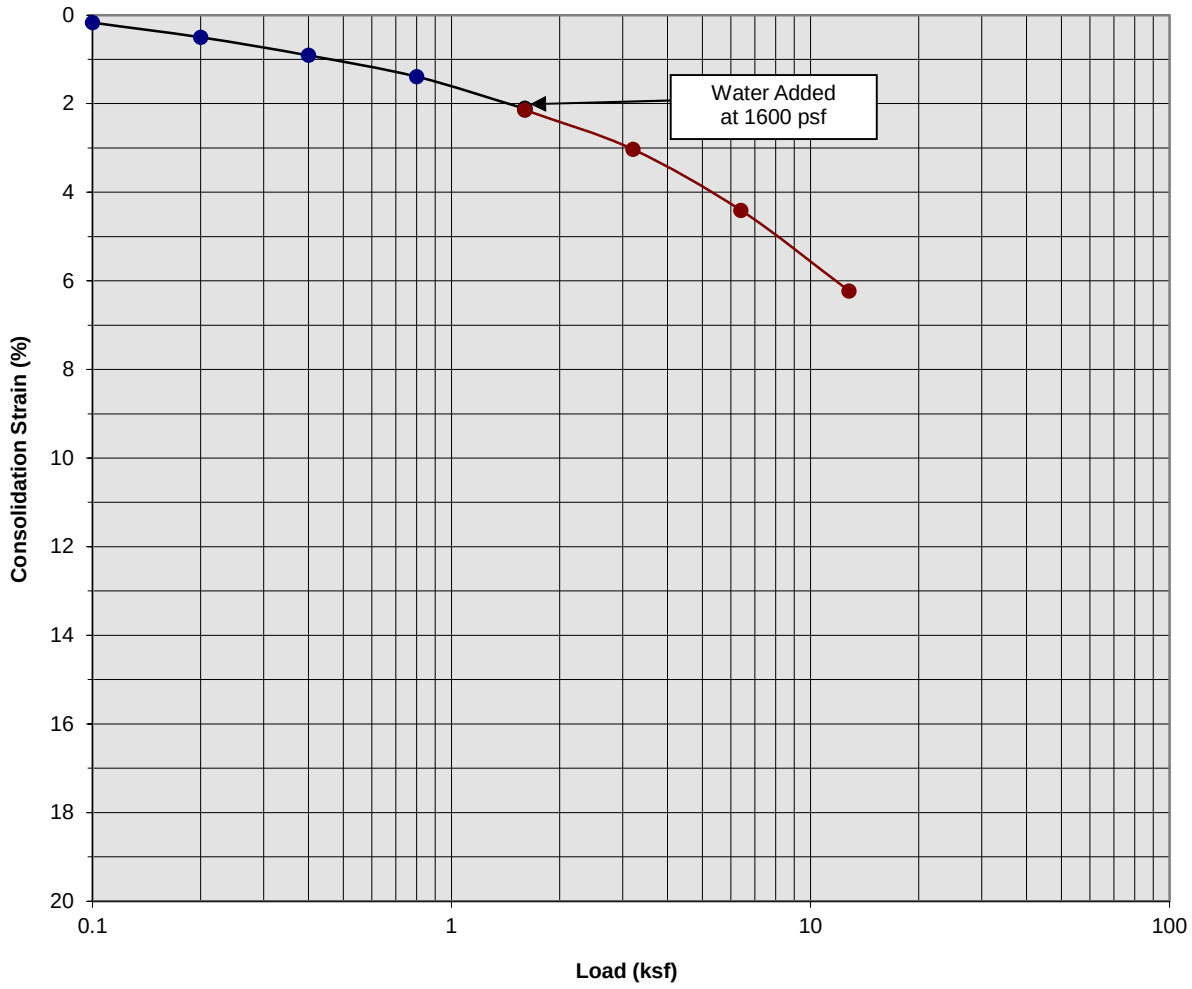
Consolidation/Collapse Test Results



Classification: Red Brown Clayey fine Sand, trace medium Sand, little Silt

Boring Number:	B-25	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	3 to 4	Initial Dry Density (pcf)	120.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.03

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PLATE C- 19

SoCalGeo
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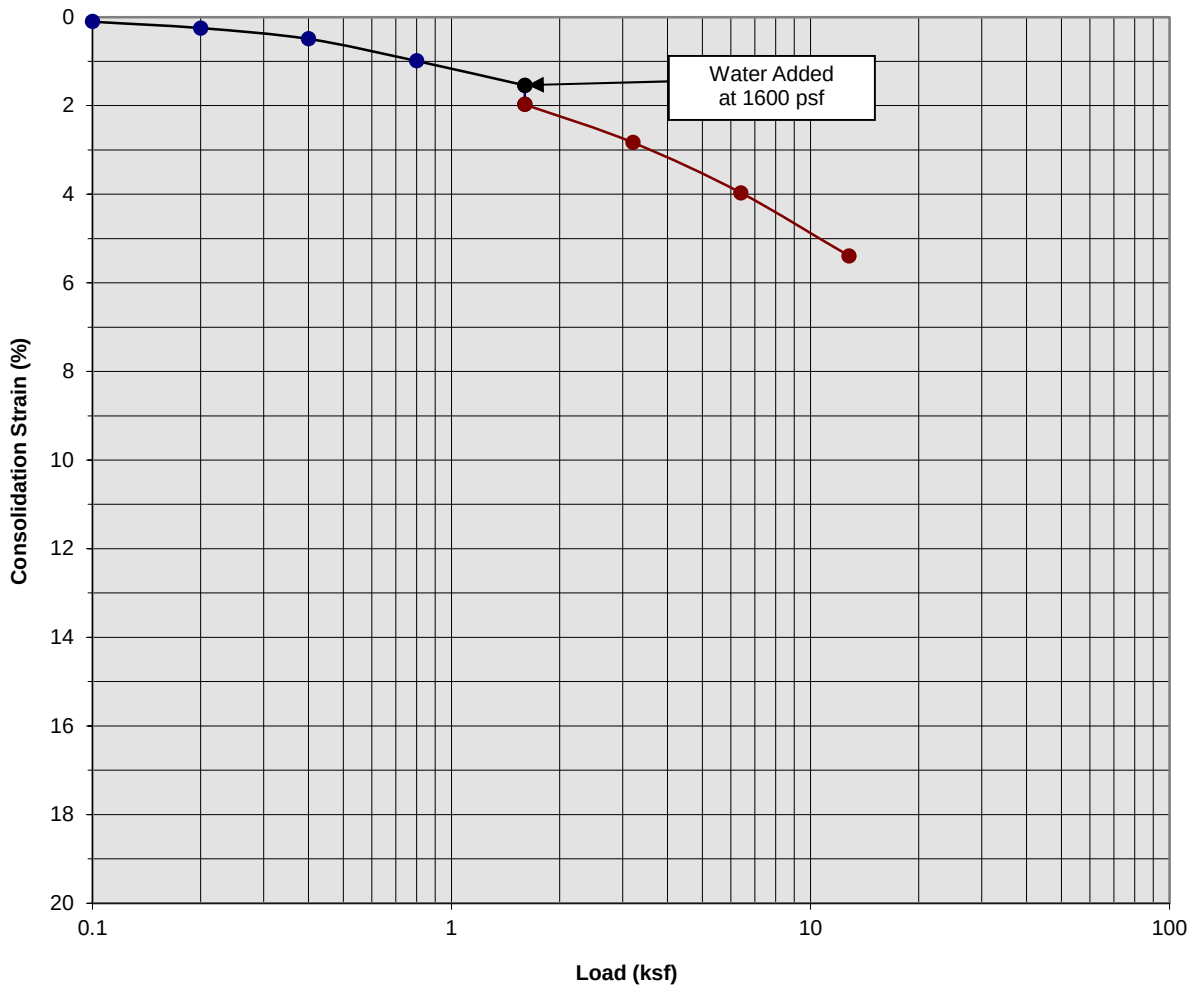
Consolidation/Collapse Test Results



Classification: Red Brown Clayey fine Sand, trace medium Sand

Boring Number:	B-25	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	5 to 6	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	122.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.43

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PLATE C- 20

SoCalGeo
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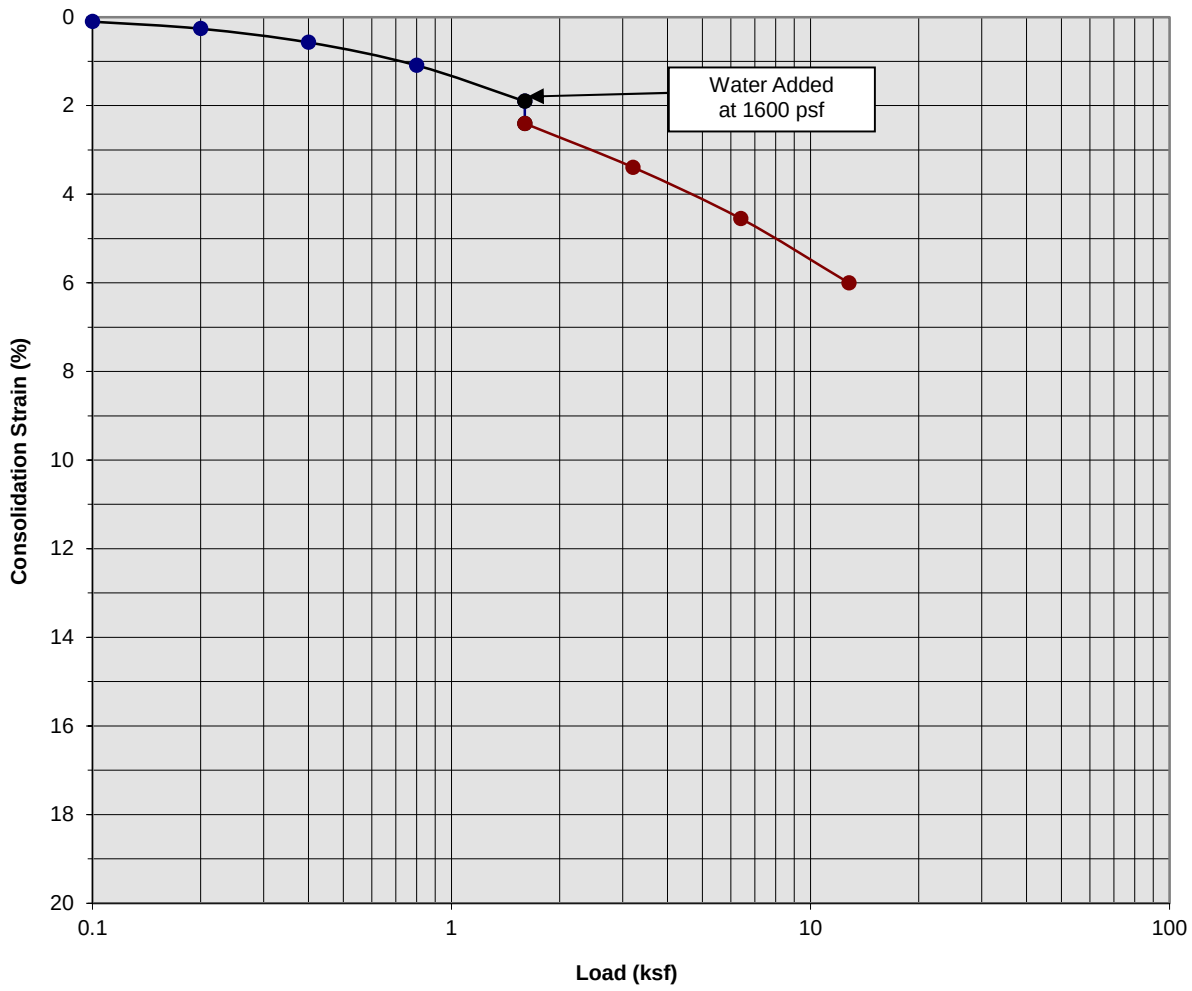
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace medium to coarse Sand

Boring Number:	B-25	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	7 to 8	Initial Dry Density (pcf)	117.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.50

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PLATE C- 21

SoCalGeo
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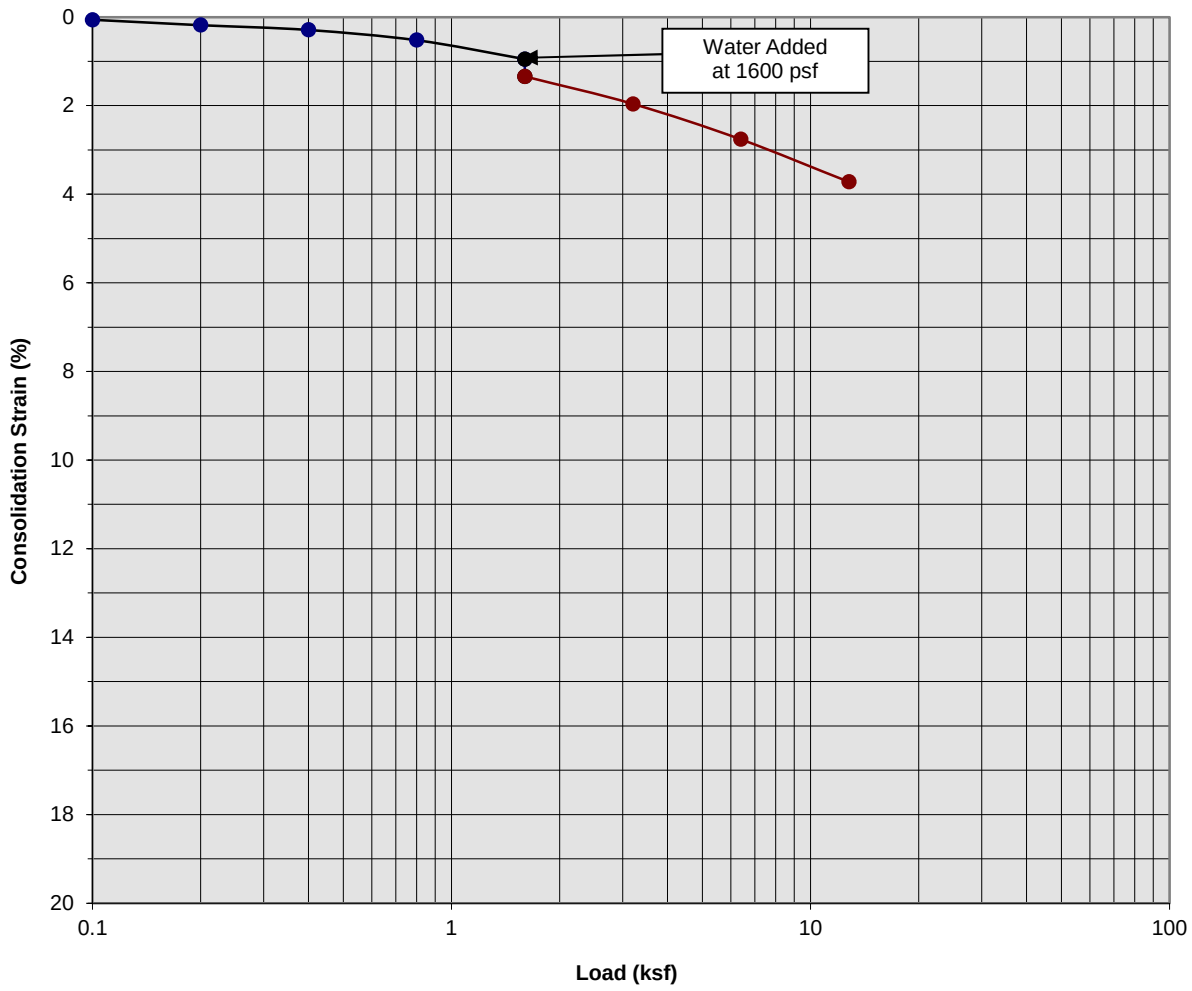
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to coarse Sand, trace fine Gravel

Boring Number:	B-25	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	121.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.39

Proposed E-Commerce Development
Beaumont, California
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PLATE C- 22

SoCalGeo
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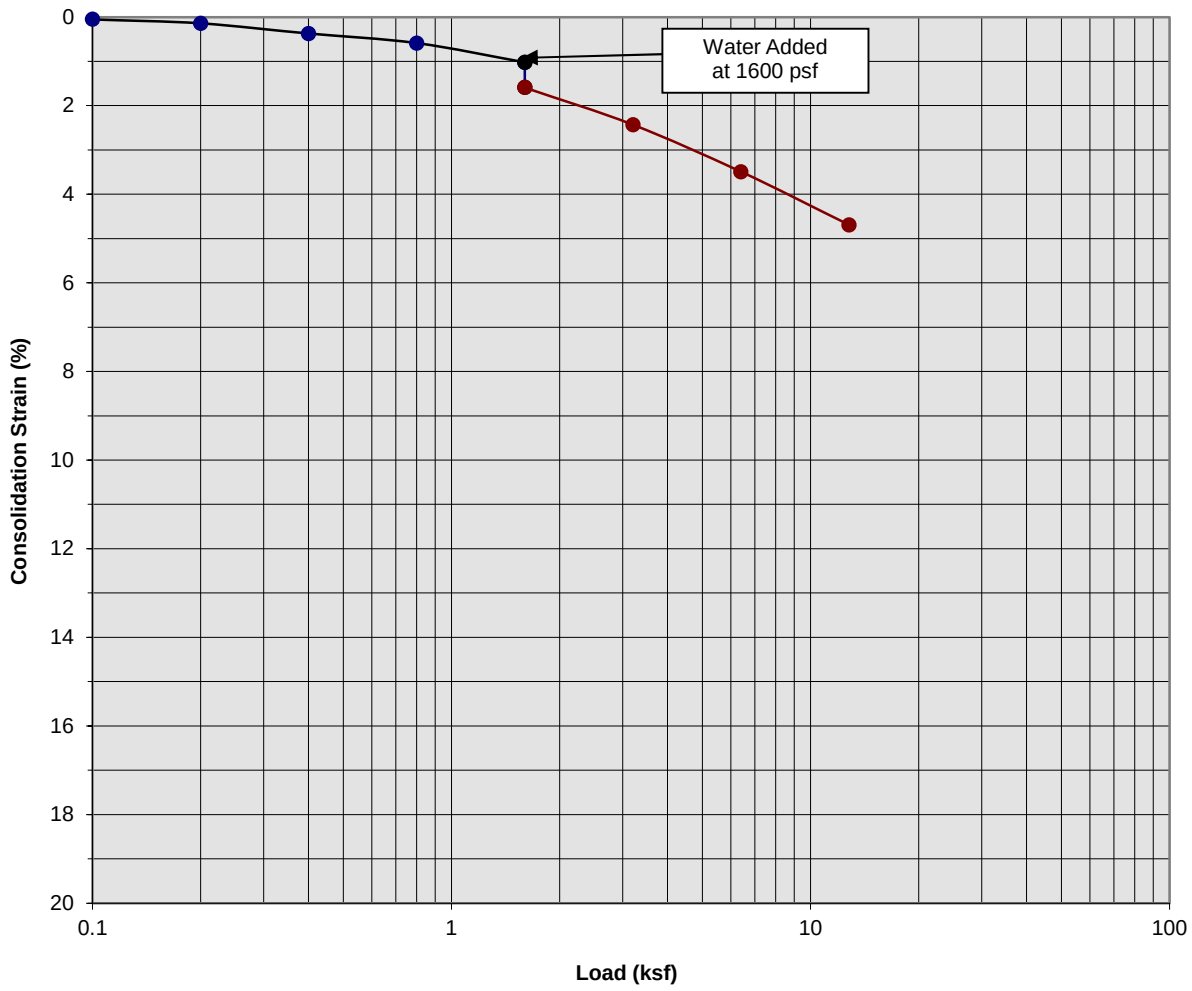
Consolidation/Collapse Test Results



Classification: FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand

Boring Number:	B-26	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	3 to 4	Initial Dry Density (pcf)	123.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	129.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.57

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PLATE C- 23

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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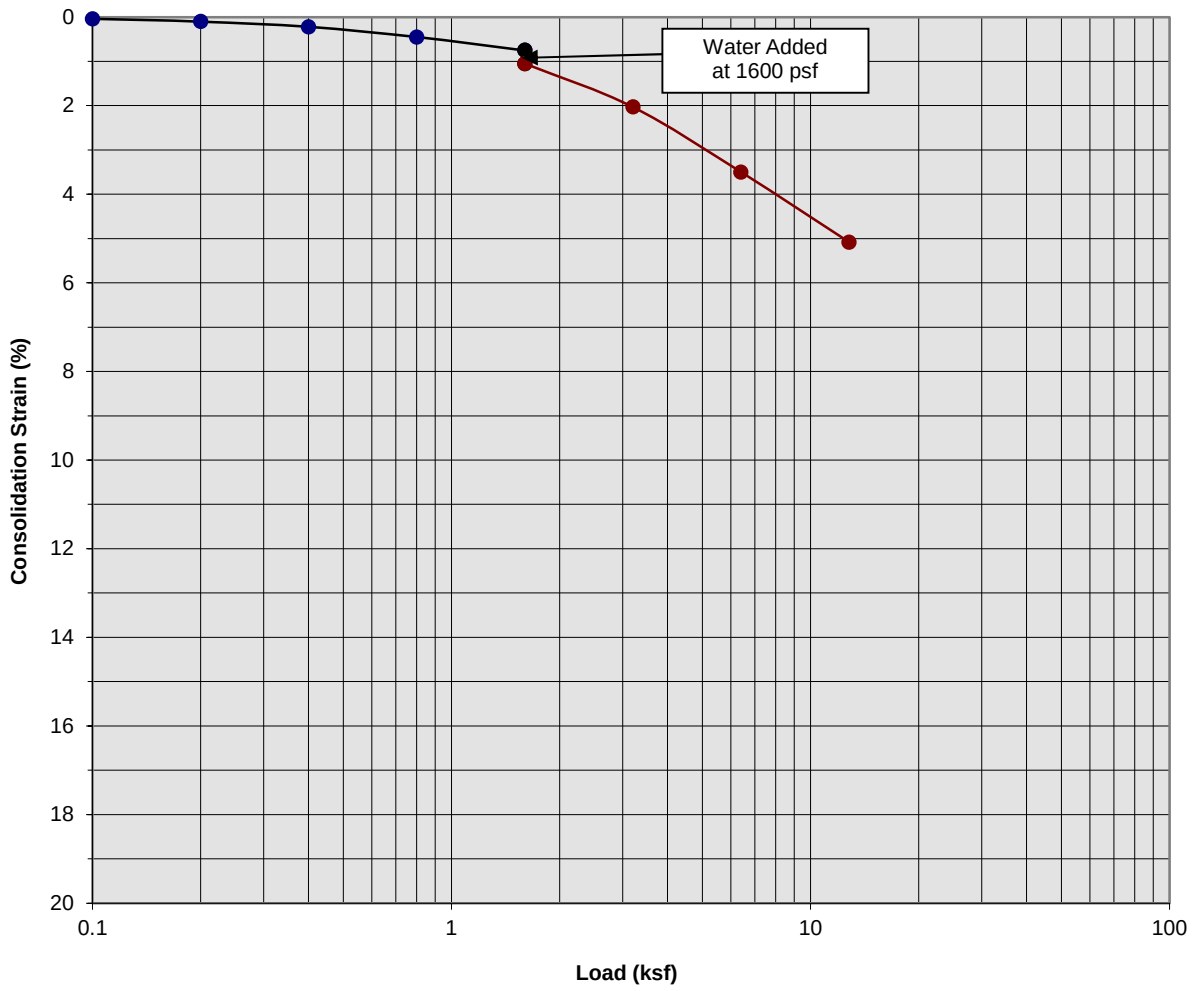
Consolidation/Collapse Test Results



Classification: FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand

Boring Number:	B-26	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	5 to 6	Initial Dry Density (pcf)	121.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.30

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PLATE C- 24

SoCalGeo
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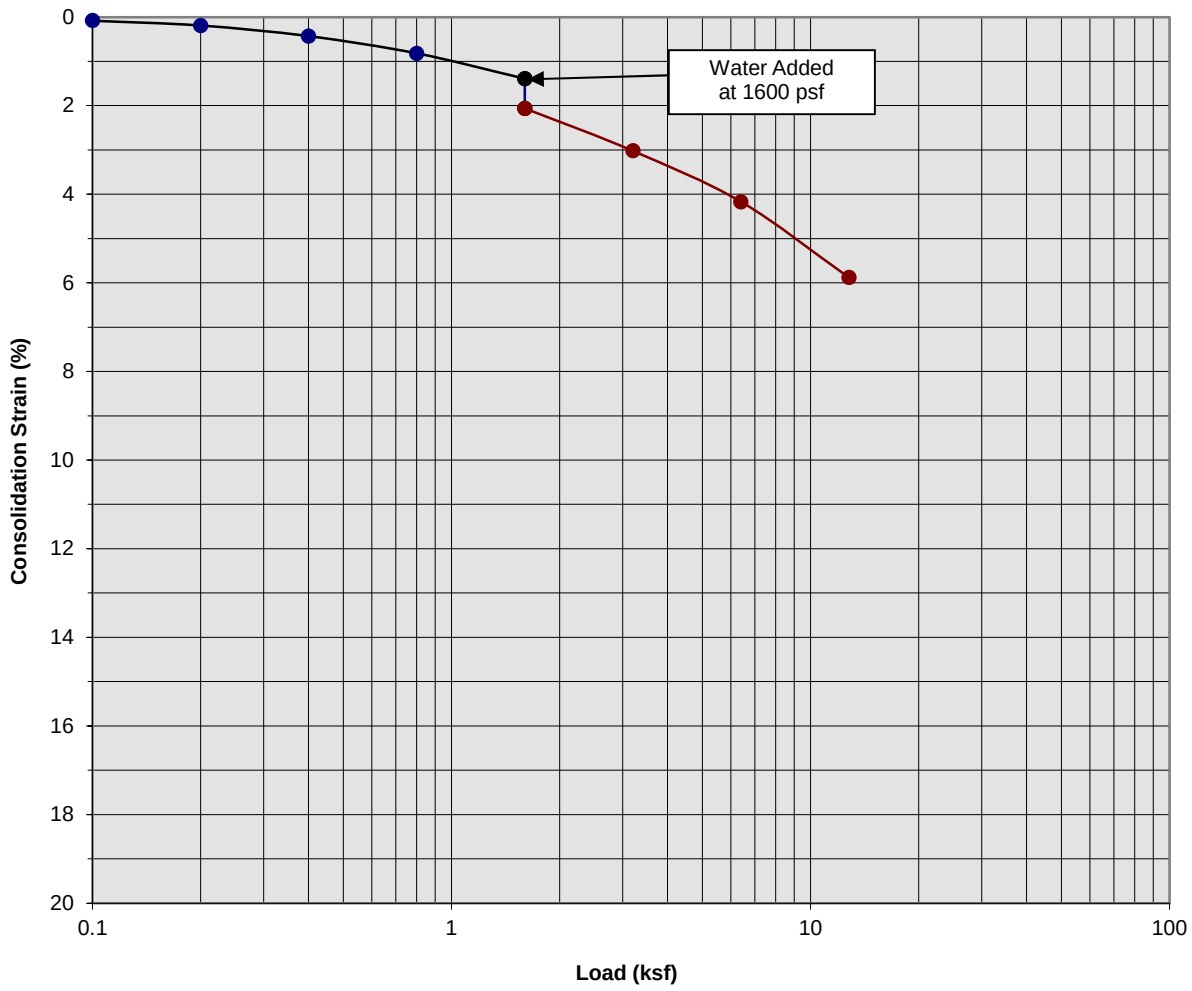
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium Sand, trace Clay

Boring Number:	B-26	Initial Moisture Content (%)	13
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	7 to 8	Initial Dry Density (pcf)	116.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.67

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PLATE C- 25

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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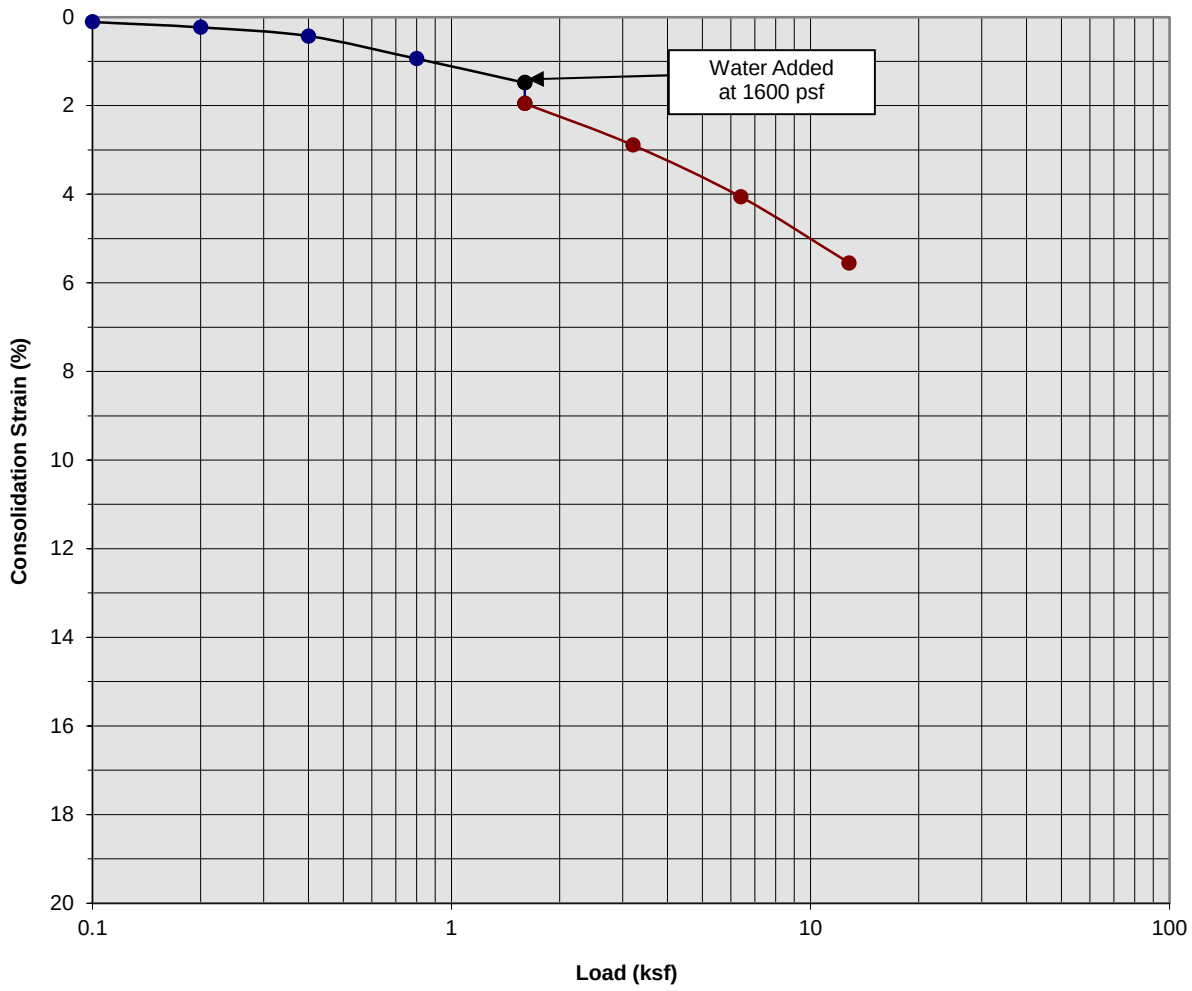
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium Sand, little Clay

Boring Number:	B-26	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	9 to 10	Initial Dry Density (pcf)	117.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.47

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Beaumont, California
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PLATE C- 26

SoCalGeo
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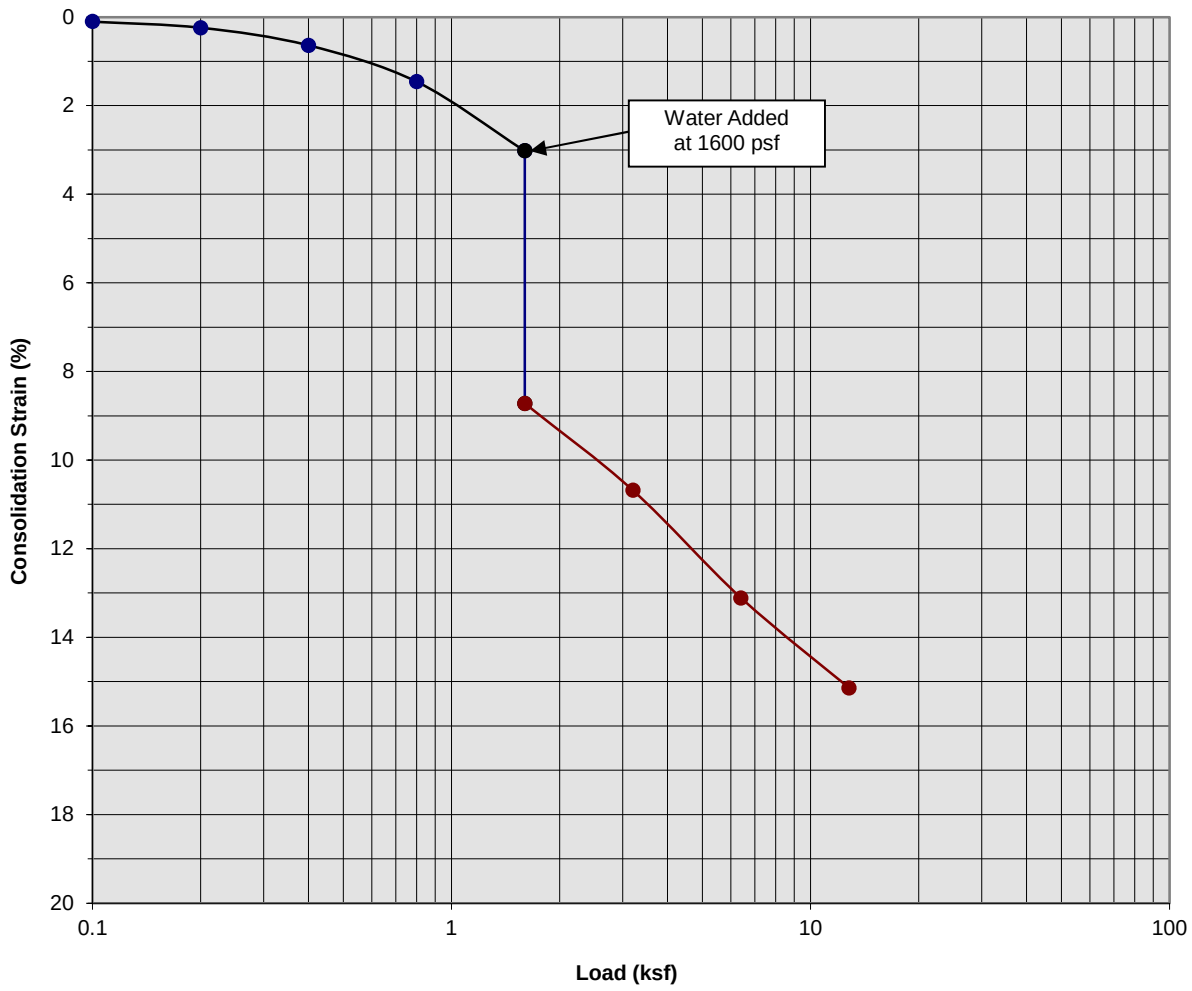
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand

Boring Number:	B-39	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	4 to 5	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.70

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PLATE C- 27

SoCalGeo
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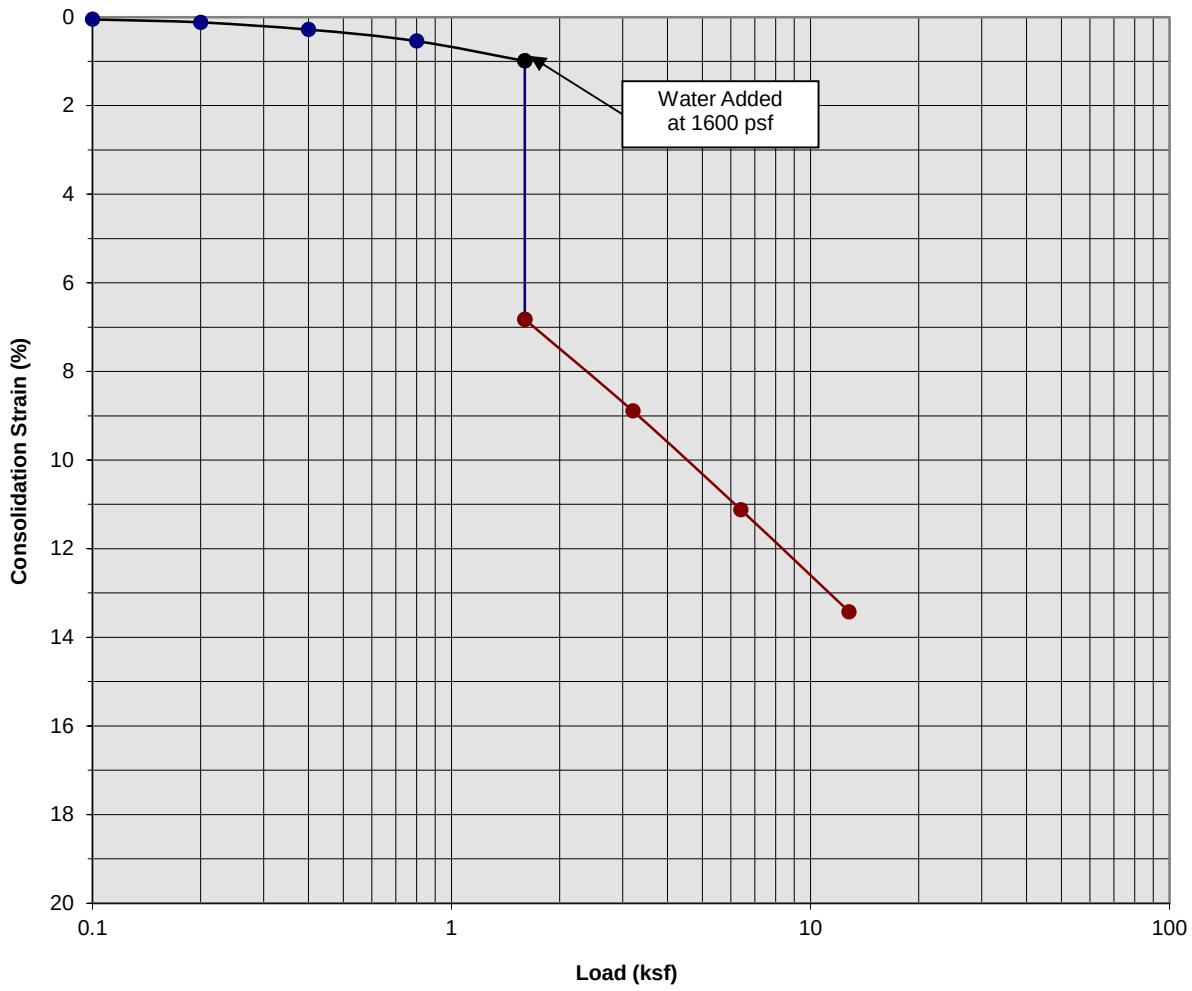
Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.83

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PLATE C- 28

SoCalGeo
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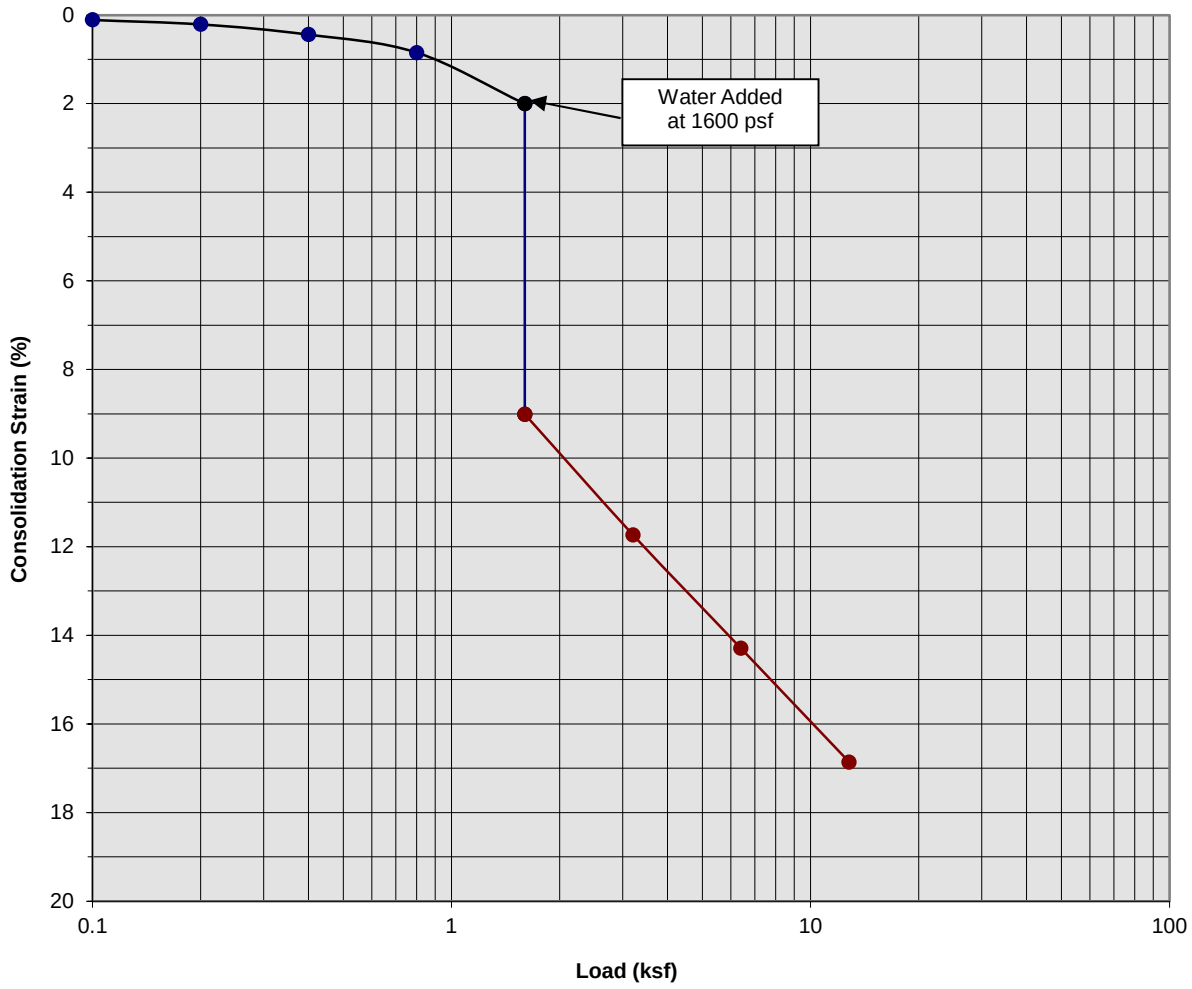
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.01

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PLATE C- 29

SoCalGeo
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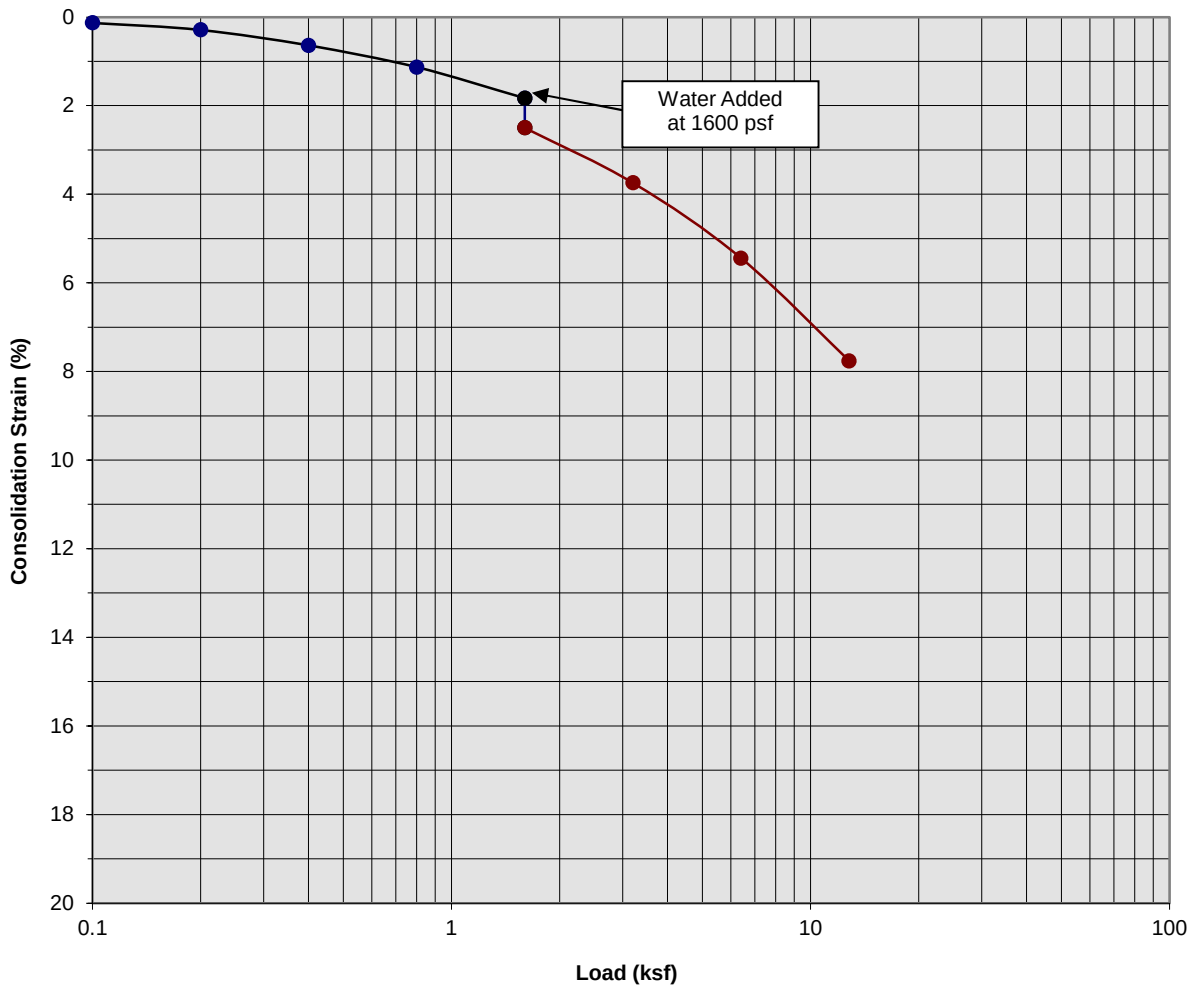
Consolidation/Collapse Test Results



Classification: Gray Brown fine Sand, trace medium to coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	19 to 20	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.67

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PLATE C- 30

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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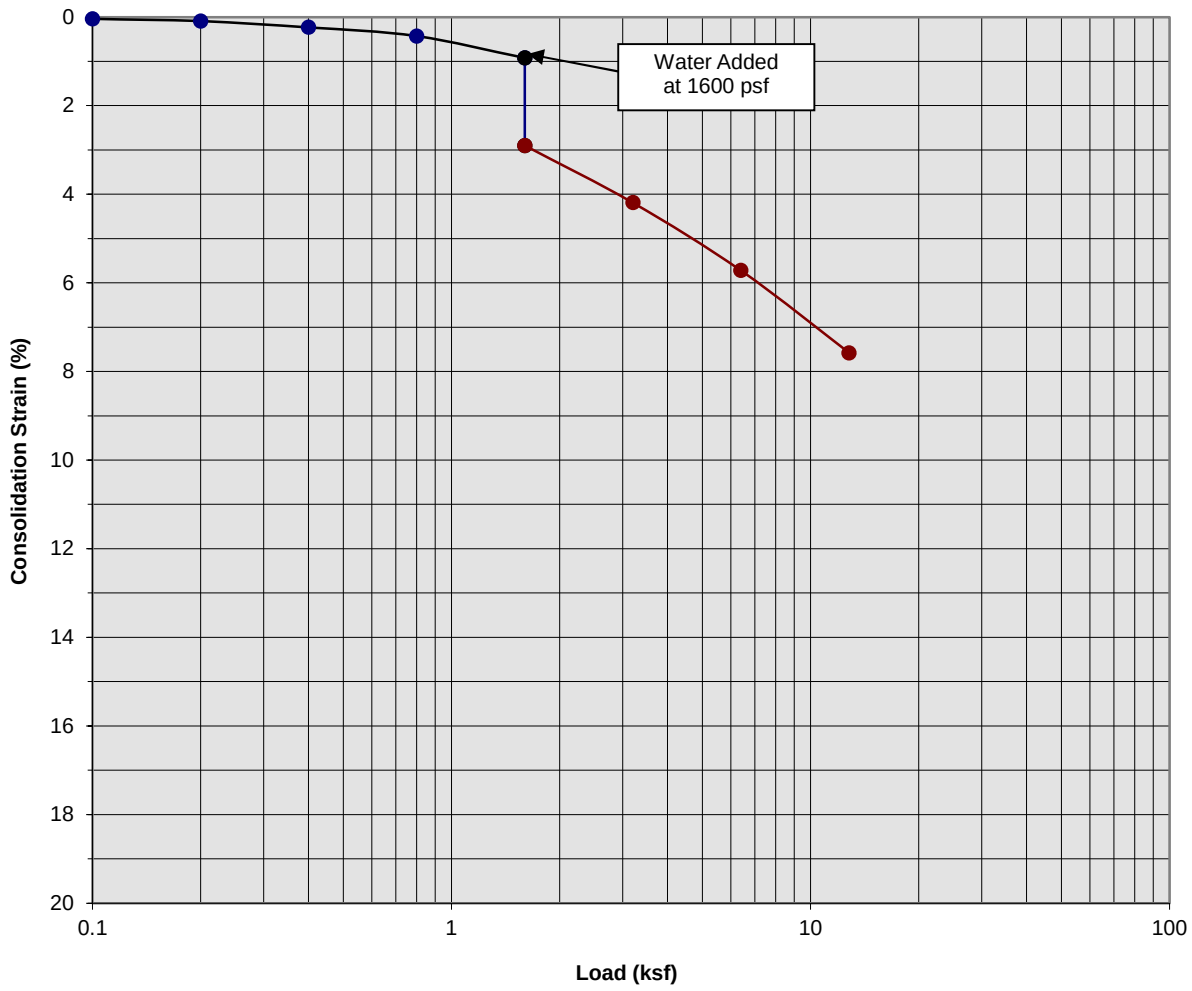
Consolidation/Collapse Test Results



Classification: FILL: Brown Silty fine Sand, trace medium to coarse Sand

Boring Number:	B-41	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	1 to 2	Initial Dry Density (pcf)	126.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	136.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.98

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PLATE C- 31

SoCalGeo
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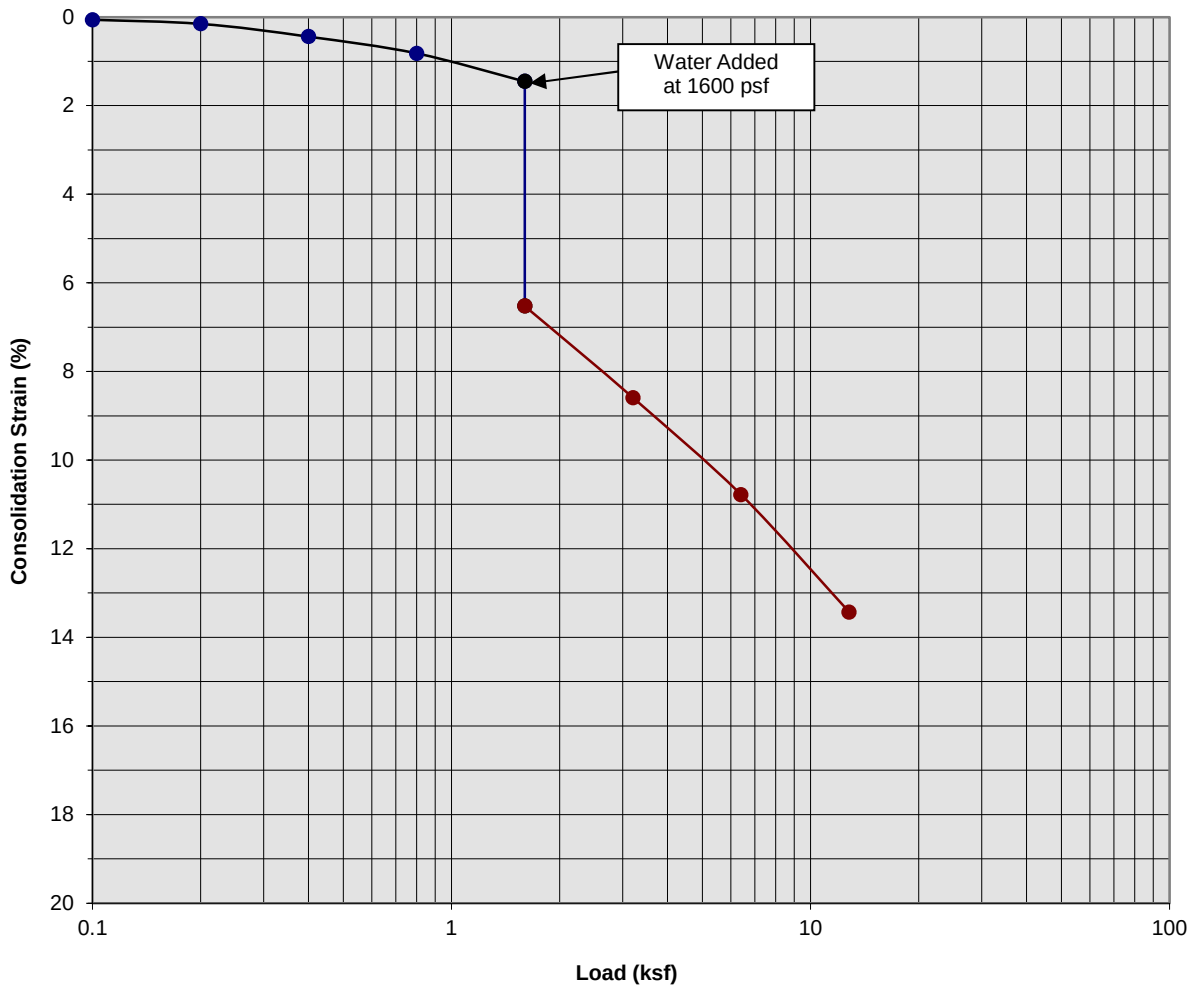
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand

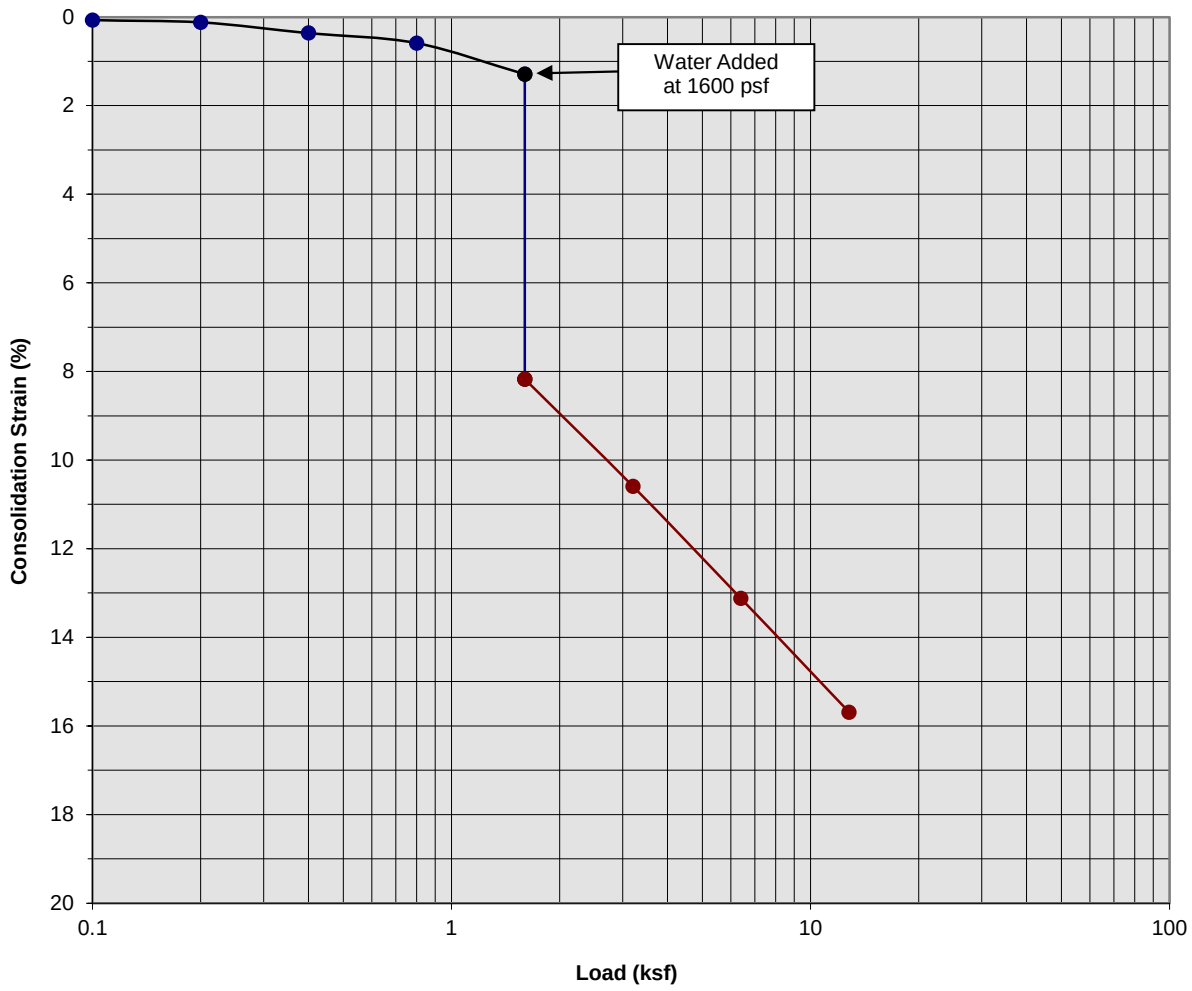
Boring Number:	B-41	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	4 to 5	Initial Dry Density (pcf)	102.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.07

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 32

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown to Red Brown Silty fine to coarse Sand, trace fine Gravel

Boring Number:	B-41	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	101.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.88

Proposed E-Commerce Development
Beaumont, California
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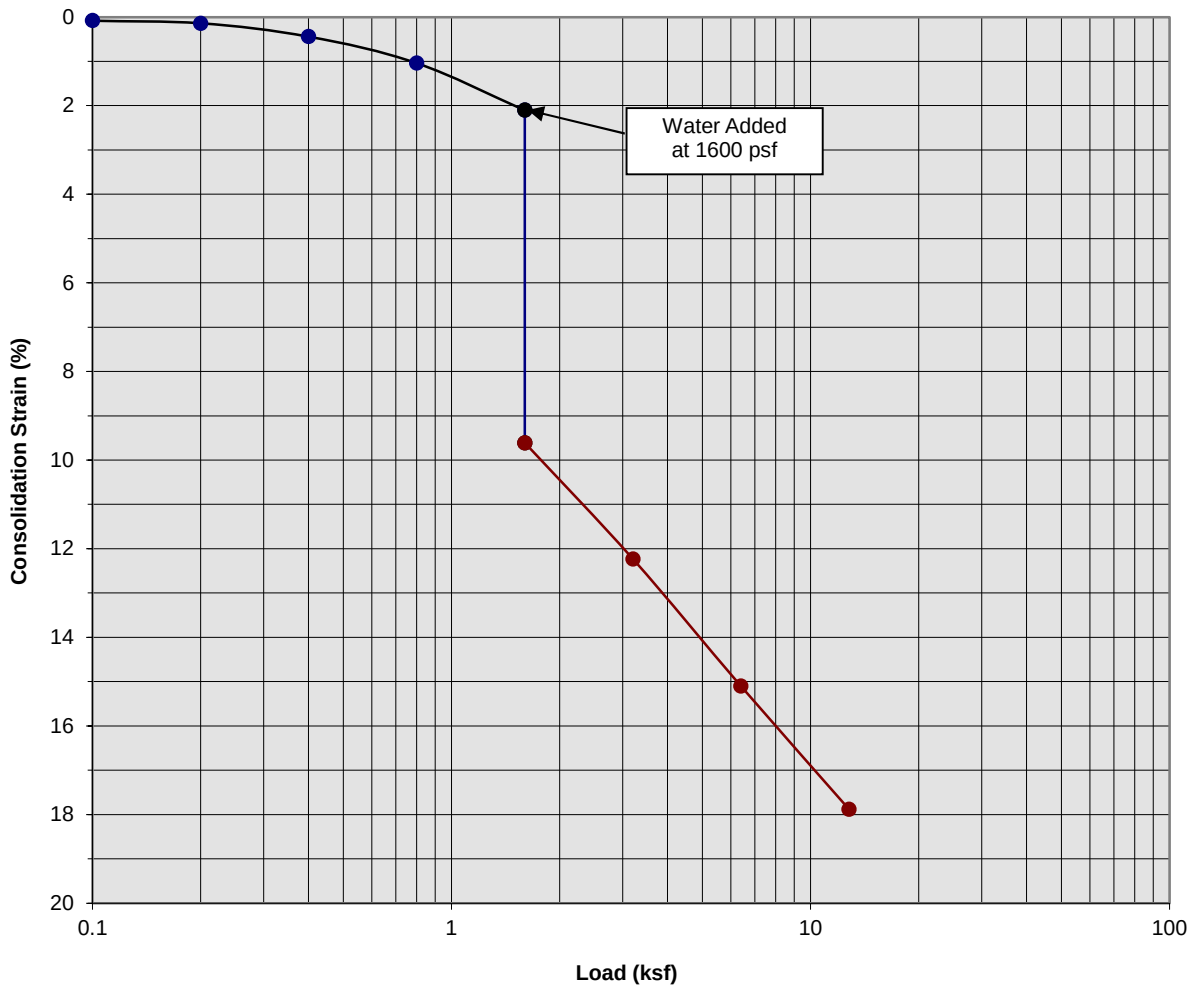
PLATE C- 33

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace Clay, trace medium to coarse Sand

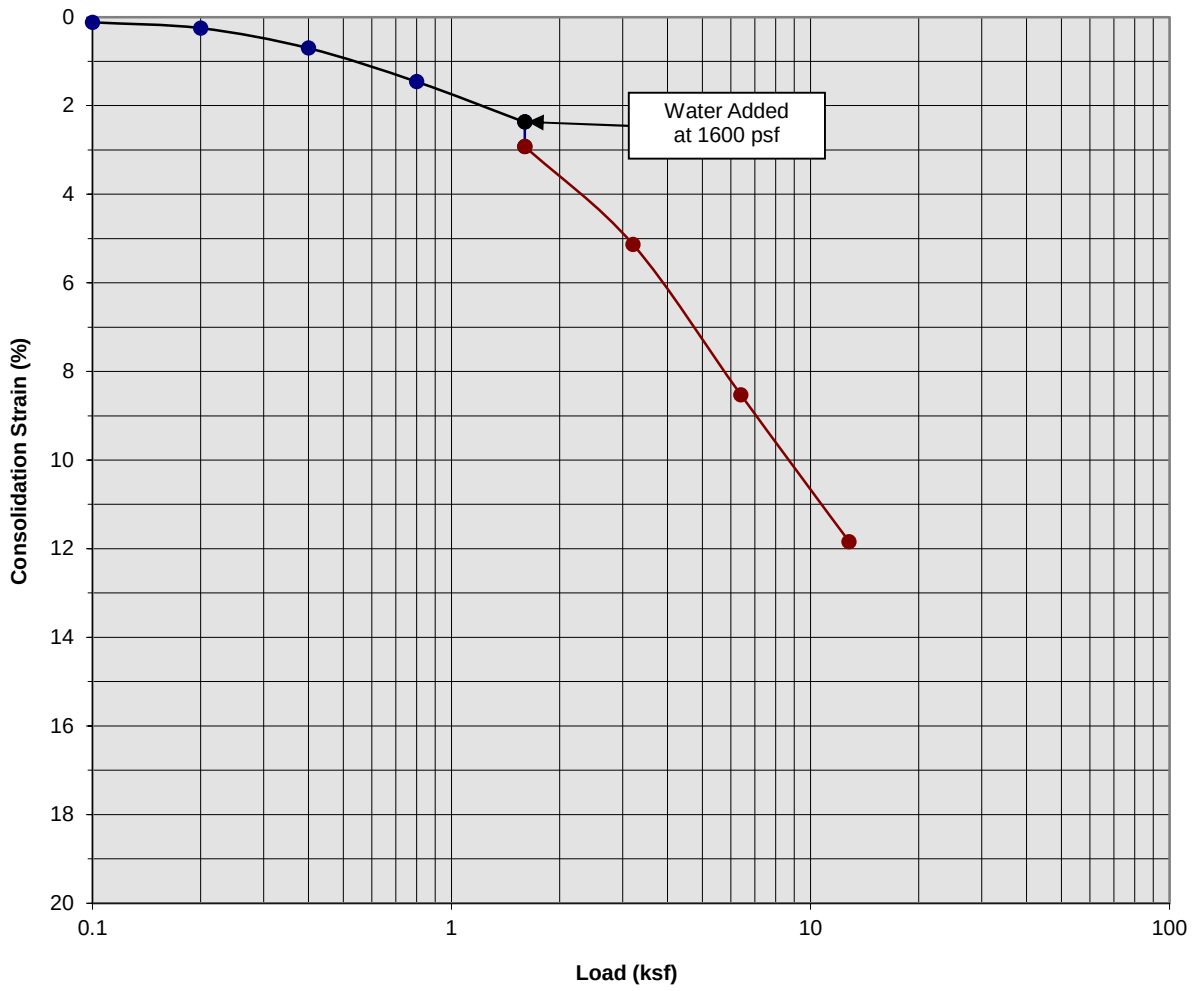
Boring Number:	B-41	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	14 to 15	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.51

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 34

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

Boring Number:	B-42	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	1 to 2	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.55

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Beaumont, California
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PLATE C- 35

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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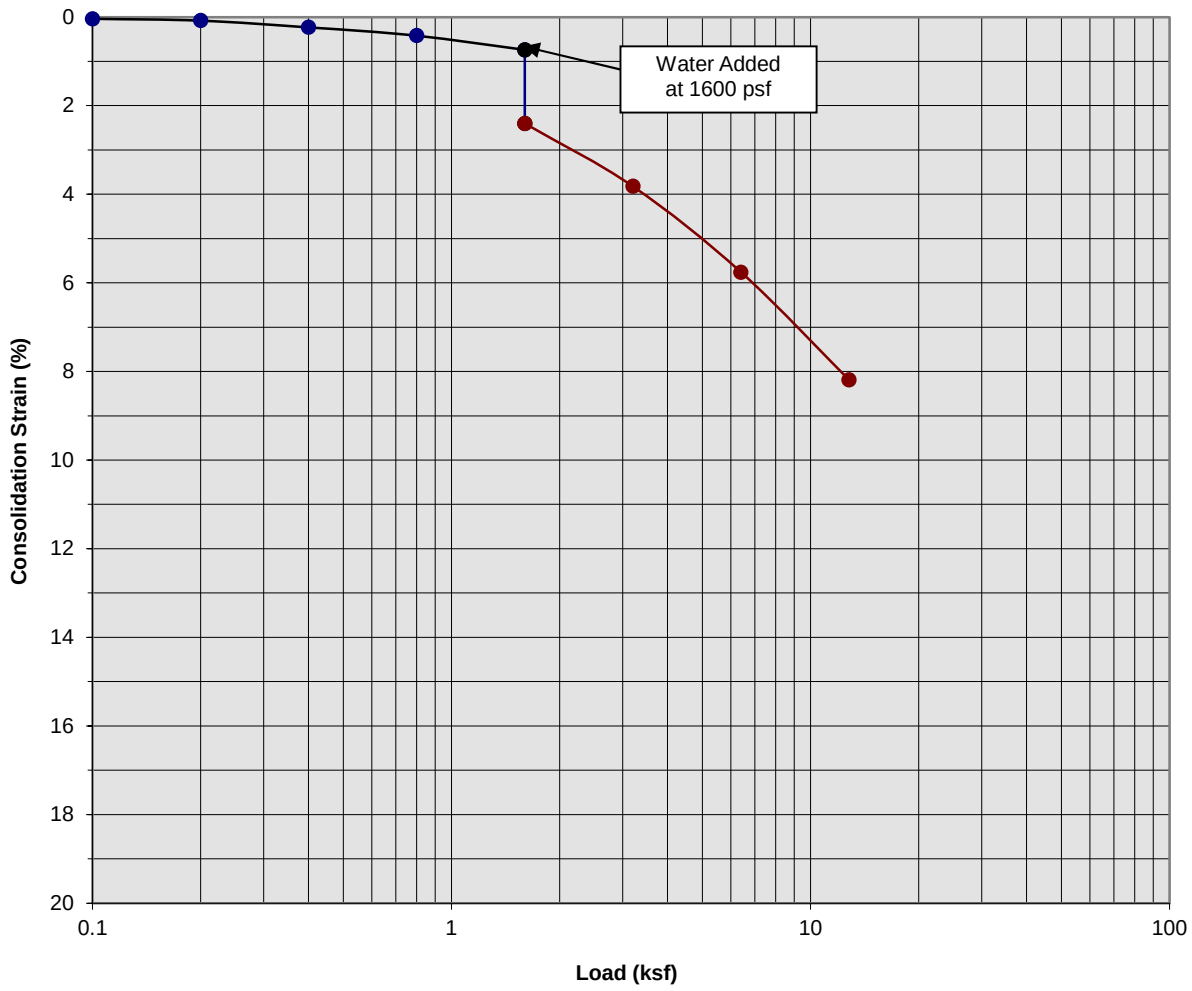
Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

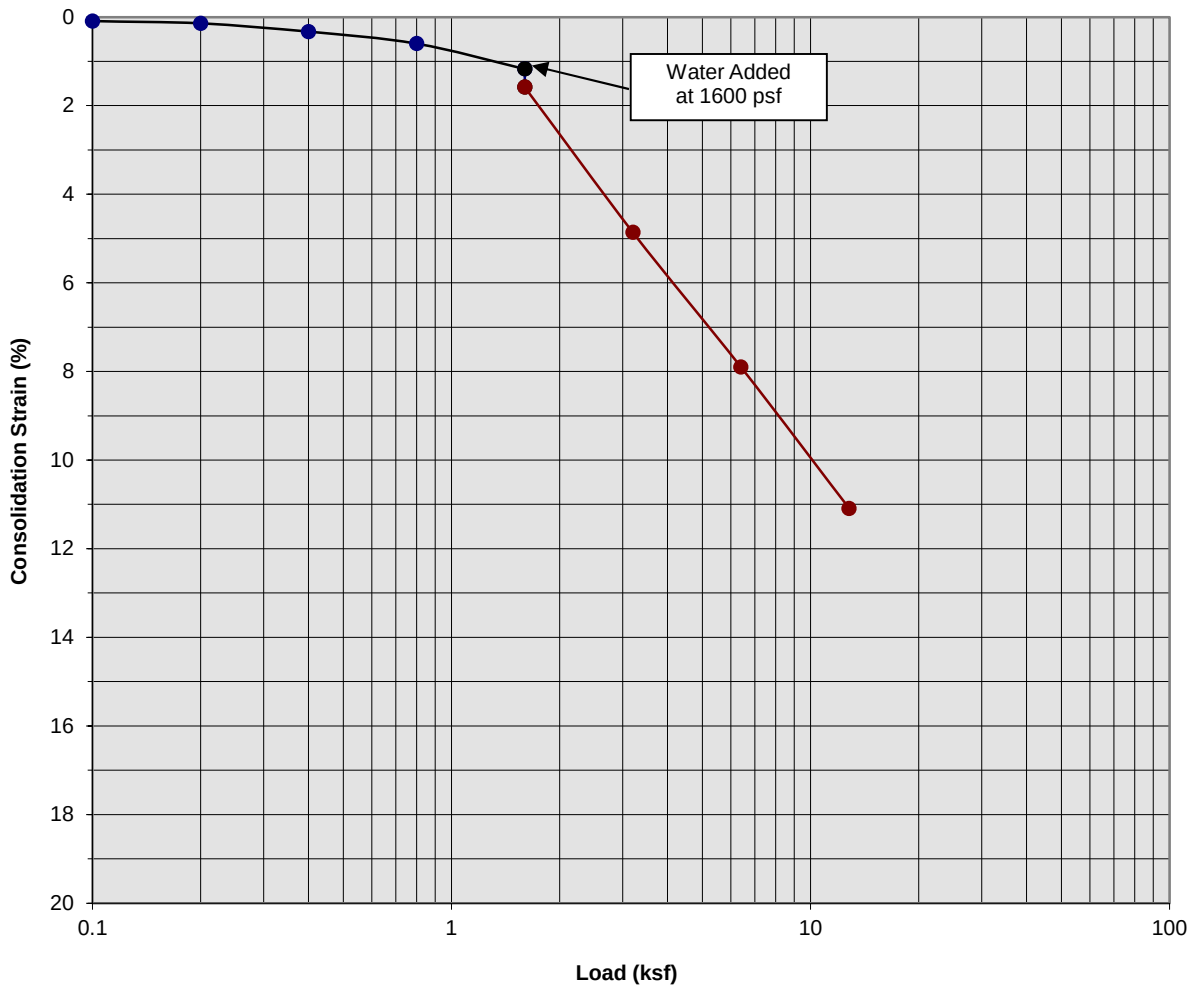
Boring Number:	B-42	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	4 to 5	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.66

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 36

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

Boring Number:	B-42	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	9 to 10	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.41

Proposed E-Commerce Development
Beaumont, California
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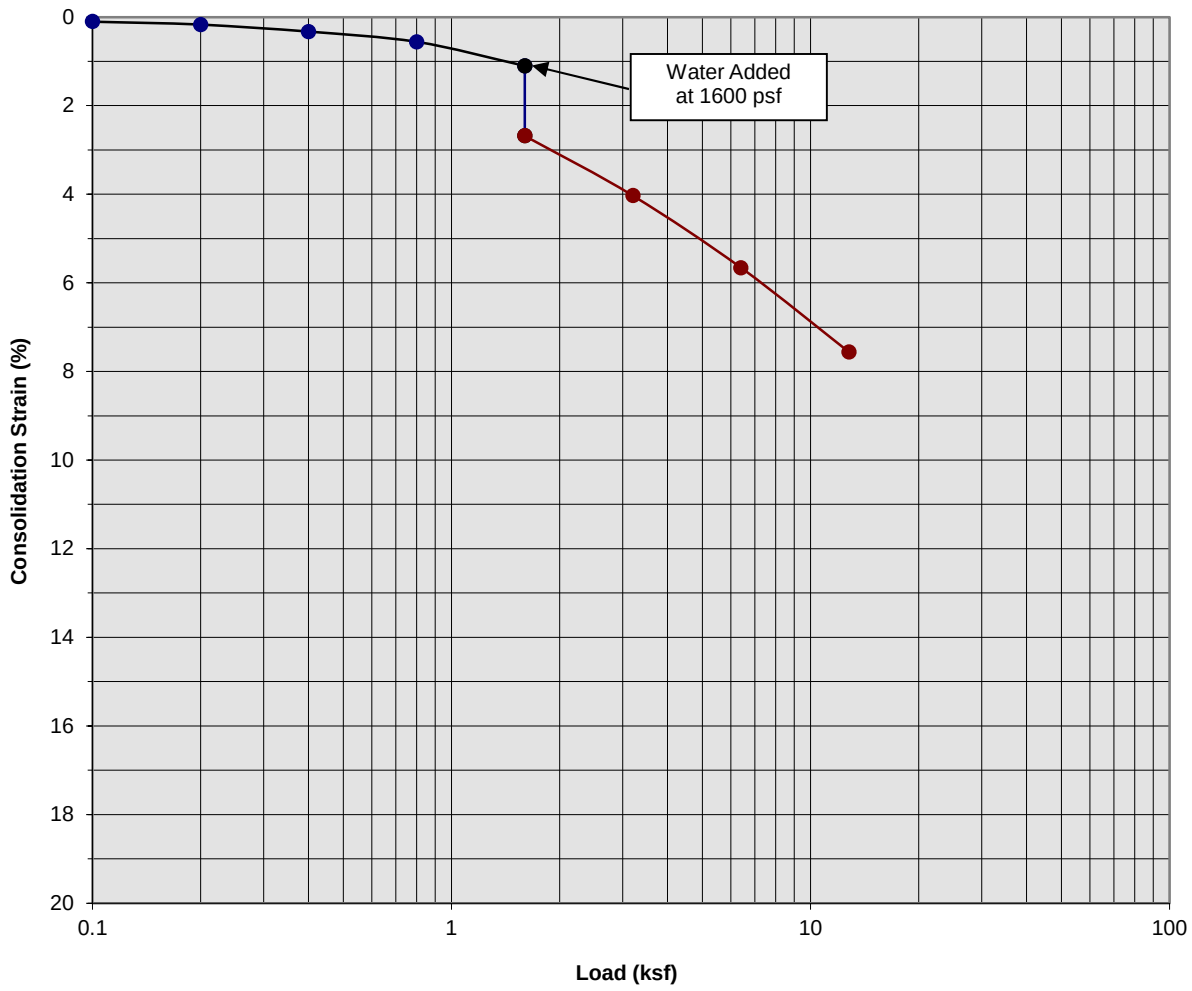
PLATE C- 37

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand

Boring Number:	B-42	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	109.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.58

Proposed E-Commerce Development
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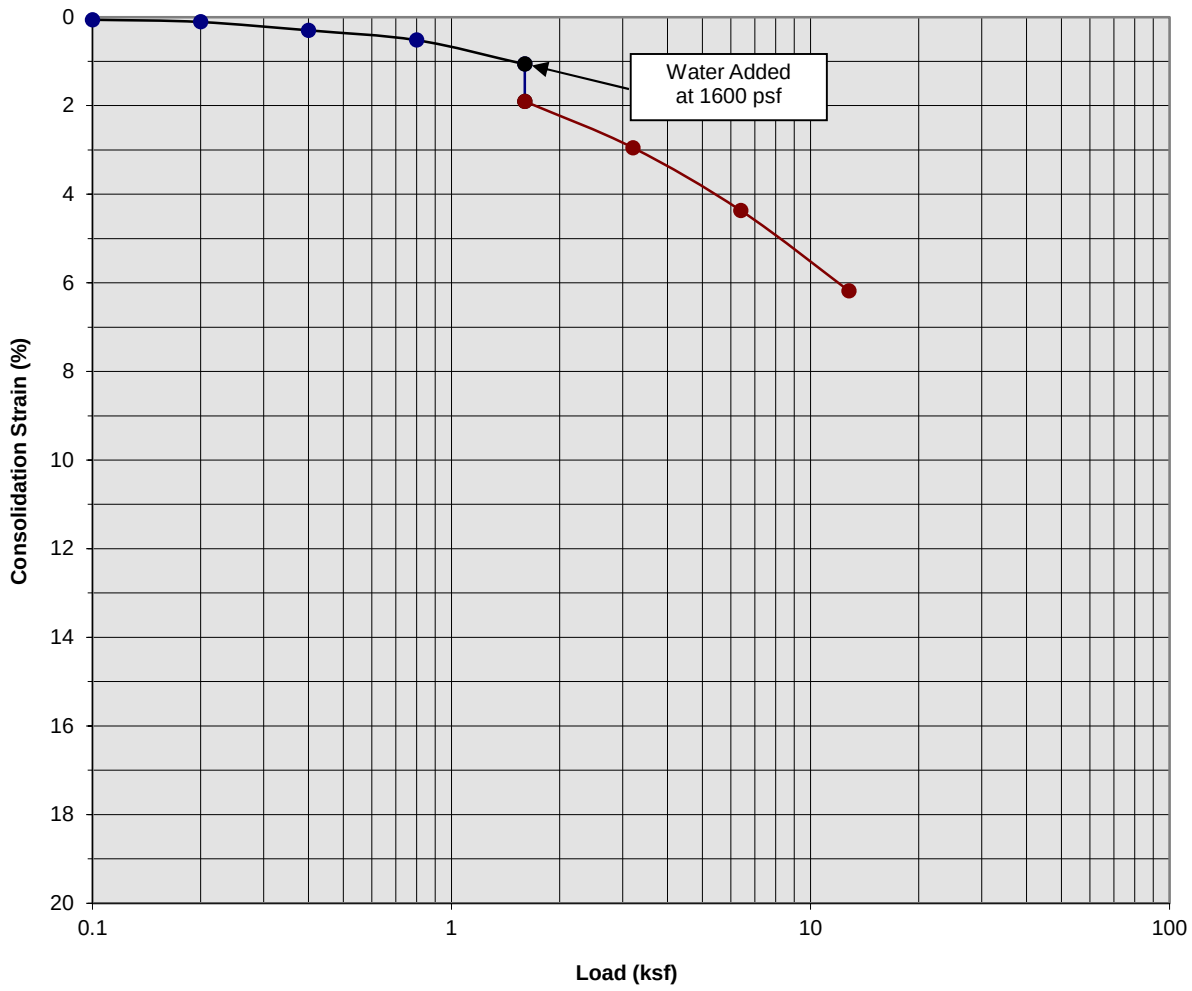
PLATE C- 38

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Gray Brown fine Sand, trace Silt

Boring Number:	B-44	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	46 to 47	Initial Dry Density (pcf)	107.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	114.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.84

Proposed E-Commerce Development
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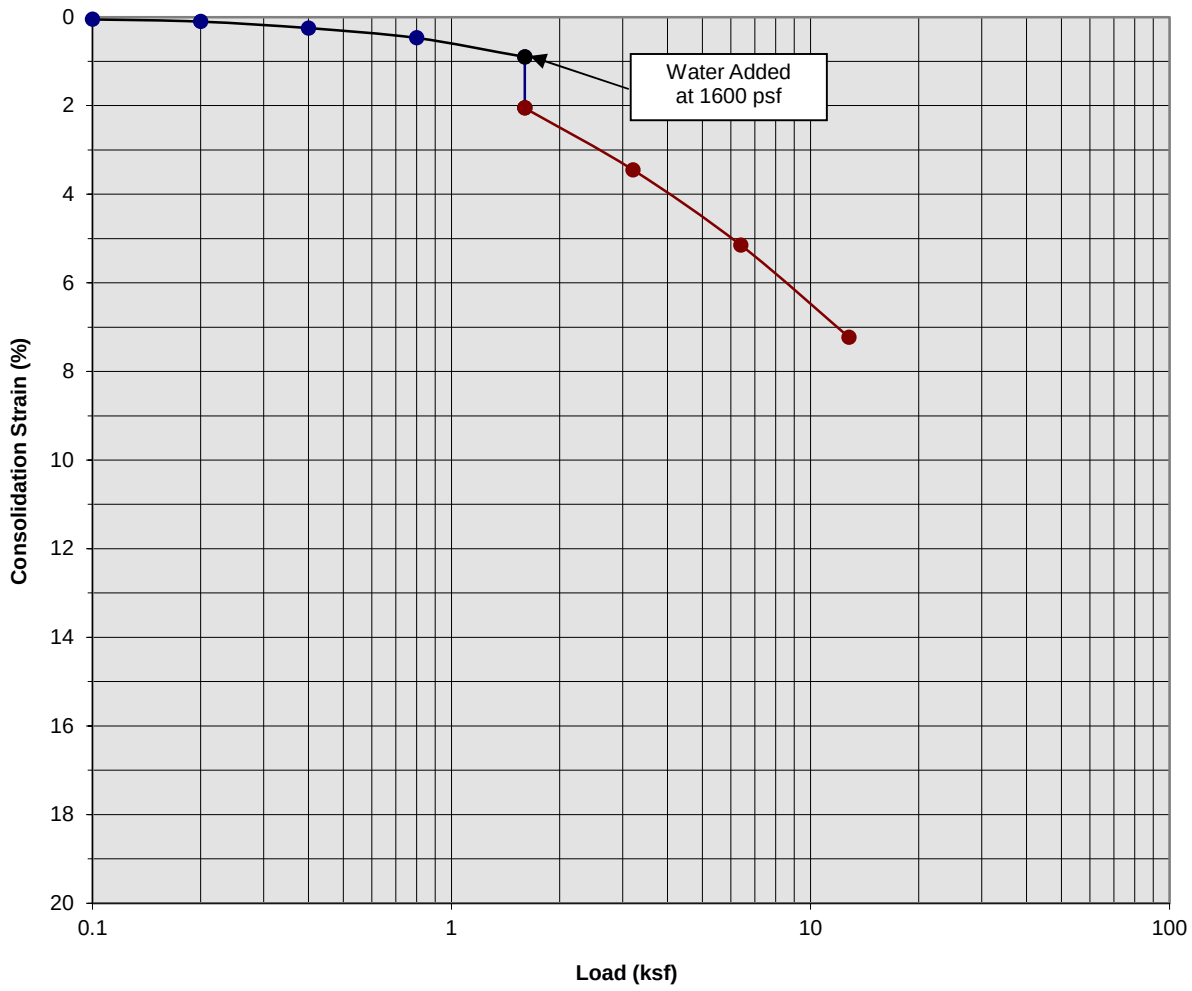
PLATE C- 39

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine to coarse Gravel

Boring Number:	B-44	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	48 to 49	Initial Dry Density (pcf)	121.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	130.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.15

Proposed E-Commerce Development
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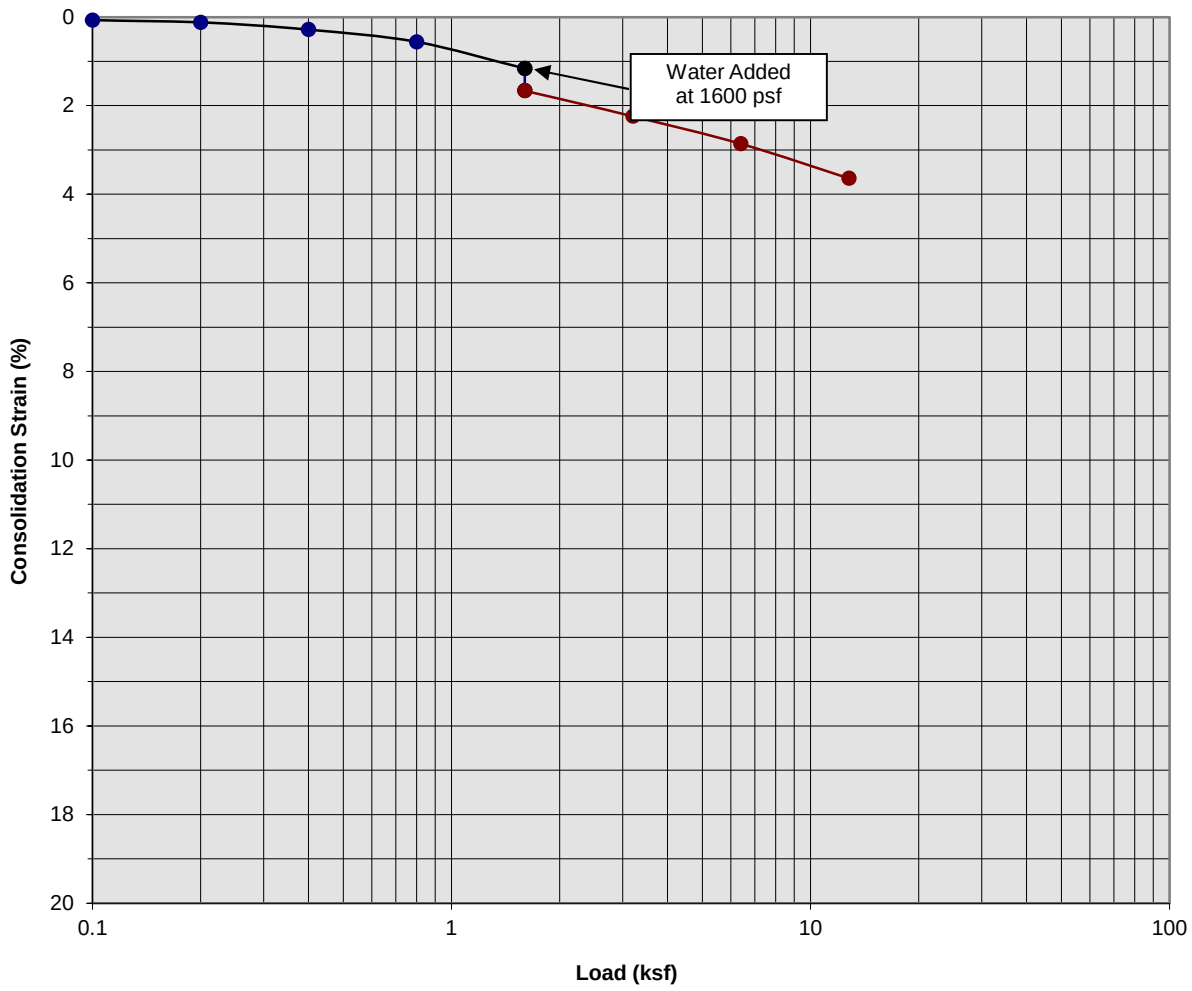
PLATE C- 40

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine to coarse Gravel

Boring Number:	B-44	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	50 to 51	Initial Dry Density (pcf)	110.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	114.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.50

Proposed E-Commerce Development
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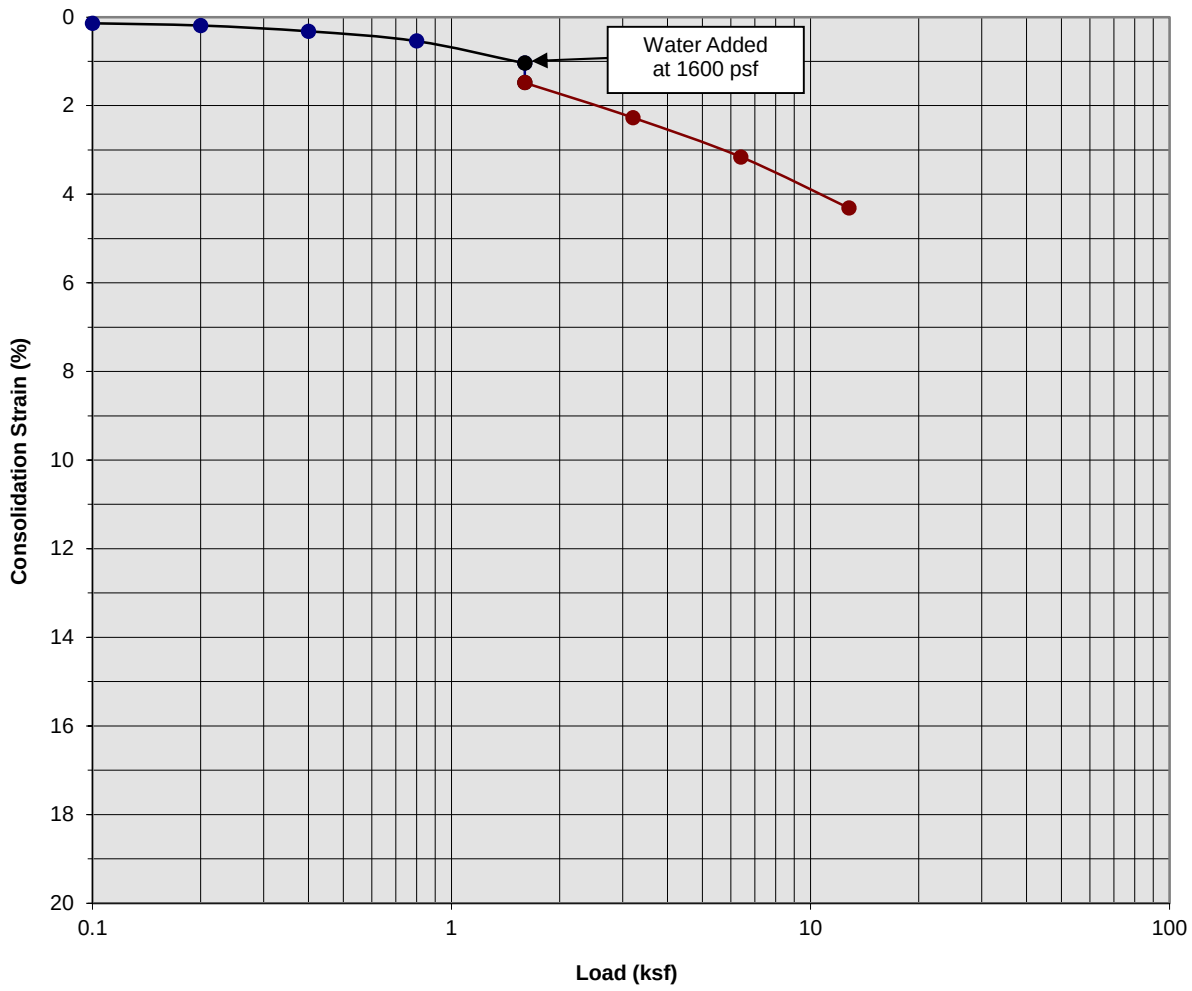
PLATE C- 41

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine Gravel

Boring Number:	B-44	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	52 to 53	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.44

Proposed E-Commerce Development
Beaumont, California
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PLATE C- 42

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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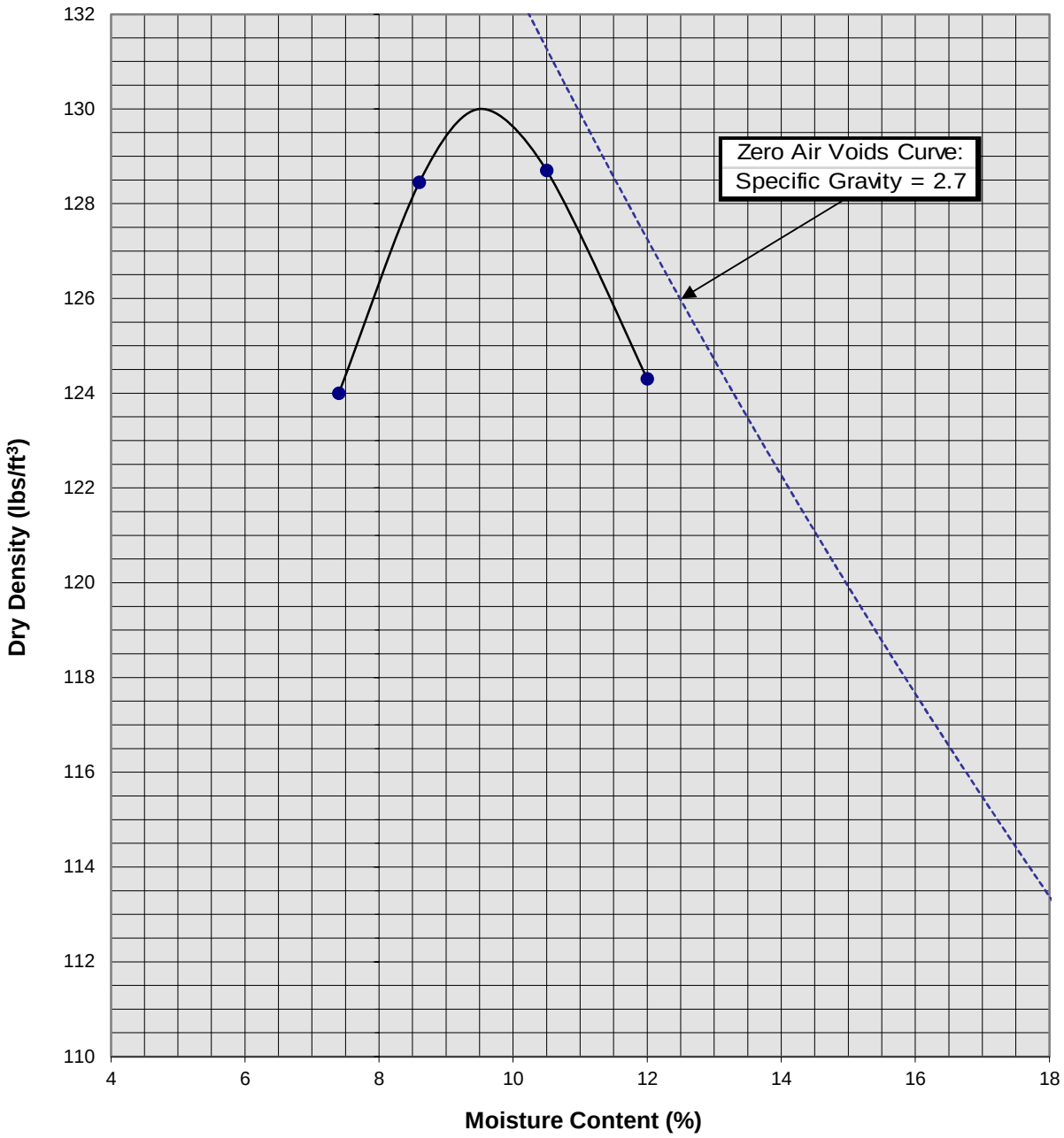
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-14 @ 0-5'
Optimum Moisture (%)	9.5
Maximum Dry Density (pcf)	130
Soil Classification	Brown fine Sandy Clay, trace medium to coarse Sand, little Silt

Proposed E-Commerce Develoment
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PLATE C-43

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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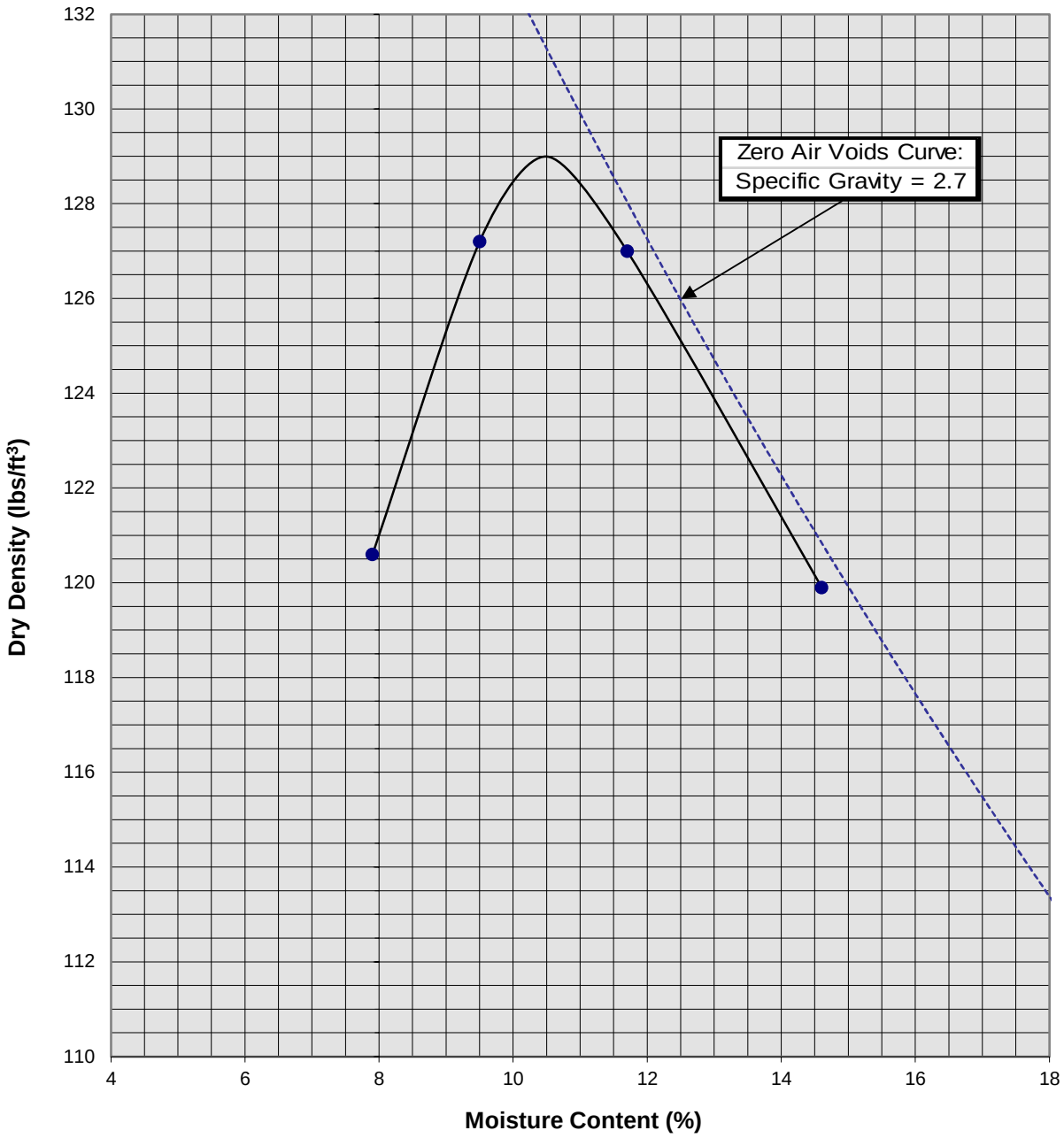
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-17 @ 0-5'
Optimum Moisture (%)	10.5
Maximum Dry Density (pcf)	129
Soil Classification	Dark Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel

Proposed E-Commerce Develoment
Beaumont, California
Project No. 21G133-1

PLATE C-44

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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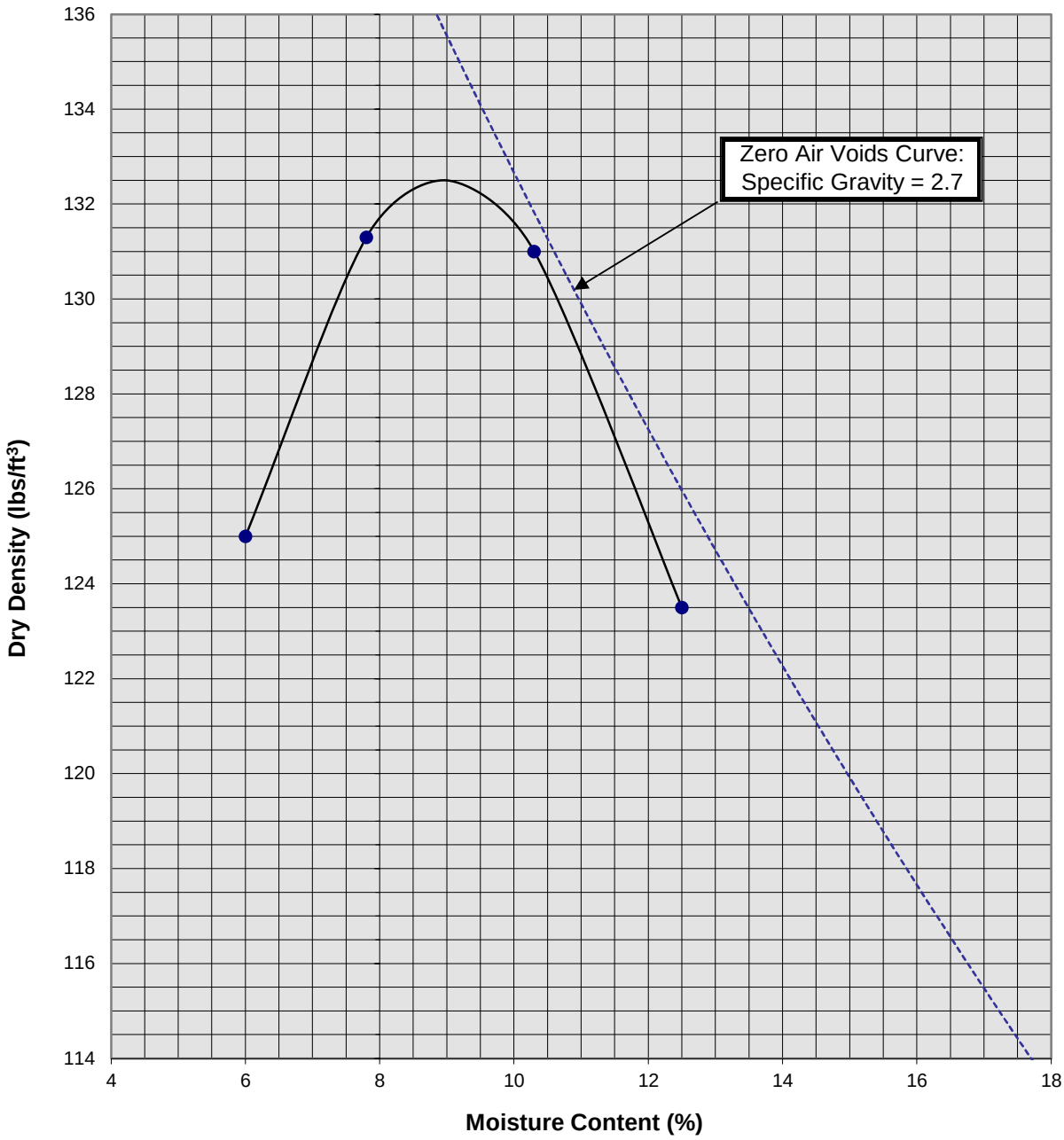
Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-25 @ 0-5'
Optimum Moisture (%)	9
Maximum Dry Density (pcf)	132.5
Soil Classification	Red Brown Clayey fine Sand, trace medium Sand, little Silt

Proposed E-Commerce Develoment
Beaumont, California
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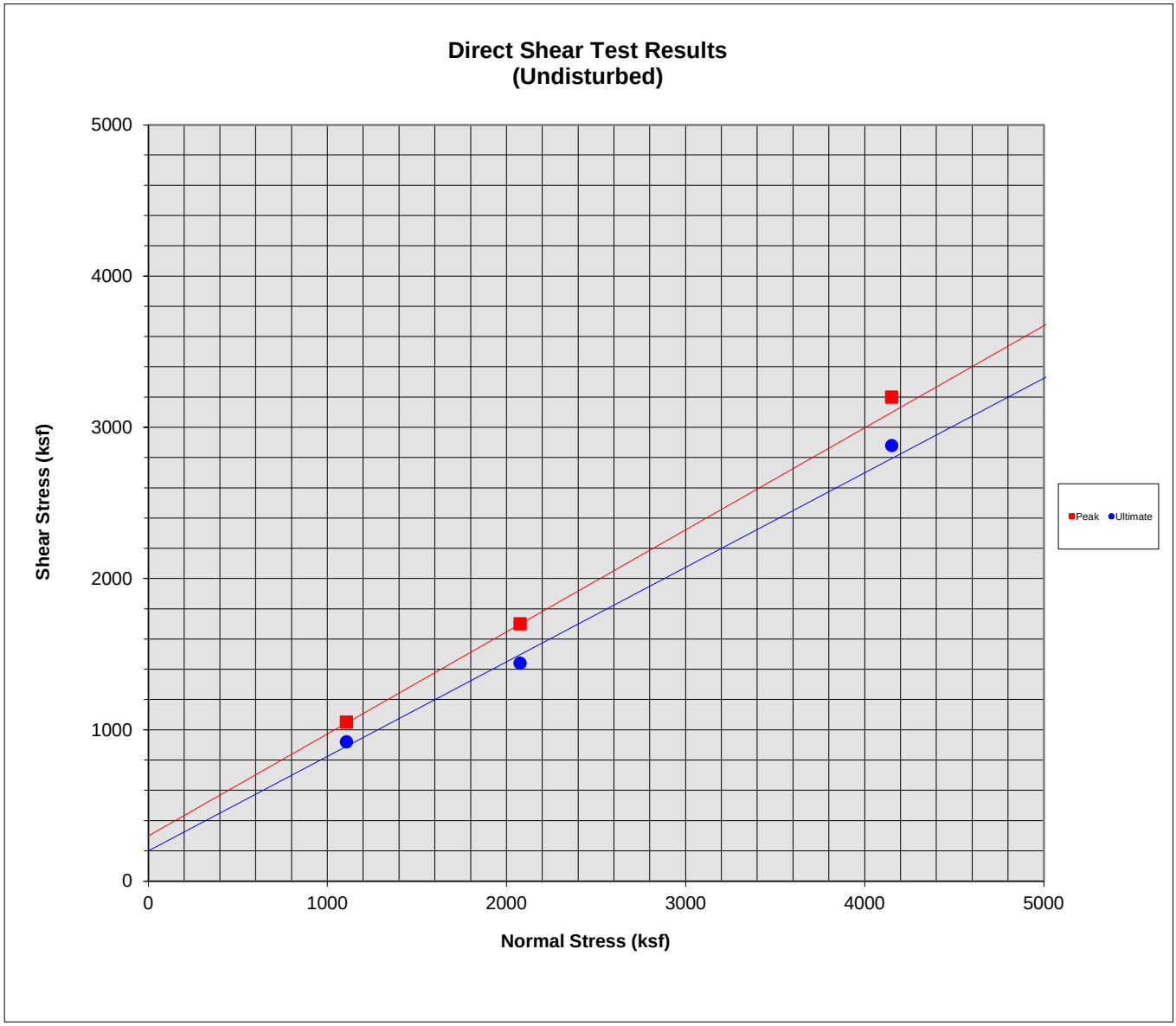
PLATE C-45

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation



Sample Description: B-22 @ 5 to 6 feet

Classification: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Sample Data	
Initial Moisture Content	5.0
Final Moisture Content	16.0
Initial Dry Density	112.0
Final Dry Density	---
Specimen Diameter (in)	2.4
Specimen Thickness (in)	1.0

Test Results		
	Peak	Ultimate
ϕ (°)	34.0	32.0
C (psf)	300	200

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133

PLATE C-46

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

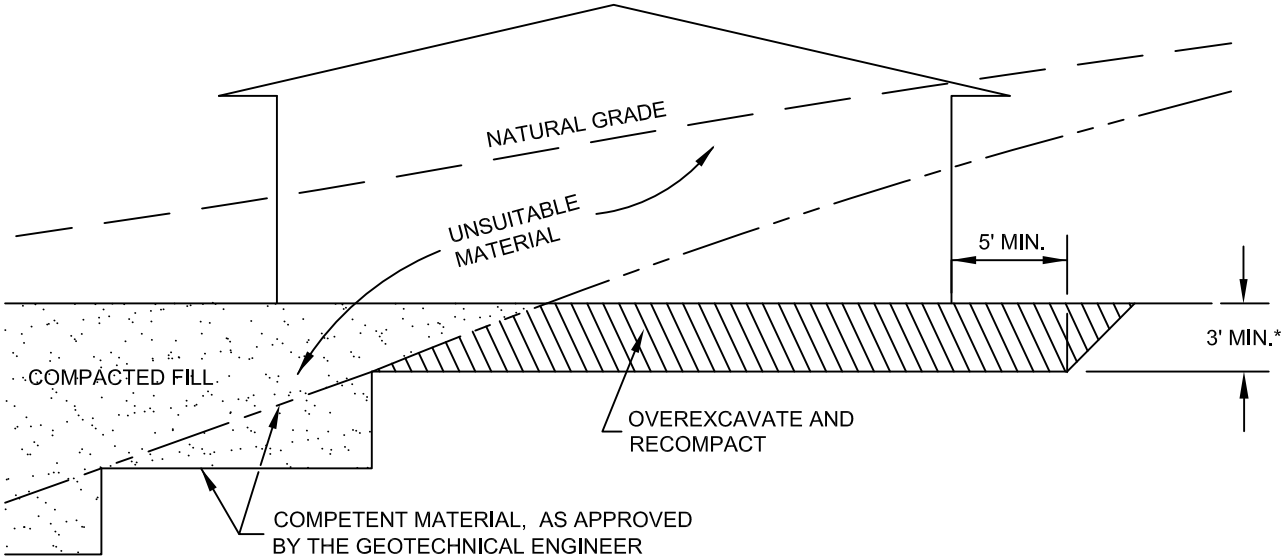
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

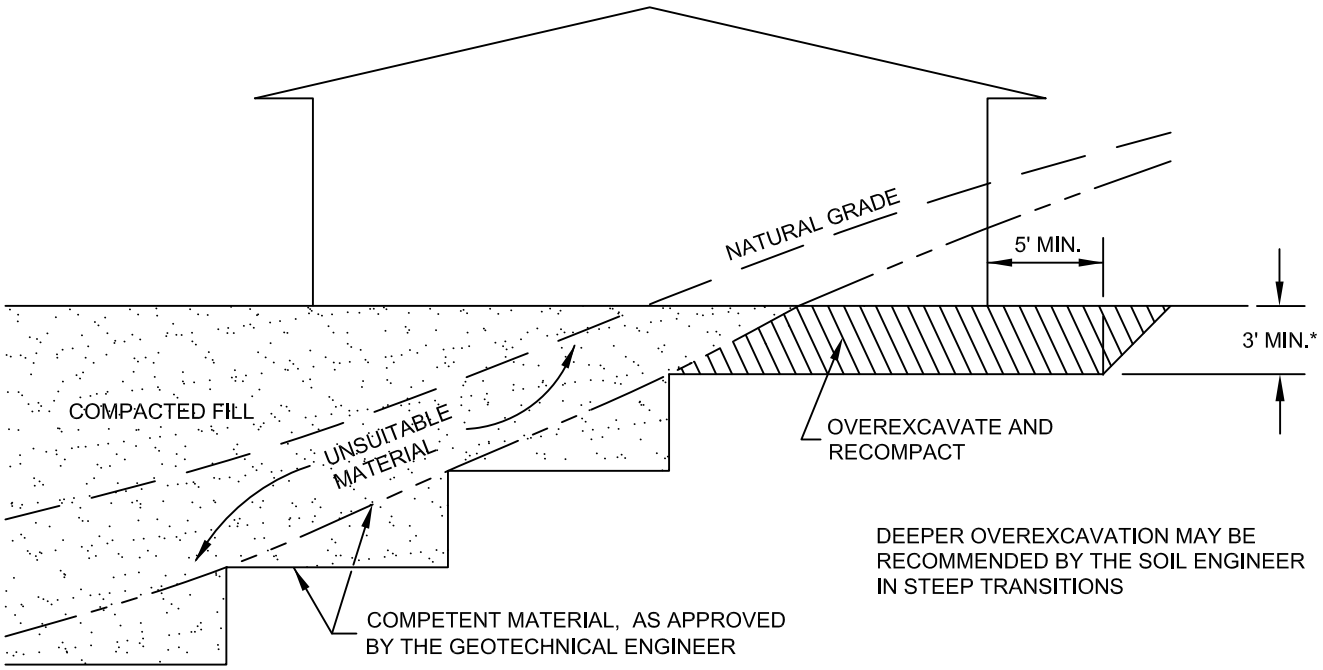
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo
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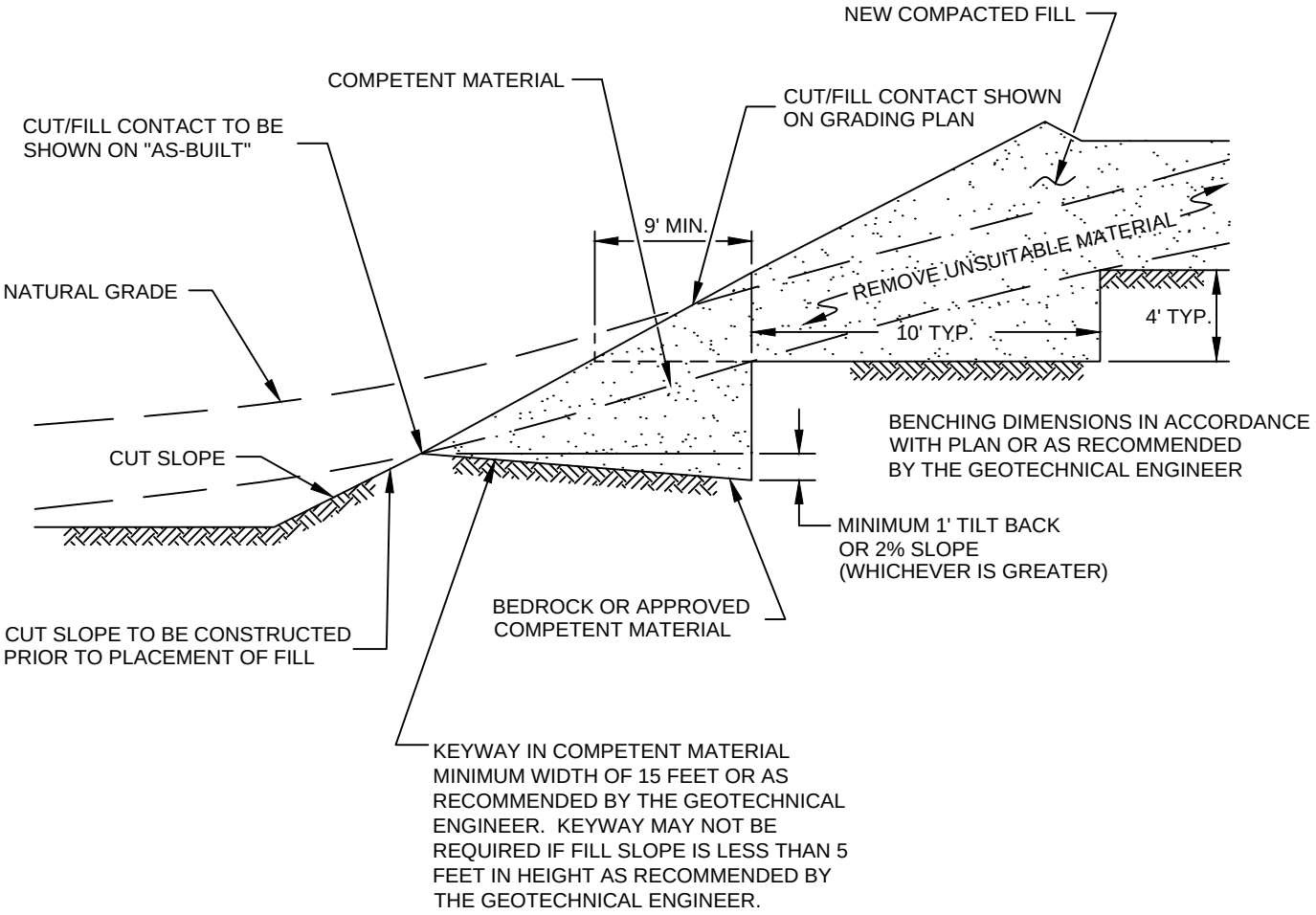


FILL ABOVE CUT SLOPE DETAIL

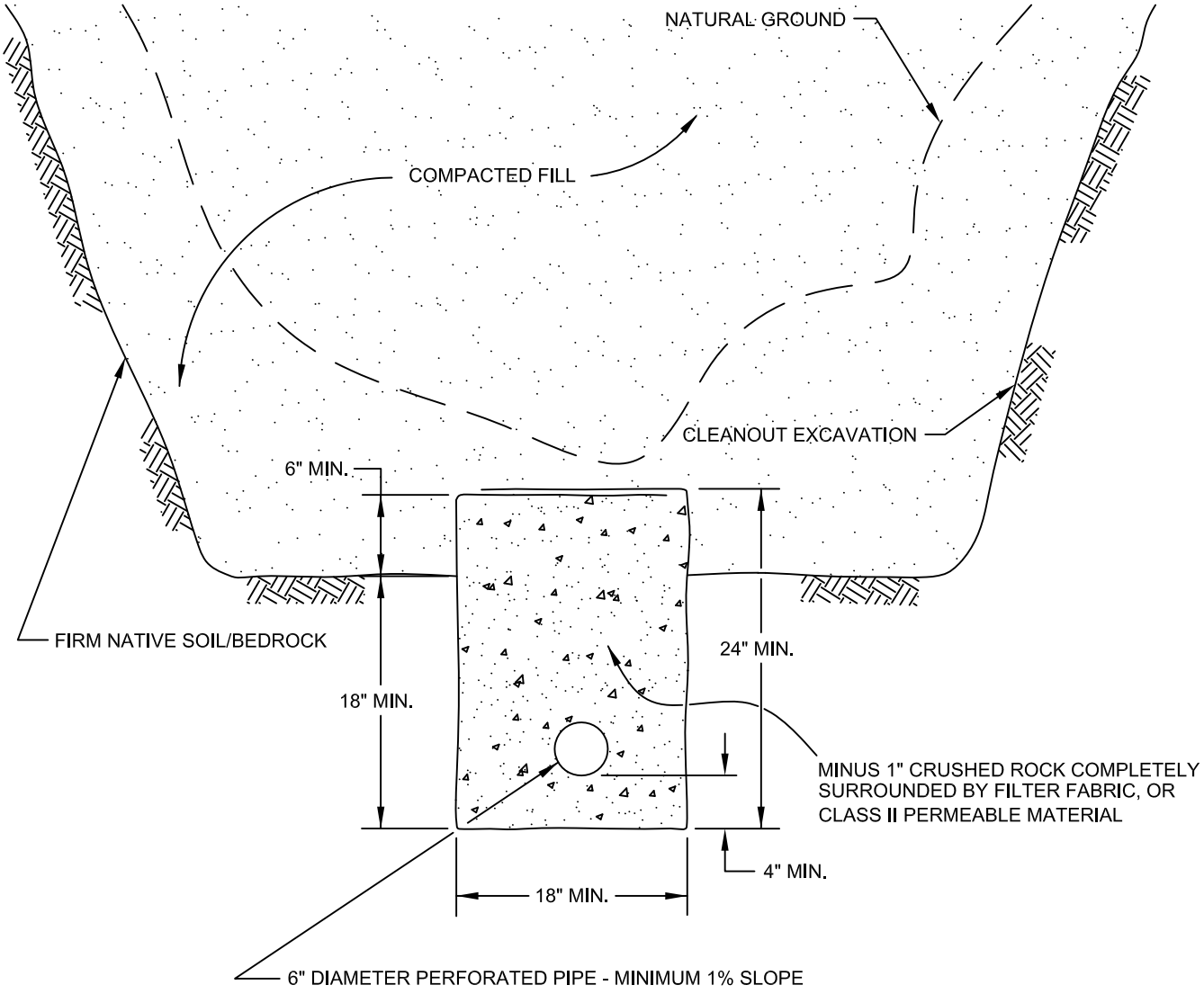
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

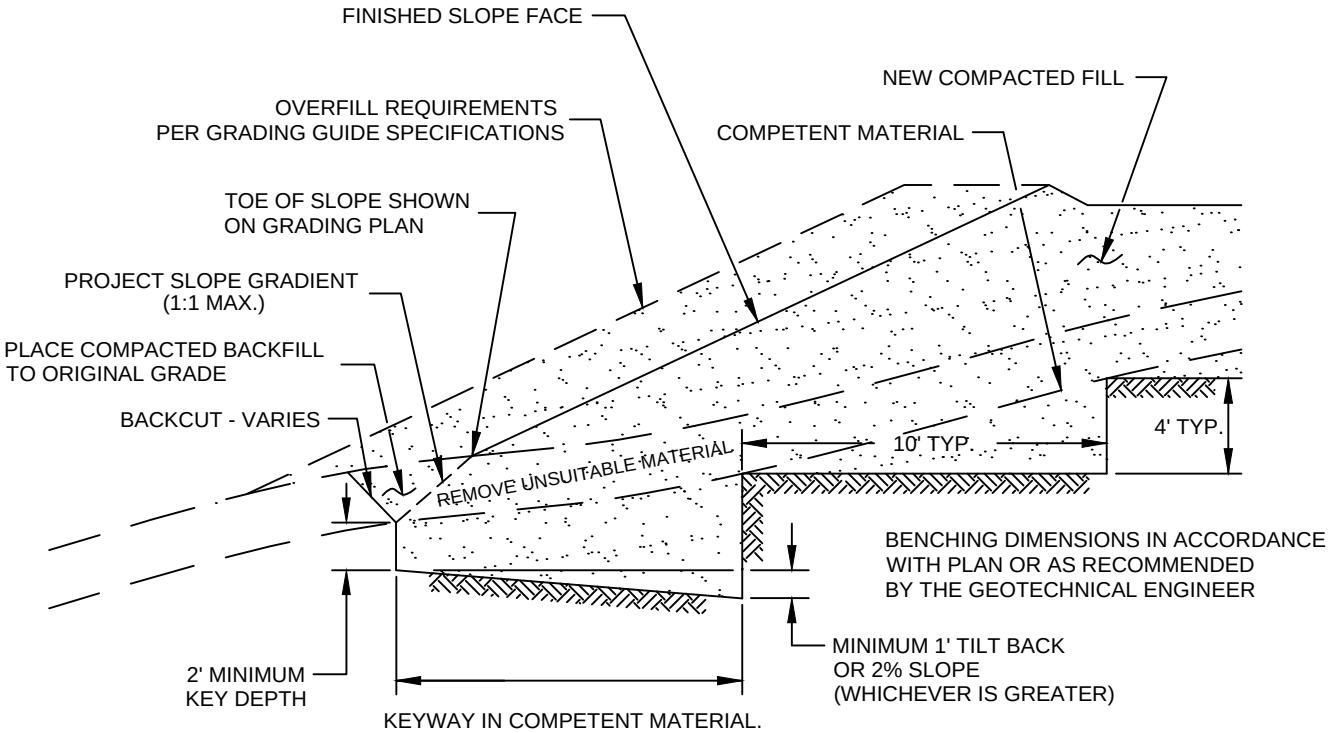
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED
WHEN NATURAL SLOPES ARE
EQUAL TO OR STEEPER THAN 5:1
OR WHEN RECOMMENDED BY
THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

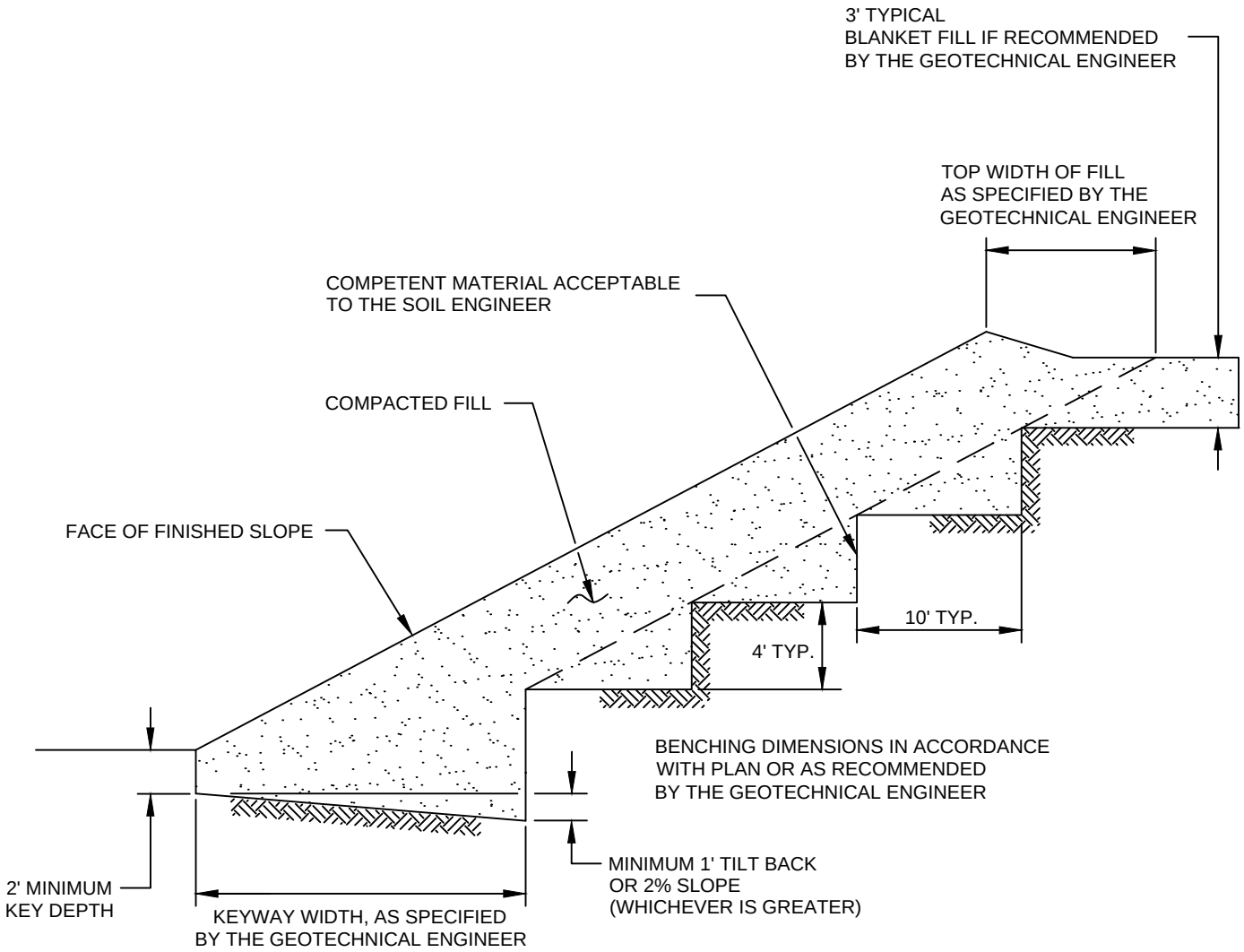
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN
CALIFORNIA
GEOTECHNICAL



STABILIZATION FILL DETAIL

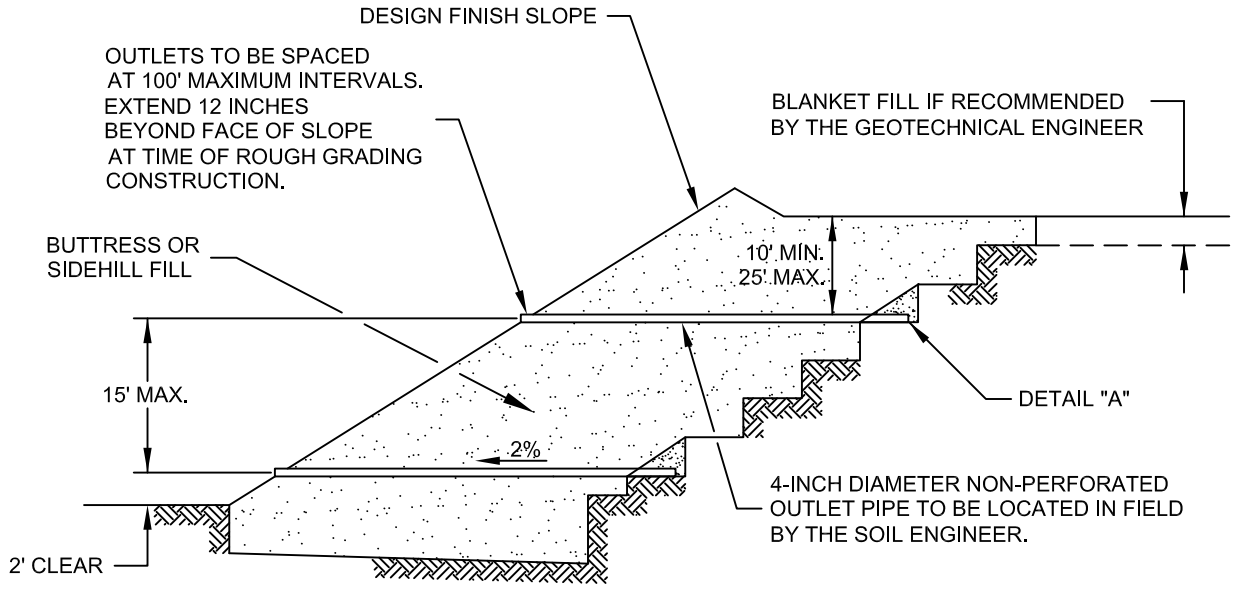
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



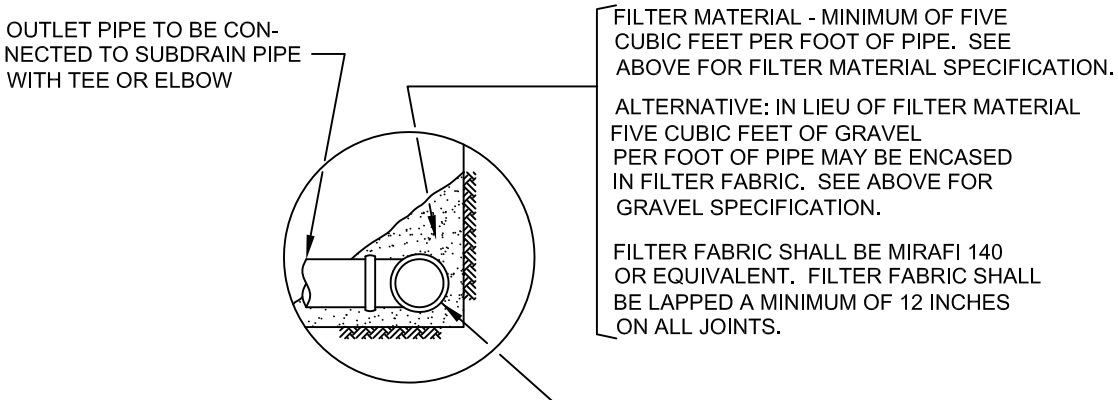
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

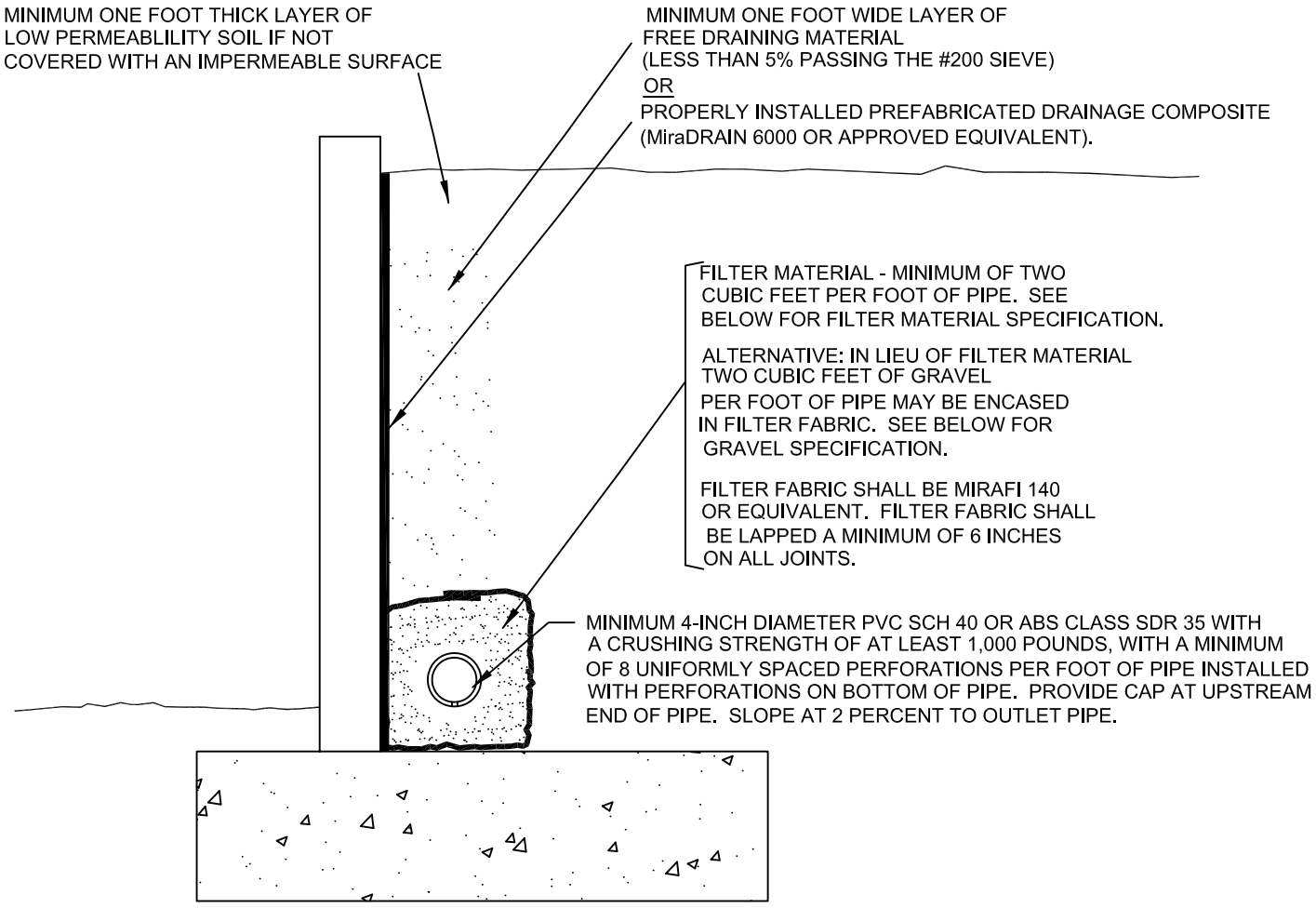
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

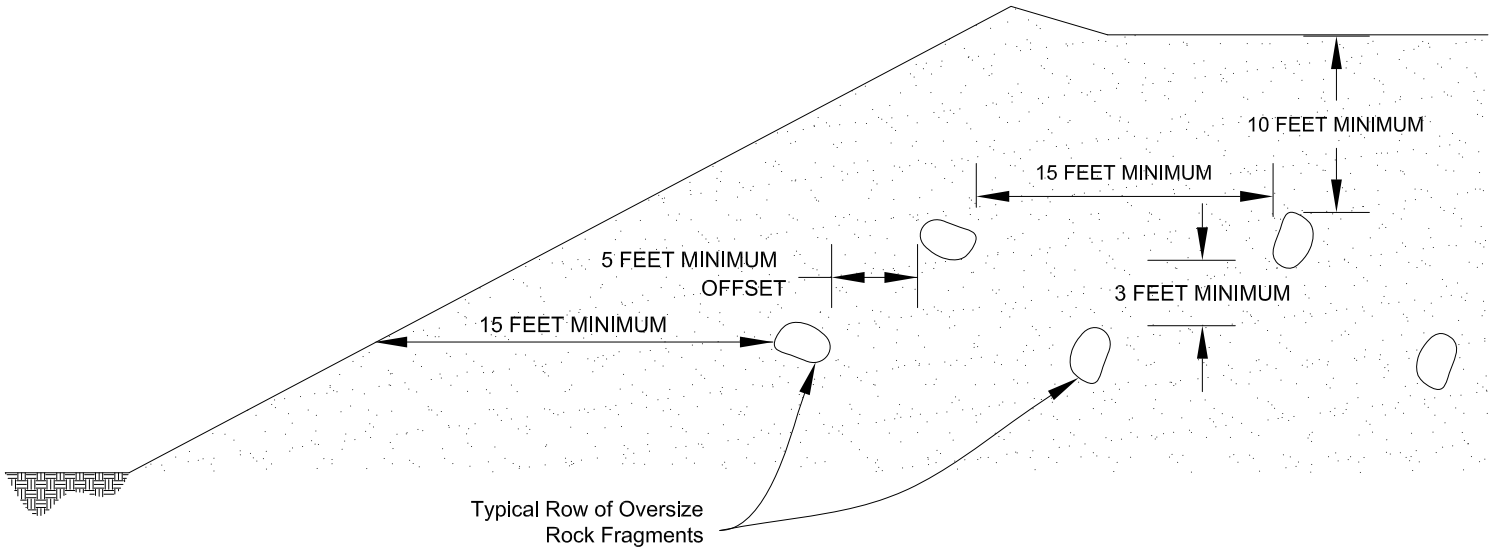
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

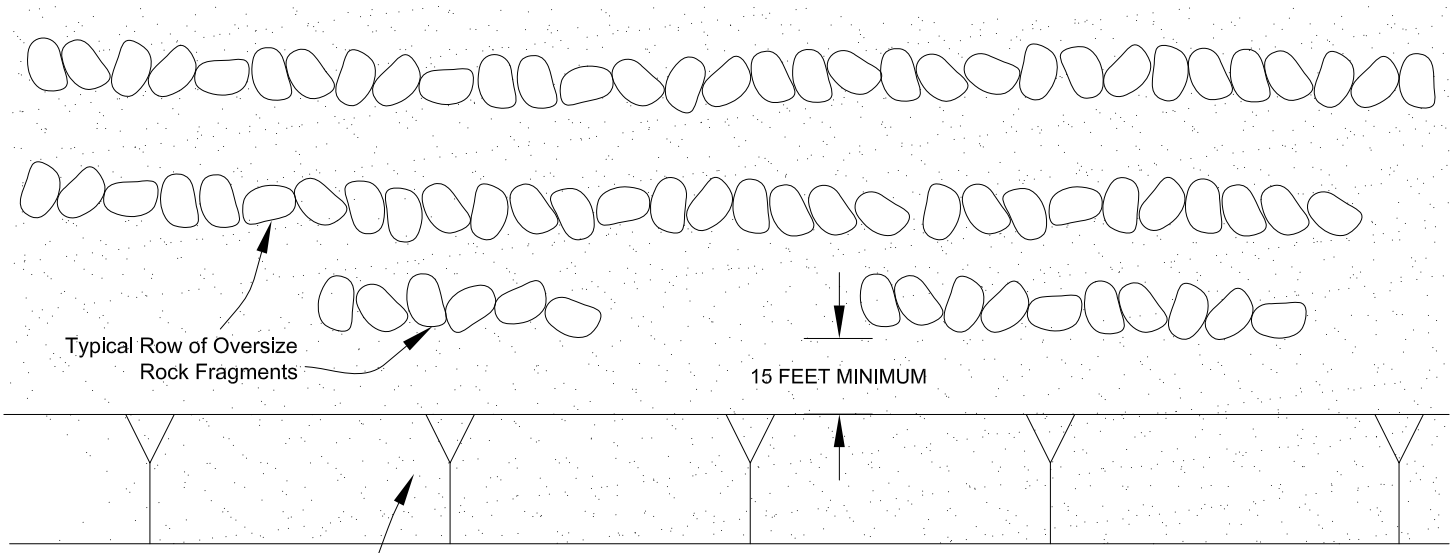
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

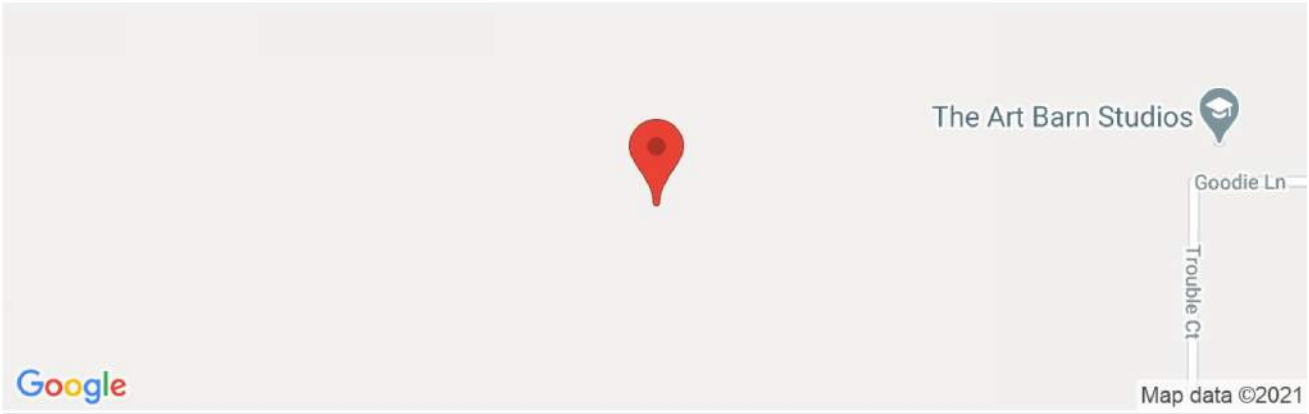
PLATE D-8

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

Latitude, Longitude: 33.966227, -117.018379



Date	4/5/2021, 2:24:01 PM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	D - Default (See Section 11.4.3)

Type	Value	Description
S_S	2.091	MCE_R ground motion. (for 0.2 second period)
S_1	0.718	MCE_R ground motion. (for 1.0s period)
S_{MS}	2.509	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.673	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.853	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	1.024	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	2.212	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.411	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.091	Factored deterministic acceleration value. (0.2 second)
S1RT	0.852	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.956	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.718	Factored deterministic acceleration value. (1.0 second)
PGAd	0.853	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.917	Mapped value of the risk coefficient at short periods
C_{R1}	0.891	Mapped value of the risk coefficient at a period of 1 s

SOURCE: SEAOC/OSHPD Seismic Design Maps Tool
<https://seismicmaps.org/>

SEISMIC DESIGN PARAMETERS - 2019 CBC

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

DRAWN: JAH
CHKD: RGT

SCG PROJECT
21G133-1

PLATE E-1

SOUTHERN CALIFORNIA GEOTECHNICAL

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

N/A

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Albert A. Webb Associates	Date	7/6/2021
Designed by	EP	Case No	
Company Project Number/Name	21-0044 BSS- Building 2		

BMP Identification

BMP NAME / ID: Infiltration Basin

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.79 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
L-A	*609,769*	*Ornamental Landscaping*	*0.1*	*0.11*	*67353.8*			
R-A	*1,212,810*	*Roofs*	*1*	*0.89*	*1081826.6*			
H-A	*1,162,617*	*Concrete or Asphalt*	*1*	*0.89*	*1037054.1*			
BMP-A	*106388*	*Ornamental Landscaping*						
	3091583.42		*Total*		*2186234.5*	*0.79*	*143927.1*	*144000*

Notes:

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID	Legend:	Required Entries / Calculated Cells
Company Name: Albert A. Webb Associates			Date: 12/13/2021
Designed by: EP			County/City Case No.:

Design Volume

a) Tributary area (BMP subarea)	A_T =	50	acres
b) Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	144,000	ft^3

Maximum Depth

a) Infiltration rate	I =	11.5	in/hr
b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook)	FS =	3	
c) Calculate D_1 $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$	D_1 =	23.0	ft
d) Enter the depth of freeboard (at least 1 ft)		1	ft
e) Enter depth to historic high ground water (measured from **top** of basin)		18	ft
f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin)		21	ft
g) D_2 is the smaller of: Depth to groundwater - (10 ft + freeboard) and Depth to impermeable layer - (5 ft + freeboard)	D_2 =	7.0	ft
h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet	D_{MAX} =	7.0	ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1)	z =	4	:1
b) Proposed basin depth (excluding freeboard)	d_B =	4	ft
c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$)	A_S =	36000	ft^2
d) Proposed Design Surface Area	A_D =	106388	ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP})	Volume =	720	ft^3
b) Forebay depth (height of berm/splashwall. 1 foot min.)	Depth =	1	ft
c) Forebay surface area (minimum)	Area =	720	ft^2
d) Full height notch-type weir	Width (W) =	6.0	in

Notes:

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Existing Unit Hydrographs

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/19/21 File: EX2YRA242.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.50	159.60

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 1.500(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	(0.747)	0.010	0.002
2	0.17	0.07	0.012	(0.744)	0.010	0.002
3	0.25	0.07	0.012	(0.741)	0.010	0.002
4	0.33	0.10	0.018	(0.738)	0.014	0.004
5	0.42	0.10	0.018	(0.736)	0.014	0.004
6	0.50	0.10	0.018	(0.733)	0.014	0.004
7	0.58	0.10	0.018	(0.730)	0.014	0.004
8	0.67	0.10	0.018	(0.727)	0.014	0.004
9	0.75	0.10	0.018	(0.724)	0.014	0.004
10	0.83	0.13	0.024	(0.721)	0.019	0.005
11	0.92	0.13	0.024	(0.718)	0.019	0.005
12	1.00	0.13	0.024	(0.716)	0.019	0.005
13	1.08	0.10	0.018	(0.713)	0.014	0.004
14	1.17	0.10	0.018	(0.710)	0.014	0.004
15	1.25	0.10	0.018	(0.707)	0.014	0.004
16	1.33	0.10	0.018	(0.704)	0.014	0.004
17	1.42	0.10	0.018	(0.702)	0.014	0.004
18	1.50	0.10	0.018	(0.699)	0.014	0.004
19	1.58	0.10	0.018	(0.696)	0.014	0.004
20	1.67	0.10	0.018	(0.693)	0.014	0.004
21	1.75	0.10	0.018	(0.690)	0.014	0.004
22	1.83	0.13	0.024	(0.688)	0.019	0.005
23	1.92	0.13	0.024	(0.685)	0.019	0.005
24	2.00	0.13	0.024	(0.682)	0.019	0.005
25	2.08	0.13	0.024	(0.679)	0.019	0.005
26	2.17	0.13	0.024	(0.677)	0.019	0.005
27	2.25	0.13	0.024	(0.674)	0.019	0.005
28	2.33	0.13	0.024	(0.671)	0.019	0.005
29	2.42	0.13	0.024	(0.668)	0.019	0.005
30	2.50	0.13	0.024	(0.666)	0.019	0.005
31	2.58	0.17	0.030	(0.663)	0.024	0.006
32	2.67	0.17	0.030	(0.660)	0.024	0.006
33	2.75	0.17	0.030	(0.657)	0.024	0.006
34	2.83	0.17	0.030	(0.655)	0.024	0.006
35	2.92	0.17	0.030	(0.652)	0.024	0.006
36	3.00	0.17	0.030	(0.649)	0.024	0.006
37	3.08	0.17	0.030	(0.647)	0.024	0.006

38	3.17	0.17	0.030	(0.644)	0.024	0.006
39	3.25	0.17	0.030	(0.641)	0.024	0.006
40	3.33	0.17	0.030	(0.639)	0.024	0.006
41	3.42	0.17	0.030	(0.636)	0.024	0.006
42	3.50	0.17	0.030	(0.633)	0.024	0.006
43	3.58	0.17	0.030	(0.631)	0.024	0.006
44	3.67	0.17	0.030	(0.628)	0.024	0.006
45	3.75	0.17	0.030	(0.625)	0.024	0.006
46	3.83	0.20	0.036	(0.623)	0.029	0.007
47	3.92	0.20	0.036	(0.620)	0.029	0.007
48	4.00	0.20	0.036	(0.617)	0.029	0.007
49	4.08	0.20	0.036	(0.615)	0.029	0.007
50	4.17	0.20	0.036	(0.612)	0.029	0.007
51	4.25	0.20	0.036	(0.610)	0.029	0.007
52	4.33	0.23	0.042	(0.607)	0.034	0.008
53	4.42	0.23	0.042	(0.604)	0.034	0.008
54	4.50	0.23	0.042	(0.602)	0.034	0.008
55	4.58	0.23	0.042	(0.599)	0.034	0.008
56	4.67	0.23	0.042	(0.597)	0.034	0.008
57	4.75	0.23	0.042	(0.594)	0.034	0.008
58	4.83	0.27	0.048	(0.592)	0.038	0.010
59	4.92	0.27	0.048	(0.589)	0.038	0.010
60	5.00	0.27	0.048	(0.586)	0.038	0.010
61	5.08	0.20	0.036	(0.584)	0.029	0.007
62	5.17	0.20	0.036	(0.581)	0.029	0.007
63	5.25	0.20	0.036	(0.579)	0.029	0.007
64	5.33	0.23	0.042	(0.576)	0.034	0.008
65	5.42	0.23	0.042	(0.574)	0.034	0.008
66	5.50	0.23	0.042	(0.571)	0.034	0.008
67	5.58	0.27	0.048	(0.569)	0.038	0.010
68	5.67	0.27	0.048	(0.566)	0.038	0.010
69	5.75	0.27	0.048	(0.564)	0.038	0.010
70	5.83	0.27	0.048	(0.561)	0.038	0.010
71	5.92	0.27	0.048	(0.559)	0.038	0.010
72	6.00	0.27	0.048	(0.556)	0.038	0.010
73	6.08	0.30	0.054	(0.554)	0.043	0.011
74	6.17	0.30	0.054	(0.551)	0.043	0.011
75	6.25	0.30	0.054	(0.549)	0.043	0.011
76	6.33	0.30	0.054	(0.546)	0.043	0.011
77	6.42	0.30	0.054	(0.544)	0.043	0.011
78	6.50	0.30	0.054	(0.542)	0.043	0.011
79	6.58	0.33	0.060	(0.539)	0.048	0.012
80	6.67	0.33	0.060	(0.537)	0.048	0.012
81	6.75	0.33	0.060	(0.534)	0.048	0.012
82	6.83	0.33	0.060	(0.532)	0.048	0.012
83	6.92	0.33	0.060	(0.529)	0.048	0.012
84	7.00	0.33	0.060	(0.527)	0.048	0.012
85	7.08	0.33	0.060	(0.525)	0.048	0.012
86	7.17	0.33	0.060	(0.522)	0.048	0.012
87	7.25	0.33	0.060	(0.520)	0.048	0.012
88	7.33	0.37	0.066	(0.518)	0.053	0.013
89	7.42	0.37	0.066	(0.515)	0.053	0.013
90	7.50	0.37	0.066	(0.513)	0.053	0.013
91	7.58	0.40	0.072	(0.510)	0.058	0.014
92	7.67	0.40	0.072	(0.508)	0.058	0.014
93	7.75	0.40	0.072	(0.506)	0.058	0.014
94	7.83	0.43	0.078	(0.503)	0.062	0.016
95	7.92	0.43	0.078	(0.501)	0.062	0.016
96	8.00	0.43	0.078	(0.499)	0.062	0.016
97	8.08	0.50	0.090	(0.496)	0.072	0.018
98	8.17	0.50	0.090	(0.494)	0.072	0.018
99	8.25	0.50	0.090	(0.492)	0.072	0.018
100	8.33	0.50	0.090	(0.490)	0.072	0.018
101	8.42	0.50	0.090	(0.487)	0.072	0.018
102	8.50	0.50	0.090	(0.485)	0.072	0.018
103	8.58	0.53	0.096	(0.483)	0.077	0.019
104	8.67	0.53	0.096	(0.480)	0.077	0.019
105	8.75	0.53	0.096	(0.478)	0.077	0.019
106	8.83	0.57	0.102	(0.476)	0.082	0.020
107	8.92	0.57	0.102	(0.474)	0.082	0.020
108	9.00	0.57	0.102	(0.471)	0.082	0.020
109	9.08	0.63	0.114	(0.469)	0.091	0.023
110	9.17	0.63	0.114	(0.467)	0.091	0.023
111	9.25	0.63	0.114	(0.465)	0.091	0.023
112	9.33	0.67	0.120	(0.462)	0.096	0.024

113	9.42	0.67	0.120	(0.460)	0.096	0.024
114	9.50	0.67	0.120	(0.458)	0.096	0.024
115	9.58	0.70	0.126	(0.456)	0.101	0.025
116	9.67	0.70	0.126	(0.454)	0.101	0.025
117	9.75	0.70	0.126	(0.452)	0.101	0.025
118	9.83	0.73	0.132	(0.449)	0.106	0.026
119	9.92	0.73	0.132	(0.447)	0.106	0.026
120	10.00	0.73	0.132	(0.445)	0.106	0.026
121	10.08	0.50	0.090	(0.443)	0.072	0.018
122	10.17	0.50	0.090	(0.441)	0.072	0.018
123	10.25	0.50	0.090	(0.439)	0.072	0.018
124	10.33	0.50	0.090	(0.436)	0.072	0.018
125	10.42	0.50	0.090	(0.434)	0.072	0.018
126	10.50	0.50	0.090	(0.432)	0.072	0.018
127	10.58	0.67	0.120	(0.430)	0.096	0.024
128	10.67	0.67	0.120	(0.428)	0.096	0.024
129	10.75	0.67	0.120	(0.426)	0.096	0.024
130	10.83	0.67	0.120	(0.424)	0.096	0.024
131	10.92	0.67	0.120	(0.422)	0.096	0.024
132	11.00	0.67	0.120	(0.420)	0.096	0.024
133	11.08	0.63	0.114	(0.418)	0.091	0.023
134	11.17	0.63	0.114	(0.416)	0.091	0.023
135	11.25	0.63	0.114	(0.413)	0.091	0.023
136	11.33	0.63	0.114	(0.411)	0.091	0.023
137	11.42	0.63	0.114	(0.409)	0.091	0.023
138	11.50	0.63	0.114	(0.407)	0.091	0.023
139	11.58	0.57	0.102	(0.405)	0.082	0.020
140	11.67	0.57	0.102	(0.403)	0.082	0.020
141	11.75	0.57	0.102	(0.401)	0.082	0.020
142	11.83	0.60	0.108	(0.399)	0.086	0.022
143	11.92	0.60	0.108	(0.397)	0.086	0.022
144	12.00	0.60	0.108	(0.395)	0.086	0.022
145	12.08	0.83	0.150	(0.393)	0.120	0.030
146	12.17	0.83	0.150	(0.391)	0.120	0.030
147	12.25	0.83	0.150	(0.389)	0.120	0.030
148	12.33	0.87	0.156	(0.388)	0.125	0.031
149	12.42	0.87	0.156	(0.386)	0.125	0.031
150	12.50	0.87	0.156	(0.384)	0.125	0.031
151	12.58	0.93	0.168	(0.382)	0.134	0.034
152	12.67	0.93	0.168	(0.380)	0.134	0.034
153	12.75	0.93	0.168	(0.378)	0.134	0.034
154	12.83	0.97	0.174	(0.376)	0.139	0.035
155	12.92	0.97	0.174	(0.374)	0.139	0.035
156	13.00	0.97	0.174	(0.372)	0.139	0.035
157	13.08	1.13	0.204	(0.370)	0.163	0.041
158	13.17	1.13	0.204	(0.368)	0.163	0.041
159	13.25	1.13	0.204	(0.367)	0.163	0.041
160	13.33	1.13	0.204	(0.365)	0.163	0.041
161	13.42	1.13	0.204	(0.363)	0.163	0.041
162	13.50	1.13	0.204	(0.361)	0.163	0.041
163	13.58	0.77	0.138	(0.359)	0.110	0.028
164	13.67	0.77	0.138	(0.357)	0.110	0.028
165	13.75	0.77	0.138	(0.355)	0.110	0.028
166	13.83	0.77	0.138	(0.354)	0.110	0.028
167	13.92	0.77	0.138	(0.352)	0.110	0.028
168	14.00	0.77	0.138	(0.350)	0.110	0.028
169	14.08	0.90	0.162	(0.348)	0.130	0.032
170	14.17	0.90	0.162	(0.346)	0.130	0.032
171	14.25	0.90	0.162	(0.345)	0.130	0.032
172	14.33	0.87	0.156	(0.343)	0.125	0.031
173	14.42	0.87	0.156	(0.341)	0.125	0.031
174	14.50	0.87	0.156	(0.339)	0.125	0.031
175	14.58	0.87	0.156	(0.338)	0.125	0.031
176	14.67	0.87	0.156	(0.336)	0.125	0.031
177	14.75	0.87	0.156	(0.334)	0.125	0.031
178	14.83	0.83	0.150	(0.333)	0.120	0.030
179	14.92	0.83	0.150	(0.331)	0.120	0.030
180	15.00	0.83	0.150	(0.329)	0.120	0.030
181	15.08	0.80	0.144	(0.327)	0.115	0.029
182	15.17	0.80	0.144	(0.326)	0.115	0.029
183	15.25	0.80	0.144	(0.324)	0.115	0.029
184	15.33	0.77	0.138	(0.322)	0.110	0.028
185	15.42	0.77	0.138	(0.321)	0.110	0.028
186	15.50	0.77	0.138	(0.319)	0.110	0.028
187	15.58	0.63	0.114	(0.318)	0.091	0.023

188	15.67	0.63	0.114	(0.316)	0.091	0.023
189	15.75	0.63	0.114	(0.314)	0.091	0.023
190	15.83	0.63	0.114	(0.313)	0.091	0.023
191	15.92	0.63	0.114	(0.311)	0.091	0.023
192	16.00	0.63	0.114	(0.309)	0.091	0.023
193	16.08	0.13	0.024	(0.308)	0.019	0.005
194	16.17	0.13	0.024	(0.306)	0.019	0.005
195	16.25	0.13	0.024	(0.305)	0.019	0.005
196	16.33	0.13	0.024	(0.303)	0.019	0.005
197	16.42	0.13	0.024	(0.302)	0.019	0.005
198	16.50	0.13	0.024	(0.300)	0.019	0.005
199	16.58	0.10	0.018	(0.299)	0.014	0.004
200	16.67	0.10	0.018	(0.297)	0.014	0.004
201	16.75	0.10	0.018	(0.296)	0.014	0.004
202	16.83	0.10	0.018	(0.294)	0.014	0.004
203	16.92	0.10	0.018	(0.293)	0.014	0.004
204	17.00	0.10	0.018	(0.291)	0.014	0.004
205	17.08	0.17	0.030	(0.290)	0.024	0.006
206	17.17	0.17	0.030	(0.288)	0.024	0.006
207	17.25	0.17	0.030	(0.287)	0.024	0.006
208	17.33	0.17	0.030	(0.285)	0.024	0.006
209	17.42	0.17	0.030	(0.284)	0.024	0.006
210	17.50	0.17	0.030	(0.282)	0.024	0.006
211	17.58	0.17	0.030	(0.281)	0.024	0.006
212	17.67	0.17	0.030	(0.280)	0.024	0.006
213	17.75	0.17	0.030	(0.278)	0.024	0.006
214	17.83	0.13	0.024	(0.277)	0.019	0.005
215	17.92	0.13	0.024	(0.275)	0.019	0.005
216	18.00	0.13	0.024	(0.274)	0.019	0.005
217	18.08	0.13	0.024	(0.273)	0.019	0.005
218	18.17	0.13	0.024	(0.271)	0.019	0.005
219	18.25	0.13	0.024	(0.270)	0.019	0.005
220	18.33	0.13	0.024	(0.269)	0.019	0.005
221	18.42	0.13	0.024	(0.267)	0.019	0.005
222	18.50	0.13	0.024	(0.266)	0.019	0.005
223	18.58	0.10	0.018	(0.265)	0.014	0.004
224	18.67	0.10	0.018	(0.264)	0.014	0.004
225	18.75	0.10	0.018	(0.262)	0.014	0.004
226	18.83	0.07	0.012	(0.261)	0.010	0.002
227	18.92	0.07	0.012	(0.260)	0.010	0.002
228	19.00	0.07	0.012	(0.259)	0.010	0.002
229	19.08	0.10	0.018	(0.257)	0.014	0.004
230	19.17	0.10	0.018	(0.256)	0.014	0.004
231	19.25	0.10	0.018	(0.255)	0.014	0.004
232	19.33	0.13	0.024	(0.254)	0.019	0.005
233	19.42	0.13	0.024	(0.253)	0.019	0.005
234	19.50	0.13	0.024	(0.251)	0.019	0.005
235	19.58	0.10	0.018	(0.250)	0.014	0.004
236	19.67	0.10	0.018	(0.249)	0.014	0.004
237	19.75	0.10	0.018	(0.248)	0.014	0.004
238	19.83	0.07	0.012	(0.247)	0.010	0.002
239	19.92	0.07	0.012	(0.246)	0.010	0.002
240	20.00	0.07	0.012	(0.245)	0.010	0.002
241	20.08	0.10	0.018	(0.244)	0.014	0.004
242	20.17	0.10	0.018	(0.243)	0.014	0.004
243	20.25	0.10	0.018	(0.242)	0.014	0.004
244	20.33	0.10	0.018	(0.240)	0.014	0.004
245	20.42	0.10	0.018	(0.239)	0.014	0.004
246	20.50	0.10	0.018	(0.238)	0.014	0.004
247	20.58	0.10	0.018	(0.237)	0.014	0.004
248	20.67	0.10	0.018	(0.236)	0.014	0.004
249	20.75	0.10	0.018	(0.235)	0.014	0.004
250	20.83	0.07	0.012	(0.234)	0.010	0.002
251	20.92	0.07	0.012	(0.234)	0.010	0.002
252	21.00	0.07	0.012	(0.233)	0.010	0.002
253	21.08	0.10	0.018	(0.232)	0.014	0.004
254	21.17	0.10	0.018	(0.231)	0.014	0.004
255	21.25	0.10	0.018	(0.230)	0.014	0.004
256	21.33	0.07	0.012	(0.229)	0.010	0.002
257	21.42	0.07	0.012	(0.228)	0.010	0.002
258	21.50	0.07	0.012	(0.227)	0.010	0.002
259	21.58	0.10	0.018	(0.226)	0.014	0.004
260	21.67	0.10	0.018	(0.226)	0.014	0.004
261	21.75	0.10	0.018	(0.225)	0.014	0.004
262	21.83	0.07	0.012	(0.224)	0.010	0.002

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263  21.92     0.07      0.012       (  0.223)       0.010        0.002
264  22.00     0.07      0.012       (  0.223)       0.010        0.002
265  22.08     0.10      0.018       (  0.222)       0.014        0.004
266  22.17     0.10      0.018       (  0.221)       0.014        0.004
267  22.25     0.10      0.018       (  0.220)       0.014        0.004
268  22.33     0.07      0.012       (  0.220)       0.010        0.002
269  22.42     0.07      0.012       (  0.219)       0.010        0.002
270  22.50     0.07      0.012       (  0.218)       0.010        0.002
271  22.58     0.07      0.012       (  0.218)       0.010        0.002
272  22.67     0.07      0.012       (  0.217)       0.010        0.002
273  22.75     0.07      0.012       (  0.217)       0.010        0.002
274  22.83     0.07      0.012       (  0.216)       0.010        0.002
275  22.92     0.07      0.012       (  0.215)       0.010        0.002
276  23.00     0.07      0.012       (  0.215)       0.010        0.002
277  23.08     0.07      0.012       (  0.214)       0.010        0.002
278  23.17     0.07      0.012       (  0.214)       0.010        0.002
279  23.25     0.07      0.012       (  0.213)       0.010        0.002
280  23.33     0.07      0.012       (  0.213)       0.010        0.002
281  23.42     0.07      0.012       (  0.213)       0.010        0.002
282  23.50     0.07      0.012       (  0.212)       0.010        0.002
283  23.58     0.07      0.012       (  0.212)       0.010        0.002
284  23.67     0.07      0.012       (  0.212)       0.010        0.002
285  23.75     0.07      0.012       (  0.211)       0.010        0.002
286  23.83     0.07      0.012       (  0.211)       0.010        0.002
287  23.92     0.07      0.012       (  0.211)       0.010        0.002
288  24.00     0.07      0.012       (  0.211)       0.010        0.002
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     3.6
      Flood volume = Effective rainfall      0.30(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       2.7(Ac.Ft)
      Total soil loss =      1.20(In)
      Total soil loss =    10.638(Ac.Ft)
      Total rainfall =      1.50(In)
      Flood volume =      115845.5 Cubic Feet
      Total soil loss =      463382.1 Cubic Feet
      ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      4.329(CFS)  AREA A
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q          |         |         |         |
  0+10       0.0006      0.08  Q          |         |         |         |
  0+15       0.0018      0.17  Q          |         |         |         |
  0+20       0.0033      0.21  Q          |         |         |         |
  0+25       0.0051      0.26  VQ         |         |         |         |
  0+30       0.0073      0.33  VQ         |         |         |         |
  0+35       0.0097      0.35  VQ         |         |         |         |
  0+40       0.0123      0.37  VQ         |         |         |         |
  0+45       0.0148      0.37  VQ         |         |         |         |
  0+50       0.0175      0.38  VQ         |         |         |         |
  0+55       0.0204      0.42  VQ         |         |         |         |
  1+ 0       0.0236      0.47  VQ         |         |         |         |
  1+ 5       0.0269      0.48  VQ         |         |         |         |
  1+10       0.0301      0.46  VQ         |         |         |         |
  1+15       0.0330      0.42  VQ         |         |         |         |
  1+20       0.0358      0.41  VQ         |         |         |         |
  1+25       0.0385      0.40  VQ         |         |         |         |
  1+30       0.0412      0.39  VQ         |         |         |         |
  1+35       0.0439      0.39  VQ         |         |         |         |
  1+40       0.0466      0.39  VQ         |         |         |         |
  1+45       0.0493      0.39  VQ         |         |         |         |
  1+50       0.0520      0.39  VQ         |         |         |         |
  1+55       0.0549      0.43  VQ         |         |         |         |
  2+ 0       0.0582      0.47  VQ         |         |         |         |
  2+ 5       0.0615      0.49  VQ         |         |         |         |
  2+10       0.0650      0.50  VQ         |         |         |         |
  2+15       0.0685      0.51  |VQ        |         |         |         |
  2+20       0.0720      0.51  |VQ        |         |         |         |
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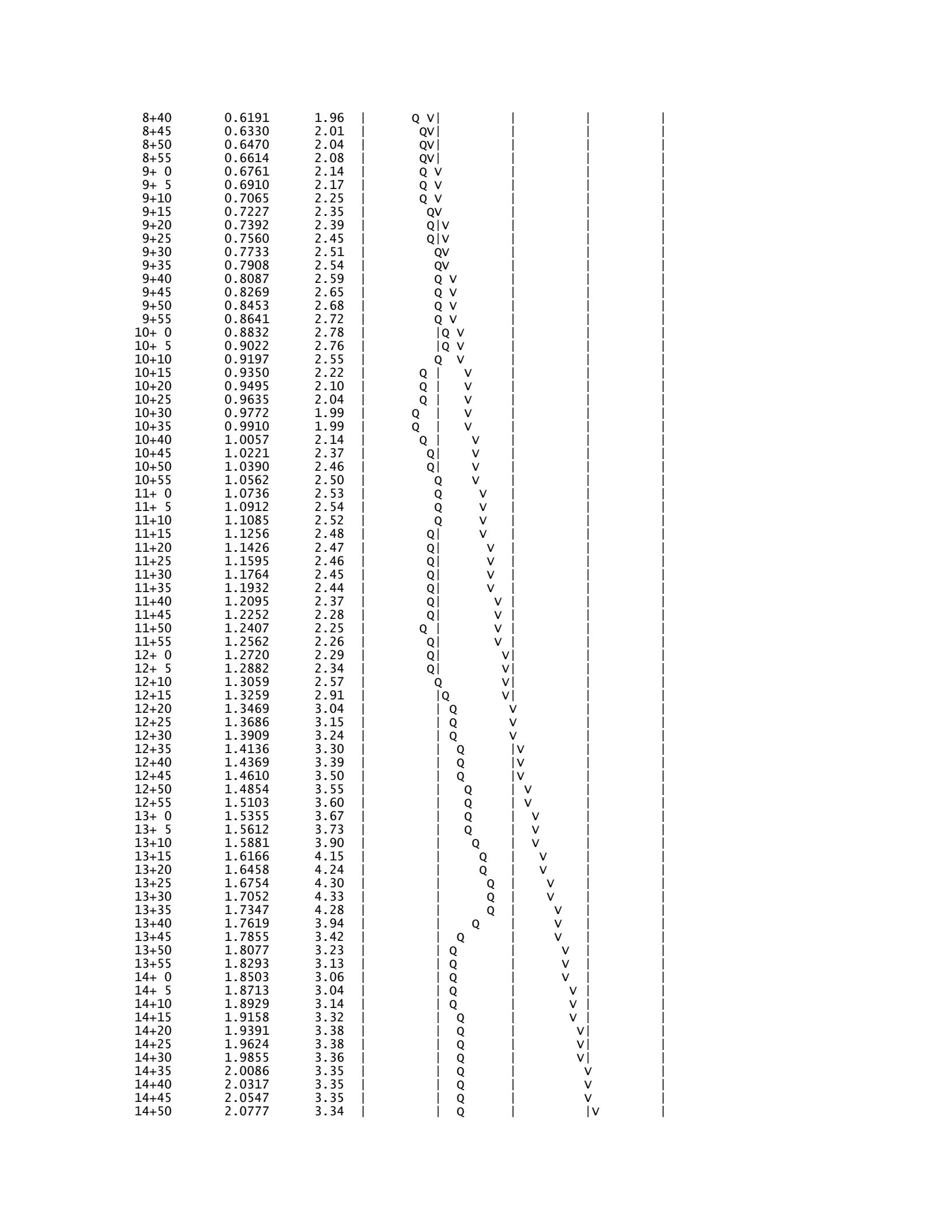
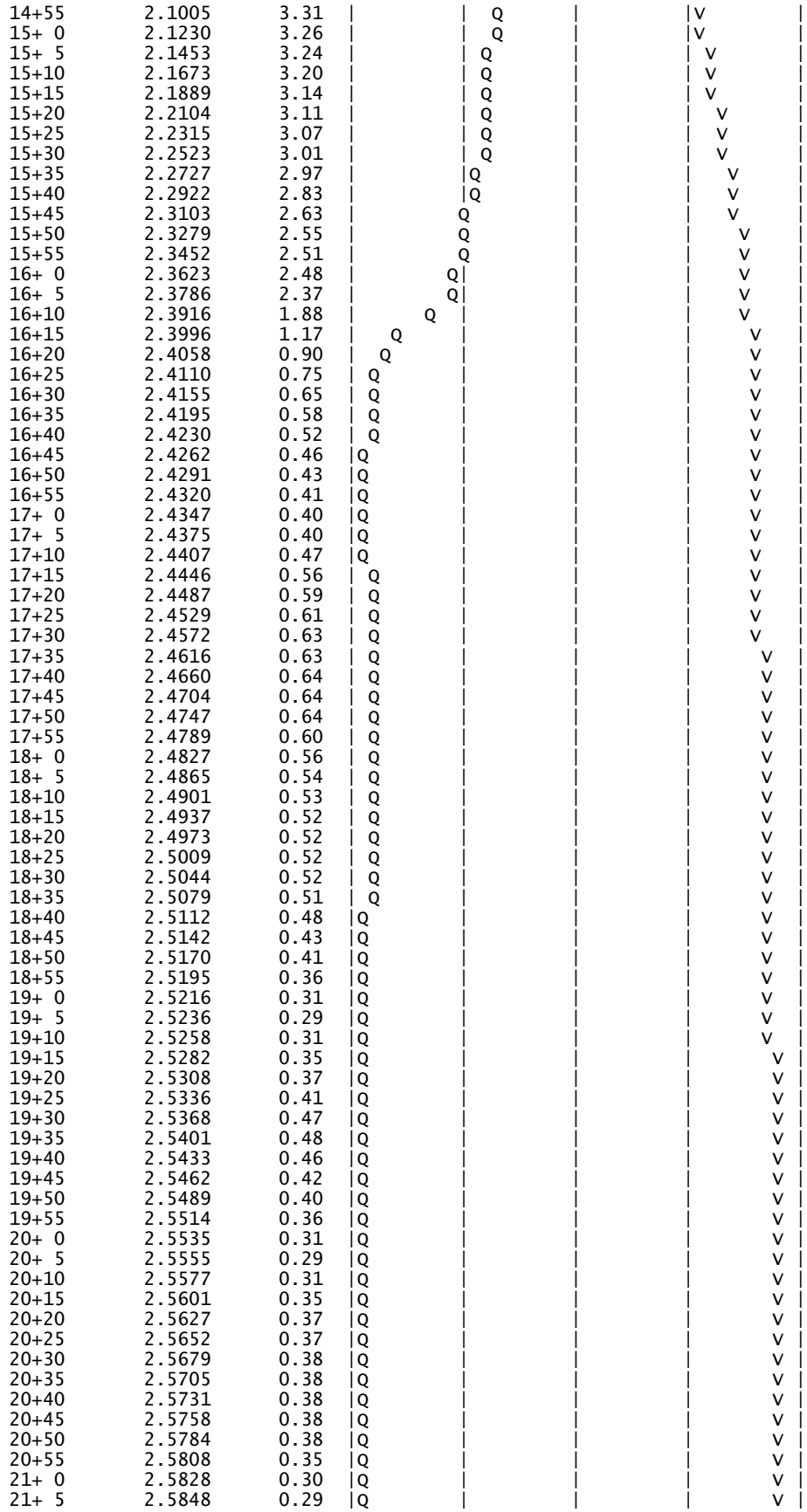
2+25	0.0755	0.51	VQ			
2+30	0.0790	0.51	VQ			
2+35	0.0826	0.52	VQ			
2+40	0.0864	0.55	VQ			
2+45	0.0905	0.60	VQ			
2+50	0.0948	0.62	VQ			
2+55	0.0991	0.63	VQ			
3+ 0	0.1035	0.63	VQ			
3+ 5	0.1079	0.64	VQ			
3+10	0.1123	0.64	VQ			
3+15	0.1167	0.64	VQ			
3+20	0.1212	0.64	VQ			
3+25	0.1256	0.64	VQ			
3+30	0.1300	0.64	VQ			
3+35	0.1345	0.64	Q			
3+40	0.1389	0.64	Q			
3+45	0.1433	0.64	Q			
3+50	0.1478	0.65	Q			
3+55	0.1525	0.68	Q			
4+ 0	0.1575	0.73	Q			
4+ 5	0.1627	0.75	Q			
4+10	0.1679	0.76	VQ			
4+15	0.1731	0.76	VQ			
4+20	0.1785	0.77	VQ			
4+25	0.1840	0.81	VQ			
4+30	0.1899	0.86	VQ			
4+35	0.1959	0.87	VQ			
4+40	0.2020	0.88	Q			
4+45	0.2082	0.89	Q			
4+50	0.2144	0.90	Q			
4+55	0.2208	0.94	Q			
5+ 0	0.2276	0.98	Q			
5+ 5	0.2344	0.99	Q			
5+10	0.2409	0.94	Q			
5+15	0.2467	0.85	Q			
5+20	0.2524	0.82	Q			
5+25	0.2582	0.84	Q			
5+30	0.2642	0.87	Q			
5+35	0.2703	0.89	QV			
5+40	0.2767	0.93	QV			
5+45	0.2835	0.98	QV			
5+50	0.2904	1.00	Q			
5+55	0.2974	1.01	Q			
6+ 0	0.3044	1.02	Q			
6+ 5	0.3115	1.03	Q			
6+10	0.3188	1.06	Q			
6+15	0.3265	1.11	Q			
6+20	0.3343	1.13	QV			
6+25	0.3422	1.14	QV			
6+30	0.3501	1.15	QV			
6+35	0.3581	1.16	QV			
6+40	0.3663	1.19	QV			
6+45	0.3748	1.24	QV			
6+50	0.3835	1.26	Q			
6+55	0.3923	1.27	Q			
7+ 0	0.4011	1.28	QV			
7+ 5	0.4099	1.28	QV			
7+10	0.4187	1.28	QV			
7+15	0.4276	1.29	QV			
7+20	0.4365	1.29	QV			
7+25	0.4456	1.32	QV			
7+30	0.4551	1.37	QV			
7+35	0.4647	1.40	QV			
7+40	0.4746	1.44	Q V			
7+45	0.4849	1.49	Q V			
7+50	0.4954	1.52	QV			
7+55	0.5061	1.56	QV			
8+ 0	0.5173	1.62	QV			
8+ 5	0.5287	1.65	QV			
8+10	0.5406	1.73	Q V			
8+15	0.5532	1.83	QV			
8+20	0.5661	1.87	QV			
8+25	0.5792	1.90	QV			
8+30	0.5923	1.91	QV			
8+35	0.6056	1.93	Q V			





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   21+10       2.5870      0.31  |Q        |         |         |       V |
   21+15       2.5894      0.35  |Q        |         |         |       V |
   21+20       2.5919      0.36  |Q        |         |         |       V |
   21+25       2.5942      0.34  |Q        |         |         |        V|
   21+30       2.5962      0.29  |Q        |         |         |        V|
   21+35       2.5982      0.29  |Q        |         |         |        V|
   21+40       2.6003      0.31  |Q        |         |         |        V|
   21+45       2.6027      0.35  |Q        |         |         |        V|
   21+50       2.6052      0.36  |Q        |         |         |        V|
   21+55       2.6075      0.33  |Q        |         |         |        V|
   22+ 0       2.6095      0.29  |Q        |         |         |        V|
   22+ 5       2.6115      0.29  |Q        |         |         |        V|
   22+10       2.6136      0.31  |Q        |         |         |        V|
   22+15       2.6160      0.35  |Q        |         |         |        V|
   22+20       2.6185      0.36  |Q        |         |         |        V|
   22+25       2.6208      0.33  |Q        |         |         |        V|
   22+30       2.6228      0.29  |Q        |         |         |        V|
   22+35       2.6247      0.28  |Q        |         |         |        V|
   22+40       2.6266      0.27  |Q        |         |         |        V|
   22+45       2.6284      0.26  |Q        |         |         |        V|
   22+50       2.6302      0.26  |Q        |         |         |        V|
   22+55       2.6320      0.26  |Q        |         |         |        V|
   23+ 0       2.6338      0.26  |Q        |         |         |        V|
   23+ 5       2.6356      0.26  |Q        |         |         |        V|
   23+10       2.6373      0.26  |Q        |         |         |        V|
   23+15       2.6391      0.26  |Q        |         |         |        V|
   23+20       2.6409      0.26  |Q        |         |         |        V|
   23+25       2.6427      0.26  |Q        |         |         |        V|
   23+30       2.6444      0.26  |Q        |         |         |        V|
   23+35       2.6462      0.26  |Q        |         |         |        V|
   23+40       2.6480      0.26  |Q        |         |         |        V|
   23+45       2.6498      0.26  |Q        |         |         |        V|
   23+50       2.6515      0.26  |Q        |         |         |        V|
   23+55       2.6533      0.26  |Q        |         |         |        V|
   24+ 0       2.6551      0.26  |Q        |         |         |        V|
   24+ 5       2.6568      0.25  Q         |         |         |        V|
   24+10       2.6580      0.18  Q         |         |         |        V|
   24+15       2.6586      0.09  Q         |         |         |        V|
   24+20       2.6590      0.05  Q         |         |         |        V|
   24+25       2.6592      0.03  Q         |         |         |        V|
   24+30       2.6593      0.02  Q         |         |         |        V|
   24+35       2.6594      0.01  Q         |         |         |        V|
   24+40       2.6594      0.01  Q         |         |         |        V|
   24+45       2.6594      0.00  Q         |         |         |        V|
   24+50       2.6594      0.00  Q         |         |         |        V|
   24+55       2.6594      0.00  Q         |         |         |        V|
   25+ 0       2.6594      0.00  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX2YRB242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.50	126.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	6.50	327.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	53.5	0.536	0.330	0.377	1.000	0.377
					Sum (F) =	0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.668)	0.013	0.007
2	0.17	0.07	0.020	(0.666)	0.013	0.007
3	0.25	0.07	0.020	(0.663)	0.013	0.007
4	0.33	0.10	0.030	(0.660)	0.019	0.011
5	0.42	0.10	0.030	(0.658)	0.019	0.011
6	0.50	0.10	0.030	(0.655)	0.019	0.011
7	0.58	0.10	0.030	(0.653)	0.019	0.011
8	0.67	0.10	0.030	(0.650)	0.019	0.011
9	0.75	0.10	0.030	(0.648)	0.019	0.011
10	0.83	0.13	0.040	(0.645)	0.025	0.015
11	0.92	0.13	0.040	(0.642)	0.025	0.015
12	1.00	0.13	0.040	(0.640)	0.025	0.015
13	1.08	0.10	0.030	(0.637)	0.019	0.011
14	1.17	0.10	0.030	(0.635)	0.019	0.011
15	1.25	0.10	0.030	(0.632)	0.019	0.011
16	1.33	0.10	0.030	(0.630)	0.019	0.011
17	1.42	0.10	0.030	(0.627)	0.019	0.011
18	1.50	0.10	0.030	(0.625)	0.019	0.011
19	1.58	0.10	0.030	(0.622)	0.019	0.011
20	1.67	0.10	0.030	(0.620)	0.019	0.011
21	1.75	0.10	0.030	(0.617)	0.019	0.011
22	1.83	0.13	0.040	(0.615)	0.025	0.015
23	1.92	0.13	0.040	(0.612)	0.025	0.015
24	2.00	0.13	0.040	(0.610)	0.025	0.015
25	2.08	0.13	0.040	(0.607)	0.025	0.015
26	2.17	0.13	0.040	(0.605)	0.025	0.015
27	2.25	0.13	0.040	(0.603)	0.025	0.015
28	2.33	0.13	0.040	(0.600)	0.025	0.015
29	2.42	0.13	0.040	(0.598)	0.025	0.015
30	2.50	0.13	0.040	(0.595)	0.025	0.015
31	2.58	0.17	0.050	(0.593)	0.031	0.018
32	2.67	0.17	0.050	(0.590)	0.031	0.018
33	2.75	0.17	0.050	(0.588)	0.031	0.018
34	2.83	0.17	0.050	(0.586)	0.031	0.018
35	2.92	0.17	0.050	(0.583)	0.031	0.018
36	3.00	0.17	0.050	(0.581)	0.031	0.018
37	3.08	0.17	0.050	(0.578)	0.031	0.018
38	3.17	0.17	0.050	(0.576)	0.031	0.018
39	3.25	0.17	0.050	(0.573)	0.031	0.018
40	3.33	0.17	0.050	(0.571)	0.031	0.018
41	3.42	0.17	0.050	(0.569)	0.031	0.018
42	3.50	0.17	0.050	(0.566)	0.031	0.018

43	3.58	0.17	0.050	(0.564)	0.031	0.018
44	3.67	0.17	0.050	(0.562)	0.031	0.018
45	3.75	0.17	0.050	(0.559)	0.031	0.018
46	3.83	0.20	0.060	(0.557)	0.038	0.022
47	3.92	0.20	0.060	(0.555)	0.038	0.022
48	4.00	0.20	0.060	(0.552)	0.038	0.022
49	4.08	0.20	0.060	(0.550)	0.038	0.022
50	4.17	0.20	0.060	(0.547)	0.038	0.022
51	4.25	0.20	0.060	(0.545)	0.038	0.022
52	4.33	0.23	0.070	(0.543)	0.044	0.026
53	4.42	0.23	0.070	(0.541)	0.044	0.026
54	4.50	0.23	0.070	(0.538)	0.044	0.026
55	4.58	0.23	0.070	(0.536)	0.044	0.026
56	4.67	0.23	0.070	(0.534)	0.044	0.026
57	4.75	0.23	0.070	(0.531)	0.044	0.026
58	4.83	0.27	0.080	(0.529)	0.050	0.030
59	4.92	0.27	0.080	(0.527)	0.050	0.030
60	5.00	0.27	0.080	(0.524)	0.050	0.030
61	5.08	0.20	0.060	(0.522)	0.038	0.022
62	5.17	0.20	0.060	(0.520)	0.038	0.022
63	5.25	0.20	0.060	(0.518)	0.038	0.022
64	5.33	0.23	0.070	(0.515)	0.044	0.026
65	5.42	0.23	0.070	(0.513)	0.044	0.026
66	5.50	0.23	0.070	(0.511)	0.044	0.026
67	5.58	0.27	0.080	(0.509)	0.050	0.030
68	5.67	0.27	0.080	(0.506)	0.050	0.030
69	5.75	0.27	0.080	(0.504)	0.050	0.030
70	5.83	0.27	0.080	(0.502)	0.050	0.030
71	5.92	0.27	0.080	(0.500)	0.050	0.030
72	6.00	0.27	0.080	(0.497)	0.050	0.030
73	6.08	0.30	0.090	(0.495)	0.057	0.033
74	6.17	0.30	0.090	(0.493)	0.057	0.033
75	6.25	0.30	0.090	(0.491)	0.057	0.033
76	6.33	0.30	0.090	(0.489)	0.057	0.033
77	6.42	0.30	0.090	(0.486)	0.057	0.033
78	6.50	0.30	0.090	(0.484)	0.057	0.033
79	6.58	0.33	0.100	(0.482)	0.063	0.037
80	6.67	0.33	0.100	(0.480)	0.063	0.037
81	6.75	0.33	0.100	(0.478)	0.063	0.037
82	6.83	0.33	0.100	(0.476)	0.063	0.037
83	6.92	0.33	0.100	(0.473)	0.063	0.037
84	7.00	0.33	0.100	(0.471)	0.063	0.037
85	7.08	0.33	0.100	(0.469)	0.063	0.037
86	7.17	0.33	0.100	(0.467)	0.063	0.037
87	7.25	0.33	0.100	(0.465)	0.063	0.037
88	7.33	0.37	0.110	(0.463)	0.069	0.041
89	7.42	0.37	0.110	(0.461)	0.069	0.041
90	7.50	0.37	0.110	(0.459)	0.069	0.041
91	7.58	0.40	0.120	(0.456)	0.076	0.044
92	7.67	0.40	0.120	(0.454)	0.076	0.044
93	7.75	0.40	0.120	(0.452)	0.076	0.044
94	7.83	0.43	0.130	(0.450)	0.082	0.048
95	7.92	0.43	0.130	(0.448)	0.082	0.048
96	8.00	0.43	0.130	(0.446)	0.082	0.048
97	8.08	0.50	0.150	(0.444)	0.094	0.055
98	8.17	0.50	0.150	(0.442)	0.094	0.055
99	8.25	0.50	0.150	(0.440)	0.094	0.055
100	8.33	0.50	0.150	(0.438)	0.094	0.055
101	8.42	0.50	0.150	(0.436)	0.094	0.055
102	8.50	0.50	0.150	(0.434)	0.094	0.055
103	8.58	0.53	0.160	(0.432)	0.101	0.059
104	8.67	0.53	0.160	(0.430)	0.101	0.059
105	8.75	0.53	0.160	(0.428)	0.101	0.059
106	8.83	0.57	0.170	(0.426)	0.107	0.063
107	8.92	0.57	0.170	(0.424)	0.107	0.063
108	9.00	0.57	0.170	(0.422)	0.107	0.063
109	9.08	0.63	0.190	(0.420)	0.120	0.070
110	9.17	0.63	0.190	(0.418)	0.120	0.070
111	9.25	0.63	0.190	(0.416)	0.120	0.070
112	9.33	0.67	0.200	(0.414)	0.126	0.074
113	9.42	0.67	0.200	(0.412)	0.126	0.074
114	9.50	0.67	0.200	(0.410)	0.126	0.074
115	9.58	0.70	0.210	(0.408)	0.132	0.078
116	9.67	0.70	0.210	(0.406)	0.132	0.078
117	9.75	0.70	0.210	(0.404)	0.132	0.078

118	9.83	0.73	0.220	(0.402)	0.139	0.081
119	9.92	0.73	0.220	(0.400)	0.139	0.081
120	10.00	0.73	0.220	(0.398)	0.139	0.081
121	10.08	0.50	0.150	(0.396)	0.094	0.055
122	10.17	0.50	0.150	(0.394)	0.094	0.055
123	10.25	0.50	0.150	(0.392)	0.094	0.055
124	10.33	0.50	0.150	(0.390)	0.094	0.055
125	10.42	0.50	0.150	(0.388)	0.094	0.055
126	10.50	0.50	0.150	(0.387)	0.094	0.055
127	10.58	0.67	0.200	(0.385)	0.126	0.074
128	10.67	0.67	0.200	(0.383)	0.126	0.074
129	10.75	0.67	0.200	(0.381)	0.126	0.074
130	10.83	0.67	0.200	(0.379)	0.126	0.074
131	10.92	0.67	0.200	(0.377)	0.126	0.074
132	11.00	0.67	0.200	(0.375)	0.126	0.074
133	11.08	0.63	0.190	(0.373)	0.120	0.070
134	11.17	0.63	0.190	(0.372)	0.120	0.070
135	11.25	0.63	0.190	(0.370)	0.120	0.070
136	11.33	0.63	0.190	(0.368)	0.120	0.070
137	11.42	0.63	0.190	(0.366)	0.120	0.070
138	11.50	0.63	0.190	(0.364)	0.120	0.070
139	11.58	0.57	0.170	(0.363)	0.107	0.063
140	11.67	0.57	0.170	(0.361)	0.107	0.063
141	11.75	0.57	0.170	(0.359)	0.107	0.063
142	11.83	0.60	0.180	(0.357)	0.113	0.067
143	11.92	0.60	0.180	(0.355)	0.113	0.067
144	12.00	0.60	0.180	(0.354)	0.113	0.067
145	12.08	0.83	0.250	(0.352)	0.157	0.092
146	12.17	0.83	0.250	(0.350)	0.157	0.092
147	12.25	0.83	0.250	(0.348)	0.157	0.092
148	12.33	0.87	0.260	(0.347)	0.164	0.096
149	12.42	0.87	0.260	(0.345)	0.164	0.096
150	12.50	0.87	0.260	(0.343)	0.164	0.096
151	12.58	0.93	0.280	(0.341)	0.176	0.104
152	12.67	0.93	0.280	(0.340)	0.176	0.104
153	12.75	0.93	0.280	(0.338)	0.176	0.104
154	12.83	0.97	0.290	(0.336)	0.183	0.107
155	12.92	0.97	0.290	(0.335)	0.183	0.107
156	13.00	0.97	0.290	(0.333)	0.183	0.107
157	13.08	1.13	0.340	(0.331)	0.214	0.126
158	13.17	1.13	0.340	(0.329)	0.214	0.126
159	13.25	1.13	0.340	(0.328)	0.214	0.126
160	13.33	1.13	0.340	(0.326)	0.214	0.126
161	13.42	1.13	0.340	(0.324)	0.214	0.126
162	13.50	1.13	0.340	(0.323)	0.214	0.126
163	13.58	0.77	0.230	(0.321)	0.145	0.085
164	13.67	0.77	0.230	(0.320)	0.145	0.085
165	13.75	0.77	0.230	(0.318)	0.145	0.085
166	13.83	0.77	0.230	(0.316)	0.145	0.085
167	13.92	0.77	0.230	(0.315)	0.145	0.085
168	14.00	0.77	0.230	(0.313)	0.145	0.085
169	14.08	0.90	0.270	(0.311)	0.170	0.100
170	14.17	0.90	0.270	(0.310)	0.170	0.100
171	14.25	0.90	0.270	(0.308)	0.170	0.100
172	14.33	0.87	0.260	(0.307)	0.164	0.096
173	14.42	0.87	0.260	(0.305)	0.164	0.096
174	14.50	0.87	0.260	(0.304)	0.164	0.096
175	14.58	0.87	0.260	(0.302)	0.164	0.096
176	14.67	0.87	0.260	(0.300)	0.164	0.096
177	14.75	0.87	0.260	(0.299)	0.164	0.096
178	14.83	0.83	0.250	(0.297)	0.157	0.092
179	14.92	0.83	0.250	(0.296)	0.157	0.092
180	15.00	0.83	0.250	(0.294)	0.157	0.092
181	15.08	0.80	0.240	(0.293)	0.151	0.089
182	15.17	0.80	0.240	(0.291)	0.151	0.089
183	15.25	0.80	0.240	(0.290)	0.151	0.089
184	15.33	0.77	0.230	(0.288)	0.145	0.085
185	15.42	0.77	0.230	(0.287)	0.145	0.085
186	15.50	0.77	0.230	(0.285)	0.145	0.085
187	15.58	0.63	0.190	(0.284)	0.120	0.070
188	15.67	0.63	0.190	(0.282)	0.120	0.070
189	15.75	0.63	0.190	(0.281)	0.120	0.070
190	15.83	0.63	0.190	(0.280)	0.120	0.070
191	15.92	0.63	0.190	(0.278)	0.120	0.070
192	16.00	0.63	0.190	(0.277)	0.120	0.070

193	16.08	0.13	0.040	(0.275)	0.025	0.015
194	16.17	0.13	0.040	(0.274)	0.025	0.015
195	16.25	0.13	0.040	(0.273)	0.025	0.015
196	16.33	0.13	0.040	(0.271)	0.025	0.015
197	16.42	0.13	0.040	(0.270)	0.025	0.015
198	16.50	0.13	0.040	(0.268)	0.025	0.015
199	16.58	0.10	0.030	(0.267)	0.019	0.011
200	16.67	0.10	0.030	(0.266)	0.019	0.011
201	16.75	0.10	0.030	(0.264)	0.019	0.011
202	16.83	0.10	0.030	(0.263)	0.019	0.011
203	16.92	0.10	0.030	(0.262)	0.019	0.011
204	17.00	0.10	0.030	(0.260)	0.019	0.011
205	17.08	0.17	0.050	(0.259)	0.031	0.018
206	17.17	0.17	0.050	(0.258)	0.031	0.018
207	17.25	0.17	0.050	(0.256)	0.031	0.018
208	17.33	0.17	0.050	(0.255)	0.031	0.018
209	17.42	0.17	0.050	(0.254)	0.031	0.018
210	17.50	0.17	0.050	(0.253)	0.031	0.018
211	17.58	0.17	0.050	(0.251)	0.031	0.018
212	17.67	0.17	0.050	(0.250)	0.031	0.018
213	17.75	0.17	0.050	(0.249)	0.031	0.018
214	17.83	0.13	0.040	(0.248)	0.025	0.015
215	17.92	0.13	0.040	(0.246)	0.025	0.015
216	18.00	0.13	0.040	(0.245)	0.025	0.015
217	18.08	0.13	0.040	(0.244)	0.025	0.015
218	18.17	0.13	0.040	(0.243)	0.025	0.015
219	18.25	0.13	0.040	(0.242)	0.025	0.015
220	18.33	0.13	0.040	(0.240)	0.025	0.015
221	18.42	0.13	0.040	(0.239)	0.025	0.015
222	18.50	0.13	0.040	(0.238)	0.025	0.015
223	18.58	0.10	0.030	(0.237)	0.019	0.011
224	18.67	0.10	0.030	(0.236)	0.019	0.011
225	18.75	0.10	0.030	(0.235)	0.019	0.011
226	18.83	0.07	0.020	(0.233)	0.013	0.007
227	18.92	0.07	0.020	(0.232)	0.013	0.007
228	19.00	0.07	0.020	(0.231)	0.013	0.007
229	19.08	0.10	0.030	(0.230)	0.019	0.011
230	19.17	0.10	0.030	(0.229)	0.019	0.011
231	19.25	0.10	0.030	(0.228)	0.019	0.011
232	19.33	0.13	0.040	(0.227)	0.025	0.015
233	19.42	0.13	0.040	(0.226)	0.025	0.015
234	19.50	0.13	0.040	(0.225)	0.025	0.015
235	19.58	0.10	0.030	(0.224)	0.019	0.011
236	19.67	0.10	0.030	(0.223)	0.019	0.011
237	19.75	0.10	0.030	(0.222)	0.019	0.011
238	19.83	0.07	0.020	(0.221)	0.013	0.007
239	19.92	0.07	0.020	(0.220)	0.013	0.007
240	20.00	0.07	0.020	(0.219)	0.013	0.007
241	20.08	0.10	0.030	(0.218)	0.019	0.011
242	20.17	0.10	0.030	(0.217)	0.019	0.011
243	20.25	0.10	0.030	(0.216)	0.019	0.011
244	20.33	0.10	0.030	(0.215)	0.019	0.011
245	20.42	0.10	0.030	(0.214)	0.019	0.011
246	20.50	0.10	0.030	(0.213)	0.019	0.011
247	20.58	0.10	0.030	(0.212)	0.019	0.011
248	20.67	0.10	0.030	(0.211)	0.019	0.011
249	20.75	0.10	0.030	(0.211)	0.019	0.011
250	20.83	0.07	0.020	(0.210)	0.013	0.007
251	20.92	0.07	0.020	(0.209)	0.013	0.007
252	21.00	0.07	0.020	(0.208)	0.013	0.007
253	21.08	0.10	0.030	(0.207)	0.019	0.011
254	21.17	0.10	0.030	(0.206)	0.019	0.011
255	21.25	0.10	0.030	(0.206)	0.019	0.011
256	21.33	0.07	0.020	(0.205)	0.013	0.007
257	21.42	0.07	0.020	(0.204)	0.013	0.007
258	21.50	0.07	0.020	(0.203)	0.013	0.007
259	21.58	0.10	0.030	(0.203)	0.019	0.011
260	21.67	0.10	0.030	(0.202)	0.019	0.011
261	21.75	0.10	0.030	(0.201)	0.019	0.011
262	21.83	0.07	0.020	(0.200)	0.013	0.007
263	21.92	0.07	0.020	(0.200)	0.013	0.007
264	22.00	0.07	0.020	(0.199)	0.013	0.007
265	22.08	0.10	0.030	(0.198)	0.019	0.011
266	22.17	0.10	0.030	(0.198)	0.019	0.011
267	22.25	0.10	0.030	(0.197)	0.019	0.011

268	22.33	0.07	0.020	(0.196)	0.013	0.007
269	22.42	0.07	0.020	(0.196)	0.013	0.007
270	22.50	0.07	0.020	(0.195)	0.013	0.007
271	22.58	0.07	0.020	(0.195)	0.013	0.007
272	22.67	0.07	0.020	(0.194)	0.013	0.007
273	22.75	0.07	0.020	(0.194)	0.013	0.007
274	22.83	0.07	0.020	(0.193)	0.013	0.007
275	22.92	0.07	0.020	(0.193)	0.013	0.007
276	23.00	0.07	0.020	(0.192)	0.013	0.007
277	23.08	0.07	0.020	(0.192)	0.013	0.007
278	23.17	0.07	0.020	(0.191)	0.013	0.007
279	23.25	0.07	0.020	(0.191)	0.013	0.007
280	23.33	0.07	0.020	(0.190)	0.013	0.007
281	23.42	0.07	0.020	(0.190)	0.013	0.007
282	23.50	0.07	0.020	(0.190)	0.013	0.007
283	23.58	0.07	0.020	(0.189)	0.013	0.007
284	23.67	0.07	0.020	(0.189)	0.013	0.007
285	23.75	0.07	0.020	(0.189)	0.013	0.007
286	23.83	0.07	0.020	(0.189)	0.013	0.007
287	23.92	0.07	0.020	(0.189)	0.013	0.007
288	24.00	0.07	0.020	(0.188)	0.013	0.007

(Loss Rate Not Used)

Sum = 100.0 Sum = 11.1

Flood volume = Effective rainfall 0.92(In)
times area 50.4(Ac.)/[(In)/(Ft.)] = 3.9(Ac.Ft)
Total soil loss = 1.57(In)
Total soil loss = 6.614(Ac.Ft)
Total rainfall = 2.50(In)
Flood volume = 169213.9 Cubic Feet
Total soil loss = 288121.0 Cubic Feet

Peak flow rate of this hydrograph = 6.386(CFS) AREA B

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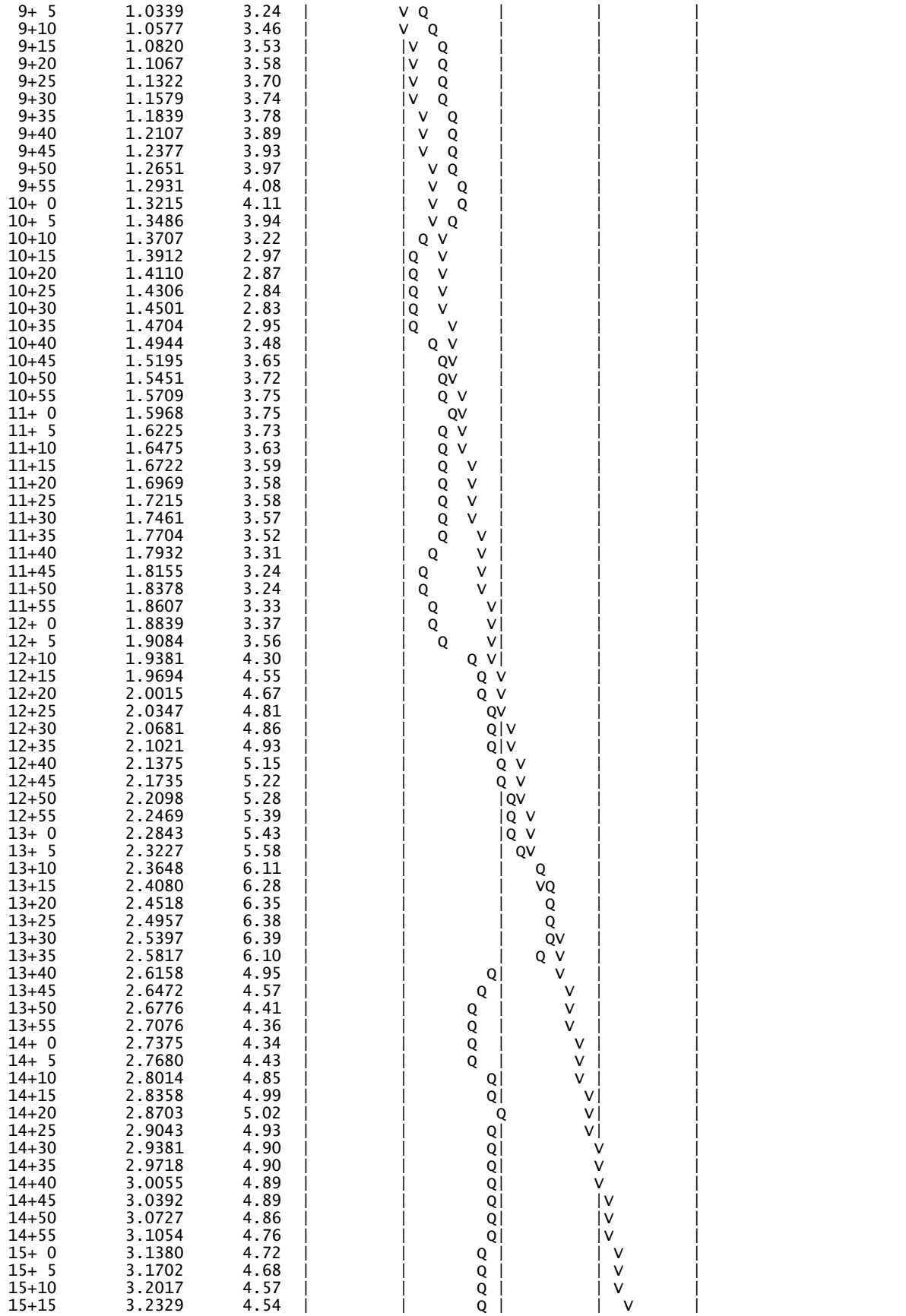
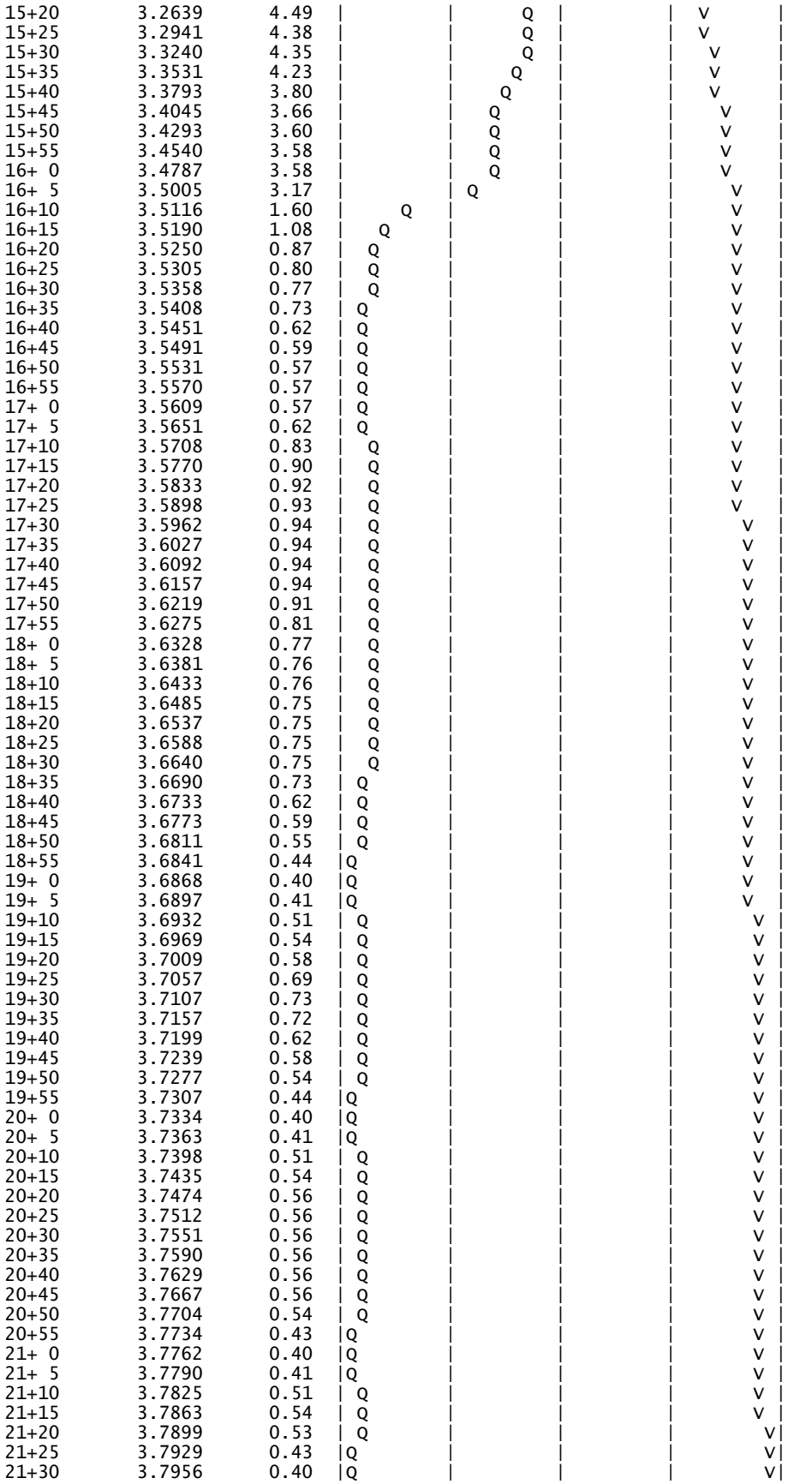
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.05	Q	|	|	|	|
0+10	0.0022	0.26	VQ	|	|	|	|
0+15	0.0045	0.33	VQ	|	|	|	|
0+20	0.0071	0.39	VQ	|	|	|	|
0+25	0.0106	0.50	V Q	|	|	|	|
0+30	0.0143	0.54	V Q	|	|	|	|
0+35	0.0181	0.56	V Q	|	|	|	|
0+40	0.0220	0.56	V Q	|	|	|	|
0+45	0.0259	0.56	V Q	|	|	|	|
0+50	0.0299	0.59	V Q	|	|	|	|
0+55	0.0347	0.70	V Q	|	|	|	|
1+ 0	0.0397	0.73	V Q	|	|	|	|
1+ 5	0.0447	0.72	V Q	|	|	|	|
1+10	0.0489	0.62	V Q	|	|	|	|
1+15	0.0530	0.58	V Q	|	|	|	|
1+20	0.0569	0.57	V Q	|	|	|	|
1+25	0.0608	0.57	V Q	|	|	|	|
1+30	0.0647	0.57	V Q	|	|	|	|
1+35	0.0686	0.56	V Q	|	|	|	|
1+40	0.0725	0.56	V Q	|	|	|	|
1+45	0.0764	0.56	V Q	|	|	|	|
1+50	0.0804	0.59	V Q	|	|	|	|
1+55	0.0852	0.70	V Q	|	|	|	|
2+ 0	0.0902	0.73	V Q	|	|	|	|
2+ 5	0.0954	0.74	V Q	|	|	|	|
2+10	0.1005	0.75	|VQ	|	|	|	|
2+15	0.1057	0.75	|V Q	|	|	|	|
2+20	0.1109	0.75	|V Q	|	|	|	|
2+25	0.1161	0.75	|V Q	|	|	|	|
2+30	0.1212	0.75	|V Q	|	|	|	|
2+35	0.1266	0.78	|V Q	|	|	|	|
2+40	0.1327	0.88	|V Q	|	|	|	|
2+45	0.1390	0.92	|V Q	|	|	|	|

```
2+50       0.1454      0.93  |V Q      |         |         |         |
2+55       0.1519      0.94  |V Q      |         |         |         |
3+ 0       0.1583      0.94  |V Q      |         |         |         |
3+ 5       0.1648      0.94  |V Q      |         |         |         |
3+10       0.1713      0.94  |V Q      |         |         |         |
3+15       0.1778      0.94  |V Q      |         |         |         |
3+20       0.1842      0.94  |V Q      |         |         |         |
3+25       0.1907      0.94  |V Q      |         |         |         |
3+30       0.1972      0.94  | VQ      |         |         |         |
3+35       0.2037      0.94  | VQ      |         |         |         |
3+40       0.2101      0.94  | VQ      |         |         |         |
3+45       0.2166      0.94  | VQ      |         |         |         |
3+50       0.2233      0.97  | VQ      |         |         |         |
3+55       0.2307      1.07  | V Q     |         |         |         |
4+ 0       0.2383      1.11  | V Q     |         |         |         |
4+ 5       0.2460      1.12  | V Q     |         |         |         |
4+10       0.2537      1.13  | V Q     |         |         |         |
4+15       0.2615      1.13  | V Q     |         |         |         |
4+20       0.2694      1.15  | V Q     |         |         |         |
4+25       0.2781      1.26  | V  Q    |         |         |         |
4+30       0.2870      1.29  | V  Q    |         |         |         |
4+35       0.2960      1.31  |  V Q    |         |         |         |
4+40       0.3051      1.31  |  V Q    |         |         |         |
4+45       0.3141      1.31  |  V Q    |         |         |         |
4+50       0.3234      1.34  |  V Q    |         |         |         |
4+55       0.3334      1.45  |  V Q    |         |         |         |
5+ 0       0.3436      1.48  |  V Q    |         |         |         |
5+ 5       0.3535      1.44  |  V Q    |         |         |         |
5+10       0.3620      1.24  |  VQ     |         |         |         |
5+15       0.3701      1.17  |  VQ     |         |         |         |
5+20       0.3782      1.17  |  VQ     |         |         |         |
5+25       0.3869      1.27  |  V Q    |         |         |         |
5+30       0.3958      1.30  |   VQ    |         |         |         |
5+35       0.4050      1.34  |   VQ    |         |         |         |
5+40       0.4149      1.44  |   VQ    |         |         |         |
5+45       0.4251      1.48  |   VQ    |         |         |         |
5+50       0.4354      1.50  |   VQ    |         |         |         |
5+55       0.4458      1.50  |   V Q   |         |         |         |
6+ 0       0.4561      1.50  |   V Q   |         |         |         |
6+ 5       0.4667      1.53  |   V Q   |         |         |         |
6+10       0.4779      1.64  |   V Q   |         |         |         |
6+15       0.4894      1.67  |    VQ   |         |         |         |
6+20       0.5010      1.68  |    VQ   |         |         |         |
6+25       0.5127      1.69  |    VQ   |         |         |         |
6+30       0.5243      1.69  |    VQ   |         |         |         |
6+35       0.5362      1.72  |    VQ   |         |         |         |
6+40       0.5487      1.82  |    V Q  |         |         |         |
6+45       0.5615      1.86  |    V Q  |         |         |         |
6+50       0.5744      1.87  |    V Q  |         |         |         |
6+55       0.5873      1.88  |     VQ  |         |         |         |
7+ 0       0.6003      1.88  |     VQ  |         |         |         |
7+ 5       0.6132      1.88  |     VQ  |         |         |         |
7+10       0.6262      1.88  |     VQ  |         |         |         |
7+15       0.6391      1.88  |     VQ  |         |         |         |
7+20       0.6522      1.91  |     VQ  |         |         |         |
7+25       0.6661      2.01  |     V Q |         |         |         |
7+30       0.6802      2.05  |      VQ |         |         |         |
7+35       0.6946      2.09  |      VQ |         |         |         |
7+40       0.7097      2.20  |      VQ |         |         |         |
7+45       0.7251      2.23  |      VQ |         |         |         |
7+50       0.7407      2.27  |      V Q|         |         |         |
7+55       0.7572      2.38  |      V Q|         |         |         |
8+ 0       0.7738      2.42  |      V Q|         |         |         |
8+ 5       0.7910      2.49  |       VQ|         |         |         |
8+10       0.8096      2.70  |       V Q         |         |         |
8+15       0.8287      2.78  |       V  |Q       |         |         |
8+20       0.8480      2.80  |       V  |Q       |         |         |
8+25       0.8674      2.81  |       V  |Q       |         |         |
8+30       0.8868      2.82  |        V |Q       |         |         |
8+35       0.9064      2.85  |        V |Q       |         |         |
8+40       0.9267      2.95  |        V |Q       |         |         |
8+45       0.9473      2.99  |        V |Q       |         |         |
8+50       0.9682      3.03  |        V|  Q      |         |         |
8+55       0.9898      3.14  |         V Q       |         |         |
9+ 0       1.0116      3.17  |         V Q       |         |         |
```





```
   21+35       3.7984      0.41  |Q        |         |         |        v|
   21+40       3.8019      0.51  | Q       |         |         |        v|
   21+45       3.8057      0.54  | Q       |         |         |        v|
   21+50       3.8093      0.53  | Q       |         |         |        v|
   21+55       3.8123      0.43  |Q        |         |         |        v|
   22+ 0       3.8150      0.40  |Q        |         |         |        v|
   22+ 5       3.8178      0.41  |Q        |         |         |        v|
   22+10       3.8214      0.51  | Q       |         |         |        v|
   22+15       3.8251      0.54  | Q       |         |         |        v|
   22+20       3.8288      0.53  | Q       |         |         |        v|
   22+25       3.8317      0.43  |Q        |         |         |        v|
   22+30       3.8344      0.40  |Q        |         |         |        v|
   22+35       3.8371      0.38  |Q        |         |         |        v|
   22+40       3.8397      0.38  |Q        |         |         |        v|
   22+45       3.8423      0.38  |Q        |         |         |        v|
   22+50       3.8449      0.38  |Q        |         |         |        v|
   22+55       3.8475      0.38  |Q        |         |         |        v|
   23+ 0       3.8501      0.38  |Q        |         |         |        v|
   23+ 5       3.8527      0.38  |Q        |         |         |        v|
   23+10       3.8552      0.38  |Q        |         |         |        v|
   23+15       3.8578      0.38  |Q        |         |         |        v|
   23+20       3.8604      0.38  |Q        |         |         |        v|
   23+25       3.8630      0.38  |Q        |         |         |        v|
   23+30       3.8656      0.38  |Q        |         |         |        v|
   23+35       3.8682      0.38  |Q        |         |         |        v|
   23+40       3.8708      0.38  |Q        |         |         |        v|
   23+45       3.8734      0.38  |Q        |         |         |        v|
   23+50       3.8760      0.38  |Q        |         |         |        v|
   23+55       3.8786      0.38  |Q        |         |         |        v|
   24+ 0       3.8811      0.38  |Q        |         |         |        v|
   24+ 5       3.8834      0.32  |Q        |         |         |        v|
   24+10       3.8841      0.11  Q         |         |         |        v|
   24+15       3.8844      0.04  Q         |         |         |        v|
   24+20       3.8846      0.02  Q         |         |         |        v|
   24+25       3.8846      0.01  Q         |         |         |        v|
   24+30       3.8846      0.00  Q         |         |         |        v|
   24+35       3.8846      0.00  Q         |         |         |        v|
-------------------------------------------------------------------------
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Proposed Unit Hydrographs

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: SOUTH2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER SOUTH PROPOSED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 67.80(Ac.) = 0.106 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 67.80(Ac.) = 0.106 Sq. Mi.
Length along longest watercourse = 3335.00(Ft.)
Length along longest watercourse measured to centroid = 2260.00(Ft.)
Length along longest watercourse = 0.632 Mi.
Length along longest watercourse measured to centroid = 0.428 Mi.
Difference in elevation = 51.40(Ft.)
Slope along watercourse = 81.3769 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.095 Hr.
Lag time = 5.70 Min.
25% of lag time = 1.42 Min.
40% of lag time = 2.28 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	2.50	169.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
67.80	6.50	440.70

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
67.800	59.20	0.740

Total Area Entered = 67.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

59.2	39.2	0.677	0.740	0.226	1.000	0.226
					Sum (F) =	0.226

Area averaged mean soil loss (F) (In/Hr) = 0.226
Minimum soil loss rate ((In/Hr)) = 0.113
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.310

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	87.776	10.723	7.327
2	0.167	175.552	52.562	35.916
3	0.250	263.328	21.552	14.727
4	0.333	351.104	8.827	6.031
5	0.417	438.880	3.918	2.677
6	0.500	526.656	1.227	0.838
7	0.583	614.432	0.656	0.448
8	0.667	702.208	0.534	0.365
			Sum = 100.000	Sum= 68.330

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.401)	0.006	0.014
2	0.17	0.07	0.020	(0.399)	0.006	0.014
3	0.25	0.07	0.020	(0.398)	0.006	0.014
4	0.33	0.10	0.030	(0.396)	0.009	0.021
5	0.42	0.10	0.030	(0.395)	0.009	0.021
6	0.50	0.10	0.030	(0.393)	0.009	0.021
7	0.58	0.10	0.030	(0.392)	0.009	0.021
8	0.67	0.10	0.030	(0.390)	0.009	0.021
9	0.75	0.10	0.030	(0.389)	0.009	0.021
10	0.83	0.13	0.040	(0.387)	0.012	0.028
11	0.92	0.13	0.040	(0.386)	0.012	0.028
12	1.00	0.13	0.040	(0.384)	0.012	0.028
13	1.08	0.10	0.030	(0.383)	0.009	0.021
14	1.17	0.10	0.030	(0.381)	0.009	0.021
15	1.25	0.10	0.030	(0.380)	0.009	0.021
16	1.33	0.10	0.030	(0.378)	0.009	0.021
17	1.42	0.10	0.030	(0.377)	0.009	0.021
18	1.50	0.10	0.030	(0.375)	0.009	0.021
19	1.58	0.10	0.030	(0.374)	0.009	0.021
20	1.67	0.10	0.030	(0.372)	0.009	0.021
21	1.75	0.10	0.030	(0.371)	0.009	0.021
22	1.83	0.13	0.040	(0.369)	0.012	0.028
23	1.92	0.13	0.040	(0.368)	0.012	0.028
24	2.00	0.13	0.040	(0.366)	0.012	0.028
25	2.08	0.13	0.040	(0.365)	0.012	0.028
26	2.17	0.13	0.040	(0.363)	0.012	0.028
27	2.25	0.13	0.040	(0.362)	0.012	0.028
28	2.33	0.13	0.040	(0.360)	0.012	0.028
29	2.42	0.13	0.040	(0.359)	0.012	0.028
30	2.50	0.13	0.040	(0.357)	0.012	0.028
31	2.58	0.17	0.050	(0.356)	0.015	0.034
32	2.67	0.17	0.050	(0.354)	0.015	0.034
33	2.75	0.17	0.050	(0.353)	0.015	0.034
34	2.83	0.17	0.050	(0.351)	0.015	0.034
35	2.92	0.17	0.050	(0.350)	0.015	0.034
36	3.00	0.17	0.050	(0.348)	0.015	0.034
37	3.08	0.17	0.050	(0.347)	0.015	0.034
38	3.17	0.17	0.050	(0.346)	0.015	0.034
39	3.25	0.17	0.050	(0.344)	0.015	0.034
40	3.33	0.17	0.050	(0.343)	0.015	0.034
41	3.42	0.17	0.050	(0.341)	0.015	0.034
42	3.50	0.17	0.050	(0.340)	0.015	0.034

43	3.58	0.17	0.050	(0.338)	0.015	0.034
44	3.67	0.17	0.050	(0.337)	0.015	0.034
45	3.75	0.17	0.050	(0.336)	0.015	0.034
46	3.83	0.20	0.060	(0.334)	0.019	0.041
47	3.92	0.20	0.060	(0.333)	0.019	0.041
48	4.00	0.20	0.060	(0.331)	0.019	0.041
49	4.08	0.20	0.060	(0.330)	0.019	0.041
50	4.17	0.20	0.060	(0.329)	0.019	0.041
51	4.25	0.20	0.060	(0.327)	0.019	0.041
52	4.33	0.23	0.070	(0.326)	0.022	0.048
53	4.42	0.23	0.070	(0.324)	0.022	0.048
54	4.50	0.23	0.070	(0.323)	0.022	0.048
55	4.58	0.23	0.070	(0.322)	0.022	0.048
56	4.67	0.23	0.070	(0.320)	0.022	0.048
57	4.75	0.23	0.070	(0.319)	0.022	0.048
58	4.83	0.27	0.080	(0.317)	0.025	0.055
59	4.92	0.27	0.080	(0.316)	0.025	0.055
60	5.00	0.27	0.080	(0.315)	0.025	0.055
61	5.08	0.20	0.060	(0.313)	0.019	0.041
62	5.17	0.20	0.060	(0.312)	0.019	0.041
63	5.25	0.20	0.060	(0.311)	0.019	0.041
64	5.33	0.23	0.070	(0.309)	0.022	0.048
65	5.42	0.23	0.070	(0.308)	0.022	0.048
66	5.50	0.23	0.070	(0.307)	0.022	0.048
67	5.58	0.27	0.080	(0.305)	0.025	0.055
68	5.67	0.27	0.080	(0.304)	0.025	0.055
69	5.75	0.27	0.080	(0.303)	0.025	0.055
70	5.83	0.27	0.080	(0.301)	0.025	0.055
71	5.92	0.27	0.080	(0.300)	0.025	0.055
72	6.00	0.27	0.080	(0.299)	0.025	0.055
73	6.08	0.30	0.090	(0.297)	0.028	0.062
74	6.17	0.30	0.090	(0.296)	0.028	0.062
75	6.25	0.30	0.090	(0.295)	0.028	0.062
76	6.33	0.30	0.090	(0.293)	0.028	0.062
77	6.42	0.30	0.090	(0.292)	0.028	0.062
78	6.50	0.30	0.090	(0.291)	0.028	0.062
79	6.58	0.33	0.100	(0.289)	0.031	0.069
80	6.67	0.33	0.100	(0.288)	0.031	0.069
81	6.75	0.33	0.100	(0.287)	0.031	0.069
82	6.83	0.33	0.100	(0.285)	0.031	0.069
83	6.92	0.33	0.100	(0.284)	0.031	0.069
84	7.00	0.33	0.100	(0.283)	0.031	0.069
85	7.08	0.33	0.100	(0.282)	0.031	0.069
86	7.17	0.33	0.100	(0.280)	0.031	0.069
87	7.25	0.33	0.100	(0.279)	0.031	0.069
88	7.33	0.37	0.110	(0.278)	0.034	0.076
89	7.42	0.37	0.110	(0.276)	0.034	0.076
90	7.50	0.37	0.110	(0.275)	0.034	0.076
91	7.58	0.40	0.120	(0.274)	0.037	0.083
92	7.67	0.40	0.120	(0.273)	0.037	0.083
93	7.75	0.40	0.120	(0.271)	0.037	0.083
94	7.83	0.43	0.130	(0.270)	0.040	0.090
95	7.92	0.43	0.130	(0.269)	0.040	0.090
96	8.00	0.43	0.130	(0.268)	0.040	0.090
97	8.08	0.50	0.150	(0.266)	0.046	0.103
98	8.17	0.50	0.150	(0.265)	0.046	0.103
99	8.25	0.50	0.150	(0.264)	0.046	0.103
100	8.33	0.50	0.150	(0.263)	0.046	0.103
101	8.42	0.50	0.150	(0.262)	0.046	0.103
102	8.50	0.50	0.150	(0.260)	0.046	0.103
103	8.58	0.53	0.160	(0.259)	0.050	0.110
104	8.67	0.53	0.160	(0.258)	0.050	0.110
105	8.75	0.53	0.160	(0.257)	0.050	0.110
106	8.83	0.57	0.170	(0.255)	0.053	0.117
107	8.92	0.57	0.170	(0.254)	0.053	0.117
108	9.00	0.57	0.170	(0.253)	0.053	0.117
109	9.08	0.63	0.190	(0.252)	0.059	0.131
110	9.17	0.63	0.190	(0.251)	0.059	0.131
111	9.25	0.63	0.190	(0.249)	0.059	0.131
112	9.33	0.67	0.200	(0.248)	0.062	0.138
113	9.42	0.67	0.200	(0.247)	0.062	0.138
114	9.50	0.67	0.200	(0.246)	0.062	0.138
115	9.58	0.70	0.210	(0.245)	0.065	0.145
116	9.67	0.70	0.210	(0.244)	0.065	0.145
117	9.75	0.70	0.210	(0.242)	0.065	0.145

118	9.83	0.73	0.220	(0.241)	0.068	0.152
119	9.92	0.73	0.220	(0.240)	0.068	0.152
120	10.00	0.73	0.220	(0.239)	0.068	0.152
121	10.08	0.50	0.150	(0.238)	0.046	0.103
122	10.17	0.50	0.150	(0.237)	0.046	0.103
123	10.25	0.50	0.150	(0.235)	0.046	0.103
124	10.33	0.50	0.150	(0.234)	0.046	0.103
125	10.42	0.50	0.150	(0.233)	0.046	0.103
126	10.50	0.50	0.150	(0.232)	0.046	0.103
127	10.58	0.67	0.200	(0.231)	0.062	0.138
128	10.67	0.67	0.200	(0.230)	0.062	0.138
129	10.75	0.67	0.200	(0.229)	0.062	0.138
130	10.83	0.67	0.200	(0.227)	0.062	0.138
131	10.92	0.67	0.200	(0.226)	0.062	0.138
132	11.00	0.67	0.200	(0.225)	0.062	0.138
133	11.08	0.63	0.190	(0.224)	0.059	0.131
134	11.17	0.63	0.190	(0.223)	0.059	0.131
135	11.25	0.63	0.190	(0.222)	0.059	0.131
136	11.33	0.63	0.190	(0.221)	0.059	0.131
137	11.42	0.63	0.190	(0.220)	0.059	0.131
138	11.50	0.63	0.190	(0.219)	0.059	0.131
139	11.58	0.57	0.170	(0.218)	0.053	0.117
140	11.67	0.57	0.170	(0.216)	0.053	0.117
141	11.75	0.57	0.170	(0.215)	0.053	0.117
142	11.83	0.60	0.180	(0.214)	0.056	0.124
143	11.92	0.60	0.180	(0.213)	0.056	0.124
144	12.00	0.60	0.180	(0.212)	0.056	0.124
145	12.08	0.83	0.250	(0.211)	0.077	0.172
146	12.17	0.83	0.250	(0.210)	0.077	0.172
147	12.25	0.83	0.250	(0.209)	0.077	0.172
148	12.33	0.87	0.260	(0.208)	0.081	0.179
149	12.42	0.87	0.260	(0.207)	0.081	0.179
150	12.50	0.87	0.260	(0.206)	0.081	0.179
151	12.58	0.93	0.280	(0.205)	0.087	0.193
152	12.67	0.93	0.280	(0.204)	0.087	0.193
153	12.75	0.93	0.280	(0.203)	0.087	0.193
154	12.83	0.97	0.290	(0.202)	0.090	0.200
155	12.92	0.97	0.290	(0.201)	0.090	0.200
156	13.00	0.97	0.290	(0.200)	0.090	0.200
157	13.08	1.13	0.340	(0.199)	0.105	0.235
158	13.17	1.13	0.340	(0.198)	0.105	0.235
159	13.25	1.13	0.340	(0.197)	0.105	0.235
160	13.33	1.13	0.340	(0.196)	0.105	0.235
161	13.42	1.13	0.340	(0.195)	0.105	0.235
162	13.50	1.13	0.340	(0.194)	0.105	0.235
163	13.58	0.77	0.230	(0.193)	0.071	0.159
164	13.67	0.77	0.230	(0.192)	0.071	0.159
165	13.75	0.77	0.230	(0.191)	0.071	0.159
166	13.83	0.77	0.230	(0.190)	0.071	0.159
167	13.92	0.77	0.230	(0.189)	0.071	0.159
168	14.00	0.77	0.230	(0.188)	0.071	0.159
169	14.08	0.90	0.270	(0.187)	0.084	0.186
170	14.17	0.90	0.270	(0.186)	0.084	0.186
171	14.25	0.90	0.270	(0.185)	0.084	0.186
172	14.33	0.87	0.260	(0.184)	0.081	0.179
173	14.42	0.87	0.260	(0.183)	0.081	0.179
174	14.50	0.87	0.260	(0.182)	0.081	0.179
175	14.58	0.87	0.260	(0.181)	0.081	0.179
176	14.67	0.87	0.260	(0.180)	0.081	0.179
177	14.75	0.87	0.260	(0.179)	0.081	0.179
178	14.83	0.83	0.250	(0.178)	0.077	0.172
179	14.92	0.83	0.250	(0.178)	0.077	0.172
180	15.00	0.83	0.250	(0.177)	0.077	0.172
181	15.08	0.80	0.240	(0.176)	0.074	0.166
182	15.17	0.80	0.240	(0.175)	0.074	0.166
183	15.25	0.80	0.240	(0.174)	0.074	0.166
184	15.33	0.77	0.230	(0.173)	0.071	0.159
185	15.42	0.77	0.230	(0.172)	0.071	0.159
186	15.50	0.77	0.230	(0.171)	0.071	0.159
187	15.58	0.63	0.190	(0.170)	0.059	0.131
188	15.67	0.63	0.190	(0.170)	0.059	0.131
189	15.75	0.63	0.190	(0.169)	0.059	0.131
190	15.83	0.63	0.190	(0.168)	0.059	0.131
191	15.92	0.63	0.190	(0.167)	0.059	0.131
192	16.00	0.63	0.190	(0.166)	0.059	0.131

193	16.08	0.13	0.040	(0.165)	0.012	0.028
194	16.17	0.13	0.040	(0.164)	0.012	0.028
195	16.25	0.13	0.040	(0.164)	0.012	0.028
196	16.33	0.13	0.040	(0.163)	0.012	0.028
197	16.42	0.13	0.040	(0.162)	0.012	0.028
198	16.50	0.13	0.040	(0.161)	0.012	0.028
199	16.58	0.10	0.030	(0.160)	0.009	0.021
200	16.67	0.10	0.030	(0.159)	0.009	0.021
201	16.75	0.10	0.030	(0.159)	0.009	0.021
202	16.83	0.10	0.030	(0.158)	0.009	0.021
203	16.92	0.10	0.030	(0.157)	0.009	0.021
204	17.00	0.10	0.030	(0.156)	0.009	0.021
205	17.08	0.17	0.050	(0.155)	0.015	0.034
206	17.17	0.17	0.050	(0.155)	0.015	0.034
207	17.25	0.17	0.050	(0.154)	0.015	0.034
208	17.33	0.17	0.050	(0.153)	0.015	0.034
209	17.42	0.17	0.050	(0.152)	0.015	0.034
210	17.50	0.17	0.050	(0.152)	0.015	0.034
211	17.58	0.17	0.050	(0.151)	0.015	0.034
212	17.67	0.17	0.050	(0.150)	0.015	0.034
213	17.75	0.17	0.050	(0.149)	0.015	0.034
214	17.83	0.13	0.040	(0.149)	0.012	0.028
215	17.92	0.13	0.040	(0.148)	0.012	0.028
216	18.00	0.13	0.040	(0.147)	0.012	0.028
217	18.08	0.13	0.040	(0.146)	0.012	0.028
218	18.17	0.13	0.040	(0.146)	0.012	0.028
219	18.25	0.13	0.040	(0.145)	0.012	0.028
220	18.33	0.13	0.040	(0.144)	0.012	0.028
221	18.42	0.13	0.040	(0.144)	0.012	0.028
222	18.50	0.13	0.040	(0.143)	0.012	0.028
223	18.58	0.10	0.030	(0.142)	0.009	0.021
224	18.67	0.10	0.030	(0.141)	0.009	0.021
225	18.75	0.10	0.030	(0.141)	0.009	0.021
226	18.83	0.07	0.020	(0.140)	0.006	0.014
227	18.92	0.07	0.020	(0.139)	0.006	0.014
228	19.00	0.07	0.020	(0.139)	0.006	0.014
229	19.08	0.10	0.030	(0.138)	0.009	0.021
230	19.17	0.10	0.030	(0.137)	0.009	0.021
231	19.25	0.10	0.030	(0.137)	0.009	0.021
232	19.33	0.13	0.040	(0.136)	0.012	0.028
233	19.42	0.13	0.040	(0.136)	0.012	0.028
234	19.50	0.13	0.040	(0.135)	0.012	0.028
235	19.58	0.10	0.030	(0.134)	0.009	0.021
236	19.67	0.10	0.030	(0.134)	0.009	0.021
237	19.75	0.10	0.030	(0.133)	0.009	0.021
238	19.83	0.07	0.020	(0.133)	0.006	0.014
239	19.92	0.07	0.020	(0.132)	0.006	0.014
240	20.00	0.07	0.020	(0.131)	0.006	0.014
241	20.08	0.10	0.030	(0.131)	0.009	0.021
242	20.17	0.10	0.030	(0.130)	0.009	0.021
243	20.25	0.10	0.030	(0.130)	0.009	0.021
244	20.33	0.10	0.030	(0.129)	0.009	0.021
245	20.42	0.10	0.030	(0.129)	0.009	0.021
246	20.50	0.10	0.030	(0.128)	0.009	0.021
247	20.58	0.10	0.030	(0.127)	0.009	0.021
248	20.67	0.10	0.030	(0.127)	0.009	0.021
249	20.75	0.10	0.030	(0.126)	0.009	0.021
250	20.83	0.07	0.020	(0.126)	0.006	0.014
251	20.92	0.07	0.020	(0.125)	0.006	0.014
252	21.00	0.07	0.020	(0.125)	0.006	0.014
253	21.08	0.10	0.030	(0.124)	0.009	0.021
254	21.17	0.10	0.030	(0.124)	0.009	0.021
255	21.25	0.10	0.030	(0.123)	0.009	0.021
256	21.33	0.07	0.020	(0.123)	0.006	0.014
257	21.42	0.07	0.020	(0.122)	0.006	0.014
258	21.50	0.07	0.020	(0.122)	0.006	0.014
259	21.58	0.10	0.030	(0.122)	0.009	0.021
260	21.67	0.10	0.030	(0.121)	0.009	0.021
261	21.75	0.10	0.030	(0.121)	0.009	0.021
262	21.83	0.07	0.020	(0.120)	0.006	0.014
263	21.92	0.07	0.020	(0.120)	0.006	0.014
264	22.00	0.07	0.020	(0.119)	0.006	0.014
265	22.08	0.10	0.030	(0.119)	0.009	0.021
266	22.17	0.10	0.030	(0.119)	0.009	0.021
267	22.25	0.10	0.030	(0.118)	0.009	0.021

268	22.33	0.07	0.020	(0.118)	0.006	0.014
269	22.42	0.07	0.020	(0.118)	0.006	0.014
270	22.50	0.07	0.020	(0.117)	0.006	0.014
271	22.58	0.07	0.020	(0.117)	0.006	0.014
272	22.67	0.07	0.020	(0.117)	0.006	0.014
273	22.75	0.07	0.020	(0.116)	0.006	0.014
274	22.83	0.07	0.020	(0.116)	0.006	0.014
275	22.92	0.07	0.020	(0.116)	0.006	0.014
276	23.00	0.07	0.020	(0.115)	0.006	0.014
277	23.08	0.07	0.020	(0.115)	0.006	0.014
278	23.17	0.07	0.020	(0.115)	0.006	0.014
279	23.25	0.07	0.020	(0.115)	0.006	0.014
280	23.33	0.07	0.020	(0.114)	0.006	0.014
281	23.42	0.07	0.020	(0.114)	0.006	0.014
282	23.50	0.07	0.020	(0.114)	0.006	0.014
283	23.58	0.07	0.020	(0.114)	0.006	0.014
284	23.67	0.07	0.020	(0.114)	0.006	0.014
285	23.75	0.07	0.020	(0.113)	0.006	0.014
286	23.83	0.07	0.020	(0.113)	0.006	0.014
287	23.92	0.07	0.020	(0.113)	0.006	0.014
288	24.00	0.07	0.020	(0.113)	0.006	0.014

(Loss Rate Not Used)

Sum = 100.0 Sum = 20.7

Flood volume = Effective rainfall 1.72(In)
times area 67.8(Ac.)/[(In)/(Ft.)] = 9.7(Ac.Ft)
Total soil loss = 0.77(In)
Total soil loss = 4.378(Ac.Ft)
Total rainfall = 2.50(In)
Flood volume = 424490.4 Cubic Feet
Total soil loss = 190713.1 Cubic Feet

Peak flow rate of this hydrograph = 16.008(CFS) SOUTH AREA

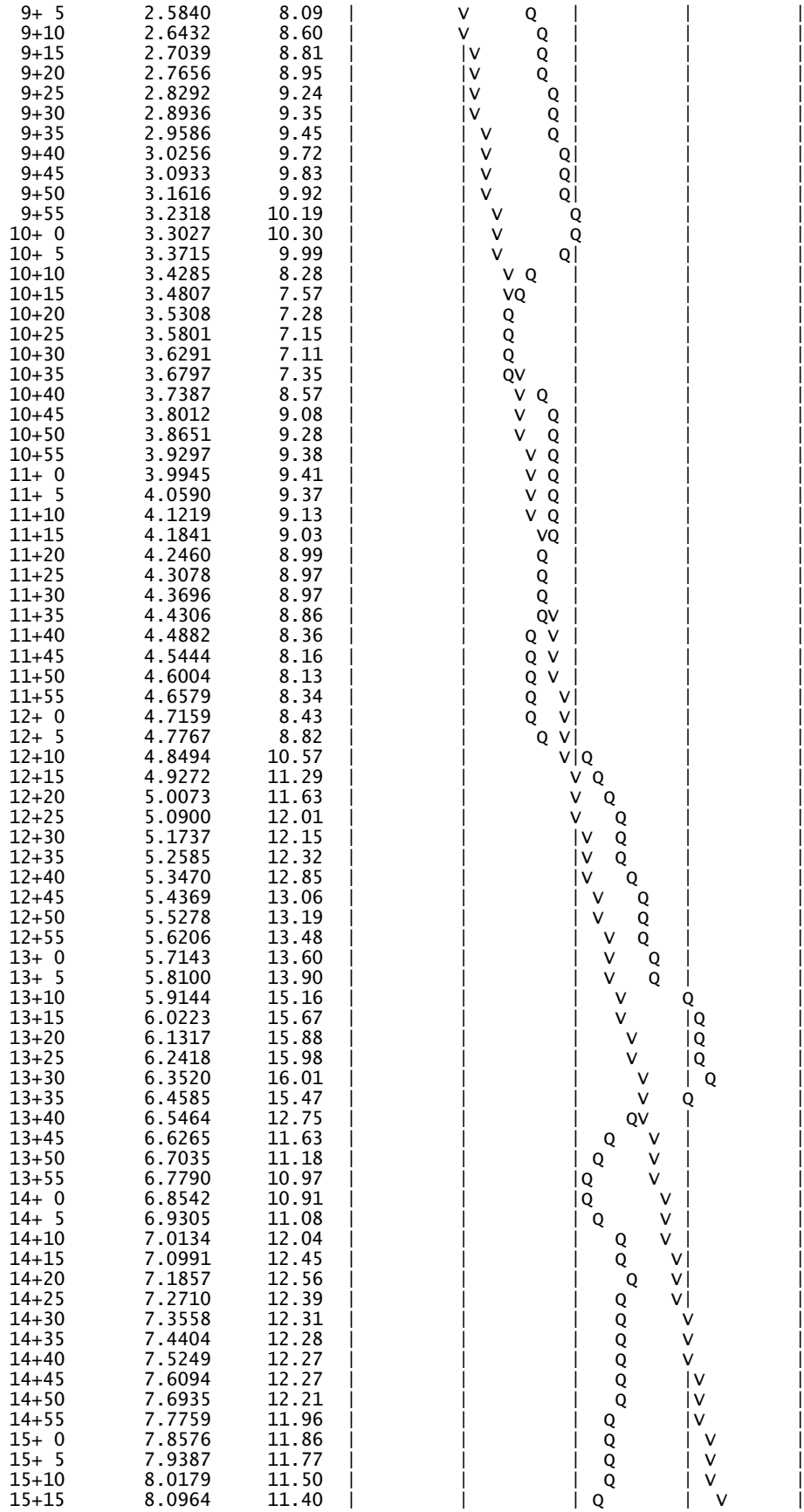
++

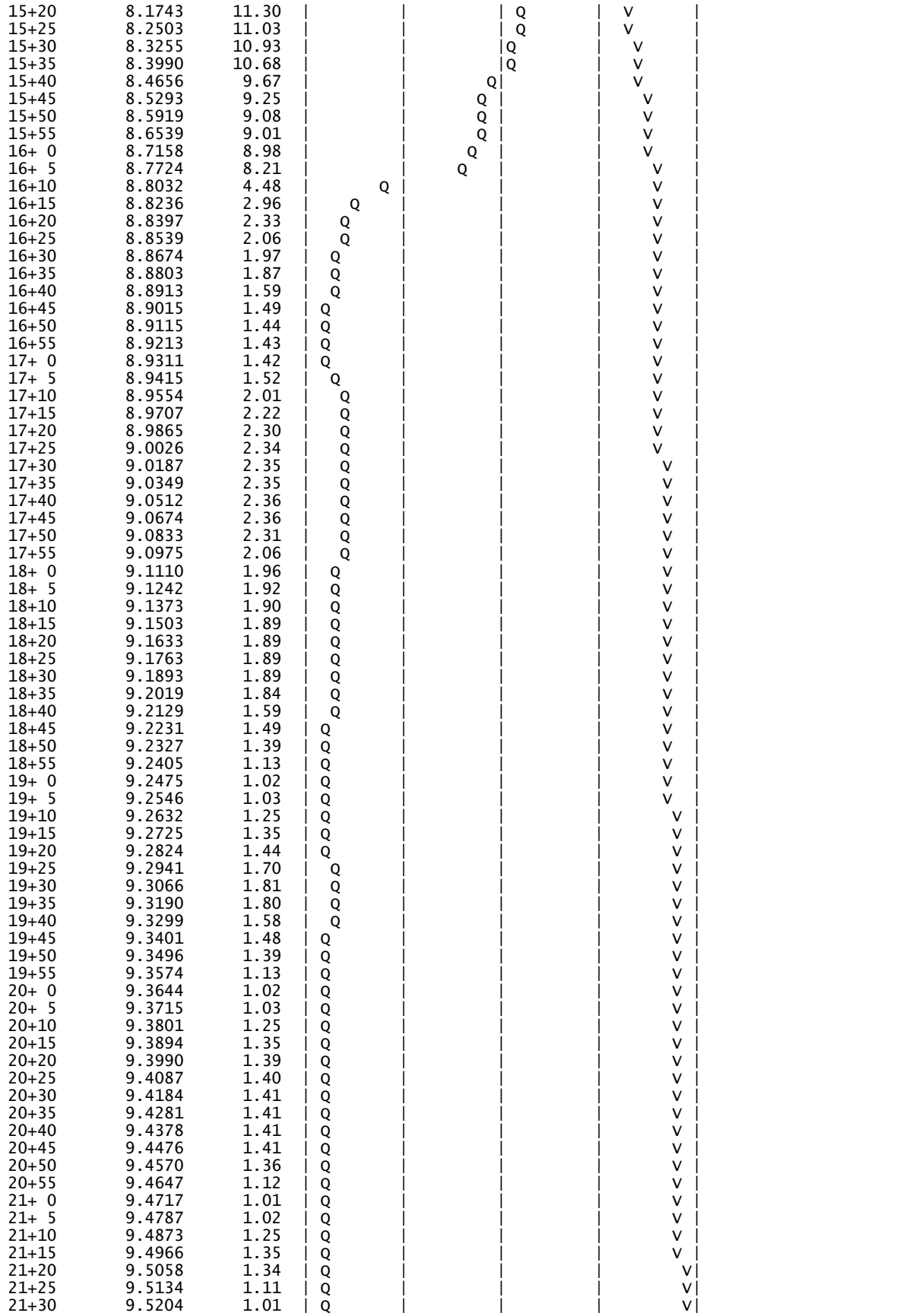
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	5.0	10.0	15.0	20.0
0+ 5	0.0007	0.10	Q	|	|	|	|
0+10	0.0048	0.60	VQ	|	|	|	|
0+15	0.0103	0.80	VQ	|	|	|	|
0+20	0.0168	0.93	VQ	|	|	|	|
0+25	0.0251	1.22	V Q	|	|	|	|
0+30	0.0343	1.33	V Q	|	|	|	|
0+35	0.0438	1.38	V Q	|	|	|	|
0+40	0.0535	1.40	V Q	|	|	|	|
0+45	0.0632	1.41	V Q	|	|	|	|
0+50	0.0733	1.46	V Q	|	|	|	|
0+55	0.0851	1.71	V Q	|	|	|	|
1+ 0	0.0976	1.82	V Q	|	|	|	|
1+ 5	0.1100	1.81	V Q	|	|	|	|
1+10	0.1209	1.58	V Q	|	|	|	|
1+15	0.1311	1.48	V Q	|	|	|	|
1+20	0.1410	1.44	V Q	|	|	|	|
1+25	0.1508	1.43	V Q	|	|	|	|
1+30	0.1606	1.42	V Q	|	|	|	|
1+35	0.1704	1.42	V Q	|	|	|	|
1+40	0.1801	1.41	V Q	|	|	|	|
1+45	0.1899	1.41	V Q	|	|	|	|
1+50	0.2000	1.47	V Q	|	|	|	|
1+55	0.2118	1.71	V Q	|	|	|	|
2+ 0	0.2243	1.82	V Q	|	|	|	|
2+ 5	0.2371	1.86	V Q	|	|	|	|
2+10	0.2500	1.88	|V Q	|	|	|	|
2+15	0.2629	1.88	|V Q	|	|	|	|
2+20	0.2759	1.88	|V Q	|	|	|	|
2+25	0.2889	1.89	|V Q	|	|	|	|
2+30	0.3019	1.89	|V Q	|	|	|	|
2+35	0.3152	1.94	|V Q	|	|	|	|
2+40	0.3303	2.19	|V Q	|	|	|	|
2+45	0.3460	2.29	|V Q	|	|	|	|

```
2+50       0.3621      2.33  |V  Q     |         |         |         |
2+55       0.3782      2.35  |V  Q     |         |         |         |
3+ 0       0.3944      2.35  |V  Q     |         |         |         |
3+ 5       0.4106      2.36  |V  Q     |         |         |         |
3+10       0.4269      2.36  |V  Q     |         |         |         |
3+15       0.4431      2.36  |V  Q     |         |         |         |
3+20       0.4594      2.36  |V  Q     |         |         |         |
3+25       0.4756      2.36  |V  Q     |         |         |         |
3+30       0.4919      2.36  | V Q     |         |         |         |
3+35       0.5081      2.36  | V Q     |         |         |         |
3+40       0.5243      2.36  | V Q     |         |         |         |
3+45       0.5406      2.36  | V Q     |         |         |         |
3+50       0.5572      2.41  | V Q     |         |         |         |
3+55       0.5755      2.66  | V  Q    |         |         |         |
4+ 0       0.5945      2.76  | V  Q    |         |         |         |
4+ 5       0.6137      2.80  | V  Q    |         |         |         |
4+10       0.6332      2.82  | V  Q    |         |         |         |
4+15       0.6526      2.82  | V  Q    |         |         |         |
4+20       0.6724      2.88  | V  Q    |         |         |         |
4+25       0.6940      3.13  | V   Q   |         |         |         |
4+30       0.7162      3.23  | V   Q   |         |         |         |
4+35       0.7388      3.27  |  V  Q   |         |         |         |
4+40       0.7614      3.29  |  V  Q   |         |         |         |
4+45       0.7841      3.30  |  V  Q   |         |         |         |
4+50       0.8072      3.35  |  V  Q   |         |         |         |
4+55       0.8320      3.60  |  V   Q  |         |         |         |
5+ 0       0.8575      3.70  |  V   Q  |         |         |         |
5+ 5       0.8826      3.64  |  V   Q  |         |         |         |
5+10       0.9044      3.16  |  V  Q   |         |         |         |
5+15       0.9248      2.97  |  V Q    |         |         |         |
5+20       0.9450      2.94  |  V Q    |         |         |         |
5+25       0.9667      3.15  |  V  Q   |         |         |         |
5+30       0.9890      3.24  |   V Q   |         |         |         |
5+35       1.0120      3.33  |   V Q   |         |         |         |
5+40       1.0367      3.59  |   V  Q  |         |         |         |
5+45       1.0621      3.70  |   V  Q  |         |         |         |
5+50       1.0879      3.74  |   V  Q  |         |         |         |
5+55       1.1138      3.76  |   V  Q  |         |         |         |
6+ 0       1.1398      3.77  |   V  Q  |         |         |         |
6+ 5       1.1661      3.82  |   V  Q  |         |         |         |
6+10       1.1941      4.07  |   V   Q |         |         |         |
6+15       1.2229      4.17  |    V  Q |         |         |         |
6+20       1.2519      4.22  |    V  Q |         |         |         |
6+25       1.2810      4.23  |    V  Q |         |         |         |
6+30       1.3102      4.24  |    V  Q |         |         |         |
6+35       1.3398      4.29  |    V  Q |         |         |         |
6+40       1.3711      4.54  |    V   Q|         |         |         |
6+45       1.4031      4.65  |    V   Q|         |         |         |
6+50       1.4354      4.69  |    V   Q|         |         |         |
6+55       1.4678      4.71  |     V  Q|         |         |         |
7+ 0       1.5002      4.71  |     V  Q|         |         |         |
7+ 5       1.5327      4.71  |     V  Q|         |         |         |
7+10       1.5652      4.72  |     V  Q|         |         |         |
7+15       1.5976      4.72  |     V  Q|         |         |         |
7+20       1.6305      4.77  |     V  Q|         |         |         |
7+25       1.6650      5.02  |     V   Q         |         |         |
7+30       1.7003      5.12  |     V   Q         |         |         |
7+35       1.7361      5.21  |      V  Q         |         |         |
7+40       1.7738      5.48  |      V  Q         |         |         |
7+45       1.8123      5.58  |      V  |Q        |         |         |
7+50       1.8514      5.68  |      V  |Q        |         |         |
7+55       1.8923      5.95  |      V  |Q        |         |         |
8+ 0       1.9340      6.05  |      V  | Q       |         |         |
8+ 5       1.9767      6.20  |       V | Q       |         |         |
8+10       2.0230      6.72  |       V |  Q      |         |         |
8+15       2.0707      6.93  |       V |  Q      |         |         |
8+20       2.1190      7.01  |       V |   Q     |         |         |
8+25       2.1676      7.05  |       V |   Q     |         |         |
8+30       2.2162      7.06  |        V|   Q     |         |         |
8+35       2.2653      7.12  |        V|   Q     |         |         |
8+40       2.3160      7.37  |        V|   Q     |         |         |
8+45       2.3675      7.47  |        V|   Q     |         |         |
8+50       2.4196      7.57  |        V|    Q    |         |         |
8+55       2.4736      7.83  |         V    Q    |         |         |
9+ 0       2.5283      7.94  |         V    Q    |         |         |
```





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   21+35       9.5274      1.02  | Q       |         |         |        v|
   21+40       9.5361      1.25  | Q       |         |         |        v|
   21+45       9.5454      1.35  | Q       |         |         |        v|
   21+50       9.5546      1.34  | Q       |         |         |        v|
   21+55       9.5622      1.11  | Q       |         |         |        v|
   22+ 0       9.5691      1.01  | Q       |         |         |        v|
   22+ 5       9.5762      1.02  | Q       |         |         |        v|
   22+10       9.5848      1.25  | Q       |         |         |        v|
   22+15       9.5941      1.35  | Q       |         |         |        v|
   22+20       9.6033      1.34  | Q       |         |         |        v|
   22+25       9.6109      1.11  | Q       |         |         |        v|
   22+30       9.6178      1.01  | Q       |         |         |        v|
   22+35       9.6245      0.97  |Q        |         |         |        v|
   22+40       9.6311      0.95  |Q        |         |         |        v|
   22+45       9.6376      0.95  |Q        |         |         |        v|
   22+50       9.6442      0.95  |Q        |         |         |        v|
   22+55       9.6507      0.94  |Q        |         |         |        v|
   23+ 0       9.6571      0.94  |Q        |         |         |        v|
   23+ 5       9.6636      0.94  |Q        |         |         |        v|
   23+10       9.6701      0.94  |Q        |         |         |        v|
   23+15       9.6766      0.94  |Q        |         |         |        v|
   23+20       9.6831      0.94  |Q        |         |         |        v|
   23+25       9.6896      0.94  |Q        |         |         |        v|
   23+30       9.6961      0.94  |Q        |         |         |        v|
   23+35       9.7026      0.94  |Q        |         |         |        v|
   23+40       9.7091      0.94  |Q        |         |         |        v|
   23+45       9.7156      0.94  |Q        |         |         |        v|
   23+50       9.7221      0.94  |Q        |         |         |        v|
   23+55       9.7286      0.94  |Q        |         |         |        v|
   24+ 0       9.7351      0.94  |Q        |         |         |        v|
   24+ 5       9.7409      0.84  |Q        |         |         |        v|
   24+10       9.7433      0.35  Q         |         |         |        v|
   24+15       9.7443      0.14  Q         |         |         |        v|
   24+20       9.7447      0.06  Q         |         |         |        v|
   24+25       9.7448      0.02  Q         |         |         |        v|
   24+30       9.7449      0.01  Q         |         |         |        v|
   24+35       9.7450      0.01  Q         |         |         |         v
-------------------------------------------------------------------------
```

Stage/Storage Tables

Building 2 Basin - Stage/Storage/Outflow Table

W.O.# 21-0044

Basin Information: Infiltration Basin		5-Year	WEIR	10-Year	WEIR	100-Year	WEIR	Infiltration*		
Tributary Area:	71.8 ac	Q EXISTING	8.8	Q EXISTING	18.2	Q Existing	34.5	I	11.5	IN/HR
DCV=	144,000 CF									
Bottom Elevation:	2450.00 FT	L(ft)	6	L(ft)	6	L(ft)	6	FS	3	
		C	3	C	3	C	3	Q	9.4	CFS
Bottom Area:	106,388 SF									
Bottom Slope:	0 %									
Constant Infiltration:	9.4 cfs									
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$										
Q_{WEIR}= C*L*H$^{3/2}$										
		Invert H (ft)	1.4	Invert H (ft)	2.15	Invert H (ft)	3.36			

#	Elevation (ft)	Depth (ft)	Basin Volume (cf)	Total Storage (ac-ft)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	5 Year (No infiltration) Total Q (cfs)	10 Year (No infiltration) Total Q (cfs)	100 Year (No infiltration) Total Q (cfs)	Total w/ Infiltration Total Q (cfs)	Comments
1	**2450**	**0**	**0.00**	**0.000**								**9.40**	**0.00**	**0.00**	**0.00**	**9.40**	**Bottom of Basin**
2	**2451.4**	**1.4**	**63102.96**	**1.449**								**9.40**	**0.00**	**0.00**	**0.00**	**9.40**	**Vbmp Ponding**
3	2451.5	1.5	67392.92	1.547								9.40	0.00	0.00	0.00	9.40	
4	2452	2	89262.48	2.049								9.40	0.00	0.00	0.00	9.40	
5	**2452.15**	**2.15**	**95906.28**	**2.202**	**0**							**9.40**	**0.00**	**0.00**	**0.00**	**9.40**	**Top of 2-Yr Ponding/Inv of 5-Yr**
6	2452.5	2.5	111408.49	2.558	0.35	3.73						9.40	3.73	3.73	3.73	13.13	
7	**2452.67**	**2.67**	**118844.14**	**2.728**	**0.52**	**6.75**	**0.000**					**9.40**	**6.75**	**6.75**	**6.75**	**16.15**	**Top of 5-Yr Ponding/Inv of 10-Yr**
8	**2452.98**	**2.98**	**132403.2707**	**3.040**	**0.83**	**13.61**	**0.310**	**3.11**	**0**			**9.40**	**13.61**	**16.72**	**16.72**	**26.12**	**Top of 10-Yr Ponding/Inv of 100-Yr**
9	2453	3	133278.05	3.060	0.85	14.11	0.330	3.41	0.02	0.05		9.40	14.11	17.52	17.57	26.97	
10	**2453.36**	**3.36**	**148392.6889**	**3.407**	**1.21**	**23.96**	**0.690**	**10.32**	**0.38**	**4.22**		**9.40**	**23.96**	**34.27**	**38.49**	**47.89**	**Top of 100-Yr Ponding**
11	2453.5	3.5	154270.60	3.542	1.35	28.23	0.830	13.61	0.52	6.75		9.40	28.23	41.85	48.59	57.99	
12	2454	4	173586.62	3.985	1.85	45.29	1.330	27.61	1.02	18.54		9.40	45.29	72.90	91.44	100.84	
13	2454.5	4.5	189486.72	4.350	2.35	64.84	1.830	44.56	1.52	33.73		9.40	64.84	109.41	143.14	152.54	
14	**2455**	**5**	**200670.97**	**4.607**	**2.85**	**86.60**	**2.330**	**64.02**	**2.02**	**51.68**		**9.40**	**86.60**	**150.62**	**202.30**	**211.70**	**Top of Basin**

H:\2021\21-0044\Drainage\HYD\Hydrology\Unit Hydrograph\[21-0044 UH Inputs and Stage Storage 2022-02-16.xlsx]O&W Bldg 2 Basin 2022-04-07

NOTE *:*

**A constant infiltration Q of 9.4 cfs is assumed within the basin extents. This value is based on the infiltration rate of 11.5 in/hr, the bottom area of 106,388 sf, and a Factor of Safety of 3.*

Routing Analysis

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 04/07/22

BSS BUILDING 2
2-YR 24 HR STORM EVENT
21-0044
2022-04-11 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: SOUTH2YR242.rte

**********HYDROGRAPH DATA**********

Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 16.008 (CFS)
Total volume = 9.745 (Ac.Ft)

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

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Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
1.400	1.449	9.400	1.417	1.481
1.500	1.547	9.400	1.515	1.579
2.000	2.049	9.400	2.017	2.081
2.500	2.558	9.400	2.526	2.590
3.000	3.060	9.400	3.028	3.092
3.500	3.542	9.400	3.510	3.574
4.000	3.985	9.400	3.953	4.017
4.500	4.350	9.400	4.318	4.382
5.000	4.607	9.400	4.575	4.639

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	4.0	8.00	12.01	16.01 (Ft.) Depth
0.083	0.10	0.00	0.000	O	|	|	|	0.00

0.167	0.60	0.02	0.003	OI	|	|	|	0.00
0.250	0.80	0.05	0.007	OI	|	|	|	0.01
0.333	0.93	0.08	0.013	OI	|	|	|	0.01
0.417	1.22	0.13	0.019	O I	|	|	|	0.02
0.500	1.33	0.18	0.027	O I	|	|	|	0.03
0.583	1.38	0.23	0.035	O I	|	|	|	0.03
0.667	1.40	0.28	0.043	O I	|	|	|	0.04
0.750	1.41	0.33	0.051	O I	|	|	|	0.05
0.833	1.46	0.38	0.058	O I	|	|	|	0.06
0.917	1.71	0.43	0.066	O I	|	|	|	0.06
1.000	1.82	0.49	0.075	O I	|	|	|	0.07
1.083	1.81	0.55	0.084	|O I	|	|	|	0.08
1.167	1.58	0.60	0.092	|O I	|	|	|	0.09
1.250	1.48	0.64	0.098	|OI	|	|	|	0.09
1.333	1.44	0.67	0.104	|OI	|	|	|	0.10
1.417	1.43	0.71	0.109	|OI	|	|	|	0.11
1.500	1.42	0.74	0.114	|OI	|	|	|	0.11
1.583	1.42	0.77	0.118	|OI	|	|	|	0.11
1.667	1.41	0.80	0.123	|OI	|	|	|	0.12
1.750	1.41	0.82	0.127	|OI	|	|	|	0.12
1.833	1.47	0.85	0.131	|OI	|	|	|	0.13
1.917	1.71	0.88	0.136	|O I	|	|	|	0.13
2.000	1.82	0.92	0.142	|O I	|	|	|	0.14
2.083	1.86	0.96	0.148	|O I	|	|	|	0.14
2.167	1.88	1.00	0.154	|O I	|	|	|	0.15
2.250	1.88	1.04	0.160	| OI	|	|	|	0.15
2.333	1.88	1.08	0.166	| OI	|	|	|	0.16
2.417	1.89	1.11	0.171	| OI	|	|	|	0.17
2.500	1.89	1.14	0.176	| OI	|	|	|	0.17
2.583	1.94	1.18	0.182	| OI	|	|	|	0.18
2.667	2.19	1.22	0.188	| O I	|	|	|	0.18
2.750	2.29	1.26	0.194	| O I	|	|	|	0.19
2.833	2.33	1.31	0.201	| O I	|	|	|	0.19
2.917	2.35	1.35	0.208	| O I	|	|	|	0.20
3.000	2.35	1.40	0.215	| O I	|	|	|	0.21
3.083	2.36	1.44	0.222	| O I	|	|	|	0.21
3.167	2.36	1.48	0.228	| O I	|	|	|	0.22
3.250	2.36	1.52	0.234	| OI	|	|	|	0.23
3.333	2.36	1.55	0.239	| OI	|	|	|	0.23
3.417	2.36	1.59	0.245	| OI	|	|	|	0.24
3.500	2.36	1.62	0.250	| OI	|	|	|	0.24
3.583	2.36	1.65	0.255	| OI	|	|	|	0.25
3.667	2.36	1.68	0.260	| OI	|	|	|	0.25
3.750	2.36	1.71	0.264	| OI	|	|	|	0.26
3.833	2.41	1.74	0.269	| OI	|	|	|	0.26
3.917	2.66	1.78	0.274	| O I	|	|	|	0.26
4.000	2.76	1.82	0.280	| O I	|	|	|	0.27
4.083	2.80	1.86	0.287	| O I	|	|	|	0.28
4.167	2.82	1.90	0.293	| O I	|	|	|	0.28
4.250	2.82	1.94	0.299	| O I	|	|	|	0.29
4.333	2.88	1.98	0.306	| O I	|	|	|	0.30
4.417	3.13	2.03	0.312	| O I	|	|	|	0.30
4.500	3.23	2.08	0.320	| O I	|	|	|	0.31
4.583	3.27	2.13	0.328	| O I	|	|	|	0.32
4.667	3.29	2.18	0.336	| O I	|	|	|	0.32
4.750	3.30	2.23	0.343	| O I	|	|	|	0.33
4.833	3.35	2.28	0.351	| O I	|	|	|	0.34
4.917	3.60	2.33	0.359	| O I|	|	|	|	0.35
5.000	3.70	2.39	0.368	| O I|	|	|	|	0.36
5.083	3.64	2.44	0.376	| O I|	|	|	|	0.36
5.167	3.16	2.48	0.383	| O I	|	|	|	0.37
5.250	2.97	2.51	0.387	| O	|	|	|	0.37
5.333	2.94	2.53	0.390	| O	|	|	|	0.38
5.417	3.15	2.55	0.393	| OI	|	|	|	0.38
5.500	3.24	2.58	0.398	| OI	|	|	|	0.38
5.583	3.33	2.61	0.402	| OI	|	|	|	0.39
5.667	3.59	2.65	0.408	| O I|	|	|	|	0.39
5.750	3.70	2.69	0.415	| O I|	|	|	|	0.40
5.833	3.74	2.74	0.422	| O I|	|	|	|	0.41
5.917	3.76	2.78	0.429	| O I|	|	|	|	0.41
6.000	3.77	2.82	0.435	| O I|	|	|	|	0.42
6.083	3.82	2.87	0.442	| O I|	|	|	|	0.43
6.167	4.07	2.91	0.449	| O I	|	|	|	0.43
6.250	4.17	2.97	0.457	| O I	|	|	|	0.44
6.333	4.22	3.02	0.465	| O I	|	|	|	0.45

6.417	4.23	3.07	0.474	o I				0.46
6.500	4.24	3.12	0.481	o I				0.47
6.583	4.29	3.17	0.489	o I				0.47
6.667	4.54	3.23	0.497	o |I				0.48
6.750	4.65	3.29	0.507	o |I				0.49
6.833	4.69	3.35	0.516	o |I				0.50
6.917	4.71	3.41	0.525	o |I				0.51
7.000	4.71	3.46	0.534	o |I				0.52
7.083	4.71	3.52	0.542	o|I				0.52
7.167	4.72	3.57	0.550	o|I				0.53
7.250	4.72	3.62	0.558	o|I				0.54
7.333	4.77	3.67	0.566	o|I				0.55
7.417	5.02	3.72	0.574	o| I				0.55
7.500	5.12	3.78	0.583	o| I				0.56
7.583	5.21	3.84	0.592	o| I				0.57
7.667	5.48	3.91	0.602	o| I				0.58
7.750	5.58	3.98	0.613	o| I				0.59
7.833	5.68	4.05	0.624	o I				0.60
7.917	5.95	4.13	0.636	o I				0.61
8.000	6.05	4.21	0.649	o I				0.63
8.083	6.20	4.29	0.662	o I				0.64
8.167	6.72	4.39	0.676	o I				0.65
8.250	6.93	4.49	0.693	o I				0.67
8.333	7.01	4.60	0.709	|o I				0.69
8.417	7.05	4.71	0.726	|o I				0.70
8.500	7.06	4.81	0.742	|o I				0.72
8.583	7.12	4.91	0.757	|o I				0.73
8.667	7.37	5.01	0.773	| o I				0.75
8.750	7.47	5.12	0.789	| o I				0.76
8.833	7.57	5.22	0.805	| o I|			0.78
8.917	7.83	5.33	0.822	| o I|			0.79
9.000	7.94	5.44	0.839	| o I|			0.81
9.083	8.09	5.56	0.856	| o I				0.83
9.167	8.60	5.68	0.875	| o |I				0.85
9.250	8.81	5.81	0.896	| o |I				0.87
9.333	8.95	5.94	0.916	| o |I				0.89
9.417	9.24	6.08	0.937	| o | I				0.91
9.500	9.35	6.22	0.959	| o | I				0.93
9.583	9.45	6.36	0.981	| o | I				0.95
9.667	9.72	6.50	1.002	| o | I				0.97
9.750	9.83	6.64	1.024	| o | I				0.99
9.833	9.92	6.79	1.046	| o | I				1.01
9.917	10.19	6.93	1.068	| o | I				1.03
10.000	10.30	7.07	1.090	| o | I				1.05
10.083	9.99	7.21	1.111	| o | I				1.07
10.167	8.28	7.29	1.124	| o I				1.09
10.250	7.57	7.32	1.128	| oI|			1.09
10.333	7.28	7.32	1.129	| o |			1.09
10.417	7.15	7.32	1.128	| o |			1.09
10.500	7.11	7.31	1.127	| o |			1.09
10.583	7.35	7.31	1.127	| o |			1.09
10.667	8.57	7.34	1.131	| o |I				1.09
10.750	9.08	7.40	1.141	| o | I				1.10
10.833	9.28	7.48	1.153	| o | I				1.11
10.917	9.38	7.56	1.165	| o| I				1.13
11.000	9.41	7.64	1.178	| o| I				1.14
11.083	9.37	7.72	1.189	| o| I				1.15
11.167	9.13	7.78	1.200	| o| I				1.16
11.250	9.03	7.84	1.209	| o| I				1.17
11.333	8.99	7.89	1.216	| o|I				1.18
11.417	8.97	7.94	1.224	| o|I				1.18
11.500	8.97	7.98	1.231	| o|I				1.19
11.583	8.86	8.02	1.237	| oI				1.20
11.667	8.36	8.05	1.241	| o				1.20
11.750	8.16	8.06	1.242	| o				1.20
11.833	8.13	8.06	1.243	| o				1.20
11.917	8.34	8.07	1.244	| o				1.20
12.000	8.43	8.08	1.246	| o				1.20
12.083	8.82	8.11	1.250	| oI				1.21
12.167	10.57	8.18	1.261	| o I				1.22
12.250	11.29	8.30	1.279	| o I				1.24
12.333	11.63	8.44	1.300	| o I|			1.26
12.417	12.01	8.58	1.323	| |o I				1.28
12.500	12.15	8.74	1.347	| |o I				1.30
12.583	12.32	8.89	1.370	| |o I				1.32

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12.667   12.85    9.05      1.395  |        |        | o     |I      |     1.35
12.750   13.06    9.22      1.421  |        |        | o     | I     |     1.37
12.833   13.19    9.39      1.448  |        |        | o     | I     |     1.40
12.917   13.48    9.40      1.475  |        |        | o     | I     |     1.43
13.000   13.60    9.40      1.503  |        |        | o     |  I    |     1.46
13.083   13.90    9.40      1.533  |        |        | o     |  I    |     1.49
13.167   15.16    9.40      1.569  |        |        | o     |     I |     1.52
13.250   15.67    9.40      1.610  |        |        | o     |      I|     1.56
13.333   15.88    9.40      1.654  |        |        | o     |      I|     1.61
13.417   15.98    9.40      1.699  |        |        | o     |      I|     1.65
13.500   16.01    9.40      1.744  |        |        | o     |       I     1.70
13.583   15.47    9.40      1.788  |        |        | o     |     I |     1.74
13.667   12.75    9.40      1.821  |        |        | o     |I      |     1.77
13.750   11.63    9.40      1.840  |        |        | o    I|       |     1.79
13.833   11.18    9.40      1.854  |        |        | o   I |       |     1.81
13.917   10.97    9.40      1.865  |        |        | o  I  |       |     1.82
14.000   10.91    9.40      1.876  |        |        | o  I  |       |     1.83
14.083   11.08    9.40      1.887  |        |        | o   I |       |     1.84
14.167   12.04    9.40      1.902  |        |        | o     I       |     1.85
14.250   12.45    9.40      1.921  |        |        | o     I       |     1.87
14.333   12.56    9.40      1.943  |        |        | o     |I      |     1.89
14.417   12.39    9.40      1.964  |        |        | o     I       |     1.92
14.500   12.31    9.40      1.984  |        |        | o     I       |     1.94
14.583   12.28    9.40      2.004  |        |        | o     I       |     1.96
14.667   12.27    9.40      2.024  |        |        | o     I       |     1.97
14.750   12.27    9.40      2.044  |        |        | o     I       |     1.99
14.833   12.21    9.40      2.063  |        |        | o     I       |     2.01
14.917   11.96    9.40      2.082  |        |        | o    I|       |     2.03
15.000   11.86    9.40      2.099  |        |        | o    I|       |     2.05
15.083   11.77    9.40      2.116  |        |        | o    I|       |     2.07
15.167   11.50    9.40      2.131  |        |        | o   I |       |     2.08
15.250   11.40    9.40      2.145  |        |        | o   I |       |     2.09
15.333   11.30    9.40      2.159  |        |        | o   I |       |     2.11
15.417   11.03    9.40      2.171  |        |        | o   I |       |     2.12
15.500   10.93    9.40      2.182  |        |        | o  I  |       |     2.13
15.583   10.68    9.40      2.191  |        |        | o  I  |       |     2.14
15.667    9.67    9.40      2.197  |        |        | oI    |       |     2.15
15.750    9.25    9.40      2.197  |        |        | o     |       |     2.15
15.833    9.08    9.40      2.195  |        |        | o     |       |     2.14
15.917    9.01    9.40      2.193  |        |        | o     |       |     2.14
16.000    8.98    9.40      2.190  |        |        |Io     |       |     2.14
16.083    8.21    9.40      2.185  |        |       I o     |       |     2.13
16.167    4.48    9.40      2.164  |       I|       | o     |       |     2.11
16.250    2.96    9.40      2.125  |    I   |       | o     |       |     2.07
16.333    2.33    9.40      2.078  |   I    |       | o     |       |     2.03
16.417    2.06    9.40      2.028  |   I    |       | o     |       |     1.98
16.500    1.97    9.40      1.978  |  I     |       | o     |       |     1.93
16.583    1.87    9.40      1.926  |  I     |       | o     |       |     1.88
16.667    1.59    9.40      1.873  |  I     |       | o     |       |     1.83
16.750    1.49    9.40      1.819  | I      |       | o     |       |     1.77
16.833    1.44    9.40      1.765  | I      |       | o     |       |     1.72
16.917    1.43    9.40      1.710  | I      |       | o     |       |     1.66
17.000    1.42    9.40      1.655  | I      |       | o     |       |     1.61
17.083    1.52    9.40      1.600  |  I     |       | o     |       |     1.55
17.167    2.01    9.40      1.548  |   I    |       | o     |       |     1.50
17.250    2.22    9.40      1.497  |   I    |       | o     |       |     1.45
17.333    2.30    9.39      1.448  |   I    |       | o     |       |     1.40
17.417    2.34    9.09      1.400  |   I    |       | o     |       |     1.35
17.500    2.35    8.79      1.355  |   I    |       |o      |       |     1.31
17.583    2.35    8.51      1.312  |   I    |       |o      |       |     1.27
17.667    2.36    8.24      1.270  |   I    |      o        |       |     1.23
17.750    2.36    7.98      1.231  |   I    |      o|       |       |     1.19
17.833    2.31    7.74      1.193  |   I    |      o|       |       |     1.15
17.917    2.06    7.49      1.155  |   I    |     o |       |       |     1.12
18.000    1.96    7.25      1.118  |  I     |     o |       |       |     1.08
18.083    1.92    7.02      1.082  |  I     |     o |       |       |     1.05
18.167    1.90    6.80      1.048  |  I     |    o  |       |       |     1.01
18.250    1.89    6.58      1.015  |  I     |    o  |       |       |     0.98
18.333    1.89    6.38      0.983  |  I     |   o   |       |       |     0.95
18.417    1.89    6.18      0.953  |  I     |   o   |       |       |     0.92
18.500    1.89    5.99      0.924  |  I     |  o    |       |       |     0.89
18.583    1.84    5.81      0.896  |  I     |  o    |       |       |     0.87
18.667    1.59    5.63      0.869  |  I     |  o    |       |       |     0.84
18.750    1.49    5.46      0.841  | I      | o     |       |       |     0.81
18.833    1.39    5.28      0.814  | I      | o     |       |       |     0.79
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18.917	1.13	5.10	0.787	I	O			0.76
19.000	1.02	4.93	0.760	I	O			0.73
19.083	1.03	4.76	0.733	I	O			0.71
19.167	1.25	4.60	0.709	I	O			0.69
19.250	1.35	4.46	0.687	I	O			0.66
19.333	1.44	4.32	0.666	I	O			0.64
19.417	1.70	4.20	0.648	I	O			0.63
19.500	1.81	4.09	0.631	I	O			0.61
19.583	1.80	3.99	0.616	I	O			0.59
19.667	1.58	3.89	0.600	I	O			0.58
19.750	1.48	3.79	0.584	I	O			0.56
19.833	1.39	3.69	0.568	I	O			0.55
19.917	1.13	3.58	0.552	I	O			0.53
20.000	1.02	3.47	0.535	I	O			0.52
20.083	1.03	3.36	0.519	I	O			0.50
20.167	1.25	3.27	0.504	I	O			0.49
20.250	1.35	3.18	0.490	I	O			0.47
20.333	1.39	3.10	0.478	I	O			0.46
20.417	1.40	3.03	0.467	I	O			0.45
20.500	1.41	2.96	0.456	I	O			0.44
20.583	1.41	2.89	0.445	I	O			0.43
20.667	1.41	2.83	0.435	I	O			0.42
20.750	1.41	2.76	0.426	I	O			0.41
20.833	1.36	2.70	0.417	I	O			0.40
20.917	1.12	2.64	0.407	I	O			0.39
21.000	1.01	2.57	0.396	I	O			0.38
21.083	1.02	2.50	0.386	I	O			0.37
21.167	1.25	2.44	0.377	I	O			0.36
21.250	1.35	2.39	0.369	I	O			0.36
21.333	1.34	2.35	0.362	I	O			0.35
21.417	1.11	2.30	0.354	I	O			0.34
21.500	1.01	2.24	0.346	I	O			0.33
21.583	1.02	2.19	0.338	I	O			0.33
21.667	1.25	2.14	0.331	I	O			0.32
21.750	1.35	2.11	0.325	I	O			0.31
21.833	1.34	2.07	0.320	I	O			0.31
21.917	1.11	2.04	0.314	I	O			0.30
22.000	1.01	1.99	0.307	I	O			0.30
22.083	1.02	1.95	0.301	I	O			0.29
22.167	1.25	1.92	0.295	I	O			0.29
22.250	1.35	1.89	0.291	I	O			0.28
22.333	1.34	1.86	0.287	I	O			0.28
22.417	1.11	1.84	0.283	I	O			0.27
22.500	1.01	1.80	0.278	I	O			0.27
22.583	0.97	1.77	0.272	I	O			0.26
22.667	0.95	1.73	0.267	I	O			0.26
22.750	0.95	1.70	0.262	I	O			0.25
22.833	0.95	1.67	0.257	I	O			0.25
22.917	0.94	1.63	0.252	I	O			0.24
23.000	0.94	1.60	0.247	I	O			0.24
23.083	0.94	1.57	0.243	I	O			0.23
23.167	0.94	1.55	0.238	I	O			0.23
23.250	0.94	1.52	0.234	I	O			0.23
23.333	0.94	1.50	0.231	I	O			0.22
23.417	0.94	1.47	0.227	I	O			0.22
23.500	0.94	1.45	0.223	I	O			0.22
23.583	0.94	1.43	0.220	I	O			0.21
23.667	0.94	1.41	0.217	I	O			0.21
23.750	0.94	1.38	0.213	I	O			0.21
23.833	0.94	1.37	0.210	I	O			0.20
23.917	0.94	1.35	0.208	I	O			0.20
24.000	0.94	1.33	0.205	I	O			0.20
24.083	0.84	1.31	0.202	I	O			0.20
24.167	0.35	1.28	0.197	I	O			0.19
24.250	0.14	1.23	0.190	I	O			0.18
24.333	0.06	1.18	0.183	I	O			0.18
24.417	0.02	1.13	0.175	I	O			0.17
24.500	0.01	1.09	0.167	I	O			0.16
24.583	0.01	1.04	0.160	I	O			0.15
24.667	0.00	0.99	0.153	I	O			0.15
24.750	0.00	0.95	0.146	I	O			0.14
24.833	0.00	0.91	0.140	I	O			0.14
24.917	0.00	0.87	0.134	I	O			0.13
25.000	0.00	0.83	0.128	I	O			0.12
25.083	0.00	0.79	0.122	I	O			0.12

25.167	0.00	0.76	0.117	IO	|	|	|	|	0.11
25.250	0.00	0.73	0.112	IO	|	|	|	|	0.11
25.333	0.00	0.69	0.107	IO	|	|	|	|	0.10
25.417	0.00	0.66	0.102	IO	|	|	|	|	0.10
25.500	0.00	0.64	0.098	IO	|	|	|	|	0.09
25.583	0.00	0.61	0.094	IO	|	|	|	|	0.09
25.667	0.00	0.58	0.090	IO	|	|	|	|	0.09
25.750	0.00	0.56	0.086	IO	|	|	|	|	0.08
25.833	0.00	0.53	0.082	IO	|	|	|	|	0.08
25.917	0.00	0.51	0.078	IO	|	|	|	|	0.08
26.000	0.00	0.49	0.075	O	|	|	|	|	0.07
26.083	0.00	0.46	0.072	O	|	|	|	|	0.07
26.167	0.00	0.44	0.068	O	|	|	|	|	0.07
26.250	0.00	0.42	0.066	O	|	|	|	|	0.06
26.333	0.00	0.41	0.063	O	|	|	|	|	0.06
26.417	0.00	0.39	0.060	O	|	|	|	|	0.06
26.500	0.00	0.37	0.057	O	|	|	|	|	0.06
26.583	0.00	0.36	0.055	O	|	|	|	|	0.05
26.667	0.00	0.34	0.052	O	|	|	|	|	0.05
26.750	0.00	0.33	0.050	O	|	|	|	|	0.05
26.833	0.00	0.31	0.048	O	|	|	|	|	0.05
26.917	0.00	0.30	0.046	O	|	|	|	|	0.04
27.000	0.00	0.28	0.044	O	|	|	|	|	0.04
27.083	0.00	0.27	0.042	O	|	|	|	|	0.04
27.167	0.00	0.26	0.040	O	|	|	|	|	0.04
27.250	0.00	0.25	0.038	O	|	|	|	|	0.04
27.333	0.00	0.24	0.037	O	|	|	|	|	0.04
27.417	0.00	0.23	0.035	O	|	|	|	|	0.03
27.500	0.00	0.22	0.034	O	|	|	|	|	0.03
27.583	0.00	0.21	0.032	O	|	|	|	|	0.03
27.667	0.00	0.20	0.031	O	|	|	|	|	0.03
27.750	0.00	0.19	0.029	O	|	|	|	|	0.03
27.833	0.00	0.18	0.028	O	|	|	|	|	0.03
27.917	0.00	0.17	0.027	O	|	|	|	|	0.03
28.000	0.00	0.17	0.026	O	|	|	|	|	0.02
28.083	0.00	0.16	0.025	O	|	|	|	|	0.02
28.167	0.00	0.15	0.023	O	|	|	|	|	0.02
28.250	0.00	0.15	0.022	O	|	|	|	|	0.02
28.333	0.00	0.14	0.021	O	|	|	|	|	0.02
28.417	0.00	0.13	0.020	O	|	|	|	|	0.02
28.500	0.00	0.13	0.020	O	|	|	|	|	0.02
28.583	0.00	0.12	0.019	O	|	|	|	|	0.02
28.667	0.00	0.12	0.018	O	|	|	|	|	0.02
28.750	0.00	0.11	0.017	O	|	|	|	|	0.02
28.833	0.00	0.11	0.016	O	|	|	|	|	0.02
28.917	0.00	0.10	0.016	O	|	|	|	|	0.02
29.000	0.00	0.10	0.015	O	|	|	|	|	0.01
29.083	0.00	0.09	0.014	O	|	|	|	|	0.01
29.167	0.00	0.09	0.014	O	|	|	|	|	0.01
29.250	0.00	0.09	0.013	O	|	|	|	|	0.01
29.333	0.00	0.08	0.013	O	|	|	|	|	0.01
29.417	0.00	0.08	0.012	O	|	|	|	|	0.01
29.500	0.00	0.07	0.011	O	|	|	|	|	0.01
29.583	0.00	0.07	0.011	O	|	|	|	|	0.01
29.667	0.00	0.07	0.010	O	|	|	|	|	0.01
29.750	0.00	0.07	0.010	O	|	|	|	|	0.01
29.833	0.00	0.06	0.010	O	|	|	|	|	0.01
29.917	0.00	0.06	0.009	O	|	|	|	|	0.01
30.000	0.00	0.06	0.009	O	|	|	|	|	0.01
30.083	0.00	0.05	0.008	O	|	|	|	|	0.01
30.167	0.00	0.05	0.008	O	|	|	|	|	0.01
30.250	0.00	0.05	0.008	O	|	|	|	|	0.01
30.333	0.00	0.05	0.007	O	|	|	|	|	0.01
30.417	0.00	0.05	0.007	O	|	|	|	|	0.01
30.500	0.00	0.04	0.007	O	|	|	|	|	0.01
30.583	0.00	0.04	0.006	O	|	|	|	|	0.01
30.667	0.00	0.04	0.006	O	|	|	|	|	0.01
30.750	0.00	0.04	0.006	O	|	|	|	|	0.01
30.833	0.00	0.04	0.006	O	|	|	|	|	0.01
30.917	0.00	0.03	0.005	O	|	|	|	|	0.01
31.000	0.00	0.03	0.005	O	|	|	|	|	0.00
31.083	0.00	0.03	0.005	O	|	|	|	|	0.00
31.167	0.00	0.03	0.005	O	|	|	|	|	0.00
31.250	0.00	0.03	0.004	O	|	|	|	|	0.00
31.333	0.00	0.03	0.004	O	|	|	|	|	0.00

31.417	0.00	0.03	0.004	o	|	|	|	|	0.00
31.500	0.00	0.03	0.004	o	|	|	|	|	0.00
31.583	0.00	0.02	0.004	o	|	|	|	|	0.00
31.667	0.00	0.02	0.004	o	|	|	|	|	0.00
31.750	0.00	0.02	0.003	o	|	|	|	|	0.00
31.833	0.00	0.02	0.003	o	|	|	|	|	0.00
31.917	0.00	0.02	0.003	o	|	|	|	|	0.00
32.000	0.00	0.02	0.003	o	|	|	|	|	0.00
32.083	0.00	0.02	0.003	o	|	|	|	|	0.00
32.167	0.00	0.02	0.003	o	|	|	|	|	0.00
32.250	0.00	0.02	0.003	o	|	|	|	|	0.00
32.333	0.00	0.02	0.003	o	|	|	|	|	0.00
32.417	0.00	0.02	0.002	o	|	|	|	|	0.00
32.500	0.00	0.01	0.002	o	|	|	|	|	0.00
32.583	0.00	0.01	0.002	o	|	|	|	|	0.00
32.667	0.00	0.01	0.002	o	|	|	|	|	0.00
32.750	0.00	0.01	0.002	o	|	|	|	|	0.00
32.833	0.00	0.01	0.002	o	|	|	|	|	0.00
32.917	0.00	0.01	0.002	o	|	|	|	|	0.00
33.000	0.00	0.01	0.002	o	|	|	|	|	0.00
33.083	0.00	0.01	0.002	o	|	|	|	|	0.00
33.167	0.00	0.01	0.002	o	|	|	|	|	0.00
33.250	0.00	0.01	0.002	o	|	|	|	|	0.00
33.333	0.00	0.01	0.001	o	|	|	|	|	0.00
33.417	0.00	0.01	0.001	o	|	|	|	|	0.00
33.500	0.00	0.01	0.001	o	|	|	|	|	0.00
33.583	0.00	0.01	0.001	o	|	|	|	|	0.00
33.667	0.00	0.01	0.001	o	|	|	|	|	0.00
33.750	0.00	0.01	0.001	o	|	|	|	|	0.00
33.833	0.00	0.01	0.001	o	|	|	|	|	0.00
33.917	0.00	0.01	0.001	o	|	|	|	|	0.00
34.000	0.00	0.01	0.001	o	|	|	|	|	0.00

Remaining water in basin = 0.00 (Ac.Ft)

**********HYDROGRAPH DATA**********

Number of intervals = 408
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 9.400 (CFS)
Total volume = 9.744 (Ac.Ft)

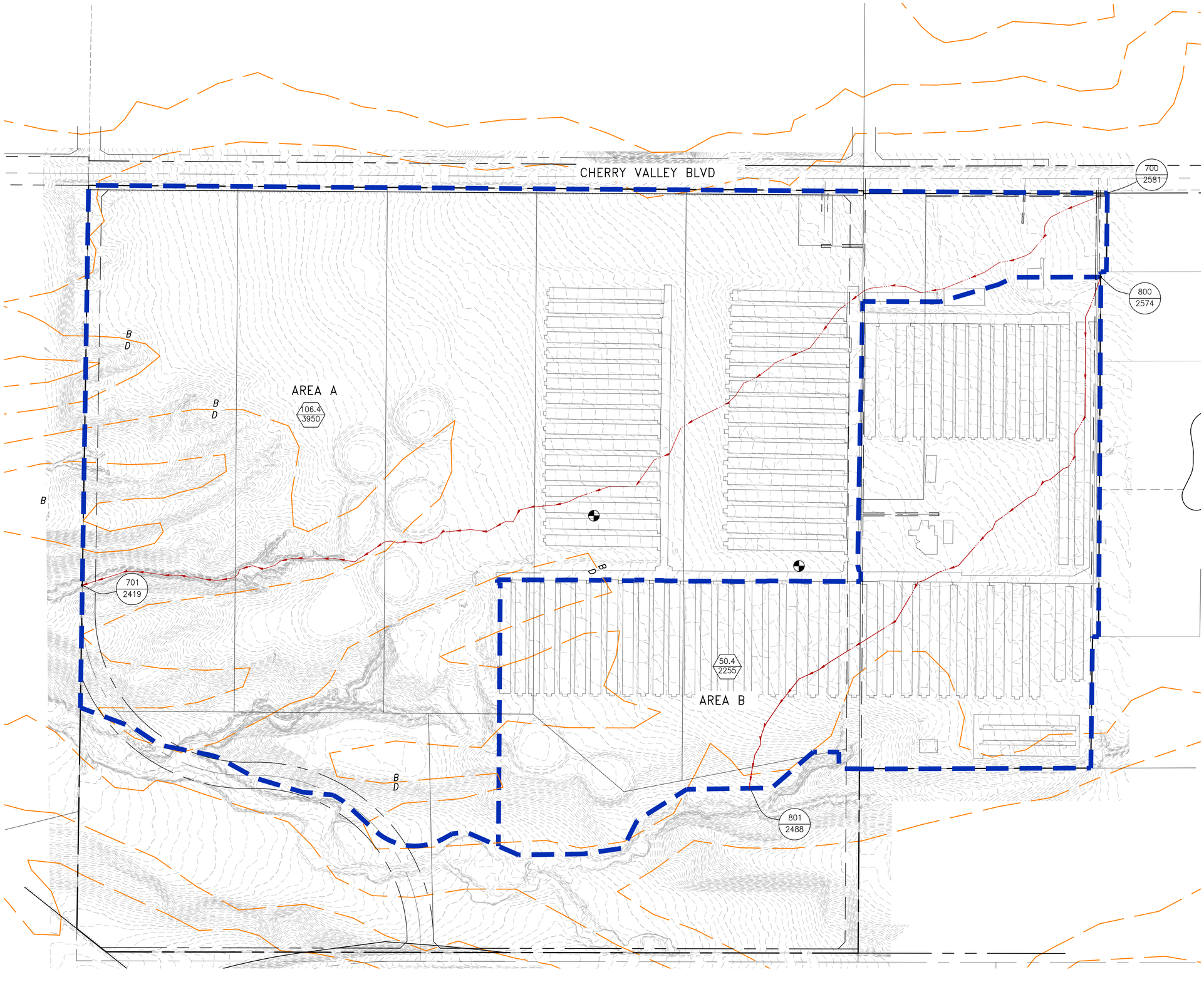
SOUTH AREA EFFECTIVE RUNOFF IS 0.0 CFS
ENTIRE 2-YR, 24-HR VOLUME IS INFILTRATED.

Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

Hydrology Maps



EXISTING AREA A	
TOTAL AREA	106.4 AC
L_T	3950 Ft
L_{CA}	1805 Ft
ΔH	162.0 Ft

EXISTING AREA B	
TOTAL AREA	50.4 AC
L_T	2255 Ft
L_{CA}	615 Ft
ΔH	86.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER – ELEVATION (FT)

AC / FT – AREA (AC) – LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W WEBB E S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 6
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE:	1"=X'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/10/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 1
DESIGNED:	EP		OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

H:\2021\21-0044\DRAINAGE\HYD\DWG FOLDER\21-0044-UH MAPS 2021-06-17.DWG 2/23/2022 3:27:49 PM

CHERRY VALLEY BLVD

AREA A

88.8 ACRES

AREA B

17.7 ACRES

B
D

LEGEND

- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY

PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED WEST AREA (83.4% AREA A)

PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED NORTH AREA (16.6% AREA A)

N
W WEBB E
S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 7
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION AREA A PORTIONS
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE: 8/10/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 2
DESIGNED: EP		OF 3 SHEETS
CHECKED:		DWG. NO.
PLN CK REF:		
F.B.		

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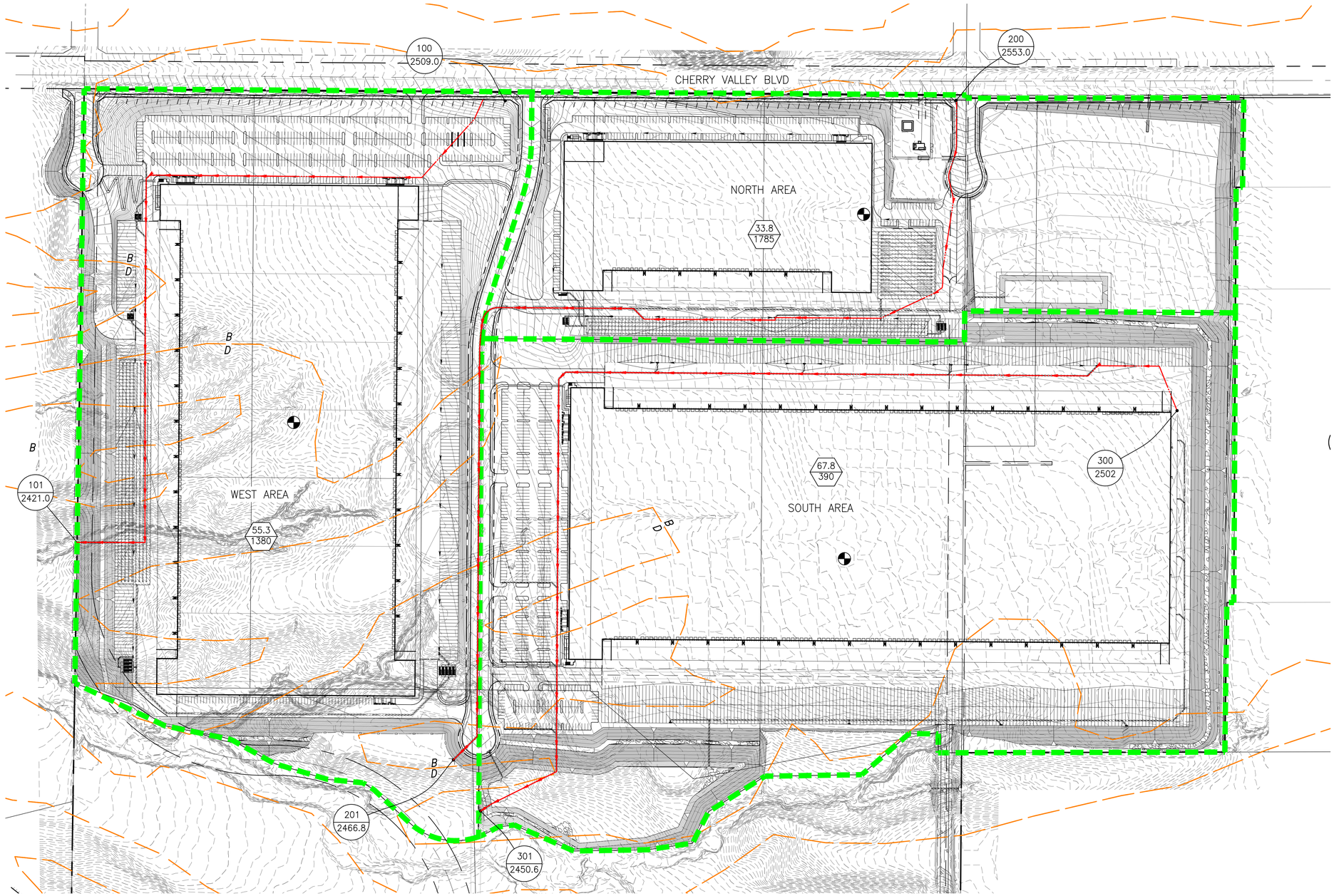

PROPOSED WEST AREA	
TOTAL AREA	55.3 AC
L_T	1380 Ft
L_{CA}	695 Ft
ΔH	12.0 Ft

PROPOSED NORTH AREA	
TOTAL AREA	33.8 AC
L_T	1785 Ft
L_{CA}	1340 Ft
ΔH	27.0 Ft

PROPOSED SOUTH AREA	
TOTAL AREA	67.8 AC
L_T	390 Ft
L_{CA}	360 Ft
ΔH	9.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER / ELEVATION (FT)

AC / FT – AREA (AC) / LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W E S WEBB

1" = 150'

150 0 150 300 450

PRELIMINARY

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CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 8
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 7/20/2021			SHEET 3
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ A. **On-site storm drain inlets**	☒ **Locations of inlets.**	☒ **Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.**	☒ **Maintain and periodically repaint or replace inlet markings.** ☒ **Provide stormwater pollution prevention information to new site owners, lessees, or operators.** ☒ **See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** ☒ **Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."**
☒ B. **Interior floor drains and elevator shaft sump pumps**		☒ **State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.**	☒ **Inspect and maintain drains to prevent blockages and overflow.**
☐ C. **Interior parking garages**		☐ **State that parking garage floor drains will be plumbed to the sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ D1. **Need for future indoor & structural pest control**		☒ **Note building design features that discourage entry of pests.**	☒ **Provide Integrated Pest Management information to owners, lessees, and operators.**
☒ D2. **Landscape/ Outdoor Pesticide Use**	☐ **Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.** ☐ **Show self-retaining landscape areas, if any.** ☒ **Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)**	**State that final landscape plans will accomplish all of the following.** ☒ **Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.** ☒ **Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.** ☒ **Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.** ☒ **Consider using pest-resistant plants, especially adjacent to hardscape.** **To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.**	☒ **Maintain landscaping using minimum or no pesticides.** ☒ **See applicable operational BMPs in "What you should know for…..Landscape and Gardening"** at http://rcflood.org/stormwater/**Error! Hyperlink reference not valid.** ☒ **Provide IPM information to new owners, lessees and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ E. **Pools, spas, ponds, decorative fountains, and other water features.**	☐ **Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)**	**If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.**	☐ **See applicable operational BMPs in** "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/
☐ F. **Food service**	☐ **For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.** ☐ **On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.**	☐ **Describe the location and features of the designated cleaning area.** ☐ **Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.**	☐ **See the brochure, "**The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ **Provide this brochure to new site owners, lessees, and operators.**
☒ G. **Refuse areas**	☒ **Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.** ☒ **If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.** ☒ **Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.**	☒ **State how site refuse will be handled and provide supporting detail to what is shown on plans.** ☒ **State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.**	☒ **State how the following will be implemented:** **Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at** www.cabmphandbooks.com

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ H. **Industrial processes.**	☒ **Show process area.**	☒ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	☒ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ I. **Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)**	❑ **Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.** ❑ **Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.** ❑ **Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.**	**Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.** **Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:** ▪ **Hazardous Waste Generation** ▪ **Hazardous Materials Release Response and Inventory** ▪ **California Accidental Release (CalARP)** ▪ **Aboveground Storage Tank** ▪ **Uniform Fire Code Article 80 Section 103(b) & (c) 1991** ▪ **Underground Storage Tank** **www.cchealth.org/groups/hazmat/**	❑ **See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ J. **Vehicle and Equipment Cleaning**	❑ **Show on drawings as appropriate:** **(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.** **(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).** **(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.** **(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.**	❑ **If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.**	**Describe operational measures to implement the following (if applicable):** ❑ **Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.** Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ ❑ **Car dealerships and similar may rinse cars with water only.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ K. **Vehicle/Equipment Repair and Maintenance**	❑ **Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.** ❑ **Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.** ❑ **Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.**	❑ **State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.** ❑ **State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.** ❑ **State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.**	**In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:** ❑ **No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.** ❑ **No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.** ❑ **No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.** Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ L. **Fuel Dispensing Areas**	❑ **Fueling areas[6] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.** ❑ **Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.**		❑ **The property owner shall dry sweep the fueling area routinely.** ❑ **See the Fact Sheet SD-30 , "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

[6] **The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ M. **Loading Docks**	☒ **Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.** ☒ **Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.** ☒ **Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.**		☒ **Move loaded and unloaded items indoors as soon as possible.** ☒ **See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ N. **Fire Sprinkler Test Water**		☒ **Provide a means to drain fire sprinkler test water to the sanitary sewer.**	☒ **See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**
☒ O. **Miscellaneous Drain or Wash Water or Other Sources** ☐ **Boiler drain lines** ☐ **Condensate drain lines** ☐ **Rooftop equipment** ☐ **Drainage sumps** ☐ **Roofing, gutters, and trim.** ☐ **Other sources**		☒ **Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.** ☒ **Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.** ☒ **Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.** ☒ **Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.** ☒ **Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.** **Include controls for other sources as specified by local reviewer.**	

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ P. **Plazas, sidewalks, and parking lots.**			☒ **Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.**

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Recorded at the request of:
COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT

THIS INSTRUMENT IS FOR THE BENEFIT
OF THE COUNTY OF RIVERSIDE AND
ENTITLED TO BE RECORDED WITHOUT
FEE.(GOV. CODE 6103)

RETURN TO:
RIVERSIDE COUNTY TRANSPORTATION
DEPARTMENT. **STOP NO. 1080**

COVENANT AND AGREEMENT REGARDING WATER QUALITY MANAGEMENT PLAN BMP, CONSENT TO INSPECT, MAINTENANCE AND INDEMNIFICATION

APN:_____PROJECT No._____IP No._____

OWNER(S):_____

PROPERTY ADDRESS:_____

LEGAL DESCRIPTION: See attached Exhibit A; File No.: NCS-xxxx_____
_____
_____

THIS AGREEMENT is made and entered into in Riverside County, California, this day of_____Year 2022, by and between_____, (hereinafter referred to as "Covenantor" or "Owner") and the COUNTY OF RIVERSIDE via its Department of Transportation, a political subdivision of the State of California (hereinafter referred to as "County").

RECITALS

WHEREAS, the Covenantor owns real property ("Property") in the County of Riverside, State of California, more specifically described in Exhibit "A" and depicted in Exhibit "B", each of these exhibits is attached, and incorporated herein by this reference;

WHEREAS, the County is the owner of interests in that certain real property within the unincorporated area of the County of Riverside, State of California, containing storm drains, pipelines, and related appurtenances constituting the County's municipal separate storm sewer system (the County's "MS4");

WHEREAS, Covenantor intends to develop, improve, and/or use the Property is such a way that approval by the County for such development, improvement, and/or use is required pursuant to applicable laws;

WHEREAS, As a condition for said approval by the County, County required Covenantor, and Covenantor desires to, restrict the use of the Property according to the conditions, covenants, equitable servitudes, and restrictions contained herein for the express benefit of the County's MS4, which include requirements that the Property incorporate post construction on-site stormwater quality control measures;

WHEREAS, the Covenantor/Owner has chosen to install one or more infiltration basin, hereinafter referred to as "Device", as the on-site control measure to minimize pollutants in urban runoff;

WHEREAS, said Device has been installed in accordance with plans and specifications accepted by the County;

WHEREAS, said Device, with installation on private property and draining only private property, is a private facility with all maintenance or replacement, therefore, the sole responsibility of the Covenantor/Owner in accordance with the terms of this Agreement;

WHEREAS, the Covenantor/Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of Device and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining; to confined space and waste disposal methods, in effect at the time such maintenance occurs;

NOW THEREFORE, incorporating the foregoing Recitals and in consideration of the covenants and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and expressly for the benefit of, and to bind, their successors in interest, the parties hereto agree as follows:

1. Covenantor/Owner hereby provides the County or County's designee complete access to the Device and its immediate vicinity and such access onto the property to permit access to the devise at any time, upon twenty-four *(24)* hour advance notice in writing, of any duration for the purpose of inspection, sampling and testing of the Device. County shall make every effort at all times to minimize or avoid interference with Owner's use of the Property.

2. Covenantor/Owner shall use its best efforts diligently to maintain the Device in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of material(s) from the Device and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested

from time to time by the County / Regional Water Quality Control Board (RWQCB), the Owner shall provide the RWQCB with documentation identifying the material(s) removed, the quantity, and disposal destination.

3. In the event Covenantor/Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) days of being given written notice by the County, the County is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense to the Owner or Owner's successors or assigns, including administrative costs and interest thereon at the maximum rate authorized by the Civil Code from the date of notice of expense until paid in full.

4. The County may require the Covenantor/Owner to post security in a form and for a time period satisfactory to the County to guarantee the performance of the obligations stated herein. Should the Owner fail to perform the obligations under this Agreement, the County may, in the case of a cash deposit, certificate of deposit or letter of credit, act for the Owner using the proceeds from it, or in the case of a surety bond, require the sureties to perform the obligations of the Agreement.

5. The County may, but shall not be obligated to, enforce this Agreement by a proceeding at law or in equity against any person or persons violating or attempting to violate any condition, covenant, equitable servitude, or restriction provided for herein, either to restrain such violation or to recover damages.

6. This Agreement constitutes the entire agreement and understanding between the parties with respect to the subject matter of this Agreement and supersedes all prior or contemporaneous agreements and understandings with respect to the subject matter hereof, whether oral or written.

7. If any part of this Agreement is declared by a final decision of a court of competent jurisdiction to be invalid for any reason, such shall not affect the validity of the rest of the Agreement. The other parts of this Agreement shall remain in effect as if this Agreement had been executed without the invalid parts(s). The parties declare that they intend and desire that the remaining parts of this Agreement continue to be effective without any part(s) that have been declared invalid.

8. This Agreement may be executed in counterparts, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an original, and all such counterparts together shall constitute one and the same instrument.

9. This Agreement shall be recorded in the Office of the Recorder of Riverside County, California and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth.

10. In the event of legal action occasioned by any default or action of the Covenantor/Owner, or its successors or assigns, then the Covenantor/Owner and its

successors or assigns agree(s) to pay all costs incurred by the County in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

11. Covenantor/Owner agrees to indemnify, defend, and hold harmless the County, its elected officers, employees, agents, and contractors from and against any and all liability, expense, including costs and reasonable legal fees, and claims of damage of any nature whatsoever including, but not limited to, death, bodily injury, personal injury, or property damage arising from or connected with the County inspection of the Property except where such liability, expense, or claim for damage results from the sole negligence or willful misconduct of the County.

12. It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien thereon against.

13. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto and any other present or future interest holders or estate holders in the property. The term "Owner" shall include not only the present Owner, but also its heirs, successors in interest and in title to the property, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of this Agreement. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the County at the same time such notice is provided to the successor.

14. Time is of the essence in the performance of this Agreement.

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15. Any notice to a party required or called for in this Agreement shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two *(72)* hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

COVENANTOR/OWNER:

COUNTY:

Riverside County Department of Transportation
Attn: Transportation Director
4080 Lemon Street
Riverside, CA

COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT

_____ _____
Patricia Romo, P.E. Date
Director of Transportation

_____ _____
(Attest) Date

COVENANTOR/OWNER

_____
Company/Corporation/Partnership

_____
(Print Name)

_____
(Print Title)

Attach Notary

Maintenance Plan for
Summit Station – Building 2

Date:_____

Project Address and Cross Streets_____

Assessor's Parcel No.: _____

Property Owner: _____ Phone No.:_____

Designated Contact: _____ Phone No.:_____

Mailing Address:_____

The property contains key drainage facilities located as described below and as shown in the attached site plan. It also contains many small, but critical, drainage source controls.

DMA 2

- **Infiltration Basin** is located in the southwest corner of the site; south of the southern truck court.

I. Routine Maintenance Activities

Primary maintenance activities include vegetation management and sediment removal, although mosquito abatement is a concern if the basin is designed to include permanent pools of standing water. Routine maintenance activities, and the frequency at which they will be conducted, are shown in Table 1.

Table 1
Routine Maintenance Activities for Drainage Facilities

No.	Maintenance Task	Frequency of Task
1	Inspect the storm drain outlet. Look for obstructions, vegetation, debris, litter, sediment, etc. blocking the outlet. Check for bushes, trees, or other dense vegetation growing immediately in front of the outlet. Inspect and maintain source controls found in Appendix 8.	Before each rainy season
2	Inspect the entire storm drain system from the upstream end to the outfall including both underground chamber systems. Observe the flow of water. Any evidence of ponding in the bioretention area indicates a blockage.	Before each rainy season and after the first heavy rain.
3	Inspect all subdrain cleanouts. Ensure that all cleanout caps are present. Look for obstructions, debris, trash, leaves, vegetation, etc. growing inside the subdrain or covering the cleanout.	Before each rainy season
4	Evaluate health of vegetation and remove and replace any dead or dying plants. Remove all green waste and dispose of properly.	Twice a year
5	Inspect slope between flow inlets and treatment facility. Look for gullies, washouts, evidence of uncontrolled surface water flow or any other evidence of distress to the slope.	Before each rainy season
6	Remove sediment from lift station and underground chambers.	Check twice a year before each rainy season and after the first heavy rain. Maintain as needed
7	Remove accumulated sediment in storage basin and regrade when the accumulated sediment volume exceeds 20% of basin volume and dispose of sediment properly.	Every 15 years, or as needed

8	Inspect for growth of trees or invasive plants in grassy bioretention area.	Each month
9	Test the irrigation system. Observe whether all grassy areas in the bioretention and storage areas are receiving the correct amount of water. Observe whether excessive irrigation is creating flow in the subdrains (irrigation should not cause any flow in subdrain).	Before each dry season and each month throughout the dry season.
10	Inspect drainage facilities using the attached inspection checklist.	Quarterly, or as needed
11	Maintain vegetation landscaping and the irrigation system. Prune and weed to keep self-retaining and self-treating areas neat and orderly in appearance.	Before wet season begins, or as needed

II. Prohibitions

The use of pesticides and quick release fertilizers shall be minimized, and the principles of integrated pest management (IPM) followed:

1. Employ non-chemical controls (biological, physical and cultural controls) before using chemicals to treat a pest problem.
2. Prune plants properly and at the appropriate time of year.
3. Provide adequate irrigation for landscape plants. Do not over water.
4. Limit fertilizer use unless soil testing indicates a deficiency. Slow-release or organic fertilizer is preferable. Check with municipality for specific requirements.
5. Pest control should avoid harming non-target organisms, or negatively affecting air and water quality and public health. Apply chemical controls only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, apply the least toxic and the least persistent pesticide that will provide adequate pest control. Do not apply pesticides on a prescheduled basis.
6. Sweep up spilled fertilizer and pesticides. Do not wash away or bury such spills.
7. Do not over apply pesticide. Spray only where the infestation exists. Follow the manufacturer's instructions for mixing and applying materials.
8. Only licensed, trained pesticide applicators shall apply pesticides.
9. Apply pesticides at the appropriate time to maximize their effectiveness and minimize the likelihood of discharging pesticides into runoff. With the exception of pre-emergent pesticides, avoid application if rain is expected.
10. Unwanted/unused pesticides shall be disposed as hazardous waste.

Standing water shall not remain in the treatment and/or hydromodification management measures for more than 3 days, to prevent mosquito generation.

III. Vector Control Contacts

Riverside County Environmental Health
951.766.9454 Vector Control at County Environmental Health

IV. Inspections

The attached Inspection and Maintenance Checklist shall be used to conduct inspections monthly (or as needed), identify needed maintenance, and record maintenance that is conducted.

Drainage Facilities
Inspection and Maintenance Checklist

Property Address: _____ Property Owner: _____

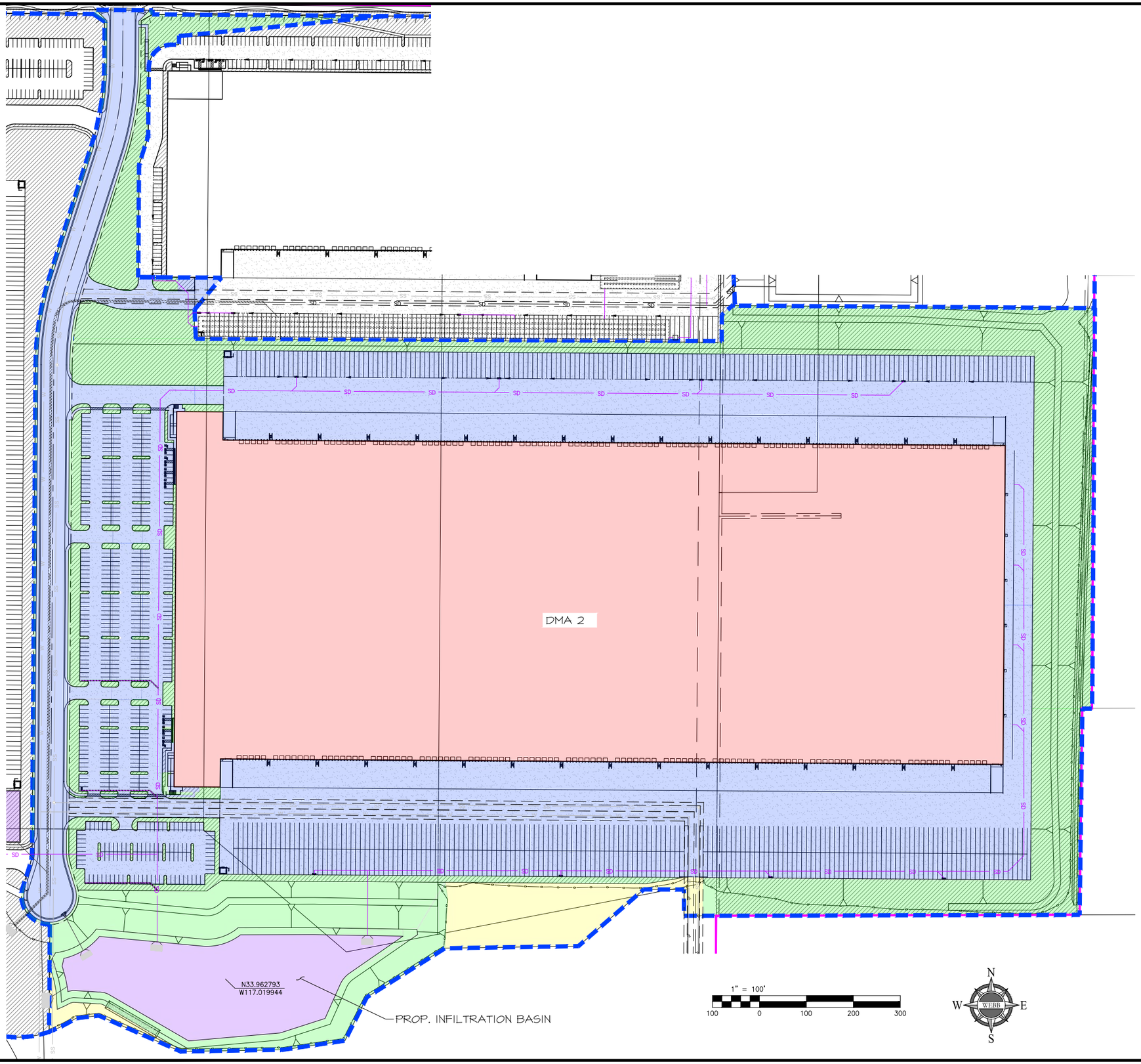
Treatment Measure No.: _____ Date of Inspection: _____ Type of Inspection: □ Monthly □ Pre-Wet Season
□ After heavy runoff □ End of Wet Season

Inspector(s): _____ □ Other:_____

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
General				
Standing Water	• When water stands in the basin storms and does not drain within 48 hours after rainfall.			There should be no areas of standing water once inflow has ceased. Any of the following may apply: sediment or trash blockages removed.
Poisonous Vegetation and noxious weeds	Poisonous or nuisance vegetation or noxious weeds, e.g., morning glory, English ivy, reed canary grass, Japanese knotweed, purple loosestrife, blackberry, Scotch broom, poison oak, stinging nettles, or devil's club.			Use Integrated Pest Management techniques to control noxious weeds or invasive species.
Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants.			No contaminants or pollutants present.
Rodent Holes	If facility acts as a dam or berm, any evidence of rodent holes, or any evidence of water piping through dam or berm via rodent holes.			The design specifications are not compromised by holes. Any rodent control activities are in accordance with applicable laws and do not affect any protected species.
Insects	Insects such as wasps and hornets interfere with maintenance activities.			Insects do not interfere with maintenance activities.

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
Tree/Brush Growth and Hazard Trees	• Growth does not allow maintenance access or interferes with maintenance activity. • Dead, diseased, or dying trees.			• Trees do not hinder maintenance activities. • Remove hazard trees as approved by the City. (Use a certified Arborist to determine health of tree or removal requirements).
Drainage time	Standing water remains in basin more than five days.			Correct any circumstances that restrict the flow of water from the system. Restore drainage to design condition; may need to maintain basin. If the problem cannot be corrected and problems with standing water recur, then mosquitoes should be controlled with larvicides, applied by a licensed pesticide applicator.
Outfall structure	Debris or silt build-up obstructs an outfall structure.			Remove debris and/or silt build-up and dispose of properly.
Storage Area				
Sediment	Accumulated sediment >15% of designed basin depths or affects inletting or outletting condition of the facilities.			Sediment cleaned out to designed basin shapes and depths; basin reseeded if necessary to control erosion. Sediment disposed of properly.
Debris Barriers (e.g., Trash Racks)				
Trash and Debris	Trash and debris accumulated in the chambers and modular wetlands.			Trash and debris removed and disposed of properly.
Damaged/ Missing Bars	Bars are missing, loose, bent out of shape, or deteriorating due to excessive rust.			Bars are repaired or replaced to allow proper functioning of trash rack.
Inlet/Outlet Pipe	Debris barrier is missing or not attached to pipe.			Debris barrier is repaired or replaced to allow proper functioning of trash rack.

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
Risers, orifices and screens	Any debris or clogging			Restore unobstructed flow through discharge structure; to meet original design; dispose of debris properly.
Miscellaneous				
Miscellan-ous	Any condition not covered above that needs attention to restore drainage facilities to design conditions.			Meets the design specifications.



DMA 2 AREA TABLE	
ROOFS (SF)	1,212,810
CONCRETE (SF)	1,162,617
LANDSCAPE (SF)	609,769
SELF-TREAT (SF)	7,700
BASIN (SF)	106,388
VBMP (CF)	144,000

PERVIOUS AREA= 723,857 SF
PERVIOUS = 23.4%

IMPERVIOUS AREA= 2,375,427 SF
IMPERVIOUS = 76.6%

LEGEND

- –ROOF
- – CONCRETE/ASPHALT
- – LANDSCAPE
- – SELF-TREATING
- – BASIN (SELF-TREATING)
- – DMA BOUNDARY
- – PROJECT BOUNDARY
- – PROPOSED ONSITE STORM DRAIN
- – NRCS SOIL BOUNDARY

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION
BUILDING 2
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
O&M EXHIBIT

SCALE:	1" = 100'
DATE:	8/3/2021
DESIGNED:	EP
CHECKED:	BJV
PLN CK REF:	
F.B.	

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

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Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

BMP TRAINING ACKNOWLEDGEMENT FORM

By signing this form, the undersigned certifies that he/she has received the listed materials and training for the BMP's that he or she is responsible for operation and maintenance or responsible to meet the requirements. The undersigned also acknowledged that punitive actions may be imposed if he or she fails to comply. The punitive actions can be in terms of monetary fine or termination of the contract or the rights that is transferred to the undersigned through contracts. If necessary, the owner or public agencies may complete the corrective actions and billed the undersigned.

Name (Print): _____
Business Name:_____
Title/Position: _____
Signature: _____ Date: _____

Item	Training Description	Related BMP(s)	Handout Materials	Initials	Comments

For Information:

Local Sewering Agencies in Riverside County:

City of Beaumont	(909) 769-8520
Belair Homeowners Association	(909) 277-1414
City of Banning	(909) 922-3130
City of Blythe	(760) 922-6161
City of Coachella	(760) 391-5008
Coachella Valley Water District	(760) 398-2651
City of Corona	(909) 736-2259
Desert Center, CSA #51	(760) 227-3203
Eastern Municipal Water District	(909) 928-3777
Elsinore Valley MWD	(909) 674-3146
Farm Mutual Water Company	(909) 244-4198
Idyllwild Water District	(909) 659-2143
Jurupa Community Services Dist.	(909) 685-7434
Lake Hemet MWD	(909) 658-3241
Lee Lake Water District	(909) 277-1414
March Air Force Base	(909) 656-7000
Mission Springs Water District	(760) 329-6448
City of Palm Springs	(760) 323-8242
Rancho Caballero	(909) 780-9272
Rancho California Water Dist.	(909) 676-4101
Ripley, CSA #62	(760) 922-4909
Rubidoux Community Services Dist.	(909) 684-7580
City of Riverside	(909) 782-5341
Silent Valley Club, Inc	(909) 849-4501
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(909) 780-4170

Spill Response Agency:
Haz-Mat: (909) 358-5055
Hazardous Waste Disposal: (909) 358-5055
To Report Illegal Dumping or a Clogged Storm Drain: 1-800-506-2555

StormWater CleanWater
PROTECTION PROGRAM

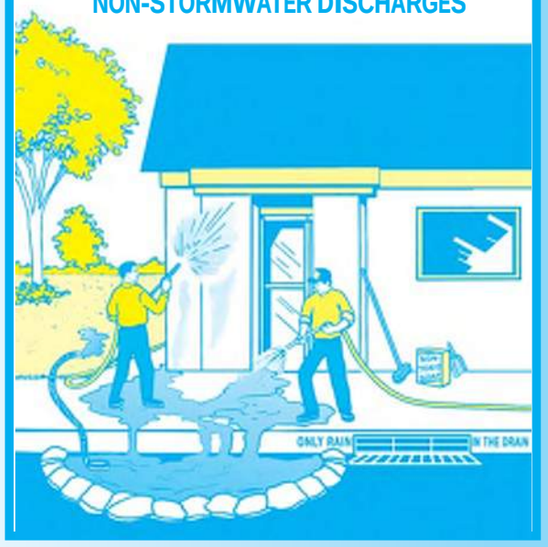
Riverside County gratefully acknowledges the Bay Area Stormwater Management Agencies Association and the Cleaning Equipment Trade Association for information provided in this brochure.

StormWater Pollution

What you should know for...

OUTDOOR CLEANING ACTIVITIES

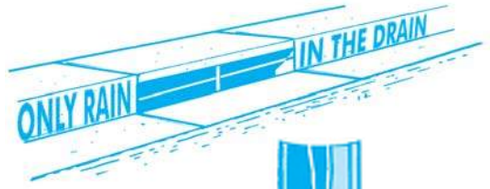
NON-STORMWATER DISCHARGES



GUIDELINES for disposal of washwater from:

- Sidewalk, plaza or parking lot cleaning
- Vehicle washing or detailing
- Building exterior cleaning
- Waterproofing
- Equipment cleaning or degreasing

Do you know . . . where the water should go?



Riverside County has two drainage systems - sanitary sewers and storm drains. The storm drain system is designed to prevent flooding by carrying excess rainwater away from streets. . . it's not designed to be a waste disposal system. Since the storm drain system does not provide for water treatment, it often serves the unintended function of transporting pollutants directly to our waterways.

Unlike sanitary sewers, storm drains are not connected to a treatment plant - they flow directly to our local streams, rivers and lakes.

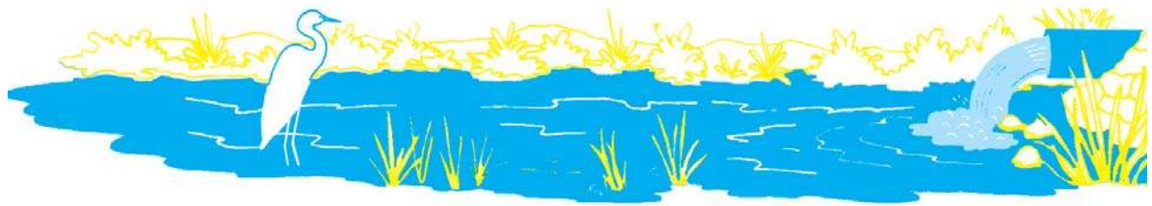
Non-stormwater discharges such as washwater generated from outdoor cleaning projects often transport harmful pollutants into storm drains and our local waterways. Polluted runoff contaminates local waterways and poses a threat to groundwater resources.

Soaps, degreasers, automotive fluids, litter, and a host of other materials washed off buildings, sidewalks, plazas, parking areas, vehicles, and equipment can all pollute our waterways.

The Cities and County of Riverside StormWater/CleanWater Protection Program

Since preventing pollution is much easier, and less costly than cleaning up "after the fact," the Cities and County of Riverside StormWater/CleanWater Protection Program informs residents and businesses of pollution prevention activities such as those described in this pamphlet.

The Cities and County of Riverside have adopted ordinances for stormwater management and discharge control. In accordance with state and federal law, these local stormwater ordinances **prohibit** the discharge of wastes into the storm drain system or local surface waters. This includes non-stormwater discharges containing oil, grease, detergents, degreasers, trash, or other waste materials.



PLEASE NOTE: The discharge of pollutants into the street, gutters, storm drain system, or waterways - without a Regional Water Quality Control Board permit or waiver - is ***strictly prohibited*** by local ordinances and state and federal law.

Help Protect Our Waterways!

Use These Guidelines For Outdoor Cleaning Activities and Washwater Disposal

DO . . . Dispose of **small amounts** of **washwater from cleaning building exteriors, sidewalks, or plazas** onto landscaped or unpaved surfaces provided you have the owner's permission and the discharge will not cause flooding or nuisance problems, or flow into a storm drain.

DO NOT . . . Discharge **large amounts** of these types of washwater onto landscaped areas or soil where water may run to a street or storm drain. Wastewater from exterior cleaning may be pumped to a sewer line with specific permission from the local sewering agency.

DO . . . Check with your local sewering agency's policies and requirements concerning waste water disposal. **Water from many outdoor cleaning activities** may be acceptable for disposal to the sewer system. See the list on the back of this flyer for phone numbers of the sewering agencies in your area.

DO NOT . . . Pour **hazardous wastes** or toxic materials into the storm drain or sewer system . . . properly dispose of it instead. When in doubt, contact the local sewering agency! The agency will tell you what types of liquid wastes can be accepted.

DO . . . Understand that **water (without soap) used to remove dust from clean vehicles** may be discharged to a street or storm drain. **Washwater from sidewalk, plaza, and building surface cleaning** may go into a street or storm drain if ALL of the following conditions are met:

1) The surface being washed is free of residual oil stains, debris and similar pollutants by using dry cleanup methods (sweeping, and cleaning any oil or chemical spills with rags or other absorbent materials before using water).
2) Washing is done with water only - no soap or other cleaning materials.
3) You have not used the water to remove paint from surfaces during cleaning.

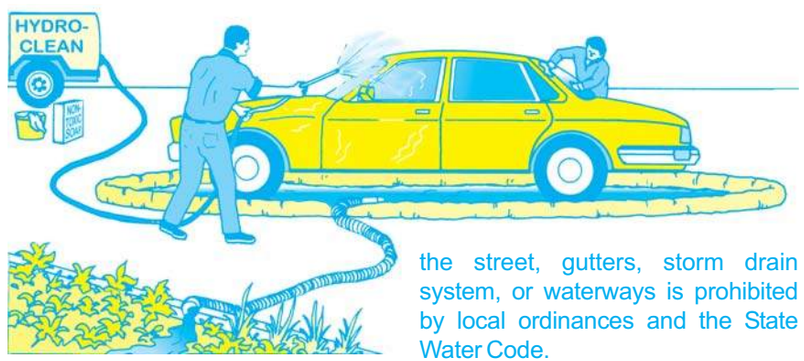
DO NOT . . . Dispose of water containing **soap or any other type of cleaning agent** into a storm drain or water body. This is a direct violation of state and/or local regulations. Because **wastewater from cleaning parking areas or roadways** normally contains metallic brake pad dust, oil and other automotive fluids, it should never be discharged to a street, gutter, or storm drain.

DO . . . Understand that **mobile auto detailers** should divert washwater to landscaped or dirt areas. Note: Be aware that soapy washwater may adversely affect landscaping; consult with the property owner. Residual washwater may remain on paved surfaces to evaporate; sweep up any remaining residue. If there is sufficient water volume to reach the storm drain, collect the runoff and obtain permission to pump it into the sanitary sewer. Follow local sewering agency's requirements for disposal.

DO NOT . . . Dispose of left over cleaning agents into the gutter, storm drain or sanitary sewer.

Regarding Cleaning Agents:

If you must use soap, use biodegradable/phosphate free cleaners. Avoid use of petroleum based cleaning products. Although the use of nontoxic cleaning products is strongly encouraged, ***do*** understand that these products can still degrade water quality and, therefore, the discharge of these products into



the street, gutters, storm drain system, or waterways is prohibited by local ordinances and the State Water Code.

Note: When cleaning surfaces with a high pressure washer or steam cleaning methods, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning, as compared to the use of a low pressure hose, can remove additional materials that can contaminate local waterways.

Other Tips to Help Protect Our Water . . .

Screening Wash Water

A thorough dry cleanup before washing (without soap) surfaces such as building exteriors and decks without loose paint, sidewalks, or plaza areas, *should be sufficient to protect storm drains.* **However**, if any debris (solids) could enter storm drains or remain in the gutter or street after cleaning, washwater should first pass through a "20 mesh" or finer screen to catch the solid material, which should then be disposed of in the trash.

Drain Inlet Protection/ Containing & Collecting Wash Water

- Sand bags can be used to create a barrier around storm drain inlets.
- Plugs or rubber mats can be used to temporarily seal storm drain openings.
- You can also use vacuum booms, containment pads, or temporary berms to keep wash water away from the street, gutter, or storm drain.

Equipment and Supplies

Special materials such as absorbents, storm drain plugs and seals, small sump pumps, and vacuum booms are available from many vendors. For more information check catalogs such as New Pig (800-468-4647), Lab Safety Supply (800-356-0783), C&H (800-558-9966), and W.W. Grainger (800-994-9174); or call the Cleaning Equipment Trade Association (800-441-0111) or the Power Washers of North America (800-393-PWNA).

Helpful telephone numbers and links:

Riverside County Stormwater Protection Partners

Flood Control District	(951) 955-1200
County of Riverside	(951) 955-1000
City of Banning	(951) 922-3105
City of Beaumont	(951) 769-8520
City of Calimesa	(909) 795-9801
City of Canyon Lake	(951) 244-2955
Cathedral City	(760) 770-0327
City of Coachella	(760) 398-4978
City of Corona	(951) 736-2447
City of Desert Hot Springs	(760) 329-6411
City of Eastvale	(951) 361-0900
City of Hemet	(951) 765-2300
City of Indian Wells	(760) 346-2489
City of Indio	(760) 391-4000
City of Lake Elsinore	(951) 674-3124
City of La Quinta	(760) 777-7000
City of Menifee	(951) 672-6777
City of Moreno Valley	(951) 413-3000
City of Murrieta	(951) 304-2489
City of Norco	(951) 270-5607
City of Palm Desert	(760) 346-0611
City of Palm Springs	(760) 323-8299
City of Perris	(951) 943-6100
City of Rancho Mirage	(760) 324-4511
City of Riverside	(951) 361-0900
City of San Jacinto	(951) 654-7337
City of Temecula	(951) 694-6444
City of Wildomar	(951) 677-7751

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555 or e-mail us at
fcnpdes@rcflood.org

- Riverside County Flood Control and Water Conservation District
  www.rcflood.org

Online resources include:

- California Storm Water Quality Association
  www.casqa.org
- State Water Resources Control Board
  www.waterboards.ca.gov
- Power Washers of North America
  www.thepwna.org

Stormwater Pollution

What you should know for...

Outdoor Cleaning Activities and Professional Mobile Service Providers

Storm drain pollution prevention information for:

- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

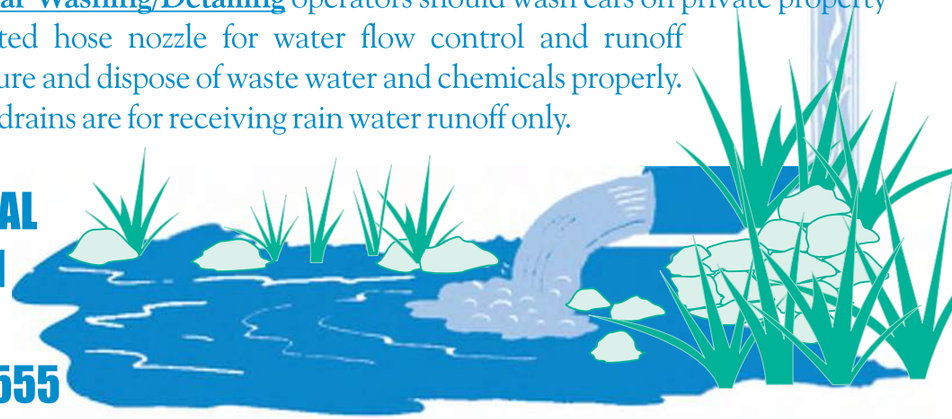
Do you know where street flows actually go?

Storm drains are NOT connected to sanitary sewer systems and treatment plants!

The primary purpose of storm drains is to carry *rain* water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** *Always* have a **Spill Response Kit** on hand to clean up unintentional spills. Only emergency **Mechanical** repairs should be done in City streets, using drip pans for spills. **Plumbing** should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. **Window/Power Washing** waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled **Carpet Cleaning** wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. **Car Washing/Detailing** operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Remember, storm drains are for receiving rain water runoff only.

REPORT ILLEGAL STORM DRAIN DISPOSAL 1-800-506-2555



Help Protect Our Waterways!

Use these guidelines for Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or body of water is *PROHIBITED* by law and can result in stiff penalties?

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. ***Each of us*** can do our part to keep stormwater clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do...consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do...prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do...use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do...obtain the property owner's permission to dispose of ***small amounts*** of power washing waste water on to landscaped, gravel or unpaved surfaces.

Do...check your local sanitary sewer agency's policies on wash water disposal regulations before disposing of wash water into the sewer. (See list on reverse side)

Do...be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do...check to see if local ordinances prevent certain activities.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.

Report illegal storm drain disposal
Call Toll Free
1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them with being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.

When cleaning surfaces with a ***high-pressure washer*** or ***steam cleaner***, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks. Water is a precious resource, don't let it flow freely and be sure to shut it off in between uses.

Screening Wash Water

Conduct thorough dry cleanup before washing exterior surfaces, such as buildings and decks ***with loose paint***, sidewalks or plaza areas. Keep debris from entering the storm drain after cleaning by first passing the wash water through a "20 mesh" or finer screen to catch the solid materials, then dispose of the mesh in a refuse container. Do not let the remaining wash water enter a street, gutter or storm drain.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or other appropriate materials.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Concrete/Coring/Saw Cutting and Drilling Projects

Protect any down-gradient inlets by using dry activity techniques whenever possible. If water is used, minimize the amount of water used during the coring/drilling or saw cutting process. Place a barrier of sandbags and/or absorbent berms to protect the storm drain inlet or watercourse. Use a shovel or wet vacuum to remove the residue from the pavement. Do not wash residue or particulate matter into a storm drain inlet or watercourse.

Landscaping and garden maintenance activities can be major contributors to water pollution. Soils, yard wastes, over-watering and garden chemicals become part of the urban runoff mix that winds its way through streets, gutters and storm drains before entering lakes, rivers, streams, etc. Urban runoff pollution contaminates water and harms aquatic life!

In Riverside County, report illegal discharges into the storm drain, call
1-800-506-2555
"Only Rain Down the Storm Drain"

Important Links:

Riverside County Household Hazardous Waste Collection Information
1-800-304-2226 or www.rivcowm.org

Riverside County Backyard Composting Program
1-800-366-SAVE

Integrated Pest Management (IPM) Solutions
www.ipm.ucdavis.edu

California Master Gardener Programs
www.mastergardeners.org
www.camastergardeners.ucdavis.edu

California Native Plant Society
www.cnps.org

The Riverside County "Only Rain Down the Storm Drain" Pollution Prevention Program gratefully acknowledges Orange County's Storm Water Program for their contribution to this brochure.

...Only Rain Down ...the Storm Drain

What you should know for... Landscape and Gardening

Best Management tips for:

- Professionals
- Novices
- Landscapers
- Gardeners
- Cultivators

Tips for Landscape & Gardening

This brochure will help you to get the most of your lawn and gardening efforts and keep our waterways clean. Clean waterways provide recreation, establish thriving fish habitats, secure safe sanctuaries for wildlife, and add beauty to our communities. NEVER allow gardening products or waste water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.

- Plant native vegetation to reduce the amount of water, fertilizers and pesticides applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro-spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.

- Consider recycling your green waste and adding "nature's own fertilizer" to your lawn or garden.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.
- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains or sewers. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting.
- Try natural long-term common sense solutions first. Integrated Pest Management (IPM) can provide landscaping guidance and solutions, such as:
  - **Physical Controls** - Try hand picking, barriers, traps or caulking holes to control weeds and pests.
  - **Biological Controls** - Use predatory insects to control harmful pests.
  - **Chemical Controls** - Check out www.ipm.ucdavis.edu before using chemicals. Remember, all chemicals should be used cautiously and in moderation.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Waste Collection Center to be recycled.
- *Dumping toxics into the street, gutter or storm drain is illegal!*

www.bewaterwise.com Great water conservation tips and drought tolerant garden designs.

www.ourwaterourworld.com Learn how to safely manage home and garden pests.

Additional information can also be found on the back of this brochure.

For Information:

For more information on the General Industrial Storm Water Permit contact:

State Water Resources Control Board (SWRCB)
(916) 657-1146 or www.swrcb.ca.gov/ or, at your Regional Water Quality Control Board (RWQCB).

Santa Ana Region (8)
California Tower
3737 Main Street, Ste. 500
Riverside, CA 92501-3339
(909) 782-4130

San Diego Region (9)
9771 Clairemont Mesa Blvd., Ste. A
San Diego, CA 92124
(619) 467-2952

Colorado River Basin Region (7)
73-720 Fred Waring Dr., Ste. 100
Palm Desert, CA 92260
(760) 346-7491

SPILL RESPONSE AGENCY:
HAZ-MAT: (909) 358-5055
HAZARDOUS WASTE DISPOSAL: (909) 358-5055
RECYCLING INFORMATION: 1-800-366-SAVE
TO REPORT ILLEGAL DUMPING OR A CLOGGED STORM DRAIN: 1-800-506-2555

To order additional brochures or to obtain information on other pollution prevention activities, call: (909) 955-1111.

StormWater CleanWater
PROTECTION PROGRAM

Riverside County gratefully acknowledges the State Water Quality Control Board and the American Public Works Association, Storm Water Quality Task Force for the information provided in this brochure.

DID YOU KNOW . . .

YOUR FACILITY MAY NEED A STORM WATER PERMIT?

Many industrial facilities and manufacturing operations must obtain coverage under the Industrial Activities Storm Water General Permit

FIND OUT IF YOUR FACILITY MUST OBTAIN A PERMIT

StormWater Pollution . . . What you should know

Riverside County has two drainage systems - sanitary sewers and storm drains. The storm drain system is designed to help prevent flooding by carrying excess rainwater away from streets. Since the storm drain system does not provide for water treatment, it also serves the *unintended* function of transporting pollutants directly to our waterways.

Unlike sanitary sewers, storm drains are not connected to a treatment plant - they flow directly to our local streams, rivers and lakes.

In recent years, awareness of the need to protect water quality has increased. As a result, federal, state, and local programs have been established to reduce polluted stormwater discharges to our waterways. The emphasis of these programs is to prevent stormwater pollution since it's much easier, and less costly, than cleaning up "after the fact."

National Pollutant Discharge Elimination System (NPDES)

In 1987, the Federal Clean Water Act was amended to establish a framework for regulating industrial stormwater discharges under the NPDES permit program. In California, NPDES permits are issued by the State Water Resources Control Board (SWRCB) and the nine (9) Regional Water Quality Control Boards (RWQCB). In general, certain industrial facilities and manufacturing operations must obtain coverage under the Industrial Activities Storm Water General Permit if the type of facilities or operations falls into one of the several categories described in this brochure.

How Do I Know If I Need A Permit?

Following are ***general descriptions*** of the industry categories types that are regulated by the Industrial Activities Storm Water General Permit. Contact your local Region Water Quality Control Board to determine if your facility/operation requires coverage under the Permit.

➜ Facilities such as cement manufacturing; feedlots; fertilizer manufacturing; petroleum refining; phosphate manufacturing; steam electric power generation; coal mining; mineral mining and processing; ore mining and dressing; and asphalt emulsion;

➜ Facilities classified as lumber and wood products (except wood kitchen cabinets); pulp, paper, and paperboard mills; chemical producers (except some pharmaceutical and biological products); petroleum and coal products; leather production and products; stone, clay and glass products; primary metal industries; fabricated structural metal; ship and boat building and repairing;

➜ Active or inactive mining operations and oil and gas exploration, production, processing, or treatment operations;

➜ Hazardous waste treatment, storage, or disposal facilities;

➜ Landfills, land application sites and open dumps that receive or have received any industrial waste; unless there is a new overlying land use such as a golf course, park, etc., and there is no discharge associated with the landfill;

➜ Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards;

➜ Steam electric power generating facilities, facilities that generate steam for electric power by combustion;

➜ Transportation facilities that have vehicle maintenance shops, fueling facilities, equipment cleaning operations, or airport deicing operations. This includes school bus maintenance facilities operated by a school district;

➜ Sewage treatment facilities;

➜ Facilities that have areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water.

How do I obtain coverage under the Industrial Activities Storm Water General Permit?

Obtain a permit application package from your local Regional Water Quality Control Board listed on the back of this brochure or the State Water Resources Control Board (SWRCB). Submit a completed Notice of Intent (NOI) form, site map and the appropriate fee ($250 or $500) to the SWRCB. Facilities must submit an NOI thirty (30) days prior to beginning operation. Once you submit the NOI, the State Board will send you a letter acknowledging receipt of your NOI and will assign your facility a waste discharge identification number (WDID No.). You will also receive an annual fee billing. These billings should roughly coincide with the date the State Board processed your original NOI submittal.

What are the requirements of the Industrial Activities Storm Water General Permit?

The basic requirements of the Permit are:

1. The facility must eliminate any non-stormwater discharges or obtain a separate permit for such discharges.

2. The facility must develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must identify sources of pollutants that may be exposed to stormwater. Once the sources of pollutants have been identified, the facility operator must develop and implement Best Management Practices (BMPs) to minimize or prevent polluted runoff.

   Guidance in preparing a SWPPP is available from a document prepared by the California Storm Water Quality Task Force called the California Storm Water Best Management Practice Handbook.

3. The facility must develop and implement a Monitoring Program that includes conducting visual observations and collecting samples of the facility's storm water discharges associated with industrial activity. The General Permit requires that the analysis be conducted by a laboratory that is certified by the State of California.

4. The facility must submit to the Regional Board, every July 1, an annual report that includes the results of its monitoring program.

A Non-Storm Water Discharge is... *any discharge to a storm drain system that is not composed entirely of storm water. The following non-storm water discharges are authorized by the General Permit: fire hydrant flushing; potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems; drinking fountain water; atmospheric condensates including refrigeration, air conditioning, and compressor condensate; irrigation drainage; landscape watering; springs; non-contaminated ground water; foundation or footing drainage; and sea water infiltration where the sea waters are discharged back into the sea water source.*

A BMP is . . . *a technique, process, activity, or structure used to reduce the pollutant content of a storm water discharge. BMPs may include simple, non-structural methods such as good housekeeping, staff training and preventive maintenance. Additionally, BMPs may include structural modifications such as the installation of berms, canopies or treatment control (e.g. setting basins, oil/water separators, etc.)*

WARNING*: There are significant penalties for non-compliance: a minimum fine of $5,000 for failing to obtain permit coverage, and, up to $10,000 per day, per violation plus $10 per gallon of discharge in excess of 1,000 gallons.*

Stormwater Pollution

What you should know for...

Industrial & Commercial Facilities

Best Management Practices (BMPS) for:

- Industrial Facilities
- Commercial Facilities

Riverside County Stormwater Program Members

City of Banning
(951) 922-3105

City of Beaumont
(951) 769-8520

City of Calimesa
(909) 795-9801

City of Canyon Lake
(951) 244-2955

City of Cathedral City
(760) 770-0340

City of Coachella
(760) 398-3502

City of Corona
(951) 736-2447

City of Desert Hot Springs
(760) 329-6411

City of Eastvale
(951) 361-0900

City of Hemet
(951) 765-2300

City of Indian Wells
(760) 346-2489

City of Indio
(760) 391-4000

City of Jurupa Valley
(951) 332-6464

City of Lake Elsinore
(951) 674-3124

City of La Quinta
(760) 777-7000

City of Menifee
(951) 672-6777

City of Moreno Valley
(951) 413-3000

City of Murrieta
(951) 304-2489

City of Norco
(951) 270-5607

City of Palm Desert
(760) 346-0611

City of Palm Springs
(760) 323-8299

City of Perris
(951) 943-6100

City of Rancho Mirage
(760) 324-4511

City of Riverside
(951) 826-5311

City of San Jacinto
(951) 487-7330

City of Temecula
(951) 694-6444

City of Wildomar
(951) 677-7751

Coachella Valley Water District
(760) 398-2651

County of Riverside
(951) 955-1000

Riverside County Flood Control District
(951) 955-1200

YOU can prevent Stormwater Pollution following these practices...

Industrial and Commercial Facilities

The Riverside County Stormwater Program has identified a number of Best Management Practices (BMPs) for Industrial and Commercial Facilities. These BMPs control and reduce stormwater pollutants from reaching our storm drain system and ultimately our local water bodies. City and County ordinances require businesses to use these BMPs to protect our water quality. Local cities and the County are required to verify implementation of these BMPs by performing regular facility inspections.

Prohibited Discharges

Discontinue all non-stormwater discharges to the storm drain system. It is *prohibited* to discharge any chemicals, paints, debris, wastes or wastewater into the gutter, street or storm drain.

Outdoor Storage BMPs

- Install covers and secondary containment areas for all hazardous materials and wastes stored outdoors in accordance with County and/or City standards.
- Keep all temporary waste containers covered, at all times when not in use.
- Sweep outdoor areas instead of using a hose or pressure washer.
- Move all process operations including vehicle/equipment maintenance inside of the building or under a covered and contained area.
- Wash equipment and vehicles in a contained and covered wash bay which is closed-loop or connected to a clarifier sized to local standards and discharged to a sanitary sewer or take them to a commercial car wash.

Spills and Clean Up BMPs

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep up the area.
- Clean up spills immediately when they occur, using dry clean up methods such as absorbent materials or sweep followed by proper disposal of materials.
- Always have a spill kit available near chemical loading dock doors and vehicle maintenance and fueling areas.
- Follow your Business Emergency Plan, as filed with the local Fire Department.
- Report all prohibited discharges and non-implementation of BMPs to your local Stormwater Coordinator as listed on the back of this pamphlet.
- Report hazardous materials spills to 951-358-5055 or call after hours to 951-782-2973 or, if an emergency, call the Fire Department's Haz Mat Team at 911.

Plastic Manufacturing Facilities BMPs

AB 258 requires plastic product manufacturers to use BMPs, such as safe storage and clean-up procedures to prevent plastic pellets (nurdles) from entering the waterway. The plastic pellets are released into the environment during transporting, packaging and processing and migrate to waterways through the storm drain system. AB 258 will help protect fish and wildlife from the hazards of plastic pollution.

Training BMPs

As prescribed by your City and County Stormwater Ordinance(s), train employees in spill procedures and prohibit non-stormwater discharges to the storm drain system. Applicable BMP examples can be found at www.cabmphandbooks.com.

Permitting

Stormwater discharges associated with specific categories for industrial facilities are regulated by the State Water Resources Control Board through an Industrial Stormwater General Permit. A copy of this General Permit and application forms are available at: www.waterboards.ca.gov, select stormwater then the industrial quick link.

To report illegal dumping or for more information on stormwater pollution prevention call: 1-800-506-2555 or e-mail us at: fcnpdes@rcflood.org.

For Information:

To report illegal dumping or a clogged storm drain
1-800-506-2555

Hazardous Materials Disposal,
Recycling/Disposal Vendors call:
951-486-3200 or 1-800-506-2555

County Code Enforcement Offices
(unincorporated area)
Lake Elsinore/Mead Valley.....951-245-3186
Jurupa Valley.....951-275-8739
Moreno Valley/Banning 951-485-5840
Murrieta So. County 951-600-6140
Thousand Palms District 760-343-4150

Environmental Crimes
1-800-304-6100

Spill Response Agency
1-800-304-2226 or 951-358-5172

Recycling and Hazardous Waste Disposal
1-800-366-SAVE

For pollution prevention brochures or to obtain information on other County Environmental Services, call 1-800-506-2555

Popular links:
www.rcflood.org
www.cabmphandbooks.com
www.cfpub.epa.gov/npdes

ONLY RAIN DOWN THE STORM DRAIN
POLLUTION PREVENTION PROGRAM
1-800-506-2555

Riverside County's "Only Rain Down the Storm Drain" Pollution Prevention Program members include:

Banning
Beaumont
Calimesa
Canyon Lake
Cathedral City
City of Riverside
Corona
Coachella
Coachella Valley Water District
Desert Hot Springs
Hemet
Indian Wells
Indio
Lake Elsinore
La Quinta
Menifee
Murrieta
Moreno Valley
Norco
Palm Desert
Palm Springs
Perris
Rancho Mirage
Riverside County
San Jacinto
Temecula
Wildomar

Stormwater Pollution

What you should know for...

Automotive Maintenance and Car Care

Best Management Practices (BMPS) for:

- Auto Body Shops
- Auto Repair Shops
- Car Dealerships
- Gas Stations
- Fleet Service Operations

Stormwater Pollution...What You Should Know

Riverside County has three major river systems, or watersheds, that are important to our communities and the environment. Improper automotive maintenance, storage and washing activities can cause pollution that endangers the health of these rivers.

Pollutants that can collect on the ground from automotive repair, storage and washing areas such as antifreeze, oil, grease, gas, lubricants, soaps and dirt can be washed into the street by rain, over-irrigation or wash water runoff. Once these pollutants are in the streets they can be carried to these rivers by the storm drain system. Unlike the sewer system, the storm drain system carries water (and pollution) to our rivers without treatment. Pollution from storm drains is a form of storm water pollution.

A common storm water pollution problem associated with automotive shops and businesses is the activity of hosing down service bays without proper capture of runoff water, illegal dumping of fluids to the street or storm drain inlets and not properly storing hazardous materials. Examples of pollutants that can be mobilized by these activities include oil and grease from cars, copper and asbestos from worn break linings, zinc from tires and toxics from spilled fluids.

The Cities and County of Riverside have adopted ordinances, in accordance with state and federal law, which prohibit the discharge of pollutants into the storm drain system or local lakes, rivers or streams. This brochure provides common practices that can prevent storm water pollution and keep your shop in compliance with the law.

Best Management Practices for Auto Body & Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations

Changing Automotive Fluids

- Locate storm drains on or near your property. Do not allow material to flow to these drains.
- Collect, and separately recycle motor oil, antifreeze, transmission fluid and gear oil. Combining waste fluid prevents recycling.
- Drain brake fluid and other non-recyclables into a proper container and handle as a hazardous waste.
- Use a recyclable radiator flushing fluid and discard safely.

Only rain is allowed down the storm drain! Don't be an offender!! Violations of local ordinances are prosecuted to the fullest extent of the law.

Identify specific activities with the potential to cause spills or release pollutants such as oil, grease, fuel, etc. Post signs and train employees on how to prevent and clean up spills during activities.

YOU can prevent Stormwater Pollution following these practices...

Working on Transmissions, Engines and Miscellaneous Repairs

- Keep a drip pan or a wide low-rimmed container under vehicles to catch fluids whenever you unclip hoses, unscrew filters, or change parts, to contain unexpected leaks.
- Drain all fluids from wrecked vehicles into proper containers before disassembly or repair.
- Store batteries indoors, on an open rack.
- Return used batteries to a battery vendor.
- Contain cracked batteries to prevent hazardous spills.
- Catch metal filings in an enclosed unit or on a tarpaulin.
- Sweep filing areas to prevent washing metals into floor drains.

Cleaning Parts

- Clean parts in a self-contained unit, solvent sink, or parts washer to prevent solvents and grease from entering a storm drain.

Fueling Vehicles

- Clean-up minor spills with a dry absorbent, rather than allowing them to evaporate.
- Use a damp cloth and a damp mop to keep the area clean rather than a hose or a wet mop.

Keeping your shop or work area pollutant clean and environmentally safe

- Never hose down your work area, as pollutants could be washed into the storm drain.
- Sweep or vacuum the shop floor frequently.
- Routinely check equipment. Wipe up spills and repair leaks.
- Use large pans or an inflatable portable berm under wrecked cars.
- Avoid spills by emptying and wiping drip pans, when they are half-full.
- Keep dry absorbent materials and/or a wet/dry vacuum cleaner on hand for mid-sized spills.
- Train your employees to be familiar with hazardous spill response plans and emergency procedures.
- Immediately report hazardous material spills that have entered the street or storm drain to OES and local authorities.

Outdoor Parking and Auto Maintenance

- Use covered or controlled areas to prevent offsite spills.
- Sweep-up trash and dirt from outdoor parking and maintenance areas. Do not hose down areas. All non-stormwater discharges to the street of storm drain are prohibited.

Storing and Disposing of Waste

- Store recyclable and non-recyclable waste separately.
- Place liquid waste (hazardous or otherwise) in proper containers with secondary containment.
- Cover outdoor storage areas to prevent contact with rain water.
- Collect used parts for delivery to a scrap metal dealer.

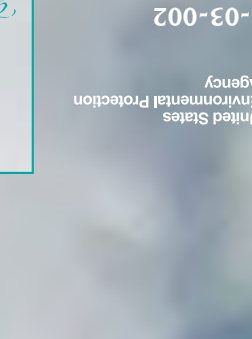
Washing vehicles and steam cleaning equipment

- For car washing, minimize wash water used and use designated areas. Never discharge wash water to the street, gutters or storm drain.
- Be sure to keep waste water from engine parts cleaning or steam cleaning from being discharged to the street, gutter or storm drain.
- Wash vehicles and steam clean with environmentally friendly soaps and polishes.

Selecting and Controlling Inventory

- Purchase recyclable or non-toxic materials.
- Select “closed-loop” suppliers and purchase supplies in bulk.

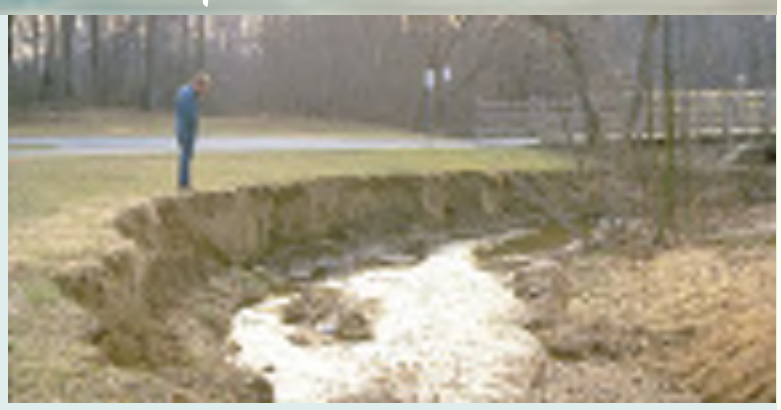
After the Storm



What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is stormwater runoff a problem?



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.

- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

United States Environmental Protection Agency

EPA 833-B-03-002

January 2003

Internet Address (URL) • HTTP://www.epa.gov
Recycled/Recyclable • Printed With Vegetable Oil Based Inks on 100% Postconsumer, Process Chlorine Free Recycled Paper

THE YEAR OF CLEAN WATER

Clean Water Environment

A Citizen's Guide to Understanding Stormwater

Stormwater Pollution Solutions

Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

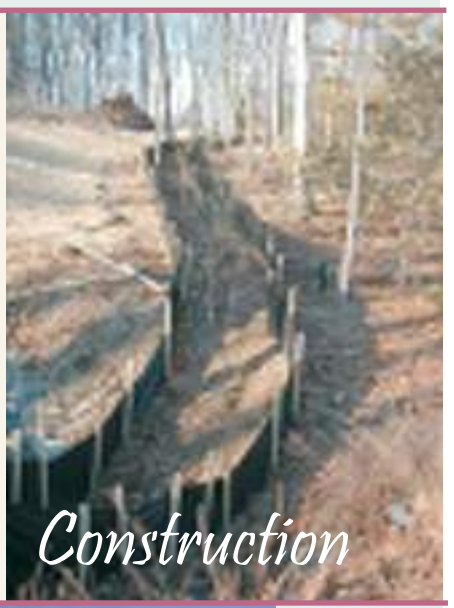
Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.



Construction

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.

Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

Stormwater Pollution Found in Your Area!

This is not a citation.

This is to inform you that our staff found the following pollutants in the storm sewer system in your area. This storm sewer system leads directly to

_____ .

- ❑ Motor oil
- ❑ Oil filters
- ❑ Antifreeze/ transmission fluid
- ❑ Paint
- ❑ Solvent/degreaser
- ❑ Cooking grease
- ❑ Detergent
- ❑ Home improvement waste (concrete, mortar)
- ❑ Pet waste
- ❑ Yard waste (leaves, grass, mulch)
- ❑ Excessive dirt and gravel
- ❑ Trash
- ❑ Construction debris
- ❑ Pesticides and fertilizers
- ❑ Other

_____

For more information or to report an illegal discharge of pollutants, please call:

www.epa.gov/npdes/stormwater

EPA
United States
Environmental Protection
Agency

EPA 833-F-03-002
April 2003

Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up debris, chemicals, dirt, and other pollutants and deposit them into a storm sewer system or waterbody.

Anything that enters a storm sewer system is discharged *untreated* into the waterbodies we use for swimming, fishing, and providing drinking water.

Remember: Only Rain Down the Drain

To keep the stormwater leaving your home or workplace clean, follow these simple guidelines:

- Use pesticides and fertilizers sparingly.
- Repair auto leaks.
- Dispose of household hazardous waste, used auto fluids (antifreeze, oil, etc.), and batteries at designated collection or recycling locations.
- Clean up after your pet.
- Use a commercial car wash or wash your car on a lawn or other unpaved surface.
- Sweep up yard debris rather than hosing down areas. Compost or recycle yard waste when possible.
- Clean paint brushes in a sink, not outdoors. Properly dispose of excess paints through a household hazardous waste collection program.
- Sweep up and properly dispose of construction debris like concrete and mortar.

EPA

Clean Water State Revolving Fund

ACTIVITY *UPDATE*

Innovative use of Clean Water State Revolving Funds for Nonpoint Source Pollution

States are successfully using linked deposit and pass-through loans to fund important nonpoint source pollution remediation projects

Many states are successfully using the USEPA's Office of Water, Clean Water State Revolving Fund (CWSRF) loan program to fund important nonpoint source pollution remediation projects. Nonpoint source pollution is widely viewed as one of the most serious threats to our nation's water quality. State and local governments, local watershed and agricultural organizations, and many others are working to devise solutions that address nonpoint source pollution. The CWSRF program provides very attractive low-interest loans that spread project costs over a repayment period of up to 20 years. Today, CWSRF programs are funding projects that address agriculture runoff, leaking on-site septic systems, and urban nonpoint source pollution, including stormwater runoff and brownfield contamination.

During the initial operating phase of CWSRF programs, states designed loan options and implemented administrative procedures that would best serve municipal wastewater system projects. However, when considering how the CWSRF program could be used to address nonpoint source pollution, a number of states recognized that they would need to go beyond the typical municipal borrower and provide loan assistance to farmers, homeowners, and nonprofit organizations. States also recognized that providing loans to small private borrowers could be challenging. The loans would fund a variety of small projects, there would be more of them to service and manage, and there would be a greater risk of loan defaults.

States have taken different approaches to addressing these challenges. In some states, the CWSRF program has called upon internal expertise and the expertise of other state personnel to help manage loans to private borrowers. Other states have used creative lending approaches that pass loan risks and loan servicing responsibilities to financial institutions, local governments, or other state agencies. These lending methods include linked deposit loan programs with local financial institutions and pass-through loan programs with local government or state agencies. This activity update will highlight these loan structures with three case studies of successful state programs.

What is a linked deposit loan?

Under a linked deposit loan approach, a state works with local private lending institutions to provide assistance for nonpoint source pollution control. The state agrees to accept a reduced rate of return on an investment (e.g., a certificate of deposit) and the lending institution agrees to provide a loan to a borrower at a similarly reduced interest rate. For example, if the typical earnings rate for a certificate of deposit (CD) is five percent, a state might agree to purchase a CD that earns two percent interest, and in exchange, the lending institution agrees to provide a loan to a borrower at an interest rate that is three percentage points lower than the market rate for the borrower. In this program, the CWSRF investment (deposit) is linked to a low-interest loan, thereby earning the description "linked deposit loan."

Linked deposit loan programs provide benefits for CWSRF programs, local financial institutions, and borrowers. The linked-deposit approach benefits CWSRF programs because they support high priority nonpoint source projects and because they place risk and management responsibilities with local financial institutions. Financial institutions earn profits from the linked deposit agreements and add an additional service for their customers. Borrowers find linked deposit programs to be economical and comfortable; they save money with low-interest loans, and they are comfortable working with local financial institutions.

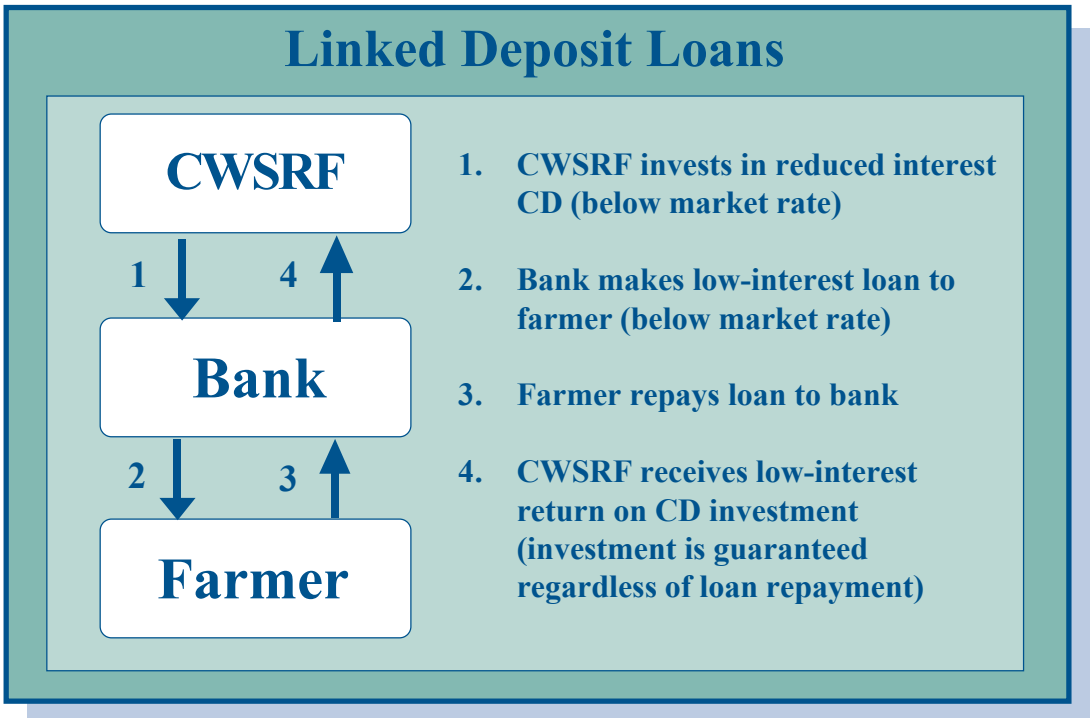


Figure 1. Linked deposit program flow chart

What is a pass-through loan?

In a pass-through loan, a CWSRF program makes a loan to another state or local government agency and that agency then lends the funds to private borrowers to address nonpoint source pollution. The town, county, or state agency reviews the project and the finances of each borrower. CWSRF loan funds are "passed-through" another government agency to private borrowers.

Pass-through loan programs benefit CWSRF programs, pass-through partners (towns, counties, and state agencies), and borrowers. These programs benefit CWSRF programs because they support high-priority nonpoint source projects and because they place risk and management responsibilities with program partners. Towns, counties, and state agencies benefit from pass-through programs because CWSRF funds support their nonpoint source priorities. Pass-through loans can offer two potential benefits to borrowers. First, pass-through loans are not provided by private lenders and, as a result, are likely to have lower interest rates. Second, local government agencies may have greater flexibility to provide loans to borrowers with relatively weak credit conditions if the borrower's nonpoint source project is a high priority for the state or local government agency.

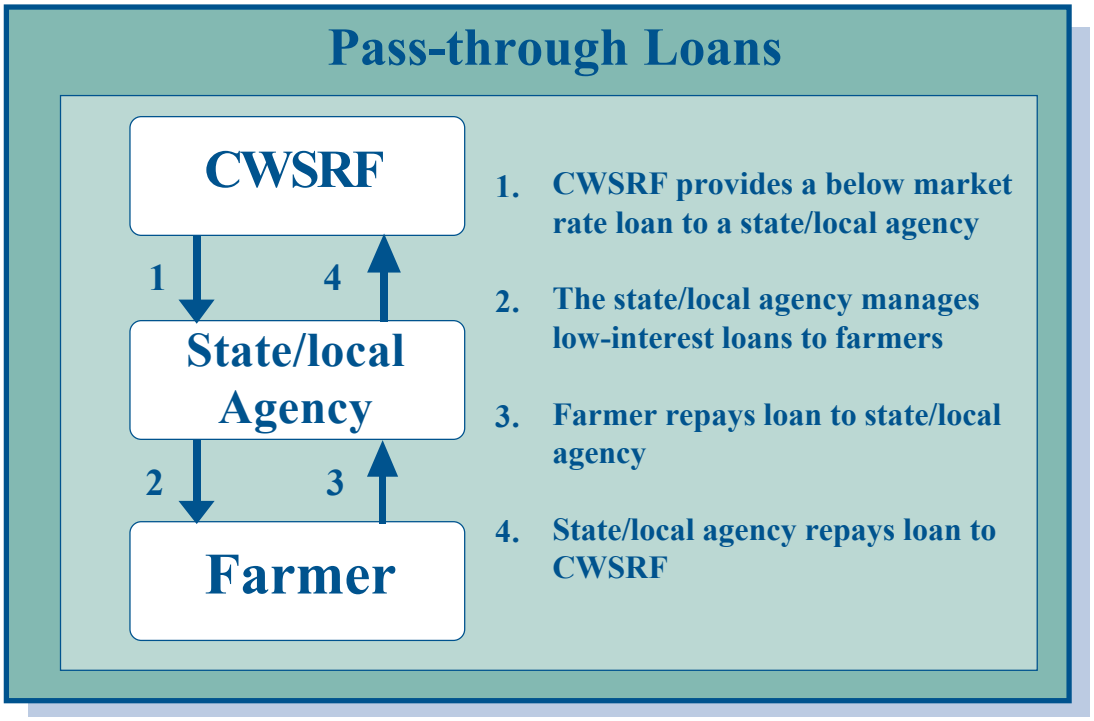


Figure 2. Pass-through program flow chart

Who has benefited from these programs and what have they funded?

CWSRF linked deposit and pass-through loan programs have supported borrowers implementing a variety of nonpoint source projects:

- Homeowners have implemented stormwater runoff best management practices and repaired or replaced failing on-site septic systems.
- Homeowner associations have addressed failing stormwater management facilities.
- Farmers have addressed agricultural runoff with a wide variety of agricultural best management practices including the construction of manure storage facilities, the restoration of filter strips and grassed waterways, and the use of conservation tillage equipment.

Ohio Case Study — Linked Deposit Loan Program

Ohio has used a linked-deposit loan program since 1993 to fund projects that support county watershed management plans. This program has funded more than 300 projects, including the repair of onsite wastewater treatment systems and the implementation of best management practices for agriculture, forestry, stormwater, and land development. The CWSRF program developed this program with the help of county soil and water conservation districts and local banks.

The CWSRF program implements its linked deposit loan program one county at a time. Each county's program is developed with two concurrent steps: the county soil and water conservation district develops a watershed management plan, and the CWSRF program and local financial institutions enter into agreements describing requirements and procedures for linked deposit loans.

Watershed management plans describe a watershed, identify sources of pollution, suggest actions that would address those pollution sources, prioritize water quality problems, identify sources of funding, and establish an implementation schedule. The county soil and water district's draft plan is reviewed by Ohio EPA and by a formal public review process. If Ohio EPA approves a plan after this review, the CWSRF program and the soil and water conservation district sign a memorandum of understanding that describes how these two entities will coordinate their implementation of the management plan.

At the same time that a watershed management plan is developed and reviewed, soil and conservation districts contact local banks to identify institutions that would like to participate in a linked deposit program. Interested banks enter into agreements with the CWSRF program that describe requirements and procedures for linked deposit loans.

Any borrower with a project that helps to implement a watershed management plan is eligible for a linked deposit loan. Participating banks review borrowers' credit using their own credit standards. If a bank approves a linked deposit loan, the CWSRF program purchases a CD of equal value from the bank. The CWSRF program accepts a CD interest rate that is five percentage points lower than the rate of a U.S. Treasury Note or Bond with the same term. The borrower's loan interest rate is also reduced by five percentage points. The bank makes semiannual payments of principal and interest to repay the CWSRF for its investment in the CD, and it makes these payments even if the borrower defaults on the linked deposit loan.

Massachusetts Case Study — Lending through Local Government

Since 1995, Massachusetts' Community Septic Management Program has used pass-through loans with local municipalities to fund the repair and replacement of failing septic systems. The program has funded more than 3,000 projects across the state. The CWSRF has developed this program with the cooperation of local municipalities.

Communities that participate in Massachusetts' Community Septic Management Program can borrow hundreds of thousands of dollars from the CWSRF program, but communities must first develop a septic management plan and procedures for a local betterment loan program (the community uses betterment assessments to secure the loans). Massachusetts provides grants of up to $20,000 to municipalities to support these planning activities and the administration of the program.

Massachusetts law defines a betterment assessment as a charge imposed on real property that receives a benefit from a public improvement. Municipalities have traditionally imposed betterments to pay for improvements such as roads, sidewalks and sewer lines. In the Community Septic Management Program, however, betterment agreements allow individuals to receive community support (a betterment loan) for septic system improvements, and the agreements allow communities to ensure that the loans are repaid as part of a property tax bill. The community can place a municipal lien on property if a homeowner defaults on a betterment loan.

Septic management plans identify and prioritize areas with septic systems that require monitoring, maintaining, and upgrading. As part of the planning process, communities develop maintenance schedules for septic systems, and they develop databases that track the inspection, maintenance, and upgrade of these systems. The Massachusetts Department of Environmental Protection reviews all community septic management plans.

Before a community can receive a CWSRF loan from the state, however, it also develops the framework for a local betterment loan program. Communities create administrative structures to manage the programs, devise a method for selecting priority projects, and work with their tax assessors to ensure that homeowners will repay their betterment loans as part of their local tax assessments.

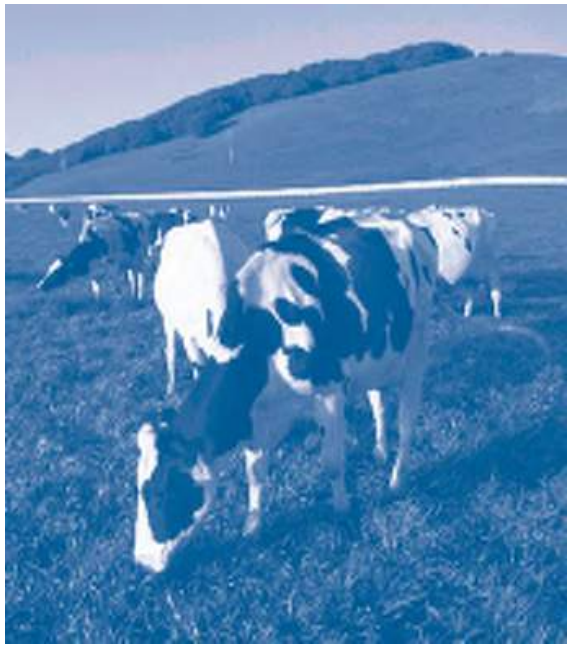
Communities that develop septic management plans and procedures for a local betterment loan program receive loans from the CWSRF program for 20 years at zero percent interest. Communities typically borrow $200,000 from this program. Homeowners typically receive twenty-year loans from communities at two to five percent interest. Communities can use interest accrued on betterment loans to support the administrative costs of the loan programs. Communities must begin to repay the CWSRF within one year after they have finished dispersing the proceeds of each CWSRF loan.

Missouri Case Study — Lending through State Agencies

Missouri's Nonpoint Source Animal Waste Treatment Facility Loan Program is a pass-through loan program that uses a state agency as a loan intermediary. Since 1995, the Missouri Agriculture and Small Business Development Authority (MASBDA) has borrowed $5 million from the CWSRF program, and MASBDA has used these funds to support the construction of 88 animal waste treatment systems for livestock and poultry producers. The agricultural operation of each borrower in this loan program produces fewer than 1,000 animal units -- concentrated animal feeding operations are ineligible.

Missouri's Nonpoint Source Animal Waste Treatment Facility Loan Program does not require a regional planning effort similar to the soil and water conservation plans required in Ohio' linked deposit program or the septic management plans required in Massachusetts' pass-through loan program. Engineers with Missouri's CWSRF program review each project application to ensure that CWSRF-financed structures and equipment support the goals of the program.

Missouri's CWSRF program provides 10-year loans to MASBDA that have a 1.8 percent interest rate. Individual agricultural producers access these resources by submitting applications to MASBDA. MASBDA reviews the financial component of each application, assessing cash flows and establishing security requirements. Borrowers must provide a dedicated source of repayment and a first or second deed of trust on their property. Agricultural producers typically receive 10-year loans from MASBDA that have interest rates from 5.3-5.8 percent. However, MASBDA does not offer construction financing for animal waste treatment systems. Typically, agricultural producers use loans from the Nonpoint Source Animal Waste Treatment Facility Loan Program to pay off construction loans from a private lender. MASBDA uses the repayments from agricultural producers to repay its loan from the CWSRF.



Case Study Contact Information

More information on the programs outlined in this update can be found on the state program web sites or by contacting the programs themselves.

Ohio Environmental Protection Agency
Div. of Environmental & Financial Assistance
Contact: Bob Monsarrat
Phone: 614-644-3655
Web site:
www.epa.state.oh.us/defa/linkdepo.html

Massachusetts Department of Environmental Protection
Massachusetts' Community Septic Management Program
Contact: Joseph McNealy
Phone: 617-556-1068
Web site: www.state.ma.us/dep/brp

Missouri Department of Agriculture
Animal Waste Facility Loan Program
Contact: Steve Townley
Phone: 573-751-1397
Web site: www.mda.state.mo.us/a2c.htm

For more information about the Clean Water Revolving Fund, or for a program representative in your State, please contact:

Clean Water State Revolving Fund Branch

U.S. Environmental Protection Agency

1201 Constitution Avenue, NW (Mailcode 4204M)

Washington, DC 20004

Phone: (202) 564-0752 **Fax:** (202) 501-2403

Internet: http://www.epa.gov/owm

Clean Water
State Revolving Fund

Office of Water July 2002 EPA 832-F-02-004

Clean Water

Everybody's Business

10 Things You Can Do to Prevent Stormwater Runoff Pollution

- Use fertilizers sparingly and sweep up driveways, sidewalks, and roads
- Never dump anything down storm drains
- Vegetate bare spots in your yard
- Compost your yard waste
- Avoid pesticides; learn about Integrated Pest Management (IPM)
- Direct downspouts away from paved surfaces
- Take your car to the car wash instead of washing it in the driveway
- Check car for leaks, and recycle motor oil
- Pick up after your pet
- Have your septic tank pumped and system inspected regularly

EPA United States Environmental Protection Agency

For more information, visit www.epa.gov/nps or www.epa.gov/npdes/stormwater

EPA
United States
Environmental Protection
Agency

EPA 841-F-03-003

Protecting Water Quality *from* URBAN RUNOFF

Clean Water Is Everybody's Business

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain and snowmelt to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers, where they seriously harm water quality. To protect surface water quality and groundwater resources, development should be designed and built to minimize increases in runoff.

The most recent National Water Quality Inventory reports that runoff from urbanized areas is the leading source of water quality impairments to surveyed estuaries and the third-largest source of impairments to surveyed lakes.

Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?

How Urbanized Areas Affect Water Quality

Increased Runoff

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to filter slowly into the ground. In contrast, impervious (nonporous) surfaces like roads, parking lots, and rooftops prevent rain and snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall and snowmelt remains above the surface, where it runs off rapidly in unnaturally large amounts.

Storm sewer systems concentrate runoff into smooth, straight conduits. This runoff gathers speed and erosional power as it travels underground. When this runoff leaves the storm drains and empties into a stream, its excessive volume and power blast out streambanks, damaging streamside vegetation and wiping out aquatic habitat. These increased storm flows carry sediment loads from construction sites and other denuded surfaces and eroded streambanks. They often carry higher water temperatures from streets, roof tops, and parking lots, which are harmful to the health and reproduction of aquatic life.

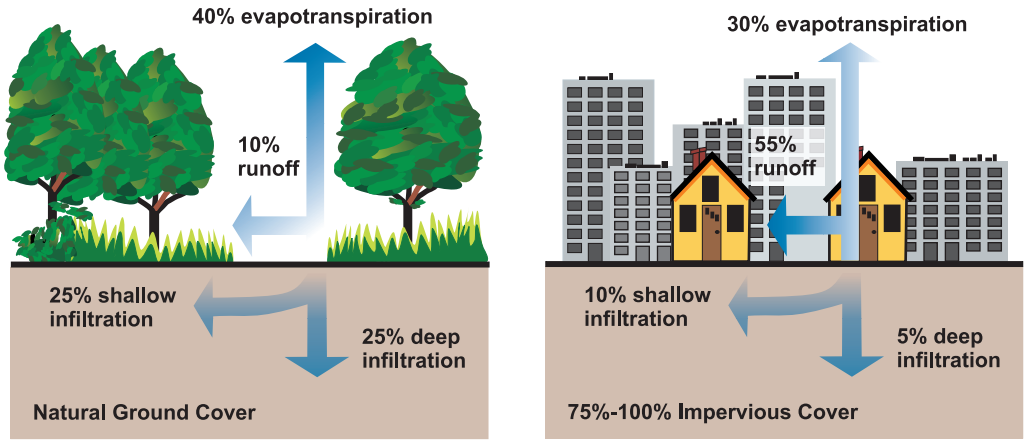
The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot survive when these conditions prevail.

Increased Pollutant Loads

Urbanization increases the variety and amount of pollutants carried into streams, rivers, and lakes. The pollutants include:

- Sediment
- Oil, grease, and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria, and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles, and other sources
- Thermal pollution from dark impervious surfaces such as streets and rooftops

These pollutants can harm fish and wildlife populations, kill native vegetation, foul drinking water supplies, and make recreational areas unsafe and unpleasant.



Relationship between impervious cover and surface runoff. Impervious cover in a watershed results in increased surface ruunoff. As little as 10 percent impervious cover in a watershed can result in stream degradation.

Managing Urban Runoff

What Homeowners Can Do

To decrease polluted runoff from paved surfaces, households can develop alternatives to areas traditionally covered by impervious surfaces. Porous pavement materials are available for driveways and sidewalks, and native vegetation and mulch can replace high maintenance grass lawns. Homeowners can use fertilizers sparingly and sweep driveways, sidewalks, and roads instead of using a hose. Instead of disposing of yard waste, they can use the materials to start a compost pile. And homeowners can learn to use Integrated Pest Management (IPM) to reduce dependence on harmful pesticides.

In addition, households can prevent polluted runoff by picking up after pets and using, storing, and disposing of chemicals properly. Drivers should check their cars for leaks and recycle their motor oil and antifreeze when these fluids are changed. Drivers can also avoid impacts from car wash runoff (e.g., detergents, grime, etc.) by using car wash facilities that do not generate runoff. Households served by septic systems should have them professionally inspected and pumped every 3 to 5 years. They should also practice water conservation measures to extend the life of their septic systems.

Controlling Impacts from New Development

Developers and city planners should attempt to control the volume of runoff from new development by using low impact development, structural controls, and pollution prevention strategies. Low impact development includes measures that conserve natural areas (particularly sensitive hydrologic areas like riparian buffers and infiltrable soils); reduce development impacts; and reduce site runoff rates by maximizing surface roughness, infiltration opportunities, and flow paths.

Controlling Impacts from Existing Development

Controlling runoff from existing urban areas is often more costly than controlling runoff from new developments. Economic efficiencies are often realized through approaches that target "hot spots" of runoff pollution or have multiple benefits, such as high-efficiency street sweeping (which addresses aesthetics, road safety, and water quality). Urban planners and others responsible for managing urban and suburban areas can first identify and implement pollution prevention strategies and examine source control opportunities. They should seek out priority pollutant reduction opportunities, then protect natural areas that help control runoff, and finally begin ecological restoration and retrofit activities to clean up degraded water bodies. Local governments are encouraged to take lead roles in public education efforts through public signage, storm drain marking, pollution prevention outreach campaigns, and partnerships with citizen groups and businesses. Citizens can help prioritize the clean-up strategies, volunteer to become involved in restoration efforts, and mark storm drains with approved "don't dump" messages.

Related Publications

Turn Your Home into a Stormwater Pollution Solution!

www.epa.gov/nps

This web site links to an EPA homeowner's guide to healthy habits for clean water that provides tips for better vehicle and garage care, lawn and garden techniques, home improvement, pet care, and more.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas

www.epa.gov/owow/nps/urbanmm

This technical guidance and reference document is useful to local, state, and tribal managers in implementing management programs for polluted runoff. Contains information on the best available, economically achievable means of reducing pollution of surface waters and groundwater from urban areas.

Onsite Wastewater Treatment System Resources

www.epa.gov/owm/onsite

This web site contains the latest brochures and other resources from EPA for managing onsite wastewater treatment systems (OWTS) such as conventional septic systems and alternative decentralized systems. These resources provide basic information to help individual homeowners, as well as detailed, up-to-date technical guidance of interest to local and state health departments.

Low Impact Development Center

www.lowimpactdevelopment.org

This center provides information on protecting the environment and water resources through integrated site design techniques that are intended to replicate preexisting hydrologic site conditions.

Stormwater Manager's Resource Center (SMRC)

www.stormwatercenter.net

Created and maintained by the Center for Watershed Protection, this resource center is designed specifically for stormwater practitioners, local government officials, and others that need technical assistance on stormwater management issues.

Strategies: Community Responses to Runoff Pollution

www.nrdc.org/water/pollution/storm/stoinx.asp

The Natural Resources Defense Council developed this interactive web document to explore some of the most effective strategies that communities are using around the nation to control urban runoff pollution. The document is also available in print form and as an interactive CD-ROM.

For More Information

U.S. Environmental Protection Agency
Nonpoint Source Control Branch (4503T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

www.epa.gov/nps

February 2003

Stormwater Management

A Guide for Auto Recycler Owners and Operators

Stormwater Protection
Starts With You

The facility operator's attitude toward stormwater management can make all the difference. It's your responsibility to communicate to your employees that stormwater management is a priority. Make sure your employees understand why stormwater management is important, both to your business and to the environment. Start by having them review the enclosed video and fact sheet.

Protecting stormwater can benefit your business in several important ways:

- **Professionalism and pride in your business** – Both workers and customers appreciate a clean and responsible facility.
- **It's the law** – Not complying with stormwater rules can put your business in jeopardy. Regulators and environmental groups across the country are increasingly targeting auto dismantlers for stormwater violations.

Protect the environment to protect your business

- **Environmental protection** – We all want clean streams, rivers, lakes, bays, and oceans for our families and for our future. Your business can protect the environment by following some straightforward and commonsense practices.

The following practices describe options that your facility can implement to help address its stormwater issues. Although following all of the practices described below may help improve performance with regard to stormwater management, it does not guarantee that your facility will be in compliance with all applicable stormwater rules. Check with your state regulatory agency or EPA for more information.

The Stormwater Permit

All vehicle dismantling facilities in the United States (except those in a combined sewer service area or facilities that do not discharge stormwater from their property) are required by the Clean Water Act to obtain a stormwater permit either from the U.S. Environmental Protection Agency or from an appropriate state agency. You must first file a Notice of Intent (NOI) with the appropriate state agency. You must also prepare a Storm Water Pollution Prevention Plan (SWPPP) to describe how you will address your facility's stormwater issues.

The practices below are organized by facility area or activity. Links and contact information to obtain additional information about stormwater and other environmental issues related to auto dismantling are listed at the end of this document.

What are Best Management Practices (BMPs)?

The term "BMP" is used to describe management practices that many different industries use to address a range of environmental issues. We'll use BMP to describe the practices that you can implement to address your auto dismantling facility's stormwater issues.

› Training

Employee training is critical! Train appropriate employees on relevant stormwater management procedures, especially during the wet season and prior to rain or snow events. All employees must be trained upon their initial hire and at least once per year thereafter. Be sure to document employee training. Also, place signs around activity areas as reminders to your workers; for example, "No fluids in the drain" or "Sweep up loose absorbent daily." Make up your own signs that make sense for your operation.

› Incoming Vehicles

Inspect all incoming vehicles for leaking fluids and unwanted materials as they enter your facility. Promptly contain leaks with drip pans or absorbent materials.

› Fluid Removal

Establish a procedure for processing vehicles and stick to it. First, before any vehicle is placed in the yard for long-term storage or crushed, and before fluid-containing parts are dismantled, drain the following fluids from the vehicle in the order that best fits your operation:

- Fuel
- Motor oil
- Transmission fluid
- Brake fluid
- Antifreeze
- Freon

Draining these fluids before placing the vehicle in the yard reduces 1) the possibility of spills when parts are removed later, and 2) time and cost to your business of cleaning up leaks and spills.

› Fluid Draining and Vehicle Dismantling Area

Ideally, these activities should be conducted in the same area, which should be covered with a roof. Your fluid draining and vehicle dismantling areas have more potential to contaminate stormwater than any other areas of your facility. Properly covering this area can eliminate contact with rainfall and is a great way to get a big bang for your buck in preventing stormwater pollution. Rain or snow can carry harmful materials like oil or gasoline into the soil and nearby streams, rivers, and lakes. Roofs not only keep out rain and snow, but also make the work area more comfortable for your workers.

If you don't currently dismantle fluid-containing parts and drain fluids under cover, you don't necessarily have to put up an entirely new and expensive building. One low-cost roofing option available is the "VersaTube" offered by Tuff Shed. (See http://www.tuffshed.com/versatube.htm or call (800) BUY-TUFF for more information.)

Another option includes building your own temporary cover using low-cost materials. Plans and materials for such temporary roofs can be obtained from vendors like South Bay Canopy (408) 998-8280.

You should also have a concrete pad in the draining and dismantling area, and you should drain all vehicles on this surface. Draining over concrete makes spills and leaks easier to clean up and minimizes the chance of environmental harm. Use appropriate fluid removal and handling equipment, such as suction systems, drain racks, and funnels for the containers.

Prevent stormwater pollution by minimizing the exposure of dismantling and fluid removal activities to stormwater. In addition to overhead cover, possible options include installing intercept trenches, berming the perimeter of the area, or using channels, swales, or grade breaks to divert the flow of stormwater around these areas.

› Fluid Storage

Storing fluids properly helps cut down on the amount of contaminants that end up in stormwater. When you remove fluids, transfer them to the proper container. Confine fluid storage to designated areas that are covered and have adequate secondary containment. Keep drums containing fluids away from storm drains; consider storing fluids near the location where fluids are drained. Maintain good integrity of all storage containers. Do not leave open drain pans that contain fluids around the shop.

You are responsible for ensuring that your fluids are handled by an authorized processor, transporter, and treatment/disposal facility.

› Spill Cleanup

Clean up spills promptly and thoroughly. Keep appropriately sized and stocked "spill kits" available in the areas where you conduct the following activities:

- Dismantling and fluid removal
- Fluid storage
- Battery and parts storage
- Fueling
- Equipment maintenance

For smaller spills, use shop rags and oil dry. Used absorbents should be placed in a designated container for proper disposal.

What should be in your spill kit?

- Absorbent socks or booms
- Absorbent pillows and pads
- Oil dry
- Broom and shovel
- Disposal bags or other containers
- Safety goggles
- Plastic gloves

- **Never use vehicle fluids for dust control!**
- **Don't mix your used oil with solvents, brake cleaner, or antifreeze.**
  This creates a hazardous waste, which can't be recycled and is very expensive to get rid of.
- **Don't pour fluids into your septic system, sanitary sewer, dry well, on the ground, or in the trash.**

› Parts Storage

Store engines, transmissions, and other oily parts (resale, core, or scrap) in a way that avoids exposure to rain or snowfall. This can include:

1) Storing parts indoors
2) Storing parts under a permanent roof on impervious surface
3) Storing parts in weather-proof, leak-proof, covered containers
4) Placing parts in vehicle bodies
5) Providing temporary cover (like tarps) for these parts as an interim measure

Lead acid battery components are toxic and corrosive and can contaminate the soil and water if handled improperly. Store batteries inside a building or outside in covered, non-leaking containers. Separate batteries from other wastes like paper, rags, garbage and flammable or hazardous chemicals. Monitor your battery storage area for leaks or deterioration, and take quick action to address any spills or leaks. Lime can be used to neutralize spilled battery acid. *Never pour battery acid on the ground or into a storm drain!*

Radiators removed from vehicles should be stored under a roof, tarp, or other cover, and raised up off the ground such that there is no contact with rainfall and surface drainage.

› Crushing

Never crush a vehicle without draining all the fluids and removing gas tanks, tires, and batteries. Capture and properly dispose of residual fluids released during crushing. You're responsible for ensuring fluids are captured and don't run off your property, even if you use a contractor to crush your vehicles.

› Vehicle Storage

If engines or fluid-containing parts remain in the vehicle when it is placed in the yard, place a hood or other cover, such as a well-secured tarp, over the vehicle engine. Use drip pans under stored vehicles with leaks.

Don't place vehicles on the ground where there is a heavy stormwater flow or close to a storm drain.

After vehicles are moved, scrape up dirt or gravel that was stained from leaks and drips. Manage the contaminated material in accordance with applicable regulations.

- Never wash spills into storm drains!
- Sweep up absorbent material and properly dispose at least daily.

› Equipment Maintenance

Schedule and perform periodic inspections of equipment. Regular maintenance of equipment such as forklifts reduces risk of breakdown and fluid release. Check for leaks and spills and for malfunctioning, worn, or corroded parts. Equipment maintenance should be done indoors or, where practical, on an impervious surface. If maintenance can't be done under cover, take adequate spill control and/or cleanup measures.

› Fueling

Pave refueling areas with concrete to prevent contamination of the soil and to enable cleanup. Don't leave vehicles unattended while fueling.

› Housekeeping

Sweep and clean paved surfaces daily to reduce sediment and contaminant buildup. Routine housekeeping is important. Catchments, inlets, oil-water separators, oil booms, waddles, tarps, and other pollutant-collecting materials need to be maintained regularly or they can become ineffective. Clean out drain inlets periodically, especially before the wet season, during the wet season, and after the wet season ends.

› Erosion Control

Tackle TSS! You may have heard of TSS or total suspended solids – in other words, dirt. Controlling the amount of dirt that runs off your property is important because metals and other harmful pollutants can attach themselves to the dirt particles and end up flowing off the property with stormwater. Eroded soil can also smother aquatic life.

Implement appropriate vegetative, structural, or stabilization measures such as basins, sediment traps, geotextiles, buffer strips, or filter berms in areas without much vegetation where soil erosion is evident.

› Non-Stormwater Discharges

Wash water from equipment, work areas, or shop floors cannot come into contact or mix with rainfall or surface drainage, or drain offsite. Vehicle and hand wash water is OK to be discharged to the sanitary sewer where allowed (be sure to check with your local sanitary sewer district). Most states prohibit all non-stormwater discharges from your property, including, but not limited to, discharges of wash water, rinse water and spilled fluids. If you are permitted to use sewers, make sure your drain is connected to the sanitary sewer. If this is not possible in your area, the wash water must be managed on-site. Management options include recycling, re-use, or off-site disposal. If you let the water soak into the ground (infiltration), take appropriate steps to prevent groundwater contamination and infestation by mosquitoes or other pests. For additional information consult your local regulatory agency.

- Residues from dried wash water cannot come into contact with rainfall or surface drainage.

- **Know where your drains go. Plug any floor drains that would let a spill run into septic systems or storm drains.**
  Automotive fluids and solvents can contaminate drinking water if they end up in drains that discharge to soil.

- Following washing, collect and clean up any accumulated sediments, oil deposits, debris, and paint particles.
- Do not steam clean or pressure wash parts without proper wash water management.
- Do not hose down the shop floor if water will run into a storm drain or off the property.

› Stormwater Filter Systems

Inexpensive filter systems or absorbents can provide an extra level of defense against stormwater pollution. Examples include: absorbent socks or booms, silt fences, straw bales, rock filters, and inlet filters. Regular maintenance of these products is essential – if they're not maintained, they won't work. Further, these measures are not a substitute for good stormwater management practices.

› Inspection

Inspect your site regularly to ensure all appropriate BMPs are being implemented. Increase inspections during periods of rainy weather. Based on permit or management needs, maintain a record of visual inspections.

Inspect oil containers, fresh water systems, irrigation lines, fueling areas, and other piping systems for leaks. If evidence of leaks is found, promptly repair or replace damaged parts to prevent polluted runoff and non-stormwater discharges.

› Customer Education

Inform customers who remove parts to do so properly and to appropriately dispose of fluids. For example, make fluid receptacles readily available, post signs that require the use of drip pans for parts removal, and prohibit waste generating activities like vehicle maintenance in parking lots.

Mercury Switches

Mercury switches are an important issue. Many older vehicles contain mercury, which is highly toxic and can cause learning disabilities and mental retardation in newborn children. When vehicles are crushed and mercury remains inside, it can get onto the ground and into waterways. Also, mercury can be released into the air and water bodies after scrapped vehicles go to the shredder.

What to do about mercury

Mercury switches are commonly found under vehicle hoods and trunks and less frequently in automatic braking systems (ABS). These switches can easily be removed to prevent contamination of the environment and human health problems.

Information on removing mercury from vehicles is available online at:

epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf

epa.gov/region5/air/mercury/autoswitch.htm

switchout.ca

Some states require mercury switches to be removed before vehicles are crushed. Some auto dismantlers remove the switches even if they are not required to do so. If you choose to address this important environmental issue and remove mercury switches before your vehicles are crushed, store the switches in a leak-proof, clearly marked, closed container. Also take care to ensure that the switches do not break during handling or storage. A licensed metals recycler that reclaims mercury can dispose of the switches. Contact your state environmental agency for more information.

You
>> CAN <<
Make a Difference!

Auto recyclers do their part to conserve natural resources by recycling valuable materials. Build on this good work and protect the environment from polluted runoff by implementing the BMPs described in this fact sheet. Make sure that your employees understand that stormwater management is important and are trained to implement your BMPs.

Remember,
stormwater protection
starts with YOU!

"It's critical for owners to set an example and be actively involved in implementing BMPs." – Brian Werth, Select Auto & Truck Recyclers

Where to find more information

Check out the following sources for additional information on BMPs for auto recyclers:

Manuals

- An Environmental Compliance Workbook for Automotive Recyclers, Florida DEP
  www.dep.state.fl.us/central/home/ps/asyca/fl_gyb.pdf
- Environmental Compliance Guide for Motor Vehicle Salvage Yards, OH Small Bus. Assistance Office
  www.epa.state.oh.us/other/sbao/salvageguide.pdf
- Vehicle Recycling Manual: A Guide for Vehicle Recyclers, Washington State Department of Ecology
  www.ecy.wa.gov/pubs/97433.pdf
- Automotive Recyclers Guide to a Cleaner Environment, New York DEC
  www.dec.state.ny.us/website/reg8/press/autorec/autorec0.pdf
- Certified Auto Recycler (CAR) Guidance Manual, Automotive Recyclers Association
  www.autorecyc.org (Available to members only)

Other Sources

- The National Compliance Assistance Clearinghouse is your guide to compliance information on the Internet. It provides quick access to compliance tools and contacts from EPA and other compliance assistance providers. The clearinghouse has an entire section devoted to the auto salvage industry.
  cfpub.epa.gov/clearinghouse
- A list of state and local environmental contacts can be found on the internet at:
  www.epa.gov/epapages/statelocal/envrolst.htm
- The EPA Small Business Ombudsman can help you understand environmental regulations, or refer you to local contacts. Their toll-free small business hotline provides regulatory and technical assistance information: (800) 368-5888

Vendors

Call for catalogs or more information

Low-Cost Roofs:		**Fluid Removal and Storage Equipment**:		**Spill Kits and Absorbent Materials**:	
Tuff Shed	(800) BUY-TUFF	Hy-Tec Environmental	(800) 336-4499	Stormtech	(888) 549-5374
South Bay Canopy	(408) 998-8280	Spill Cleanup Direct	(800) 356-0783	New Pig	(800) 468-4647

Note: Sustainable Conservation and U.S. EPA do not endorse any of these products.
This list is not complete: other vendors may provide similar or identical products and services.

Developed by

Sustainable Conservation
www.suscon.org

Supervisión de la Precipitación Pluvial

Una Guía para los Dueños y Operadores de Recicladoras de Autos

La Protección de la Precipitación Pluvial Comienza Con Usted

La actitud del operador de la compañía hacia la supervisión de la precipitación pluvial puede hacer la diferencia. Es su responsabilidad comunicar a sus empleados que la supervisión de la precipitación pluvial es una prioridad. Asegúrese que sus empleados entiendan por qué es importante la supervisión de la precipitación pluvial tanto para su negocio como para el medio ambiente. Comienze mostrándoles el video y hoja informativa que aquí se adjuntan.

Proteger la precipitación pluvial puede beneficiar a su negocio de varias maneras importantes:

- **Profesionalismo y orgullo en su negocio** - Tanto los trabajadores como sus clientes aprecian una compañía limpia y responsable.
- **Es la ley** - El no cumplir con las normas de precipitación pluvial puede poner su negocio en juego. Los grupos reguladores y ambientalistas en todo el país estan enfocándose cada vez más en las desmanteladoras de autos por violaciones en cuanto a la precipitación pluvial.
- **Protección ambiental** - Todos queremos arroyos, ríos, lagos, bahías, y oceanos limpios para nuestras familias y nuestro futuro. Su compañía puede proteger el medio ambiente siguiendo algunas prácticas directas y de sentido común.

Proteja el medio ambiente para proteger a su negocio

Las siguientes prácticas describen opciones que su compañía puede aplicar para ayudarse a administrar lo relativo a la precipitación pluvial. Aunque el seguir todas las prácticas descritas abajo puede ayudar a mejorar el desempeño respecto a la supervición de la precipitación pluvial, ello no garantiza que su compañía estará en cumplimiento con todas las normas aplicables de la precipitación pluvial. Comuníquese con una agencia reguladora del estado o la EPA si desea más información.

El Permiso de precipitación pluvial

Todas las instalaciones desmanteladoras de vehículos en los Estados Unidos (excepto aquellas en una área de servicio de desagüe combinado o instalaciones que no desechen precipitación pluvial de su propiedad) están obligadas por la Ley de Agua Limpia (Clean Water Act) a obtener un permiso de precipitación pluvial, ya sea de la Agencia de Protección del Medio Ambiente de los EE.UU. o de una agencia estatal correspondiente. Usted primero debe archivar un Aviso de Intención (Notice of Intent, o N.O.I.) ante la agencia estatal correspondiente. También debe preparar un Plan de Prevención de Contaminación de la precipitación pluvial (SWPPP) para describir cómo es que su compañía administrará lo referente a la precipitación pluvial.

Las siguientes prácticas están organizadas por área o actividad de la compañía. Para referencias y contactos para obtener información adicional acerca de la precipitación pluvial y otros asuntos ambientales relacionados la desmantelación de vehículos, vea el final de este documento.

¿Cuáles son las prácticas de mejor manejo (BMPs)?

El término “BMP” es utilizado para describir prácticas de manejo que muchas diferentes industrias usan para dirigir un gran número de asuntos ambientales. Nosotros utilizaremos BMP para describir las prácticas que usted puede aplicar para administrar lo referente a la precipitación pluvial en su desmanteladora de autos.

Supervisión de la Precipitación Pluvial

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› La capacitación

¡La capacitación de los empleados es fundamental! Capacite a sus empleados en procedimientos referentes al manejo de la precipitación pluvial, especialmente durante la temporada de lluvia y nieve y antes de que éstas lleguen. Todos los empleados deben ser capacitados al inicio de su contratación y al menos una vez al año después de ella. Asegúrese de documentar la capacitación de sus empleados. También debe colocar letreros alrededor de las áreas de actividad con recordatorios para sus trabajadores. Por ejemplo, "Evite los fluidos en el drenaje" o "Barra diariamente el absorbente." Diseñe sus propios letreros que den sentido a su operación.

› Ingreso de vehículos

Inspeccione todos los vehículos de reciente ingreso por posibles fugas de fluidos y materiales no deseados, cuando vayan entrando a las instalaciones. Contenga rápidamente las fugas con charolas o materiales absorbentes.

› Extracción de fluidos

Establezca un procedimiento para procesar vehículos y apéguese a él. Primero, antes de que cualquier vehículo sea colocado en la yarda por un término largo de almacenamiento o para compactarse, y antes que se desmantelen las partes que contengan fluidos, extraiga los siguientes fluidos del vehículo, en el orden que mejor funcione para su operación:

- Combustible
- Aceite de motor
- Líquido de transmisión
- Líquido de frenos
- Anticongelante
- Gas freón

Extraer estos fluidos antes de colocar el vehículo en la yarda disminuye 1) la posibilidad de derrames cuando las partes son removidas posteriormente, y 2) el tiempo y costo requerido en su negocio para limpiar fugas y derrames.

› Área de extracción de fluidos y de desmantelamiento de vehículos

Lo ideal es que estas actividades se realicen en la misma área, la cual debe estar cubierta con un techo. Sus áreas de extracción de fluidos y de desmantelación de vehículos tienen mayor potencial de contaminar la precipitación pluvial que cualquier otra área de su compañía. El cubrir apropiadamente esta área puede eliminar el contacto con la caída de la lluvia y es una gran forma de economizar, al prevenir la contaminación de la precipitación pluvial. La lluvia y la nieve pueden acarrear materiales dañinos como aceite o gasolina al suelo y cerca de arroyos, ríos, y lagos. Los techos no solo

detienen la lluvia y la nieve, sino que también hacen el área de trabajo más cómoda para sus trabajadores.

Si usted no desmantela actualmente partes que contengan fluidos y extrae fluidos debajo de un techo, usted no necesariamente tiene que construir un edificio nuevo y costoso. Una opción disponible es el techo de bajo costo "Versa Tube" ofrecido por Tuff Shed. (Vea http://www.tuffshed.com/versatube.htm o llame (800) BUY TUFF para más información.) Otra opción incluye construir su propio techo temporal utilizando materiales de bajo costo. Puede obtener planos y materiales de dichos techos temporales de vendedores como South Bay Canopy (408) 998-8280.

Usted también debe tener una plataforma de concreto en el área de extracción y desmantelamiento, y dee drenar todos los vehículos sobre la superficie. El drenar sobre concreto hace que los derrames y fugas sean más fáciles de limpiar y minimiza la posibilidad de daño ambiental. Utilice equipo apropiado para la extracción y manejo de fluidos, tales como sistemas de succión, racas de drenaje y embudos para contenedores.

Prevenga la contaminación de la precipitación pluvial minimizando la exposición de las actividades de desmantelamiento y de extracción de fluidos a la precipitación pluvial. Además de un techo, otras opciones posibles incluyen instalar zanjas interceptoras, bordear el perímetro del área, o utilizar canales, o cortes para desviar el flujo de la precipitación pluvial fuera del alcance de estas áreas.

› Almacenamiento de fluidos

El almacenar los fluidos apropiadamente ayuda a reducir la cantidad de contaminantes que terminan en la precipitación pluvial. Cuando extraiga fluidos, colóquelos en el contenedor apropiado. Destine el almacenamiento de fluidos a áreas designadas que estén cubiertas y que tengan un adecuado contenimiento secundario. Mantenga los barriles que contengan fluidos alejados de los drenajes de agua; considere almacenar los fluidos cerca del área donde los fluidos son extraidos. Mantenga en buenas condiciones todos los contenedores de almacenamiento. No deje charolas abiertas que contengan fluidos alrededor del taller.

Usted es responsable de asegurarse que sus fluidos sean manejados por procesadores, transportistas, y compañías de tratamiento/desechos autorizados.

- **¡Nunca utilice fluidos de vehículo para controlar el polvo!**
- **No mezcle su aceite usado con solventes, limpiador de frenos, ni anticongelante.** **Esto crea un desperdicio peligroso el cual no puede ser reciclado y es muy costoso deshacerse de él.**
- **No vierta fluidos dentro del sistema séptico, el drenaje sanitario, los pozos, en la tierra, ni en la basura.**

› Limpieza de derrames

Limpie los derrames rápida y completamente. Guarde kits para derrames, del tamaño apropiado, en todas las áreas donde realice las siguientes actividades:

- Desmantelamiento y extracción de fluidos
- Almacenamiento de fluidos
- Almacenamiento de baterías y partes
- Abastecimiento de combustible
- Mantenimiento de equipo

Para derrames menores utilice trapos y "oil dry". Los materiales absorbentes usados deberán colocarse en un contenedor designado para su desecho.

¿Qué debería haber en su kit para derrames?

- Tubos ("socks") absorbentes
- Cojines y almohadas absorbentes
- "Oil dry"
- Escoba y pala
- Lentes de seguridad
- Guantes de plástico
- Bolsas para desecho y otros contenedores

› Almacenamiento de partes

Almacene motores, transmisiones, y otras partes grasosas (reventa, core, o chatarra) de forma que se evite la exposición a la lluvia o caída de nieve. Esto puede incluir:

1) Almacenar partes a puerta cerrada
2) Almacenar partes bajo un techo permanente sobre una superficie impenetrable
3) Almacenar partes en contenedores cubiertos a prueba del clima y de fugas
4) Colocar partes en las carrocerías de los vehículos
5) Proveer cobertura temporal (como lonas) para estas partes como medida alterna

Los componentes de la batería de acido de plomo son tóxicos y corrosivos y pueden contaminar el suelo y agua si son manejados incorrectamente. Almacene las baterías dentro o fuera de un edificio en contenedores cubiertos y sin fugas. Separe las baterías de otros desperdicios como el papel, trapos, basura y químicos inflamables o peligrosos. Monitoree su área de almacenamiento de baterías por posibles fugas o deterioraciones, y tome acción rapida para evitar cualquier derrame o fuga. La cal puede utilizarse para neutralizar el acido de batería derramado. *¡Nunca vierta acido de batería en la tierra o dentro del drenaje de agua!*

Los radiadores extraidos de los vehículos deben almacenarse bajo techo, lona, u otro cobertizo, y a cierta altura del suelo de tal manera que no haya contacto con la lluvia o el drenaje de la superficie.

› Compactación

Nunca compacte un vehículo sin haber extraido todos los fluidos y quitado los tanques de gasolina, las llantas y las baterías. Contenga y deseche apropiadamente los residuos de fluidos que escurran mientras se está compactando. Usted es responsable de asegurarse que se contangan todos los fluidos y que no escurran fuera de su propiedad, aún si compacta sus vehículos a través de un contratista.

› Almacenamiento de vehículos

En caso de que haya motores o partes que contengan fluidos dentro del vehículo cuando éste se coloque en la yarda, coloque un cofre u otro cobertor tal como una lona bien asegurada sobre el motor del vehículo. Coloque charolas debajo de los vehículos que tengan fugas. No ponga vehículos en la tierra donde haya una corriente fuerte de precipitación pluvial o cerca de un drenaje. Después de que los vehículos sean retirados, levante la tierra o grava que ha sido manchada por fugas y goteos. Maneje el material contaminado de acuerdo con las regulaciones correspondientes.

- **¡Nunca dirija derrames hacia los drenajes!**
- **Barra el material absorbente y deséchelo apropiadamente al menos una vez al día.**

› Mantenimiento del equipo

Programe y realice inspecciones periódicas del equipo. El mantenimiento regular del equipo, tal como los montacargas, reduce el riesgo de que se descomponga y que tire fluidos. Revise por posibles fugas y derrames, el mal funcionamiento, desgaste, o partes corroídas. El mantenimiento del equipo debe hacerse en un lugar cerrado o, cuando sea práctico, en una superficie impenetrable. Si el mantenimiento no puede hacerse bajo techo, tome medidas adecuadas de control de derrames y/o limpieza.

› Abastecimiento de combustible

Pavimente las áreas de abastecimiento de combustible con concreto para prevenir la contaminación del suelo y facilitar la limpieza. No deje los vehículos sin atender mientras se estén cargando de combustible.

› Mantenimiento

Barra y limpie las superficies pavimentadas diariamente para reducir la sedimentación y acumulación de contaminantes. El mantenimiento como rutina es importante. Recipientes, zanjas, separadores de agua/aceite, repelentes de aceite, lonas, y demas materiales para retener contaminantes deben recibir mantenimiento regular o pueden llegar a ser ineficaces. Limpie las zanjas de drenaje periódicamente, antes, durante y después de la temporada de lluvias.

› Control de la erosión

¡Elimine los TSS! Quizás haya oído hablar de los TSS o sólidos totalmente suspendidos: en otras palabras, la tierra. Controlar la cantidad de tierra que se escurre fuera de su propiedad es importante porque los metales y otros contaminantes dañinos pueden adherirse a las particulas de tierra y terminar escurriéndose fuera de la propiedad hacia la precipitación pluvial. El suelo erosionado puede también extinguir la vida acuática.

Tome medidas adecuadas en cuanto a la vegetación, estructuración o estabilización, tales como desagües, retenedores de sedimentación, geotextiles, o bordos de filtración en áreas sin mucha vegetación, donde la erosión del suelo es evidente.

› Los escurrimientos que no provienen de la precipitación pluvial

El agua para lavar equipo, áreas de trabajo, o pisos del taller no puede entrar en contacto o mezclarse con la lluvia o el drenaje superficial ni el drenaje común. El agua para lavarse las manos o lavar vehículos puede descargarse en el drenaje sanitario donde sea permitido (asegúrese de contactar a su distrito local de drenaje sanitario). La mayoría de los estados prohiben los escurrimientos de su propiedad que no provengan de la precipitación pluvial, incluyendo, pero sin limitarse a, los escurrimientos de agua para lavar, para enjuagar y de fluidos derramados. Si usted tiene permiso para usar drenajes, asegúrese que su drenaje esté conectado al drenaje sanitario. Si esto no es posible en su área, el agua para lavar debe ser manejada dentro de su propiedad. Las opciones de manejo incluyen el reciclaje, el reuso o su desecho fuera de la propiedad. Si usted deja que el agua se acumule en la tierra (filtración), tome los pasos adecuados para prevenir contaminación en la tierra o que se infeste con mosquitos u otras plagas. Para información adicional consulte su agencia reguladora local.

- Los residuos secos del agua para lavar no pueden entrar en contacto con la lluvia o drenaje de la superficie.

- **Usted debe saber hacia dónde están dirigidos sus drenajes. Tape cualquier drenaje en el suelo que pudiera dejar escurrir un derrame hacia un sistema séptico o drenaje de agua.**
  Los fluidos y solventes de los autómoviles pueden contaminar el agua potable si caen en drenajes que se descargan sobre el suelo.

- Después de lavar, recoja y limpie cualquier sedimentación acumulada, depósitos de aceite, chatarra, y partículas de pintura.
- No lave partes a vapor o a presión sin el manejo apropiado del agua para lavar.
- No lave el piso del taller con manguera si el agua va a escurrir hacia el drenaje o fuera de la propiedad.

› Sistemas de filtración de la precipitación pluvial

Los sistemas de filtración no costosos o absorbentes pueden ofrecer un nivel de defensa adicional contra la contaminación de la precipitación pluvial. Algunos ejemplos incluyen: tubos absorbentes, cercos, pacas de paja, filtros de roca, y zanjas para filtrar. El mantenimiento regular de estos productos es esencial: si no reciben mantenimiento, no van a funcionar. Además, estas medidas no sustituyen a las prácticas del buen manejo de la precipitación pluvial.

› Inspección

Inspeccione sus instalaciones con regularidad para asegurarse que se estén aplicando todas las BMPs correctas. Aumente las inspecciones durante los periodos de clima lluvioso. Basándose en el permiso o necesidades de supervisión, mantenga un registro de las inspecciones visuales. Inspeccione los contenedores de aceite, los sistemas de agua fresca, las líneas de irrigación, las áreas de abastecimiento de combustible, y demás sistemas de tuberías por posibles fugas. Si existe evidencia de alguna fuga, repárela rápidamente o reemplace las partes dañadas para prevenir escurrimientos contaminados y descargas de agua que no provengan de la precipitación pluvial.

› Educación de los clientes

Notifique a sus clientes que sustraen partes que lo hagan correctamente y que desechen los fluidos debidamente. Por ejemplo, coloque recipientes para fluidos a disposición de los clientes, coloque letreros que requieran el uso de charolas para quitar partes, y prohiba actividades que generen desperdicios, como el dar mantenimiento a vehículos en el estacionamiento.

Switches de mercurio

Los switches o interrruptores de mercurio son un aspecto importante. Muchos vehículos viejos contienen mercurio, el cual es altamente tóxico y puede causar discapacidades del aprendizaje y el retardo mental en niños recién nacidos. Cuando los vehículos son compactados y el mercurio se mantiene adentro, éste puede caer en el suelo y en las corrientes de agua. El mercurio también puede esparcirse en el aire y en los mantos acuíferos después de que los vehículos compactados van a la cortadora.

Puede obtener información acerca de como remover el mercurio de los vehículos por el internet en:

epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf

epa.gov/region5/air/mercury/autoswitch.htm

switchout.ca

Qué hacer acerca del mercurio

Los switches de mercurio se hayan normalmente debajo de los cofres y cajuelas de los vehículos y menos frecuentemente en sistemas de frenado automático (ABS). Estos switches se pueden extraer antes de compactar los vehículos. Algunas desmanteladoras de autos quitan los switches aunque no se les requiera. Si usted decidiera participar en este importante aspecto ambiental y removiera los switches de mercurio antes de compactar sus vehículos, debe almacenar los switches en un contenedor cerrado claramente marcado y a prueba de fugas. También asegúrese de que los switches no se quiebren cuando se manejen o almacenen. Una recicladora de metales con licencia que recolecte mercurio puede desechar los switches. Contacte a su agencia ambiental del estado si desea más información.

¡Usted
>> PUEDE <<
Hacer la Diferencia!

Las recicladoras de autos hacen su labor para conservar los recursos naturales al reciclar materiales valiosos. Coopere en esta buena labor y proteja al medio ambiente de los escurrimientos contaminados, aplicando las BMPs descritas en este documento. Asegúrese que sus empleados entiendan que el manejo de la precipitación pluvial es importante y que se les capacite para aplicar las BMPs.

Recuerde, ¡la protección de la precipitación pluvial

Comienza con USTED!

"Es fundamental para los propietarios poner el ejemplo y participar activamente en la aplicación de las BMPs."

— Brian Werth, Select Auto & Truck Recyclers

Dónde puede encontrar más información

Consulte las siguientes fuentes si desea más información acerca de las BMPs para recicladoras de autos:

Manuales

- An Environmental Compliance Workbook for Automotive Recyclers, Florida DEP
  www.dep.state.fl.us/central/home/ps/asyca/fl_gyb.pdf
- Environmental Compliance Guide for Motor Vehicle Salvage Yards, OH Small Bus. Assistance Office
  www.epa.state.oh.us/other/sbao/salvageguide.pdf
- Vehicle Recycling Manual: A Guide for Vehicle Recyclers, Washington State Department of Ecology
  www.ecy.wa.gov/pubs/97433.pdf
- Automotive Recyclers Guide to a Cleaner Environment, New York DEC
  www.dec.state.ny.us/website/reg8/press/autorec/autorec0.pdf
- Certified Auto Recycler (CAR) Guidance Manual, Automotive Recyclers Association
  www.autorecyc.org (Disponible para miembros solamente)

Otras fuentes

- La National Compliance Assistance Clearinghouse es su guía sobre cómo obtener información acerca de los requerimientos por el internet. Ésta le proporciona al rápido acceso a las herramientas requeridas y los contactos de la EPA y de otros proveedores de asistencia en cuanto a los requerimientos. Dicha agencia tiene una sección entera dedicada a la industria del salvamento de autos. http://cfpub.epa.gov/clearinghouse
- Puede hallar una lista de contactos ambientalistas del estado y locales por el internet en:
  epa.gov/epapages/statelocal/envrolst.htm
- El EPA Small Business Ombudsman le puede ayudar a comprender las regulaciones ambientales, o proporcionarle contactos locales. La línea libre de cobro para pequeños empresarios provee información sobre asistencia regulatoria y técnica: (800) 368 5888.

Información sobre vendedores

Techos de bajo costo:

Tuff Shed	(800) BUY-TUFF
South Bay Canopy	(408) 998-8280

Extracción de fluidos y equipo de almacenamiento:

Hy-Tec Environmental	(800) 336-4499
Spill Cleanup Direct	(800) 356-0783

Kits para derrames y materiales absorbentes:

Stormtech	(888) 549-5374
New Pig	(800) 468-4647

Nota: Sustainable Conservation y U.S. EPA no endosa ninguno de estos productos.
Esta lista no esta completa: otros vendedores pueden proveer productos y servicios similares o idénticos.

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Sustainable Conservation
www.suscon.org

Clean Water State Revolving Fund

FACT SHEET

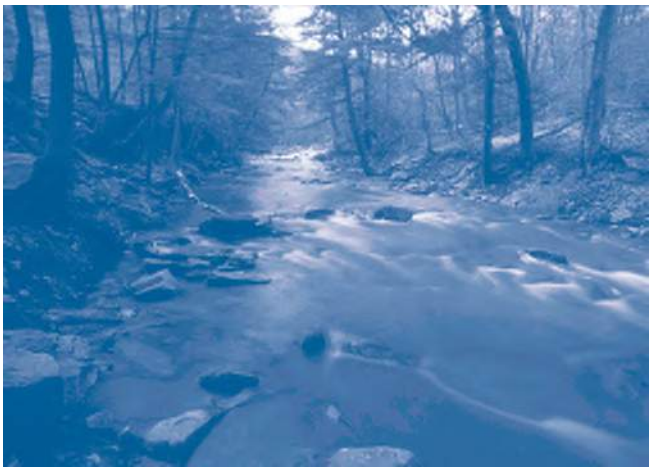
Cleaning Up Polluted Runoff with the Clean Water State Revolving Fund

What's In It For You?

The Clean Water State Revolving Fund (CWSRF) program has become a major source of funding to address polluted runoff. To date, 30 of the 51 CWSRF programs have provided funding for nonpoint source and estuary protection projects. Today annual funding to address polluted runoff exceeds $200 million. CWSRF loans are issued at below market rates (zero percent to less than market), offering borrowers significant savings over the life of the loan.

History

In creating the CWSRF program, Congress ensured that it would be able to fund most types of water quality projects, including nonpoint source, wetlands, estuary, and other types of watershed projects, as well as more traditional municipal wastewater treatment systems. The CWSRF program provisions in the Clean Water Act give no more preference to one category or type of project than any other.



Capacity of the CWSRF

The 51 CWSRF programs work like banks (each state and Puerto Rico has one). Federal and state contributions are used to capitalize or set-up the programs. These assets are used to make low-interest loans for important water quality projects. Repaid funds are then recycled to fund other important water quality projects.

The CWSRF programs have in excess of $42 billion in assets and average funding for the past three years exceedes $4 billion annually. The funding of polluted runoff projects with the CWSRF is gaining momentum. Since 1989, the CWSRF program has funded 3,400 projects, investing more than $1.6 billion in polluted runoff projects.

Who May Qualify?

Included in a long list of eligible loan recipients are communities, citizens groups, businesses, farmers, homeowners, watershed groups, and nonprofit organizations. Since the program is managed largely by the states, project eligibility may vary according to the priorities within each state. Contact your state's CWSRF program for details.

Polluted Runoff and the CWSRF

The CWSRF can fund virtually any type or category of polluted runoff that is included in a state approved nonpoint source (NPS) management plan.

Polluted runoff occurs when rainfall, snowmelt, or irrigation runs over land or through the ground, picks up pollutants, and deposits them into surface or ground

water. For instance, polluted runoff from agricultural sources is the leading contributor to water quality impairments in rivers, degrading over 60% of impaired river miles.

Terraces, conservation tillage and conservation buffers save soil and improve water quality

Here are a few actual project examples from states that demonstrate what the CWSRF can do:

- **California -** Stormwater management facilities, including sediment basins and constructed wetlands. Purchasing easements for wetland protection
- **Delaware -** Animal waste management facilities, including manure storage facilities and dead chicken composters
- **Massachusetts -** Septic system improvements and replacement
- **Minnesota -** Agricultural best management practices (BMPs) to prevent and reduce runoff. Purchasing conservation tillage equipment and implementing soil erosion controls
- **New York** - Purchasing land and easements for source water protection projects
- **Washington -** Rehabilitation of streambanks, riparian corridors and buffers
- **Wisconsin** - Water protection and improvement projects on brownfield redevelopment sites
- **Wyoming -** Removal of leaking underground storage tanks and remediation of contaminated ground water and soil

State of the art lagoon animal waste management system

These are just a sample of the projects that have been funded. Contact your state or visit the CWSRF web site for more examples and information **(www.epa.gov/owm/cwfinance/index.htm)**

Benefits of Loans

First, Funds are Available. CWSRF loans can usually be obtained much faster than grants and each year over $200 million is spent on nonpoint source projects.

Second, No Cash Up-Front. Most grant programs require significant cost shares (as much as 40 percent or more). A CWSRF loan can cover 100 percent of project costs with no cash up-front.

Third, Significant Cost Savings. CWSRF loans provide significant cost savings over the life of the loan. The total cost of a zero percent CWSRF loan will be approximately 50 percent less than the same project financed by a commercial loan at 7.5 percent.

Fourth, Loans can Complement other Funding Sources. It may be possible to combine a CWSRF loan with grant dollars from other sources. Check with your state.

Sources of Repayment

Many users of the CWSRF program have demonstrated a high level of creativity in developing sources of repayments. The source of repayment need not come from the project itself. Some possible sources include:

- Fees paid by property owner or homeowner
- Fees paid by a developer
- Dedicated portion of local, county, or state taxes or fees
- Recreational fees (fishing license, park entrance fees)
- Stormwater management fees
- Wastewater user charges
- Donations or dues made to nonprofit groups
- Business revenues

Making Funding Accessible - Ohio Examples

The state of Ohio employs several innovative funding methods to ensure a variety of watershed projects receive funding. Two unique funding methods used in Ohio are the Linked-Deposit Loan Program and the Watershed Resource Restoration Sponsorship Program (WRRSP). In both examples the state shows creativity by taking existing institutional arrangements and modifying them to achieve the state's goals and meet the needs of loan recipents.

Linked Deposit Lending Program

In Ohio's linked-deposit program, the state makes arrangements with local banks to provide loans for agricultural BMPs and on-site wastewater treatment projects. Under a linked-deposit arrangement the state agrees to buy a bank's investment (CD) and receive a lower than market rate of return on the investment. The bank agrees to provide reduced interest rate loans for eligible projects. The linked-deposit loan interest rate reflects the difference between the state's reduced rate of return on the investment and the market rate of return.

The linked-deposit approach benefits CWSRF programs because they support high priority nonpoint source projects and because they place risk and management responsibilities with local financial institutions. Financial institutions earn profits from the linked deposit agreements and add an additional service for their customers. Borrowers find linked deposit programs to be economical and comfortable; they save money with low-interest loans, and they are comfortable working with local financial institutions.

For more information on linked-deposit loans see EPA's Activity Update ***"Innovative Use of Clean Water State Revolving Funds for Nonpoint Source Pollution"*** (EPA 832-F-02-004) found on the CWSRF web site.

Watershed Resource Restoration Sponsorship Program (WRRSP)

The WRRSP offers communities very low interest rates on loans for wastewater treatment plant improvements if the communities also sponsor projects that protect or restore water resources. The end payment for the wastewater treatment plant project is the same because of the lower interest rate and the simultaneous funding for the restoration project by the wastewater treatment plant. The benefit of this program is water restoration projects that normally would not receive funding are completed with the help of the wastewater treatment plants.

To date, the WRRSP program has supported projects that have acquired wetlands and riparian lands, acquired conservation easements, restored habitat, and removed dams.

Over the past two years under the WRRSP, communities in Ohio have used $24 million of CWSRF loan funds to protect and restore 1850 acres of riparian lands and wetlands and 38 miles of Ohio's stream corridors.

For more information on Ohio's WRRSP see EPA's Activity Update ***"Ohio's Restoration Sponsor Program Integrates Point Source and Nonpoint Source Projects"*** (EPA 832-F-02-001) found on the CWSRF web site.

Challenges Ahead

With increasing emphasis on watershed-based program management and implementation of Total Maximum Daily Loads (TMDLs) in impaired water bodies, it will be even more important to take advantage of the tremendous buying power of the CWSRF program.

How to Get More From the CWSRF

- Share information on polluted runoff priorities with CWSRF managers
- Work to enhance CWSRF programs to include funding of polluted runoff projects
- Become involved in the annual CWSRF planning and priority setting process
- Help market the program and encourage loan applications

The water quality community needs to work together to increase understanding of polluted runoff issues and facilitate the use of the powerful resources of the CWSRF to address these significant problems. EPA has been encouraging the states to open their CWSRFs to the widest variety of water quality projects and to use their CWSRFs to fund the highest priority projects in targeted watersheds. Those interested in cleaning up polluted runoff must seek out their CWSRF programs, gain an understanding of how their state program works, and participate in the annual process that determines which projects are funded.

For more information about the Clean Water Revolving Fund, or for a program representative in your State, please contact:

Clean Water State Revolving Fund Branch

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW (Mailcode 4204M)

Washington, DC 20460

Phone: (202) 564-0752 **Fax:** (202) 501-2403

Internet: www.epa.gov/owm/cwfinance/index.htm

Clean Water
State Revolving Fund

What is WaterSense?

WaterSense is a voluntary public-private partnership program sponsored by the U.S. Environmental Protection Agency. Its mission is to protect the future of our nation's water supply by promoting and enhancing the market for water-efficient products and services.

www.epa.gov/watersense

U.S. EPA WaterSense

5 Simple Ways to Save Water

United States Environmental Protection Agency
(4204M)

EPA-832-F-06-007
May 2006
www.epa.gov/watersense

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Saving water is simple and smart.

1 Be smart when irrigating your lawn or landscape.

- Water the lawn or garden during the coolest part of the day. Early morning is best.
- Water plants according to their water needs; you'll have healthier plants and a lower water bill.
- Set sprinklers to water lawns and gardens only—not the street or sidewalk.
- Use soaker hoses or trickle irrigation systems for trees and shrubs.

2 Use your appliances wisely.

- Wash only full loads or set small loads to the appropriate water level.
- Scrape rather than rinse dishes before loading them into the dishwasher.
- Replace old clothes washers with ENERGY STAR qualified appliances that use less water.

3 Don't flush your money down the drain/Toilets.

- A leaky toilet can waste 200 gallons of water per day. Check your toilet for leaks by adding food coloring to the tank. If the toilet is leaking, color will appear in the bowl within 15 minutes. Look for worn out, corroded or bent parts in the leaky toilet. Most replacement parts are inexpensive, readily available and easily installed. (Flush as soon as test is done, since food coloring may stain the tank.)
- When replacing your toilet, look for high-efficiency models that use less than 1.3 gallons per flush.

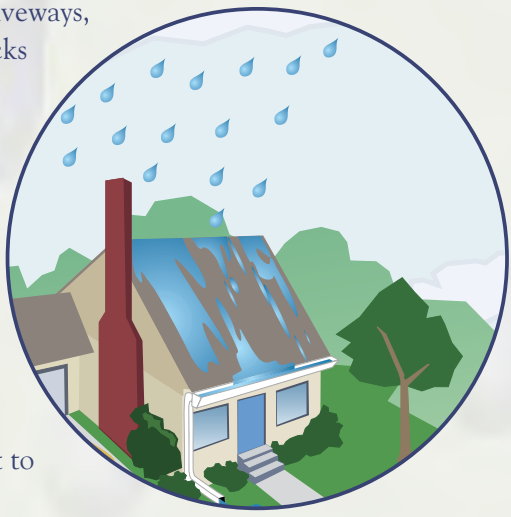
4 Conserve around the house.

- Keep drinking water in the refrigerator instead of letting the faucet run until cool. A running tap can use about 2 gallons of water per minute.
- Try not to leave the tap running while you brush your teeth or shave.
- Don't pour water down the drain if you can use it for other projects such as watering a plant or cleaning.

5 Stop those leaks.

- Verify that your home is leak-free. Many homes have hidden water leaks that can waste more than 10 percent, costing both you and the environment. Read your water meter before and after a two-hour period where no water is being used. If the meter does not read exactly the same, you probably have a leak.
- Repair dripping faucets and showers. If your faucet is dripping at the rate of one drop per second, you can expect to waste 2,700 gallons per year. This waste will add to the cost of water and sewer utilities or strain your septic system.

As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants. Stormwater can flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water. Polluted runoff is the nation's greatest threat to clean water.



By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automotive fluids off the ground and out of stormwater. Adopt these healthy household habits and help protect lakes, streams, rivers, wetlands, and coastal waters. Remember to share the habits with your neighbors!

Healthy Household Habits for Clean Water

Vehicle and Garage

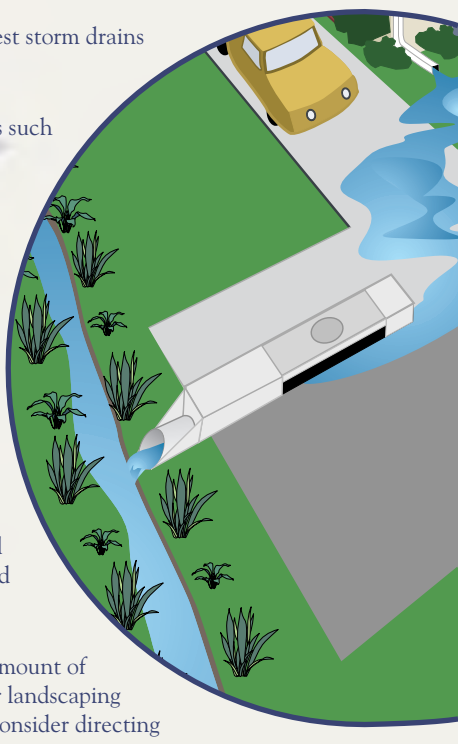
- Use a commercial car wash or wash your car on a lawn or other unpaved surface to **minimize** the amount of dirty, soapy water flowing into the storm drain and eventually into your local waterbody.

- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. Clean up **spilled fluids** with an absorbent material like kitty litter or sand, and don't rinse the spills into a nearby storm drain. Remember to properly dispose of the absorbent material.
- **Recycle** used oil and other automotive fluids at participating service stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.

Lawn and Garden

- Use pesticides and fertilizers **sparingly**. When use is necessary, use these chemicals in the recommended amounts. Avoid application if the forecast calls for rain; otherwise, chemicals will be washed into your local stream.
- Select **native** plants and grasses that are drought- and pest-resistant. Native plants require less water, fertilizer, and pesticides.
- **Sweep up** yard debris, rather than hosing down areas. Compost or recycle yard waste when possible.
- Don't overwater your lawn. Water during the **cool** times of the day, and don't let water run off into the storm drain.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. **Vegetate** bare spots in your yard to prevent soil erosion.

Home Repair and Improvement



- Before beginning an outdoor project, locate the nearest storm drains and **protect** them from debris and other materials.
- **Sweep up** and properly dispose of construction debris such as concrete and mortar.
- Use hazardous substances like paints, solvents, and cleaners in the **smallest amounts possible**, and follow the directions on the label. Clean up spills **immediately**, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Purchase and use **nontoxic**, **biodegradable**, **recycled**, and **recyclable** products whenever possible.
- **Clean** paint brushes in a sink, not outdoors. Filter and reuse paint thinner when using oil-based paints. Properly dispose of excess paints through a household hazardous waste collection program, or donate unused paint to local organizations.
- **Reduce** the amount of paved area and increase the amount of vegetated area in your yard. Use native plants in your landscaping to reduce the need for watering during dry periods. Consider directing downspouts away from paved surfaces onto lawns and other measures to increase infiltration and reduce polluted runoff.

Pet Care

- When walking your pet, remember to **pick up** the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Swimming Pool and Spa

- **Drain** your swimming pool only when a test kit does not detect chlorine levels.
- Whenever possible, drain your pool or spa into the **sanitary** sewer system.
- Properly store pool and spa chemicals to **prevent** leaks and spills, preferably in a covered area to avoid exposure to stormwater.

Septic System Use and Maintenance

- Have your septic system **inspected** by a professional at least every 3 years, and have the septic tank **pumped** as necessary (usually every 3 to 5 years).
- Care for the septic system drainfield by **not** driving or parking vehicles on it. Plant only grass over and near the drainfield to avoid damage from roots.
- Flush responsibly. Flushing household chemicals like paint, pesticides, oil, and antifreeze can **destroy** the biological treatment taking place in the system. Other items, such as diapers, paper towels, and cat litter, can **clog** the septic system and potentially damage components.

Storm drains connect to waterbodies!

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or

Make your home

The

SOLUTION TO STORMWATER POLLUTION!

A homeowner's guide to healthy habits for clean water

EPA United States Environmental Protection Agency

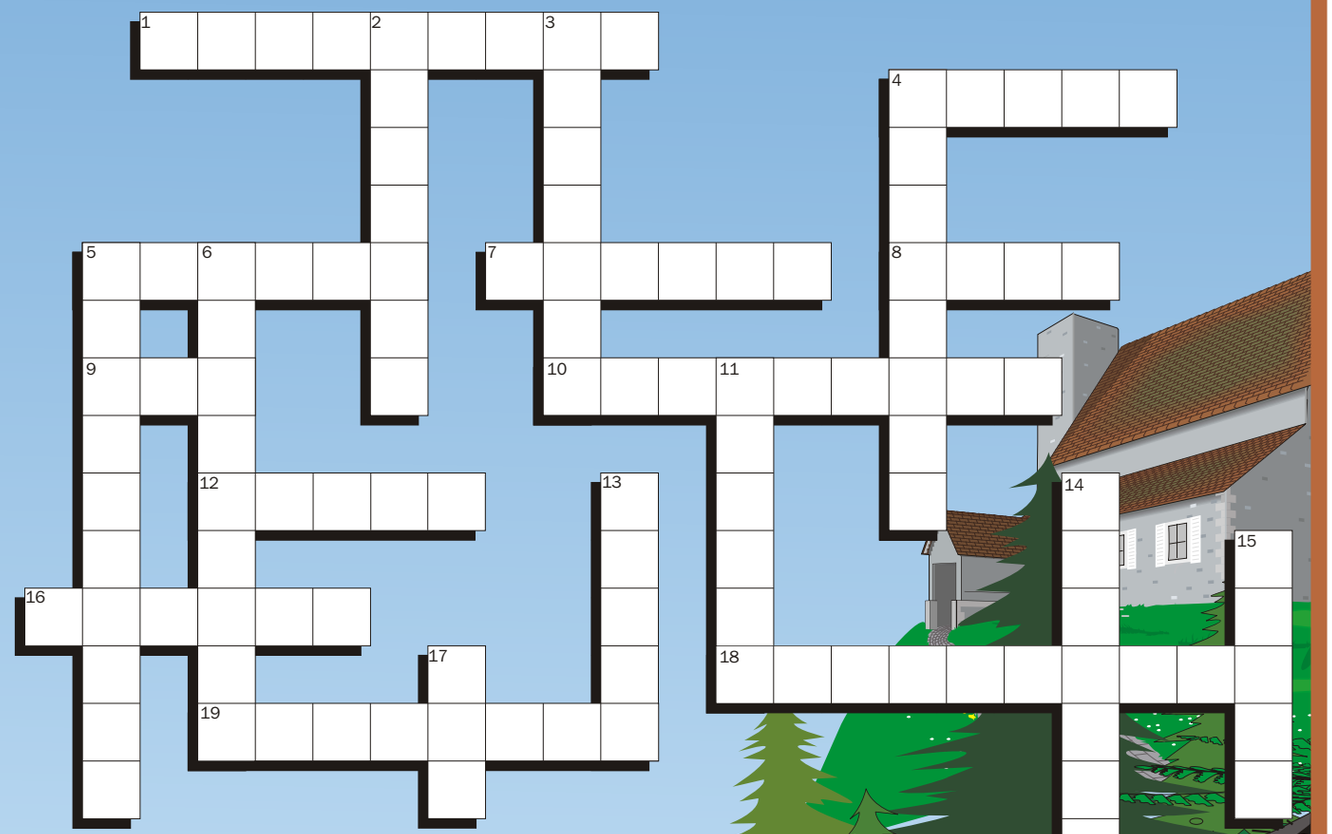
Take the Stormwater Runoff Challenge

Across:

1) The area of land that drains into an estuary, lake, stream, or groundwater is known as a _____.
4) The _____ of speeding boats can erode shorelines.
5) Maintaining your _____ tank will help to prevent bacteria and nutrients from leaking into groundwater and surface waters.
7) Wetland plants act like a natural water _____, removing harmful pollutants from stormwater runoff.
8) Leave your grass clippings on your _____ to reduce the need for commercial fertilizers.
9) A single quart of motor _____, if disposed of improperly, can pollute 2 million gallons of water.
10) Fertilizers and animal wastes contain _____ that "feed" algae and other aquatic plants harmful to water quality.
12) Polluted runoff from both rural and _____ sources has a significant impact on water quality.
16) Storm _____ don't always connect to sewage treatment plants, so runoff can flow directly to rivers, lakes, and coastal waters.
18) Follow directions carefully when applying _____ on your lawn—more isn't always better.
19) Polluted runoff (also called_____ source pollution) comes from so many places that it's hard to "pinpoint" a source.
20) Yard and vegetable food waste are suitable additions to a _____ pile.

Down:

2) Don't dump used motor oil into storm drains. _____ it!
3) _____ of soil from barren land can cloud nearby streams.
4) _____ prevent flooding, improve water quality, and provide habitat for waterfowl, fish, and wildlife.
5) Marking "Do Not Dump, Drains to Bay" on a _____ is one way to educate people about polluted runoff.
6) Excess sediment, nutrients, toxics, and pathogens are all types of runoff _____.
11) Polluted _____ is the nation's #1 water quality problem.
13) The cattail is one wetland _____ that helps purify polluted runoff.
14) Too much _____ in water can harm aquatic life.
15) Proper crop and animal management on _____ helps to control water pollution.
17) _____ impact development helps control stormwater pollution through conservation approaches and techniques.



Choices:

compost	nonpoint	sediment
drains	nutrients	septic
erosion	oil	storm drain
farms	plant	urban
fertilizer	pollution	wakes
filter	recycle	watershed
lawn	runoff	wetlands
Low		

EPA United States Environmental Protection Agency

For more information, please visit EPA's Polluted Runoff web site at www.epa.gov/nps

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Water-Efficient Landscaping:

Preventing Pollution & Using Resources Wisely

A Message from the Administrator

Christine Todd Whitman

I believe water is the biggest environmental issue we face in the 21st Century in terms of both quality and quantity. In the 30 years since its passage, the Clean Water Act has dramatically increased the number of waterways that are once again safe for fishing and swimming. Despite this great progress in reducing water pollution, many of the nation's waters still do not meet water quality goals. I challenge you to join with me to finish the business of restoring and protecting our nation's waters for present and future generations.

United States Environmental Protection Agency
Office of Water (4204M)
EPA832-F-02-002
September 2002
www.epa.gov/owm/water-efficiency/index.htm

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What is Water-efficient Landscaping?

Water, many agree, is our most precious natural resource; without it, life ceases. Yet judging by our water use and consumption practices, many of us in the United States seem to take it for granted. A typical household uses approximately 260 gallons of water per day. "Water conscious" individuals often install high-efficiency shower heads and toilets and wash only full loads of clothes and dishes to reduce consumption. But in the summer, the amount of water used outdoors by a household can exceed the amount used for all other purposes in the entire year. This is especially true in hot, dry climates.

Gardening and lawn care account for the majority of this seasonal increase, but other outdoor activities, such as washing cars and filling swimming pools, also contribute. According to the U.S. Geological Survey, of the 26 billion gallons of water consumed daily in the United States[1], approximately 7.8 billion gallons, or 30 percent[2], is devoted to outdoor uses. The majority of this is used for landscaping. In fact, it is estimated that the typical suburban lawn consumes 10,000 gallons of water above and beyond rainwater each year (Vickers, p 140).

Many mistakenly believe that stunning gardens and beautiful lawns are only possible through extensive watering, fertilization, and pesticide application. As this booklet will demonstrate, eye-catching gardens and landscapes that save water, prevent pollution, and protect the environment are, in fact, easily achieved by employing water-efficient landscaping. Water-efficient landscaping produces attractive landscapes because it utilizes designs and plants suited to local conditions.

This booklet describes the benefits of water-efficient landscaping. It includes several examples of successful projects and programs, as well as contacts, references, and a short bibliography. For specific information about how to best apply water-efficient landscaping principles to your geographical area, consult with your county extension service and local garden and nursery centers. Local governments and water utilities also possess a wealth of information and suggestions for using water more efficiently in all aspects of your life, including landscaping.

Xeriscape garden at Denver Water

1 W.B. Solley, R.R. Pierce, and H.A. Perlman. 1998. *Estimated Use of Water in the United States in 1995* (USGS Circular 1200). USGS. Reston, VA. p.27.

2 Amy Vickers. 2001. *Handbook of Water Use and Conservation*. WaterPlow Press. Amherst, MA. p. 140.

Xeriscaped front yard in Colorado Springs

Many terms and schools of thought have been used to describe approaches to water-efficient landscaping. Some examples include "water-wise," "water-smart," "low-water," and "natural landscaping." While each of these terms varies in philosophy and approach, they are all based on the same principles and are commonly used interchangeably. One of the first conceptual approaches developed to formalize these principles is known as "Xeriscape[3] landscaping." Xeriscape landscaping is defined as "quality landscaping that conserves water and protects the environment." The word "Xeriscape" was coined and copyrighted by Denver Water Department in 1981 to help make water conserving landscaping an easily recognized concept. The word is a combination of the Greek word "*xeros*," which means "dry," and "landscape."

The seven principles upon which Xeriscape landscaping is based are:

- Proper planning and design
- Soil analysis and improvement
- Appropriate plant selection
- Practical turf areas
- Efficient irrigation
- Use of mulches
- Appropriate maintenance

The eight fundamentals of water-wise landscaping, below, illustrate the similarities in the underlaying concepts and principles of Xeriscape landscaping and other water-efficient approaches.

- Group plants according to their water needs.
- Use native and low-water-use plants.
- Limit turf areas to those needed for practical uses.
- Use efficient irrigation systems.
- Schedule irrigation wisely.
- Make sure soil is healthy.
- Remember to mulch.
- Provide regular maintenance.

In short, plan and maintain your landscape with these principles of water efficiency in mind and it will continue to conserve water and be attractive.

3 Denver Water welcomes the use of the term Xeriscape in books, articles, and speeches promoting water conserving landscape. EPA is using this term with permission from Denver Water. For permission to use "Xeriscape" in your publications, call Denver Water at 303 628-6330.

Why Use Water-efficient Landscaping?

Proper landscaping techniques not only create beautiful landscapes, but also benefit the environment and save water. In addition, attractive, water-efficient, low-maintenance landscapes can increase home values.

Water-efficient landscaping offers many economic and environmental benefits, including:

- Lower water bills from reduced water use.
- Conservation of natural resources and preservation of habitat for plants and wildlife such as fish and waterfowl.
- Decreased energy use (and air pollution associated with its generation) because less pumping and treatment of water is required.
- Reduced home or office heating and cooling costs through the careful placement of trees and plants.
- Reduced runoff of stormwater and irrigation water that carries top soils, fertilizers, and pesticides into lakes, rivers, and streams.
- Fewer yard trimmings to be managed or landfilled.
- Reduced landscaping labor and maintenance costs.
- Extended life for water resources infrastructure (e.g., reservoirs, treatment plants, groundwater aquifers), thus reduced taxpayer costs.

Meadow Sage (Salvia pratensis) *is the background for New Mexico Evening Primrose* (Oenothera berlandieri 'siskiyou')

How is Water-efficient Landscaping Applied?

Landscaping that conserves water and protects the environment is not limited to arid landscapes with only rocks and cacti. Through careful planning, landscapes can be designed to be both pleasing to the senses and kind to the environment. One simple approach to achieving this is applying and adopting the basic principles of water-efficient landscaping to suit your climatic region. The seven principles of Xeriscape landscaping are used below to describe these basic concepts in greater detail.

Dragon's Blood Sedum (Sedum spurium) *under Honeylocust Trees* (Gleditsia triaconthos)

Proper planning and design

Developing a landscape plan is the first and most important step in creating a water-efficient landscape. Your plan should take into account the regional and microclimatic conditions of the site, existing vegetation, topography, intended uses of the property, and most importantly, the grouping of plants by their water needs. Also consider the plants' sun or shade requirements and preferred soil conditions. A well-thought-out landscape plan can serve as your roadmap in creating beautiful, water-efficient landscapes and allow you to continually improve your landscape over time.

Soil analysis and improvements

Because soils vary from site to site, test your soil before beginning your landscape improvements. Your county extension service can analyze the pH levels; nutrient levels (e.g., nitrogen, phosphorus, potassium); and the sand, silt, clay, and organic matter content of your soil. It can also suggest ways to improve your soil's ability to support plants and retain water (e.g., through aeration or the addition of soil amendments or fertilizers).

Appropriate plant selection

Your landscape design should take into account your local climate as well as soil conditions. Focus on preserving as many existing trees and shrubs as possible because established plants usually require less water and maintenance. Choose plants native to your region. Native plants, once established, require very little to no additional water beyond normal rainfall. Also, because they are adapted to local soils and climatic conditions, native plants commonly do not require the addition of fertilizers and are more resistant to pests and disease.

When selecting plants, avoid those labeled "hard to establish," "susceptible to disease," or "needs frequent attention," as these types of plants frequently require large amounts of supplemental water, fertilizers, and pesticides. Be careful when selecting non-indigenous species as some of them may become invasive. An invasive plant might be a water guzzler and will surely choke out native species. Your state or county extension service or local nursery can help you select appropriate plants for your area.

The key to successful planting and transplanting is getting the roots to grow into the surrounding soil as quickly as possible. Knowing when and where to plant is crucial to speeding the establishment of new plants. The best time to plant will vary from species to species. Some plants will thrive when planted in a dormant or inactive state. Others succeed when planted during the season when root generation is highest and sufficient moisture is available to support new growth (generally, spring is the best season, but check plant tags or consult with your local nursery for specific species).

Practical turf areas

How and where turf is placed in the landscape can significantly reduce the amount of irrigation water needed to support the landscape. Lawns require a large amount of supplemental water and generally greater maintenance than other vegetation. Use turf where it aesthetically highlights the house or buildings and where it has practical function, such as in play or recreation areas. Grouping turf areas can increase watering efficiency and significantly reduce evaporative and runoff losses. Select a type of grass that can withstand drought periods and become dormant during hot, dry seasons. Reducing or eliminating turf areas altogether further reduces water use.

Efficient irrigation

Efficient irrigation is a very important part of using water efficiently outdoors, and applies in any landscape—whether Xeriscape or conventional. For this reason, an entire section of this booklet addresses efficient irrigation; it can be found on page 6.

Use of mulches

Mulches aid in greater retention of water by minimizing evaporation, reducing weed growth, moderating soil temperatures, and preventing erosion. Organic mulches also improve the condition of your soil as they decompose. Mulches are typically composed of wood bark chips, wood grindings, pine straws, nut shells, small gravel, or shredded landscape clippings. Avoid using rock mulches in sunny areas or around non-arid climate plants, as they radiate large amounts of heat and promote water loss that can lead to scorching. Too much mulch can restrict water flow to plant roots and should be avoided.

Wine Cup (Callirhoe involucrata) *and Sunset Hyssop* (Agastache rupestris) *in the Denver Water Xeriscape Garden*

Appropriate maintenance

Water and fertilize plants only as needed. Too much water promotes weak growth and increases pruning and mowing requirements. Like any landscape, a water-efficient yard will require regular pruning, weeding, fertilization, pest control, and irrigation. As your water-efficient landscape matures, however, it will require less maintenance and less water. Cutting turf grass only when it reaches two to three inches promotes deeper root growth and a more drought-resistant lawn. As a rule of thumb, mow your turf grass before it requires more than one inch to be removed. The proper cutting height varies, however, with the type of grass, so you should contact your county extension service or local nursery to find out the ideal cutting height for your lawn. Avoid shearing plants or giving them high nitrogen fertilizers during dry periods because these practices encourage water-demanding new growth.

Water-efficient Landscape Irrigation Methods

With common watering practices, a large portion of the water applied to lawns and gardens is not absorbed by the plants. It is lost through evaporation, runoff, or being pushed beyond the root zone because it is applied too quickly or in excess of the plants' needs. The goal of efficient irrigation is to reduce these losses by applying only as much water as is needed to keep your plants healthy. This goal is applicable whether you have a Xeriscape or a conventional landscape.

To promote the strong root growth that supports a plant during drought, water deeply and only when the plant needs water. For clay soils, watering less deeply and more often is recommended. Irrigating with consideration to soil type, the condition of your plants, the season, and weather conditions—rather than on a fixed schedule—significantly increases your watering efficiency. Grouping plants according to similar water needs also makes watering easier and more efficient.

Purple Fountain Grass (Pennisetum setaceum "Rubrum") *and Marigolds* (Calendula officinalis) *in planter bed*

Irrigating lawns, gardens, and landscapes can be accomplished either manually or with an automatic irrigation system. Manual watering with a hand-held hose tends to be the most water-efficient method. According to the AWWA Research Foundation's outdoor end use study, households that manually water with a hose typically use 33 percent less water outdoors than the average household. The study also showed that households with in-ground sprinkler systems used 35 percent more water, those with automatic timers used 47 percent more water, and those with drip irrigation systems used 16 percent more water than households without these types of systems. These results show that in-ground sprinkler and drip irrigation systems must be operated properly to be water-efficient.

You can use a hand-held hose or a sprinkler for manual irrigation. To reduce water losses from evaporation and wind, avoid sprinklers that produce a fine mist or spray high into the air. Soaker hoses can also be very efficient and effective when used properly. Use a hand-held soil moisture probe to determine when irrigation is needed.

To make automatic irrigation systems more efficient, install system controllers such as rain sensors that prevent sprinkler systems from turning on during and immediately after rainfall, or soil moisture sensors that activate sprinklers only when soil moisture levels drop below pre-programmed levels. You can also use a weather-

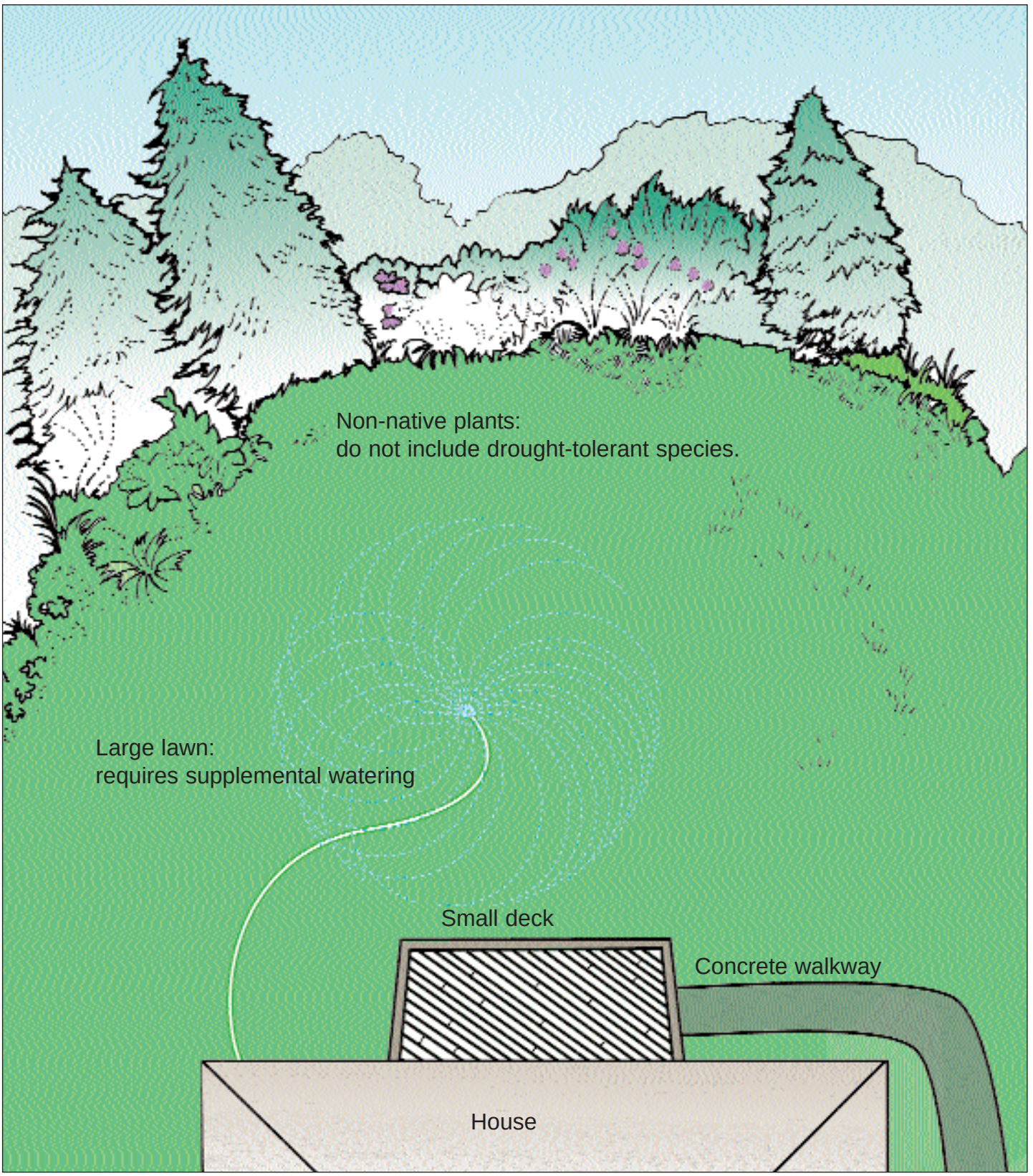
driven programming system. Drip-type irrigation systems are considered the most efficient of the automated irrigation methods because they deliver water directly to the plants' roots. It is also important to revise your watering schedule as the seasons change. Over-watering is most common during the fall when summer irrigation schedules have not been adjusted to the cooler temperatures.

To further reduce your water consumption, consider using alternative sources of irrigation water, such as gray water, reclaimed water, and collected rainwater. According to the AWWA Research Foundation, homes with access to alternative sources of irrigation reduce their water bills by as much as 25 percent.[4] Graywater is untreated household waste water from bathroom sinks, showers, bathtubs, and clothes washing machines. Graywater systems pipe this used water to a storage tank for later outdoor watering use. State and local graywater laws and policies vary, so you should investigate what qualifies as gray water and if any limitations or restrictions apply. Reclaimed water is waste water that has been treated to levels suitable for nonpotable uses. Check with local water officials to determine if it is available in your area. Collected rainwater is rainwater collected in cisterns, barrels, or storage tanks. Commercial rooftop collection systems are available, but simply diverting your downspout into a covered barrel is an easy, low-cost approach. When collecting rainwater, cover all collection vessels to prevent animals and children from entering and to prevent mosquito breeding. Some states might have laws which do not allow collection of rainwater, so be sure to check with your state's water resource agency before implementing a rainwater collection system.

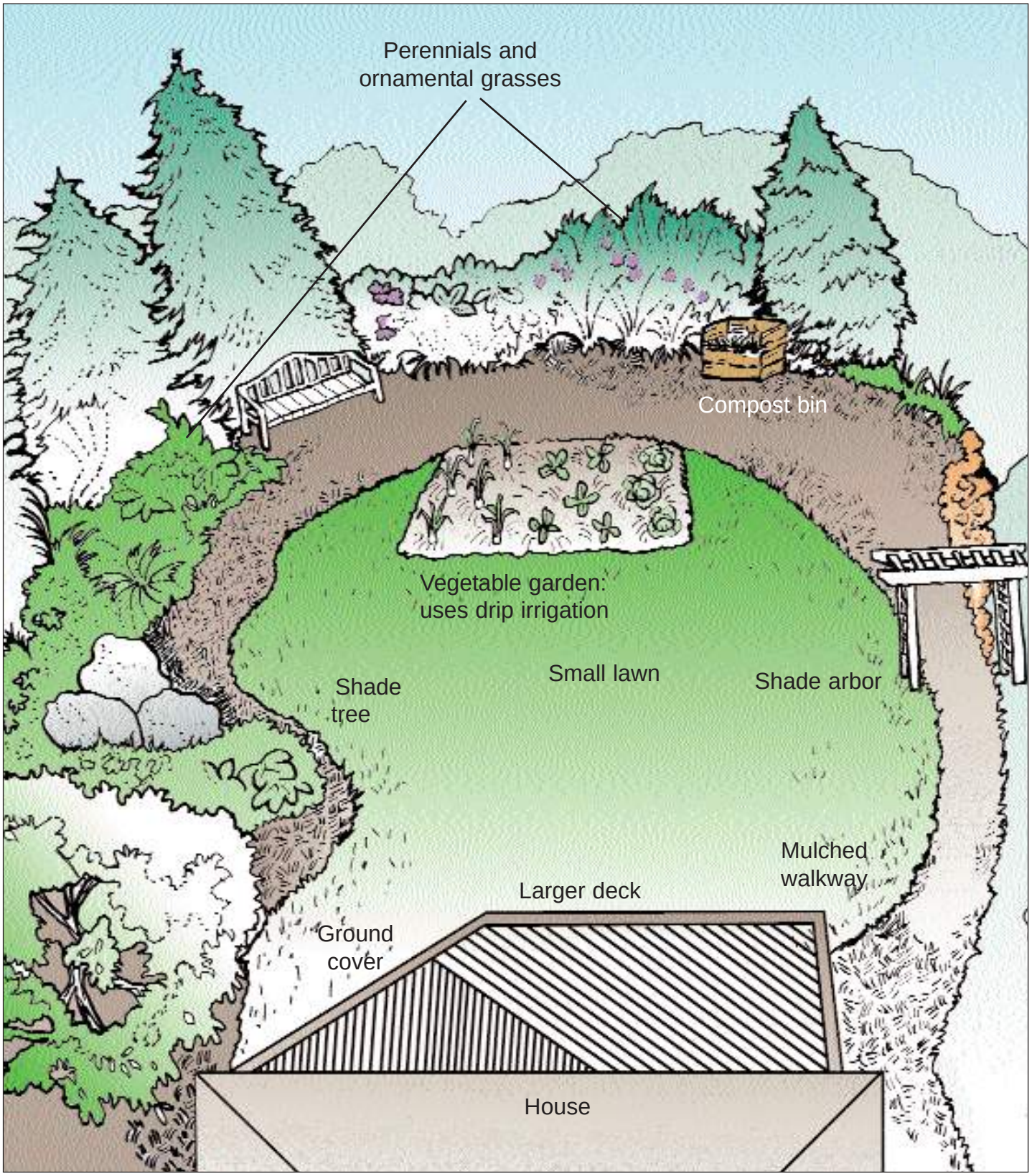
Red Valerian (Centranthus ruber)

4 AWWA Research Foundation. 1999. *Residential End Uses of Water*. <www.waterwiser.org>

Non-xeriscaping



Xeriscaping



Examples of Successful Water-efficient Landscaping Projects

Water-efficient landscaping techniques can be used by individuals, companies, state, tribal, and local governments, and businesses to physically enhance their properties, reduce long-term maintenance costs, and create environmentally conscious landscapes. The following examples illustrate how water-efficient landscapes can be used in various situations.

Oriental Poppies (Paparer orientale)

Homeowner–public/private partnership

- The South Florida Water Management District, the Florida Nurserymen and Growers Association, the Florida Irrigation Society, and local businesses worked together to produce a television video called "Plant It Smart with Xeriscape." The video shows how a typical Florida residential yard can be retrofitted with Xeriscape landscaping to save energy, time, and money. The showcase yard (selected from 70 applicants) had a history of heavy water use—more than 90,000 gallons per month. After the retrofit, the yard's aesthetic value was enhanced; plus it now uses 75 percent less water and relies on yard trimmings for mulch and compost.
- The Southwest Florida Water Management District (SWFWMD), the City of St. Petersburg, and Pinellas County, Florida, produced a video called "Xeriscape It!" It shows a landscape being installed using the seven Xeriscape principles. The SWFWMD also funded several Xeriscape demonstration sites and maintains a Xeriscape demonstration garden at its Brooksville, Florida, headquarters. The garden features a variety of native and non-native plants and is available for public viewing, along with a landscape plant identification guide.
- Residents of Glendale, Arizona, can receive a $100 cash rebate for installing or converting more than half of their landscapable area to non-grass vegetation. The Glendale Water Conservation Office conducts an inspection of the converted lawn to ensure compliance with rebate requirements and then issues a rebate check to the homeowner. The purpose of the Landscape Rebate Program is to permanently reduce the amount of water used to irrigate grass throughout Glendale.

State government

- Although perceived as a water-rich state, Florida became the first to enact a statewide Xeriscape law. Florida's legislature recognized that its growing population and vulnerable environment necessitated legal safeguards for its water resources. The Xeriscape law requires Florida's Departments of Management Ser-

vices and Transportation to use Xeriscape landscaping on all new public properties and to develop a 5-year program to phase in Xeriscape on properties constructed before July 1992. All local governments must also consider requiring the use of Xeriscape and offering incentives to install Xeriscaping.

- Texas also developed legislation requiring Xeriscape landscaping on new construction projects on state property beginning on or after January 1994. Additional legislation, enacted in 1995, requires the Department of Transportation to use Xeriscape practices in the construction and maintenance of roadside parks. All municipalities may consider enacting ordinances requiring Xeriscape to conserve water.

City government

In Las Vegas, Nevada, homeowners can receive up to $1,000 for converting their lawn to Xeriscape, while commercial landowners can receive up to a $50,000 credit on their water bill. The city and several other surrounding communities hope these eye-catching figures will help Las Vegas meet its goal of saving 25 percent of the water it would otherwise have used by the year 2010; to date, it has saved 17 percent. Local officials plan to reach the target with the assistance of incentive programs encouraging Xeriscape, a city ordinance limiting turf to no more than 50 percent of new landscapes, grassroots information programs, and a landscape awards program specifically for Xeriscaped properties. Preliminary results of a five-year study show that residents who converted a portion of their lawns to Xeriscape reduced total water consumption by an average of 33 percent. The xeric vegetation required less than a quarter of the water typically used and one-third the maintenance (both in labor and expenditures) compared to traditional turf.

Yellow Ice Plant (Delosperma nubigenum) *close-up*

Developers

Howard Hughes Properties (HHP), a developer and manager of more than 25,000 acres of residential, commercial, and office development property, has enthusiastically used drought tolerant landscaping on all of its properties since 1990. Most of the company's properties are located in Las Vegas, one of the country's fastest growing metropolitan areas. To conserve resources, the city and county have implemented regulations requiring developers to employ certain Xeriscape principles in new projects. Specifically, a limited percentage of grass can be used on projects, and it must be kept away from streets. As the area's first large-scale developer to recognize the need and value in incorporating drought tolerant landscaping in parks, streetscapes, and open spaces, HHP uses native and desert-adaptive plants that survive and thrive in the Las Vegas climate with minimal to moderate amounts of water.

Drip system irrigation controllers are linked to weather stations that monitor the evapotranspiration rate. This allows HHP to determine the correct amount of water to be applied to plants at any given time. HHP tests the irrigation systems regularly and adds appropriate soil amendments to promote healthy plant growth. The maintenance program also includes pest management, the use of mulching mowers, and the use of rock mulch top dressing on all non-turf planting areas. These measures combine to ensure a beautiful, healthy, and responsible landscape.

Public/private partnerships

Even the most water-conscious homeowners in Southern California are over-watering by 50 to 70 gallons per day. The excess water washes away fertilizers and pesticides, which pollute natural waterways. The quantity of water wasted (and the dollars that pay for it) are even more substantial for large-scale commercial properties and developments.

An innovative partnership in Orange County links landscape water management, green material management, and non-point source pollution prevention goals into one program—the Landscape Performance Certification Program. This program emphasizes efficient landscape irrigation and features a "landscape irrigation budget" based on a property's landscape area, type, and the daily weather. The Municipal Water District monitors actual water use through a system of 12,000 dedicated water meters installed by participating landscape managers.

Participants, including landscapers, property managers, and homeowner associations, can compare the actual cost of water used on their property with the calculated budget. Those staying within budget are awarded certification, a proven marketing tool. This new voluntary program is implemented by the Municipal Water District with input from the California Landscape Contractors' Association, the Orange County Integrated Management Department, the Metropolitan Water District of Southern California, and local nurseries and has the support of 32 retailing water suppliers. The program is already credited with increasing the use of arid-climate shrubs and landscaping to accommodate drip irrigation, and has resulted in cost savings to water customers.

Miscanthus sinensis (Miscanthus grass, also called Maiden grass) *variety with leaves turning yellow for fall.*

For More Information

The following list of organizations can provide more information on water-efficient landscaping. This is not meant to be an exhaustive list, rather it is intended to help you locate local information sources and possible technical assistance.

Turkish Speedwell (Veronica liwanensis) *in background and tulips in foreground.*

Water Management Districts or Utilities

Your local water management district often can provide information on water conservation, including water efficient landscaping practices. Your city, town, or county water management district can be found in the Blue Pages section of your local phone book or through your city, town, or county's Web site if it has one. If you do not know your city, town, or county's Web site, check for a link on your state's Web site. URLs for state Web sites typically follow this format: <www.state.(two letter state abbreviation).us>.

State/County Extension Services

Your state or county extension service is also an excellent source of information. Many extension services provide free publications and advice on home landscaping issues including tips on plant selection and soil improvement. Some also offer a soil analysis service for a nominal fee. Your county extension service can be found in the Blue Pages section of your local phone book under the county government section or through your county's Web site if it has one. The U.S. Department of Agriculture's Cooperative State Research, Education, and Extension Service (www.reeusda.gov/statepartners/usa.htm) provides an online directory of land-grant universities which can help you locate your state extension service. Government Guide (www.governmentguide.com) is yet another online resource that might prove helpful in locating state or local agencies.

Organizations

The following is a partial list of organizations located across the United States that provide helpful information on water-efficient landscaping.

American Water Works Association (AWWA)
6666 West Quincy Avenue
Denver, CO 80235
Telephone: 303 794-7711
and
1401 New York Avenue, NW, Suite 640
Washington, DC 20005
Telephone: 202 628-8303
Web: <www.awwa.org>

Arizona Municipal Water Users Association (AMWUA)
Web: <www.amwua.org/program-xeriscape.htm>

BASIN
City of Boulder Environmental Affairs
P.O. Box 791
Boulder, CO 80306
Phone: 303 441-1964
E-mail: basin@bcn.boulder.co. us
Web: <bcn.boulder.co.us/basin/local/seven.html>

Denver Water
1600 West 12th Avenue
Denver, CO 80204
Phone: 303 628-6000
Fax: 303 628-6199
TDDY: 303 534-4116
Office of Water Conservation hotline:
303 628-6343
E-mail: jane.earle@denverwater.org
Web: <www.water.denver.co.gov/conservation/conservframe.html>

New Mexico Water Conservation Program/Water Conservation Clearinghouse
P. O. Box 25102
Santa Fe, NM 87504
Phone: 800 WATER-NM
E-mail: waternm@ose.state.nm.us
Fax: 505 827-3813
Web: <www.ose.state.nm.us/water-info/conservation/index.html>

Project WET - Water Education for Teachers
201 Culbertson Hall
Montana State University
Bozeman, MT 59717
Phone: 406 994-5392
Web: <www.montana.edu/wwwwet>

Rocky Mountain Institute
1739 Snowmass Creek Road
Snowmass, CO 81654-9199
Phone: 970 927-3851
Web: <www.rmi.org>

Southern Nevada Water Authority
1001 S. Valley View Boulevard, Mailstop #440
Las Vegas, NV 89153
Phone: 702 258-3930
Web: <www.snwa.com>

Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899
Phone: 352 796-7211 or 800 423-1476 (Florida only)
Web: <www.swfwmd.state.fl.us/watercon/xeris/swfxeris.html>

Sustainable Sources Green Building Program: Sustainable Building Source Book
E-mail: info@greenbuilder.com
Web: <www.greenbuilder.com/sourcebook/xeriscape.html>

Water Conservation Garden – San Diego County
12122 Cuyamaca College Drive West
El Cajon, CA 92019
Phone: 619 660-0614
Fax: 619 660-1687
E-mail: info@thegarden.org
Web: <www.thegarden.org/garden/xeriscape/index.html> and <www.sdcwa.org/manage/conservation-xeriscape.phtml>\

WaterWiser: The Water Efficiency Clearing House
(Operated by AWWA in cooperation with the U.S. Bureau of Reclamation)
6666 West Quincy Avenue
Denver, CO 80235
Phone: 800 559-9855
Fax: 303 794-6303
E-mail: bewiser@waterwiser.org
Web: <www.waterwiser.org>

Xeriscape Colorado!, Inc.
P.O. Box 40202
Denver, CO 80204-0202
Web: <www.xeriscape.org>

Resources

The following is a partial list of publications on resource efficient landscaping. For even more information, particularly on plants suited to your locale, consult your local library, county extension service, nursery, garden clubs, or water utility.

Ball, Ken and American Water Works Association Water Conservation Committee. *Xeriscape Programs for Water Utilities*. Denver: American Water Works Association, 1990.

Bennett, Jennifer. *Dry-Land Gardening: A Xeriscaping Guide for Dry-Summer, Cold-Winter Climates*. Buffalo: Firefly, 1998.

Bennett, Richard E. and Michael S. Hazinski. *Water-Efficient Landscape Guidelines*. Denver: American Water Works Association, 1993.

Brenzel, Kathleen N., ed. *Western Garden Book*, 2001 Edition. Menlo Park: Sunset Publishing Corporation, 2001.

City of Aurora, Colorado Utilities Department. *Landscaping for Water Conservation: Xeriscape!* Aurora: Colorado Utilities Department, 1989.

Johnson, Eric and Scott Millard. *The Low-Water Flower Gardener: 270 Unthirsty Plants for Color, Including Perennials, Ground Covers, Grasses & Shrubs*. Tucson: Ironwood Press, 1993.

Knopf, James M. *The Xeriscape Flower Gardener*. Boulder: Johnson Books, 1991.

Knopf, James M., ed. *Waterwise Landscaping with Trees, Shrubs, and Vines: A Xeriscape Guide for the Rocky Mountain Region, California, and the Desert Southwest*. Boulder: Chamisa Books, 1999.

Knox, Kim, ed. *Landscaping for Water Conservation: Xeriscape*. Denver: City of Aurora and Denver Water, 1989.

Nellis, David W. *Seashore Plants of South Florida and the Caribbean: A Guide to Identification and Propagation of Xeriscape Plants*. Sarasota: Pineapple Press, Inc., 1994.

Perry, Bob. *Landscape Plants for Western Regions: An Illustrated Guide to Plants for Water Conservation*. Claremont: Land Design Publishing, 1992.

Phillips, Judith. *Natural by Design: Beauty and Balance in Southwest Gardens*. Santa Fe: Museum of New Mexico Press, 1995.

Phillips, Judith. *Plants for Natural Gardens: Southwestern Native & Adaptive Trees, Shrubs, Wildflowers & Grasses*. Santa Fe: Museum of New Mexico Press, 1995.

Robinette, Gary O. *Water Conservation in Landscape Design and Maintenance*. New York: Nostrand Reinhold, 1984.

Rumary, Mark. *The Dry Garden*. New York: Sterling Publishing Co., Inc., 1995.

Springer, Lauren. *The Undaunted Garden: Planting for Weather-Resilient Beauty*. Golden: Fulcrum Publishing, 1994.

Springer, Lauren. *Waterwise Gardening*. New York: Prentice Hall Gardening, 1994.

Stephens, Tom, Doug Welsh, and Connie Ellefson. *Xeriscape Gardening, Water Conservation for the American Landscape*. New York: Macmillan Publishing, 1992.

Sunset Books, eds. *Waterwise Gardening: Beautiful Gardens with Less Water*. Menlo Park: Lane Publishing Company, 1989.

Vickers, Amy. *Handbook of Water Use and Conservation*. Amherst, MA: WaterPlow Press, 2001.

Weinstein, Gayle. *Xeriscape Handbook : A How-To Guide to Natural, Resource-Wise Gardening*. Golden: Fulcrum Publishing, 1998.

Williams, Sara. *Creating the Prairie Xeriscape*. Saskatchewan: University Extension Press, 1997.

Winger, David, ed. *Xeriscape Plant Guide: 100 Water-Wise Plants for Gardens and Landscapes*. Golden: Fulcrum Publishing, 1998.

Winger, David, ed. *Xeriscape Color Guide*. Golden: Fulcrum Publishing, 1998.

Winger, David, ed. *Evidence of Care: The Xeriscape Maintenance Journal, 2002, Vol. 1*, Colorado WaterWise Council, 2001.

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For copies of this publication contact:
EPA Water Resources Center (RC-4100)
U.S. Environmental Protection Agency
Ariel Rios Building, 1200 Pennsylvania Avenue, NW.
Washington, DC 20460

For more information regarding water efficiency, please contact:
Water Efficiency Program (4204M)
U.S. Environmental Protection Agency
Ariel Rios Building, 1200 Pennsylvania Avenue, NW.
Washington, DC 20460
<www.epa.gov/OWM/water-efficiency/index.htm>

United States
Environmental Protection Agency (4204M)
Washington, DC 20460

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Drainage System Maintenance SC-44

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).

- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.

- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.

- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.

- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.

- Regulations may include adoption of substantial penalties for illegal dumping and disposal.

- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.

- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:

  - Purchase and installation of signs.

  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.

  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.

  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line:
http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Waste Handling & Disposal SC-34

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Accomplish reduction in the amount of waste generated using the following source controls:
  - ✓ Production planning and sequencing;
  - ✓ Process or equipment modification;
  - ✓ Raw material substitution or elimination;
  - ✓ Loss prevention and housekeeping;
  - ✓ Waste segregation and separation; and
  - ✓ Close loop recycling.
- ☐ Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- ☐ Recycle materials whenever possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- Use the entire product before disposing of the container.
- To the extent possible, store wastes under cover or indoors after ensuring all safety concerns such as fire hazard and ventilation are addressed.
- Provide containers for each waste stream at each work station. Allow time after shift to clean area.

Good Housekeeping

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain. Clean in a designated wash area that drains to a clarifier.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- If possible, move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Preventative Maintenance

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.

- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, vacuuming, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Spill Response and Prevention Procedures

- Keep your spill prevention and plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - ✓ Vehicles equipped with baffles for liquid waste; and
  - ✓ Trucks with sealed gates and spill guards for solid waste.

Material Handling and Waste Management

Litter Control

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.

- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for waste handling and disposal, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.

- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and the types of waste handled. Significant capital costs may be associated with reducing wastes by modifying processes or implementing closed-loop recycling.
- Many facilities will already have indoor covered areas where waste materials will be stored and will require no additional capital expenditures for providing cover.
- If outdoor storage of wastes is required, construction of berms or other means to prevent stormwater run-on and runoff may require appropriate constructed systems for containment.
- Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

References and Resources

Minnesota Pollution Control Agency, *Industrial Stormwater Best Management Practices Guidebook*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315,* Revised. Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities

Oregon Department of Environmental Quality, 2013. *Industrial Stormwater Best Management Practices Manual- BMP 26 Fueling and Liquid Loading/Unloading Operations.* Available online at: http://www.deq.state.or.us/wq/wqpermit/docs/IndBMP021413.pdf.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control.* Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Sacramento County Environmental Management Stormwater Program: Best Management Practices. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Outdoor Liquid Container Storage SC-31

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

Accidental releases of materials from above ground liquid storage tanks, drums, and dumpsters present the potential for contaminating stormwaters with many different pollutants. Tanks may store many potential stormwater runoff pollutants, such as gasoline, aviation gas, diesel fuel, kerosene, oils, greases, lubricants and other distilled, blended and refined products derived from crude petroleum. Materials spilled, leaked, or lost from storage tanks may accumulate in soils or on other surfaces and be carried away by rainfall runoff. These source controls apply to containers located outside of a building used to temporarily store liquid materials and include installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Approach

Pollution Prevention

- Educate employees about pollution prevention measures and goals.
- Keep an accurate, up-to-date inventory of the materials delivered and stored on-site.
- Try to keep chemicals in their original containers, and keep them well labeled.

Suggested Protocols

General

- Develop an operations plan that describes procedures for loading and/or unloading. Refer to SC-30 – Outdoor

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Loading/Unloading of Materials for more detailed BMP information pertaining to loading and unloading of liquids.

- Protect materials from rainfall, run-on, runoff, and wind dispersal:
  - Cover the storage area with a roof.
  - Minimize stormwater run-on by enclosing the area or building a berm around it.
  - Use a "doghouse" structure for storage of liquid containers.
  - Use covered dumpsters for waste product containers.
- Employ safeguards against accidental releases:
  - Provide overflow protection devices to warn operator or automatic shut down transfer pumps.
  - Provide protection guards (bollards) around tanks and piping to prevent damage from a vehicle or forklift.
  - Provide clear tagging or labeling, and restrict access to valves to reduce human error.
- Berm or surround tank or container with secondary containment system, including dikes, liners, vaults, or double walled tanks.
- Be aware and ready to address the fact that some municipalities require secondary containment areas to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.
- Contact the appropriate regulatory agency regarding environmental compliance for facilities with "spill ponds" designed to intercept, treat, and/or divert spills.
- Have registered and specifically trained professional engineers identify and correct potential problems such as loose fittings, poor welding, and improper or poorly fitted gaskets for newly installed tank systems.

Storage Areas

- Provide storage tank piping located below product level with a shut-off valve at the tank; ideally this valve should be an automatic shear valve with the shut-off located inside the tank.
- Provide barriers such as posts or guardrails, where tanks are exposed, to prevent collision damage with vehicles.
- Provide secure storage to prevent vandalism-caused contamination.
- Place tight-fitting lids on all containers.
- Enclose or cover the containers where they are stored.

- Raise the containers off the ground by use of pallet or similar method, with provisions for spill control.
- Contain the material in such a manner that if the container leaks or spills, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters or groundwater.
- Place drip pans or absorbent materials beneath all mounted container taps, and at all potential drip and spill locations during filling and unloading of containers. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.
- Ensure that any underground or aboveground storage tanks are designed and managed in accordance with applicable regulations, identified as a potential pollution source, and have secondary containment such as a berm or dike with an impervious surface.

Inspection

- Provide regular inspections:
  - Inspect storage areas regularly for leaks or spills.
  - Conduct routine inspections and check for external corrosion of material containers. Also check for structural failure, spills and overfills due to operator error, failure of piping system.
  - Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.
  - Visually inspect new tank or container installations for loose fittings, poor welding, and improper or poorly fitted gaskets.
  - Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
  - Replace containers that are leaking, corroded, or otherwise deteriorating with ones in good condition. If the liquid chemicals are corrosive, containers made of compatible materials must be used instead of metal drums.
  - New or secondary containers must be labeled with the product name and hazards.

Training

- Train employee (e.g., fork lift operators) and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.
- Train employees in proper storage measures.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment, and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Prevent operator errors by using engineering safeguards and thus reducing accidental releases of pollutants.
- Store and maintain appropriate spill cleanup materials in a location near the tank storage area and known to all.

Other Considerations

- Storage sheds often must meet building and fire code requirements.
- The local fire district must be consulted for limitations on clearance of roof covers over containers used to store flammable materials.
- All specific standards set by Federal and State laws concerning the storage of oil and hazardous materials must be met.
- Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code.
- Storage of oil and hazardous materials must meet specific Federal and State standards including:
  - Spill Prevention Control and Countermeasure Plan (SPCC) Plan
  - Secondary containment
  - Integrity and leak detection monitoring
  - Emergency preparedness plans

Requirements

Costs

Costs will vary depending on the size of the facility and the necessary controls, such as berms or safeguards against accidental controls.

Maintenance

- Conduct weekly inspection.
- Sweep and clean the storage area regularly if it is paved, do not hose down the area to a storm drain.

Supplemental Information

The most common causes of unintentional releases are:

- Installation problems
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- External corrosion and structural failure
- Spills and overfills due to operator error
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa

Further Detail of the BMP

Aboveground Tank Leak and Spill Control

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be paved with Portland cement concrete, free of cracks and gaps, and impervious in order to contain leaks and spills,
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10% of the volume of all of the containers or 110% of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator

Maintenance is critical to preventing leaks and spills. Conduct routine weekly inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa

- Inspect new tank or container installation visually for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently release accumulated stormwater during the wet season.
- Have periodic integrity testing conducted by a qualified professional.

Container Management

- To limit the possibility of stormwater pollution, containers used to store dangerous waste or other liquids should be kept inside the building unless this is impractical due to site constraints. If the containers are placed outside, the following procedures should be employed:
  - Dumpsters used to store items awaiting transfer to a landfill should be placed in a lean-to structure or otherwise covered. Dumpsters shall be kept in good condition without corrosion or leaky seams.
  - Garbage dumpsters shall be replaced if they are deteriorating to the point where leakage is occurring. Dumpsters should be kept undercover to prevent the entry of stormwater. Employees should be made aware of the importance of keeping the dumpsters covered and free from leaks.
  - Waste container drums should be kept in an area such as a service bay. If drums are kept outside, they must be stored in a lean-to type structure, shed or walk-in container to keep rainfall from reaching the drums.

Dikes

One of the best protective measures against contamination of stormwater is diking. Containment dikes are berms or retaining walls that are designed to hold spills. Diking is an effective pollution prevention measure for above ground storage tanks and railcar or tank truck loading and unloading areas. The dike surrounds the area of concern and holds the spill, keeping spill materials separated from the stormwater side of the dike area. Diking can be used in any industrial or municipal facility, but it is most commonly used for controlling large spills or releases from liquid storage areas and liquid transfer areas.

- For single-wall tanks, containment dikes should be large enough to hold the contents of the storage tank for the facility plus rain water.
- For trucks, diked areas should be capable of holding an amount equal to the volume of the tank truck compartment. Diked construction material should be strong enough to safely hold spilled materials.
- Dike materials can consist of earth, concrete, synthetic materials, metal, or other impervious materials.
- Strong acids or bases may react with metal containers, concrete, and some plastics.

- Where strong acids or bases or stored, alternative dike materials should be considered. More active organic chemicals may need certain special liners for dikes.
- Dikes may also be designed with impermeable materials to increase containment capabilities.
- Dikes should be inspected during or after significant storms or spills to check for washouts or overflows.
- Regular checks of containment dikes to insure the dikes are capable of holding spills should be conducted.
- Inability of a structure to retain stormwater, dike erosion, soggy areas, or changes in vegetation indicate problems with dike structures. Damaged areas should be patched and stabilized immediately.
- Earthen dikes may require special maintenance of vegetation such as mulching and irrigation.

Curbing

Curbing is a barrier that surrounds an area of concern. Curbing is similar to containment diking in the way that it prevents spills and leaks from being released into the environment. Curbing is usually small scaled and does not contain large spills like diking. Curbing is common at many facilities in small areas where handling and transfer of liquid materials occur. Curbing can redirect contaminated stormwater away from the storage area. It is useful in areas where liquid materials are transferred from one container to another. Asphalt is a common material used for curbing; however, curbing materials can include earth, concrete, synthetic materials, metal, or other impenetrable materials.

- Spilled materials should be removed immediately from curbed areas to allow space for future spills.
- Curbs should have manually-controlled pump systems rather than common drainage systems for collection of spilled materials.
- The curbed area should be inspected regularly to clear clogging debris.
- Maintenance should also be conducted frequently to prevent overflow of any spilled materials as curbed areas are designed only for smaller spills.
- Curbing has the following advantages:
  - Excellent run-on control
  - Inexpensive
  - Ease of installment
  - Provides option to recycle materials spilled in curb areas
  - Common industry practice

Examples

The "doghouse" design has been used to store small liquid containers. The roof and flooring design prevent contact with direct rain or runoff. The doghouse has two solid structural walls and two canvas covered walls. The flooring is wire mesh about secondary containment. The unit has been used successfully at Lockheed Missile and Space Company in Sunnyvale.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Fueling Areas SD-30

Photo Credit: Geoff Brosseau

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- ☑ Collect and Convey

Description

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the stormwater conveyance system. Spills at vehicle and equipment fueling areas can be a significant source of pollution because fuels contain toxic materials and heavy metals that are not easily removed by stormwater treatment devices.

Approach

Project plans must be developed for cleaning near fuel dispensers, emergency spill cleanup, containment, and leak prevention.

Suitable Applications

Appropriate applications include commercial, industrial, and any other areas planned to have fuel dispensing equipment, including retail gasoline outlets, automotive repair shops, and major non-retail dispensing areas.

Design Considerations

Design requirements for fueling areas are governed by Building and Fire Codes and by current local agency ordinances and zoning requirements. Design requirements described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements.

Designing New Installations

Covering

Fuel dispensing areas should provide an overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area should drain to the project's treatment control BMP(s) prior to discharging to the stormwater conveyance system. Note - If fueling large equipment or vehicles that would prohibit the use of covers or roofs, the fueling island should be designed to sufficiently accommodate the larger vehicles and equipment and to prevent stormwater run-on and runoff. Grade to direct stormwater to a dead-end sump.

Surfacing

Fuel dispensing areas should be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete should be prohibited. Use asphalt sealant to protect asphalt paved areas surrounding the fueling area. This provision may be made to sites that have pre-existing asphalt surfaces.

The concrete fuel dispensing area should be extended a minimum of 6.5 ft from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 ft, whichever is less.

Grading/Contouring

Dispensing areas should have an appropriate slope to prevent ponding, and be separated from the rest of the site by a grade break that prevents run-on of urban runoff. (Slope is required to be 2 to 4% in some jurisdictions' stormwater management and mitigation plans.)

Fueling areas should be graded to drain toward a dead-end sump. Runoff from downspouts/roofs should be directed away from fueling areas. Do not locate storm drains in the immediate vicinity of the fueling area.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

- In the case of an emergency, provide storm drain seals, such as isolation valves, drain plugs, or drain covers, to prevent spills or contaminated stormwater from entering the stormwater conveyance system.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Non-Stormwater Discharges SC-10

Description

Non-stormwater discharges (NSWDs) are flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain if local regulations allow. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include: potable water sources, fire hydrant flushing, air conditioner condensate, landscape irrigation drainage and landscape watering, emergency firefighting, etc. as discussed in Section 2.

However there are certain non-stormwater discharges that pose an environmental concern. These discharges may originate from illegal dumping of industrial material or wastes and illegal connections such as internal floor drains, appliances, industrial processes, sinks, and toilets that are illegally connected to the nearby storm drainage system through on-site drainage and piping. These unauthorized discharges (examples of which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains.

Non-stormwater discharges will need to be addressed through a combination of detection and elimination. The ultimate goal is to effectively eliminate unauthorized non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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pollutants on streets and into the storm drain system and downstream water bodies.

Approach

Initially the Discharger must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is the elimination of unauthorized non-stormwater discharges. See other BMP Fact Sheets for activity-specific pollution prevention procedures.

General Pollution Prevention Protocols

- Implement waste management controls described in SC-34 Waste Handling and Disposal.
- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" or similar stenciled or demarcated next to them to warn against ignorant or unintentional dumping of pollutants into the storm drainage system.
- Manage and control sources of water such as hose bibs, faucets, wash racks, irrigation heads, etc. Identify hoses and faucets in the SWPPP, and post signage for appropriate use.

Non-Stormwater Discharge Investigation Protocols

Identifying the sources of non-stormwater discharges requires the Discharger to conduct an investigation of the facility at regular intervals. There are several categories of non-stormwater discharges:

- Visible, easily identifiable discharges, typically generated as surface runoff, such as uncontained surface runoff from vehicle or equipment washing; and
- Non-visible, (e.g., subsurface) discharges into the site drainage system through a variety of pathways that are not obvious.

The approach to detecting and eliminating non-stormwater discharges will vary considerably, as discussed below:

Visible and identifiable discharges

- Conduct routine inspections of the facilities and of each major activity area and identify visible evidence of unauthorized non-stormwater discharges. This may include:
  - ✓ Visual observations of actual discharges occurring;

- ✓ Evidence of surface staining, discoloring etc. that indicates that discharges have occurred;
- ✓ Pools of water in low lying areas when a rain event has not occurred; and
- ✓ Discussions with operations personnel to understand practices that may lead to unauthorized discharges.

- ☐ If evidence of non-stormwater discharges is discovered:
  - ✓ Document the location and circumstances using Worksheets 5 and 6 (Section 2 of the manual), including digital photos;
  - ✓ Identify and implement any quick remedy or corrective action (e.g., moving uncovered containers inside or to a proper location); and
  - ✓ Develop a plan to eliminate the discharge. Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge.

- ☐ Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge. Make sure the facility SWPPP is up-to-date and includes applicable BMPs to address the non-stormwater discharge.

Other Illegal Discharges (Non visible)

Illicit Connections

- ☐ Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- ☐ Isolate problem areas and plug illicit discharge points.
- ☐ Locate and evaluate discharges to the storm drain system.
- ☐ Visual Inspection and Inventory:
  - ✓ Inventory and inspect each discharge point during dry weather.
  - ✓ Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system.
  - ✓ Non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- ☐ A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.

- Inspect the path of loading/unloading area drain inlets and floor drains in older buildings.

- Never assume storm drains are connected to the sanitary sewer system.

Monitoring for investigation/detection of illegal discharges

- If a suspected illegal or unknown discharge is detected, monitoring of the discharge may help identify the content and/or suggest the source. This may be done with a field screening analysis, flow meter measurements, or by collecting a sample for laboratory analysis. Section 5 and Appendix D describe the necessary field equipment and procedures for field investigations.

- Investigative monitoring may be conducted over time. For example if, a discharge is intermittent, then monitoring might be conducted to determine the timing of the discharge to determine the source.

- Investigative monitoring may be conducted over a spatial area. For example, if a discharge is observed in a pipe, then monitoring might be conducted at accessible upstream locations in order to pinpoint the source of the discharge.

- Generally, investigative monitoring requiring collection of samples and submittal for lab analysis requires proper planning and specially trained staff.

Smoke Testing

Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two piping systems. Smoke testing is generally performed at a downstream location and the smoke is forced upstream using blowers to create positive pressure. The advantage to smoke testing is that it can potentially identify multiple potential discharge sources at once.

- Smoke testing uses a harmless, non-toxic smoke cartridges developed specifically for this purpose.

- Smoke testing requires specialized equipment (e.g., cartridges, blowers) and is generally only appropriate for specially trained staff.

- A Standard Operating Procedure (SOP) for smoke testing is highly desirable. The SOP should address the following elements:

  - ✓ Proper planning and notification of nearby residents and emergency services is necessary since introducing smoke into the system may result in false alarms;

  - ✓ During dry weather, the stormwater collection system is filled with smoke and then traced back to sources;

- ✓ Temporary isolation of segments of pipe using sand bags is often needed to force the smoke into leaking pipes; and
- ✓ The appearance of smoke in a waste vent pipe, at a sewer manhole, or even the base of a toilet indicates that there may be a connection between the sanitary and storm water systems.

- Most municipal wastewater agencies will have necessary staff and equipment to conduct smoke testing and they should be contacted if cross connections with the sanitary sewer are suspected. See SC-44 Drainage System Maintenance for more information.

Dye Testing

- Dye testing is typically performed when there is a suspected specific pollutant source and location (i.e., leaking sanitary sewer) and there is evidence of dry weather flows in the stormwater collection system.
- Dye is released at a probable upstream source location, either the facility's sanitary or process wastewater system. The dye must be released with a sufficient volume of water to flush the system.
- Operators then visually examine the downstream discharge points from the stormwater collection system for the presence of the dye.
- Dye testing can be performed informally using commercially available products in order to conduct an initial investigation for fairly obvious cross-connections.
- More detailed dye testing should be performed by properly trained staff and follow SOPs. Specialized equipment such as fluorometers may be necessary to detect low concentrations of dye.
- Most municipal wastewater agencies will have necessary staff and equipment to conduct dye testing and they should be contacted if cross connections with the sanitary sewer are suspected.

TV Inspection of Drainage System

- Closed Circuit Television (CCTV) can be employed to visually identify illicit connections to the industrial storm drainage system. Two types of CCTV systems are available: (1) a small specially designed camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping, or (2) a larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe.
- CCTV systems often include a high-pressure water jet and camera on a flexible cable. The water jet cleans debris and biofilm off the inside of pipes so the camera can take video images of the pipe condition.

- CCTV units can detect large cracks and other defects such as offsets in pipe ends caused by root intrusions or shifting substrate.
- CCTV can also be used to detect dye introduced into the sanitary sewer.
- CCTV inspections require specialized equipment and properly trained staff and are generally best left to specialized contractors or municipal public works staff.

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks may include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. These wastes can cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ Illegal dumping hot spots;
  - ✓ Types and quantities (in some cases) of wastes;
  - ✓ Patterns in time of occurrence (time of day/night, month, or year);
  - ✓ Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills);
  - ✓ An anonymous tip/reporting mechanism; and
  - ✓ Evidence of responsible parties (e.g., tagging, encampments, etc.).
- One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Spill and Leak Prevention and Response

- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.
- See SC-11 Spill Prevention Control and Cleanup.

Employee Training Program

- Training of technical staff in identifying and documenting illegal dumping incidents is required. The frequency of training must be presented in the SWPPP, and depends on site-specific industrial materials and activities.
- Consider posting a quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.
- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan. Employees should be able to identify work/jobs with high potential for spills and suggest methods to reduce possibility.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.

- Conduct spill response drills annually (if no events occurred) in order to evaluate the effectiveness of the plan.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Quality Assurance and Record Keeping

Performance Evaluation

- Annually review internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.
- Develop document and data management procedures.
- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Annually document and report the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.
- Document training activities.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Many facilities do not have accurate, up-to-date 'as-built' plans or drawings which may be necessary in order to conduct non-stormwater discharge assessments.
  - ✓ Online tools such as Google Earth™ can provide an aerial view of the facility and may be useful in understanding drainage patterns and potential sources of non-stormwater discharges
  - ✓ Local municipal jurisdictions may have useful drainage systems maps.

- Video surveillance cameras are commonly used to secure the perimeter of industrial facilities against break-ins and theft. These surveillance systems may also be useful for capturing illegal dumping activities. Minor, temporary adjustments to the field of view of existing surveillance camera systems to target known or suspected problem areas may be a cost-effective way of capturing illegal dumping activities and identifying the perpetrators.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital facility cost requirements may be minimal unless cross-connections to storm drains are detected.
- Indoor floor drains may require re-plumbing if cross-connections are detected.
- Leaky sanitary sewers will require repair or replacement which can have significant costs depending on the size and industrial activity at the facility.

Maintenance (including administrative and staffing)

- The primary effort is for staff time and depends on how aggressively a program is implemented.
- Costs for containment, and disposal of any leak or discharge is borne by the Discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Permit Requirements

The IGP authorizes certain Non-Storm Water Discharges (NSWDs) provided BMPs are included in the SWPPP and implemented to:

- Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
- Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
- Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards (WQS); and,

- Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability."

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Project Specific Water Quality Management Plan – Building 3

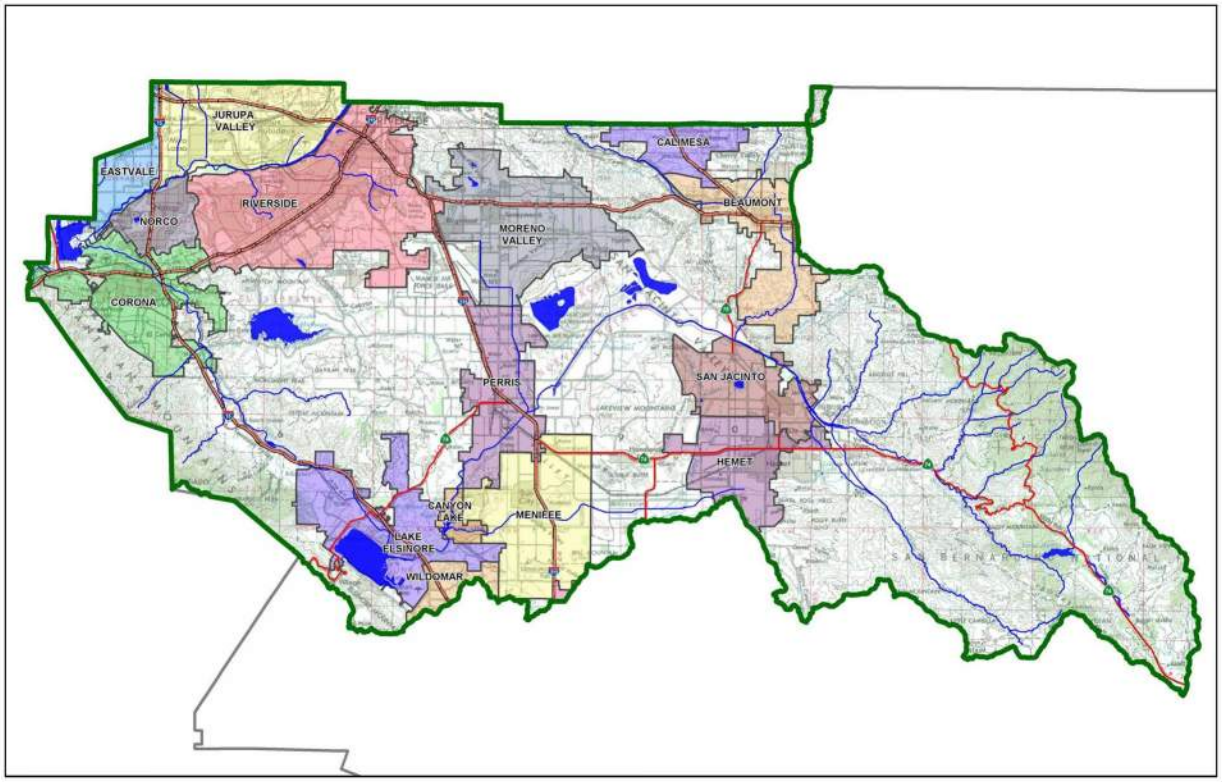
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Beaumont Summit Station – Building 3

Development No:

Design Review/Case No: PW2021-0771



☒ **Preliminary**
☐ **Final**

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Prepared for Compliance with
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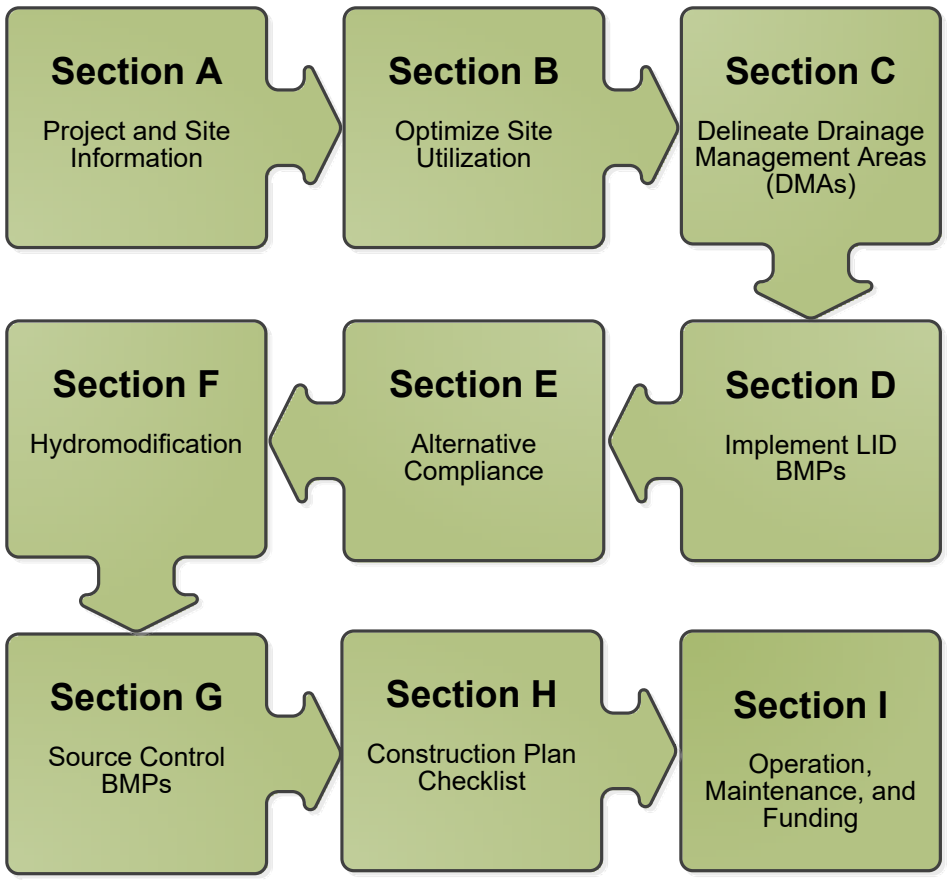
A Brief Introduction

This Project-Specific WQMP Template for the **Santa Ana Region** has been prepared to help guide you in documenting compliance for your project. Because this document has been designed to specifically document compliance, you will need to utilize the WQMP Guidance Document as your "how-to" manual to help guide you through this process. Both the Template and Guidance Document go hand-in-hand, and will help facilitate a well prepared Project-Specific WQMP. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Exeter Cherry Valley Land, LLC by Albert A. Webb Associates for the Beaumont Summit Station- Building 3 project.

This WQMP is intended to comply with the requirements of City of Beaumont, County of Riverside for County of Riverside Ordinance No. 754 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under Riverside County Water Quality Ordinance (Municipal Code Section 13.12 – Stormwater Drainage System Protection Regulations).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	Date
Byanka Velasco	Senior Engineer
Preparer's Printed Name	Preparer's Title/Position

Preparer's Licensure:

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	E-commerce
Planning Area:	Sunny Cal Specific Plan
Community Name:	Beaumont Summit Station
Development Name:	Beaumont Summit Station – Building 3
PROJECT LOCATION	
Latitude & Longitude (DMS): 33˚ 58’ 2.85” N, 117˚ 1’ 7.77” W	
Project Watershed and Sub-Watershed: Santa Ana Watershed	
Gross Acres: 22.4	
APN(s): 407-230-0(22-28), 407-190-016, 407-190-017	
Map Book and Page No.: Thomas Bros. Map Book Page: 690, Grids: C5, D5	
PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	E-commerce
Proposed or Potential SIC Code(s)	1541 – General Contractors – Industrial Buildings and Warehouses
Area of Impervious Project Footprint (SF)	738,132
Total Area of proposed Impervious Surfaces within the Project Footprint (SF)/or Replacement	738,132
Does the project consist of offsite road improvements?	☐ Y ☒ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the Project limits Footprint (SF)	638,676
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	N/A
Are there any natural hydrologic features on the project site?	☐ Y ☒ N
Is a Geotechnical Report attached?	☒ Y ☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	B, D
What is the Water Quality Design Storm Depth for the project?	0.79 in

Project Description

The Beaumont Summit Station (BSS)– Building 3 project proposes an e-commerce development in the City of Beaumont on approximately 22.4 acres of mostly vacant land within the boundaries of the 188-acre TPM 38223 (overall BSS project site). The overall BSS project site consists of approximately 188 acres of TPM 38223 which currently contains mostly vacant land with some pavement and structures and is bounded by Cherry Valley Boulevard to the north, Brookside Avenue to the south, residential lots to the east and vacant land to the west. TPM 38223 consists of approximately 145.4 acres of e-commerce, 11.4 acres of commercial, and 31.2 acres of open space areas. The BSS – Building 3 project is bounded by Cherry Valley Boulevard to the north, the future BSS – Building 1 development (Design Review No. PW2021-0769) to the west, vacant Parcel 4 of TPM 38223 to the east and the future BSS – Building 2 development (Design Review No. PW2021-0770) to the south.

The overall project site is currently mostly vacant with some buildings and paved areas in the eastern portion of the site. Runoff from the onsite area currently runs through the site to the southwest. The runoff is conveyed into a natural streambed area that runs along the south and western boundary of the project. This streambed ultimately discharges into a concrete ditch to the northwest of the project site.

For the proposed condition, runoff is captured through a series of inlets located throughout the site at low points. Captured flows are directed via proposed underground storm drain towards a proposed underground CMP detention system for increased runoff mitigation. While the chambers are not a water quality BMP, they serve a LID function by allowing sediments to settle out. The water quality flows are pumped from the chambers to a proposed vegetated swale in the northeast corner of the site which serves as a LID measure. Runoff will flow from the swale into a bioretention basin to be treated. The bioretention basin was designed based on a minimum infiltration of 1.6 in/hr and an available basin bottom area of 18,000 sf. For a drawdown time of 24 hrs, the basin would treat 57,600 cubic ft of runoff, which is greater than the V_{BMP} produced within the Building 3 site. Treated flows will be discharged to the backbone storm drain line which also receives the mitigated flows from the underground chambers. Flows generated by the BSS – Building 3 project development will ultimately discharge to the existing natural streambed to the southwest of the overall project site. While the mitigation for both Building 3 and Parcel 4 are included in the BSS – Building 3 area, Parcel 4 will be required to treat for water quality separately from Building 3. Parcel 4 is not included in the water quality calculations as this site will be mass graded but no development is proposed within Parcel 4 with the BSS – Building 3 project.

Based on site grading constraints, an infiltration-based BMP is not feasible. This is due to fill conditions being required for site grading of the BSS – Building 3 area and unsatisfactory infiltration rates found through a geotechnical investigation. Some paved access roads and landscaped areas on the northwest region of the site drain offsite to Cherry Valley Boulevard due to grading constraints. The concrete areas have been excluded from this preliminary analysis while the landscaped areas have been considered self-retaining areas.

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling
- BMP Locations (Lat/Long)

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Timoteo Creek Reach 3 (HUC 801.62)	N/A	GWR, REC1, REC2, WARM, WILD, RARE	N/A
Santa Ana River (Reach 5)	N/A	MUN, AGR, GWR,REC1, REC2, WARM, WILD, RARE	N/A
Santa Ana River (Reach 4)	Pathogens	GWR, REC1, REC2, WARM, WILD, RARE, SPWN	N/A
Santa Ana River (Reach 3)	Copper, Lead, Pathogens	AGR, GWR, REC1, REC2, WARM, WILD, RARE, SPWN	N/A
Prado Basin Management Zone	N/A	REC1, REC2, WARM, WILD, RARE	N/A

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☒ Y	☐ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* *City of Beaumont Grading Permit*	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, **constraints** might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. **Opportunities** might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Consideration of "highest and best use" of the discharge should also be considered. For example, Lake Elsinore is evaporating faster than runoff from natural precipitation can recharge it. Requiring infiltration of 85% of runoff events for projects tributary to Lake Elsinore would only exacerbate current water quality problems associated with Pollutant concentration due to lake water evaporation. In cases where rainfall events have low potential to recharge Lake Elsinore (i.e. no hydraulic connection between groundwater to Lake Elsinore, or other factors), requiring infiltration of Urban Runoff from projects is counterproductive to the overall watershed goals. Project proponents, in these cases, would be allowed to discharge Urban Runoff, provided they used equally effective filtration-based BMPs.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

The current site generally drains from northeast to southwest towards an existing natural streambed. In this existing condition, runoff generally sheet flows towards the streambed which runs northwest along the southwestern project boundary. In the developed condition, a network of inlets will capture flows generated onsite and be conveyed to a proposed CMP detention system for increased runoff mitigation. The water quality flows will be pumped from the chambers to a proposed vegetated swale and bioretention basin in the northeast corner of the site. After being treated, flows are conveyed towards the backbone storm drain which discharges into the existing streambed area to the south of the overall project site, preserving the existing drainage pattern.

Did you identify and protect existing vegetation? If so, how? If not, why?

The existing project site has minimal vegetation, so no vegetation is proposed to be protected.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

Due to poor infiltration capacities, an infiltration-based BMP is not feasible for water quality requirements.

Did you identify and minimize impervious area? If so, how? If not, why?

The impervious areas will be minimized as much as possible while maintaining safe and usable facilities onsite. Landscaped areas have been provided throughout the projects site along concrete walkways, around the proposed building, adjacent to parking areas, and in other feasible locations throughout the site.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

Yes, however, based on the nature of the e-commerce development, not all runoff can feasibly be directed towards a pervious area before being captured. Pervious landscaped areas are proposed throughout the site where possible in order to maximize the chances of runoff dispersing into landscaped areas before being captured. All runoff that is captured onsite will be directed towards a vegetated swale and bioretention basin to provide water quality treatment.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1][2]	Area (Sq. Ft.)	DMA Type
DMA 3 – Concrete	Concrete or Asphalt	363,254	D
DMA 3 – L/S	Ornamental Landscaping	78,946	D
DMA 3 – Roofs	Roofs	358,370	D
DMA 3 – Basin	Ornamental Landscaping	18,006	D

[1]Reference Table 2-1 in the WQMP Guidance Document to populate this column
[2]If multi-surface provide back-up

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	**Area (Sq. Ft.)**	**Stabilization Type**	**Irrigation Type (if any)**

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet) [A]	Post-project surface type	Impervious fraction [B]	Product [C] = [A] x [B]	DMA name /ID	Area (square feet) [D]	Ratio [C]/[D]

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA 3	Bioretention Basin

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site; proceed to section D.3

If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?	X	
If Yes, list affected DMAs: DMA 3		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.
**The infiltration rates in the BSS – Building 3 site varied from 0 to 5 in/hr per the infiltration report.*

D.2 Harvest and Use Assessment

Please check what applies*:*

☒ Reclaimed water will be used for the non-potable water demands for the project.

☐ Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐ The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If none of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: N/A

Type of Landscaping (Conservation Design or Active Turf): N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: N/A

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
N/A	N/A

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: N/A

Project Type: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-2 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: N/A

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	**Projected number of toilet users (Step 1)**
N/A	N/A

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-4 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-4: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the projected average daily use (Step 1) to the minimum required non-potable use (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**
N/A	N/A

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment per Section 3.4.2 of the WQMP Guidance Document.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☒ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA 3	☐	☐	☒	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

Based on the LID BMP Hierarchy, the BSS – Building 3 project will utilize a bioretention basin to treat for water quality requirements. Infiltration-based BMPs are not feasible due to poor infiltration capacities based on a preliminary geotechnical investigation. Harvest and use BMPs are not feasible as reclaimed water will be used for non-potable water demands.

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*DMA 3*		
	[A]		[B]	[C]	[A] x [C]			
Roof	*358,370*	*Roofs*	*1*	*0.89*	*319,666*			
Concrete/Asphalt	*363,254*	*Concrete/Asphalt*	*1*	*0.89*	*324,023*			
Landscaping	*78,946*	*Ornamental Landscaping*	*0.1*	*0.11*	*8,720*			
Basin	*18,006*	*Ornamental Landscaping*	*0.1*	*0.11*	*1,989*	*Design Storm Depth (in)*	*Design Capture Volume,* V_{BMP} *(cf)*	*Proposed Volume on Plans (cf)*
	$A_T = \Sigma[A]$ **818,576**				Σ= [D] **654,398**	[E] **0.79**	$[F] = \frac{[D]x[E]}{12}$ **43,081**	[G] ***43,085***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

N/A

E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P[(2)]
☒ Commercial/Industrial Development	P[(3)]	P	P[(1)]	P[(1)]	P[(5)]	P[(1)]	P	P
☐ Automotive Repair Shops	N	P	N	N	P[(4, 5)]	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☐ Parking Lots (>5,000 ft^2)	P[(6)]	P	P[(1)]	P[(1)]	P[(4)]	P[(1)]	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☒	☒	☒	☒	☒	☒	☒

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	N/A
Total Credit Percentage[1]	

[1]*Cannot Exceed 50%*

[2]*Obtain corresponding data from Table 3-8 in the WQMP Guidance Document*

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
N/A						*Design Storm Depth (in)*	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document

[E] is for Flow-Based Treatment Control BMPs [E] = .2, for Volume-Based Control Treatment BMPs, [E] obtained from Exhibit A in the WQMP Guidance Document

[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12

[H] is from the Total Credit Percentage as Calculated from Table E.2 above

[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
N/A		

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.

[2] Cross Reference Table E.1 above to populate this column.

[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	N/A	N/A	N/A
Volume (Cubic Feet)	N/A	N/A	N/A

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Susceptibility Maps.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

The site does not meet the HCOC exemption criteria listed in Section F.1, therefore the site has been designed to mitigate the proposed flows to be no more than 10% of the pre-development 2-year peak flow rate generated by the BSS – Building 3 site, as allowed by option C listed above. Unit hydrograph and routing analyses were performed for the 2-year storm event. A CMP chamber detention system is proposed along with an orifice outlet to mitigate the proposed condition flows. In the existing condition, approximately 106.4 acres were analyzed as Area A and include the BSS – Building 3 site. In the proposed condition, approximately 33.8 acres of Area A are referred to as the North Area and correspond to the BSS - Building 3 site. The unit hydrograph results show that Area A generates a 24-hour, 2-year peak flow of 4.33 cfs. The proposed condition analyses resulted in the North Area generating a 24-hour, 2-year peak flow of 8.2 cfs. The North Area accounts for approximately 16.6% of Area A, therefore the proposed condition flow generated by the West Area was routed to be within 10% of 0.72 cfs, which is 16.6% of the existing condition peak flow of Area A. A CMP chamber system sized to detain 480,000 cf of runoff and a 3.5-inch orifice were proposed for the routing and resulted in a peak flow of 0.7 cfs for the North Area (BSS-Building 3) site. Each of the Beaumont Summit Station building sites were analyzed along with the overall site to ensure that while some building sites are over mitigating or under mitigating due to the breakdown of the site based on grading constraints, overall the project will be fully mitigated once developed. The results for the 2-year storm event of BSS – Building 3 have been included in Appendix 7 and detailed

information regarding the analyses can be found in the "Beaumont Summit Station – Building 3 Preliminary Drainage Study".

	EXISTING CONDITION 2-YEAR, 24-HOUR STORM		
		VOL (AC-FT)	PEAK FLOW (CFS)
	AREA A	2.7	4.3
	83.4% AREA A (PROP. WEST AREA)	-	3.6
X	16.6% AREA A (PROP. NORTH AREA)	-	0.7
	AREA B (PROP. SOUTH AREA)	3.9	6.4

	PROPOSED CONDITION 2-YEAR, 24-HOUR STORM			
		VOL (AC-FT)	PEAK FLOW (CFS)	ROUTING PEAK FLOW (CFS)
	WEST AREA	7.7	12.7	3.3
X	NORTH AREA	5.0	8.2	0.7
	EX. AREA A COMBINED	12.7	20.9	4.0
	SOUTH AREA (EX. AREA B)	9.7	16.0	0*

**South Area is tributary to a proposed infiltration basin with a factored infiltration rate of 9.4 cfs. The South Area 2-yr, 24-hour runoff is fully infiltrated by the basin at the factored rate. The effective runoff leaving the South Area tributary is 0 cfs.*

*Note: **X** signals area for Building-3. Matching colors from existing and proposed conditions are the same site outlet; the contributory tributaries are different and can span multiple building areas.*

*The entire site is shown for continuity, but only those areas with **X** will have Unit Hydrograph and Routing output included in Appendix 7.*

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	*Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.*	*Maintain and periodically repaint or replace inlet markings.* *Provide stormwater pollution prevention information to new site owners, lessees, or operators.* *See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*

Interior floor drains and elevator shaft sump	*The interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer*	*Inspect and maintain drains to prevent blockages and overflow.*
Landscape/Outdoor Pesticide Use	*Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.* *Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.* *Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.* *Consider using pest-resistant plants, especially adjacent to hardscape.* *To ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.*	*Maintain landscaping using minimum or no pesticides.* *See applicable operational BMPs in "What you should know for…..Landscape and Gardening" at http://rcflood.org/stormwater/* *Provide IPM information to new owners, lessees and operators.* *Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*
Refuse Areas	*Trash container storage areas shall be paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements from the surrounding area, and screened or walled to prevent off-site transport of trash.* *Trash dumpsters (containers) shall be leak proof and have attached covers or lids.* *Trash enclosures shall be roofed per City standards.* *Trash compactors shall be roofed and set on a concrete pad per City standards. The pad shall be a minimum of one foot larger all around than the trash compactor and sloped to drain to a sanitary sewer line. Connection of trash area drains to the MS4 is prohibited.* *See CASQA SD-32 BMP Fact Sheets in Appendix 10 for additional information.*	*Adequate number of receptacles shall be provided. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, in Appendix 10, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbook at www.cabmphandbooks.com*

	Signs shall be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	
Plazas, Sidewalks and parking lots.		*Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.*
Loading Docks	*Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.* *Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.* *Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.*	*Move loaded and unloaded items indoors as soon as possible.* *See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*
Fire Sprinkler Test Water	*Water discharged from the fire sprinkler systems shall not enter the storm drain system. Discharged water from fire sprinkler testing shall be collected and used for onsite landscape or disposed of at a local waste water treatment plant.*	*See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com*

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	BMP Location (Lat/Long)
DMA 3	Bioretention Basin	Appendix 6	

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section H will be completed and addressed during Final WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: WQMP Covenant and Agreement

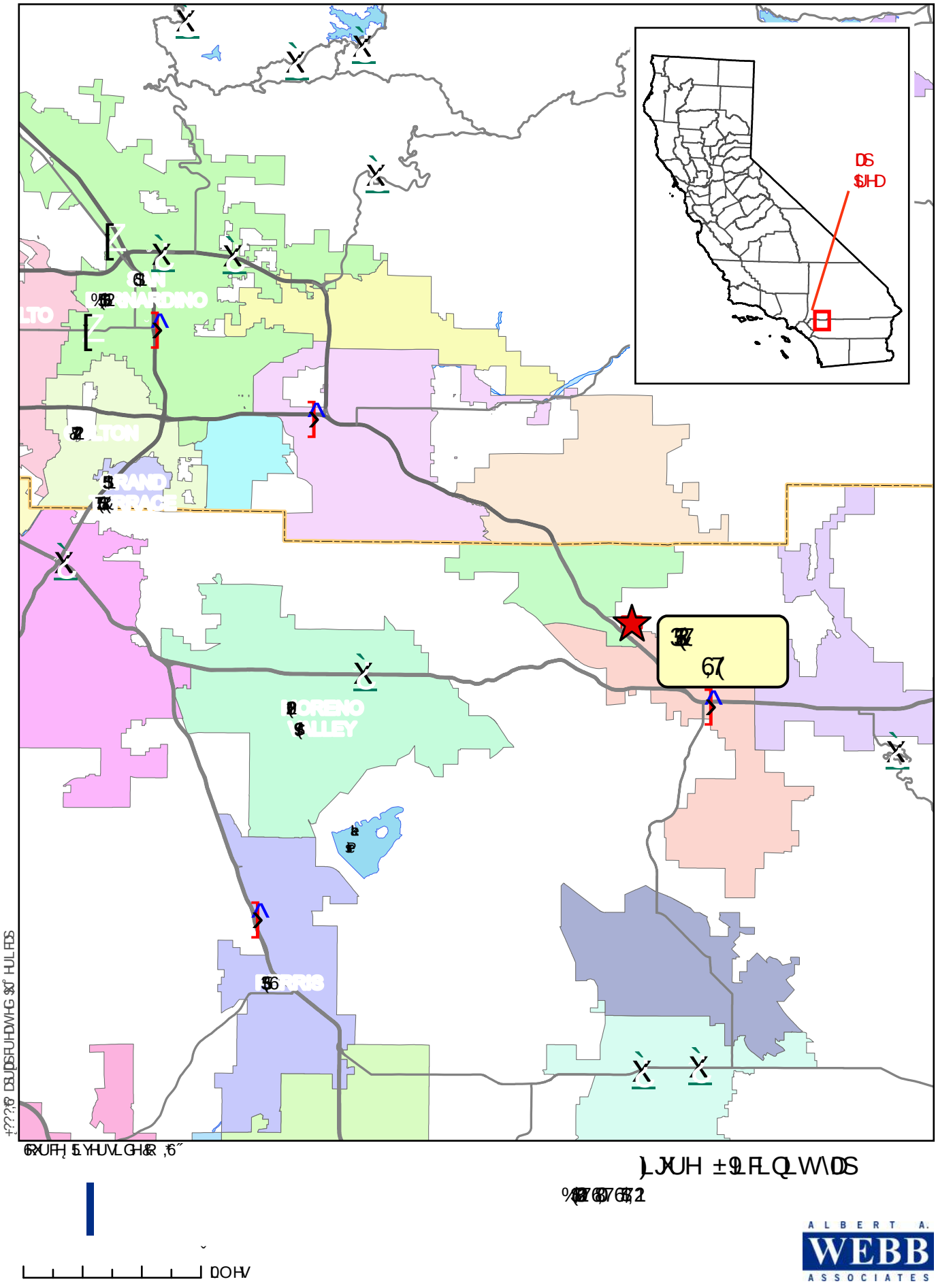
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☒ Y ☐ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map


SAN BERNARDINO
COLTON
GRAND TERRACE
MORENO VALLEY
HIGHLAND
67(
DS
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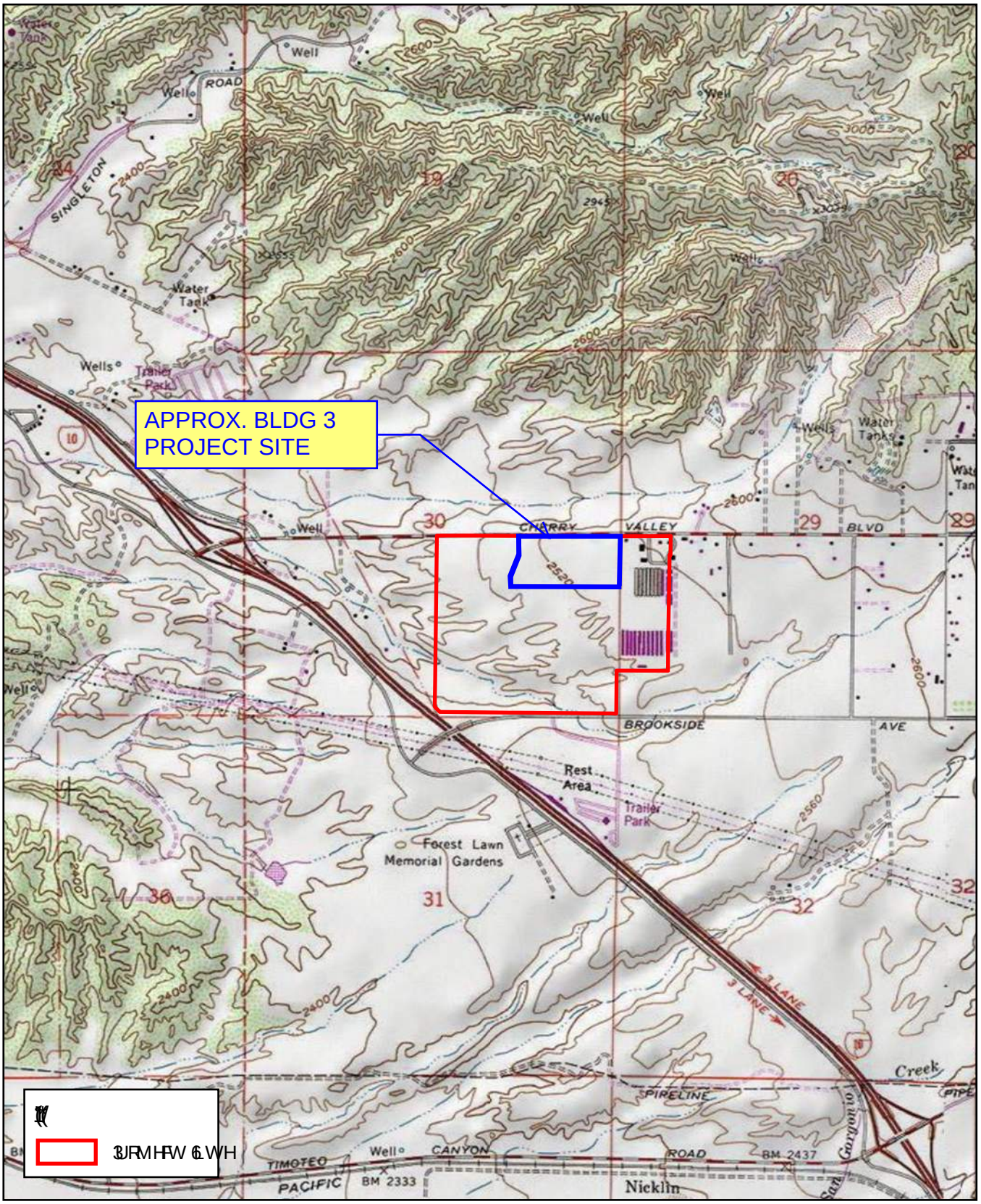
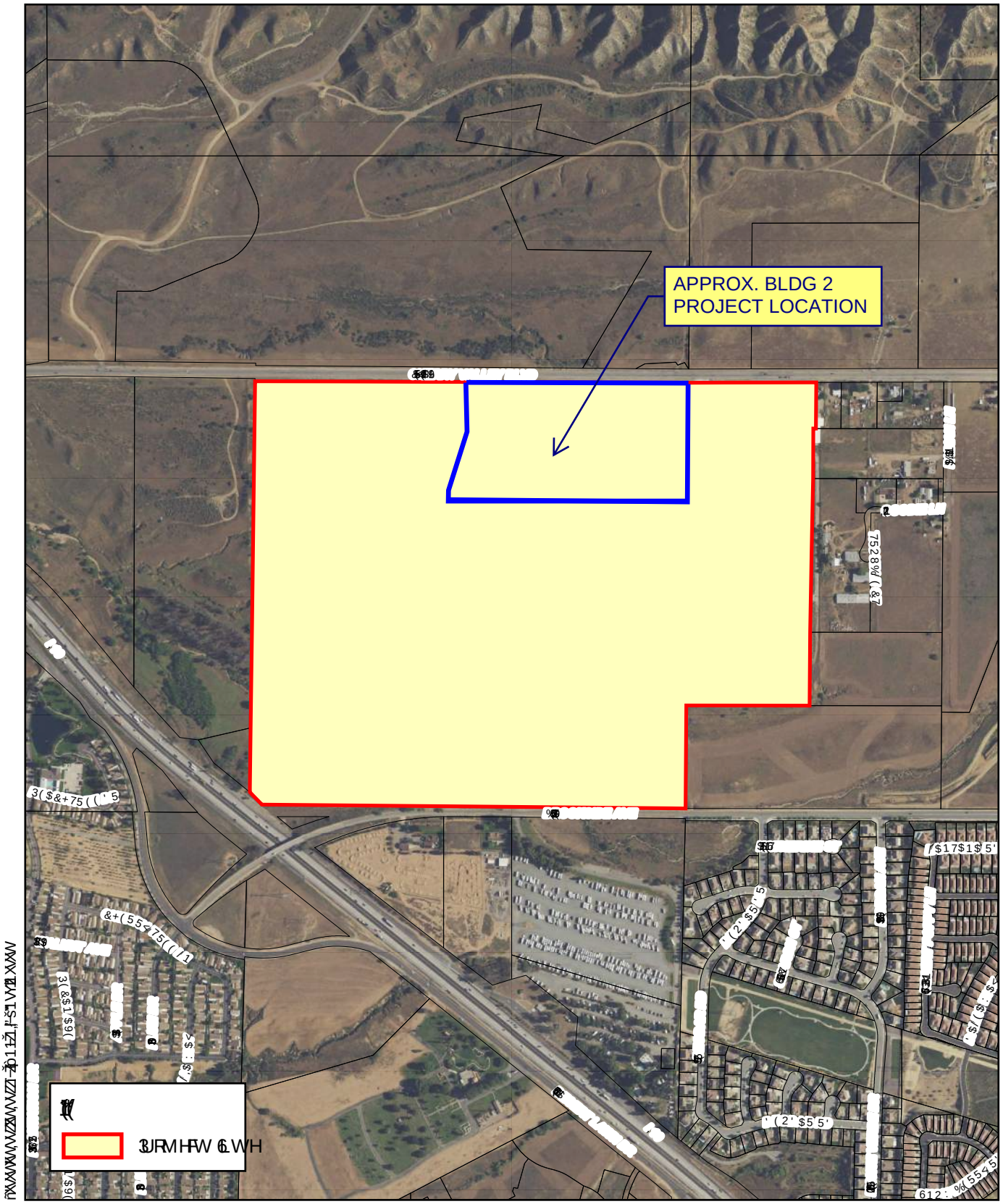
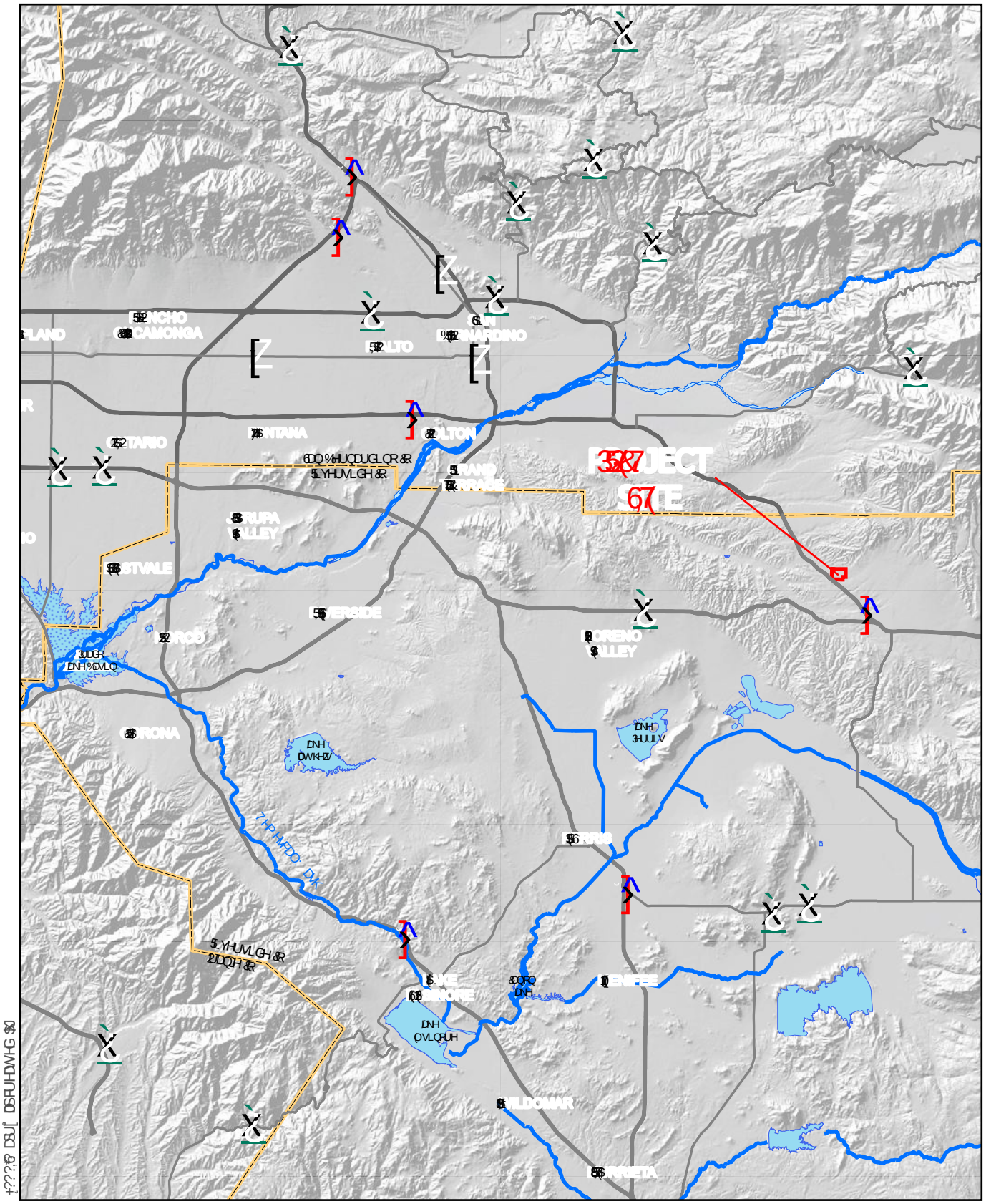
DOHV


APPROX. BLDG 3
PROJECT SITE
CHERRY
VALLEY
BLVD
BROOKSIDE
AVE
Rest
Area
Trailer
Park
Forest Lawn
Memorial Gardens
SINGLETON
ROAD
Water
Tank
Wells
Well
Trailer
Park
Water
Tanks
CANYON
TIMOTEO
PACIFIC
BM 2333
BM 2437
Nicklin
3 LANE
Creek
PIPELINE



ALBERT A. WEBB ASSOCIATES



6RXUFH6 8 6 (3

)LJXUH ±5HFHLYLQJZDWHUERGLHV

%6 6 7 6 2

DOHV

ALBERT A. WEBB ASSOCIATES

CHERRY VALLEY BLVD

CHERRY VALLEY BLVD

"A" STREET

"B" STREET

"C" STREET

BUILDING 1

BUILDING 2

BUILDING 3

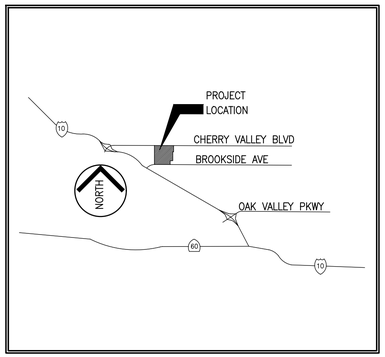
PARCEL 4

BROOKSIDE AVE

1" = 150'

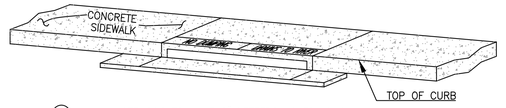
150 0 150 300 450

N W WEBB E S

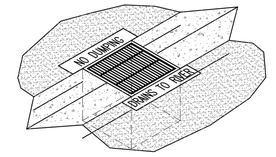


VICINITY MAP

NOT TO SCALE
T 2S, R 1W, SEC. 29 & 30



1. STENCILS TO HAVE 2" LETTERS AS FOLLOWS: "NO DUMPING – DRAINS TO RIVER"
2. PLACE BOTH STENCILS CENTERED WITHIN THE CATCHBASIN OPENINGS AND WITHIN THE TOP OF THE CURB.
3. SPRAY BOTH STENCILS WITH WHITE PAINT.
4. REMOVE STENCILS WHEN PAINT IS DRY.



CATCH BASIN STENCILING DETAIL

NTS

LEGEND

- ROOF
- CONCRETE/ASPHALT
- LANDSCAPE
- BASIN
- SELF-TREATING
- DMA BOUNDARY
- PROJECT BOUNDARY
- FLOWLINE
- PROPOSED ONSITE STORM DRAIN
- NRCS SOIL BOUNDARY
- PROPOSED INLET

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

OVERALL SITE PLAN
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
PRELIMINARY WQMP EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/3/2021			SHEET 1
DESIGNED: EP			OF 2 SHEETS
CHECKED: BJV			
PLN CK REF:			DWG. NO.
F.B.			

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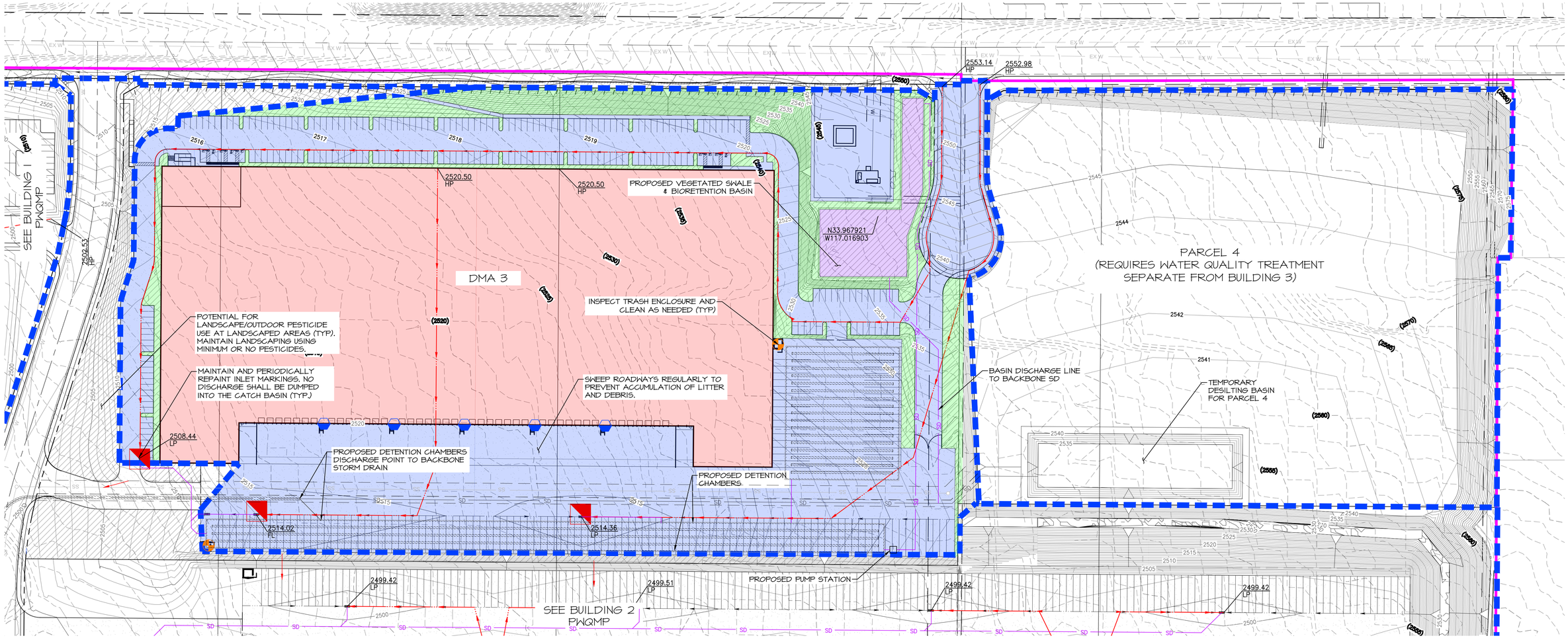

LEGEND

- ROOF
- CONCRETE/ASPHALT
- LANDSCAPE
- BIORETENTION BASIN
- DMA BOUNDARY
- PROJECT BOUNDARY
- FLOWLINE
- PROPOSED ONSITE STORM DRAIN
- NRCS SOIL BOUNDARY
- PROPOSED INLET
- ROOF DRAIN DOWNSPOUT
- PROPOSED TRASH ENCLOSURE
- OVERFLOW DIRECTION

1"=70'

0 70 140 210

N W WEBB E S

DMA 3 AREA TABLE	
ROOFS (SF)	358,370
CONCRETE (SF)	363,254
LANDSCAPE (SF)	78,946
BASIN (SF)	18,006
VBMP (CF)	43085

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 3
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
PRELIMINARY WQMP EXHIBIT

SCALE:	1" = 70'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/3/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 2
DESIGNED:	EP		OF 2 SHEETS
CHECKED:	BJV		DWG. NO.
PLN CK REF:			
F.B.			

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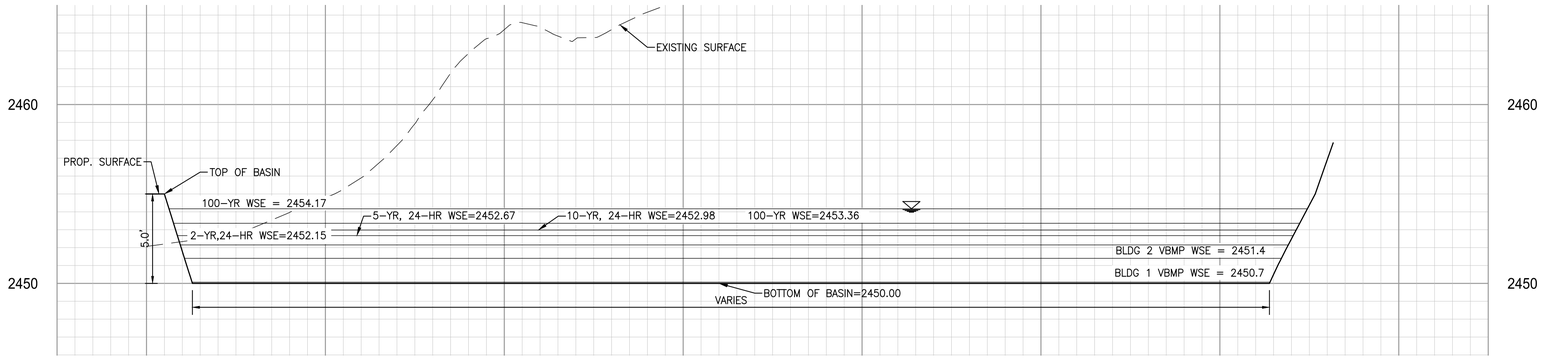
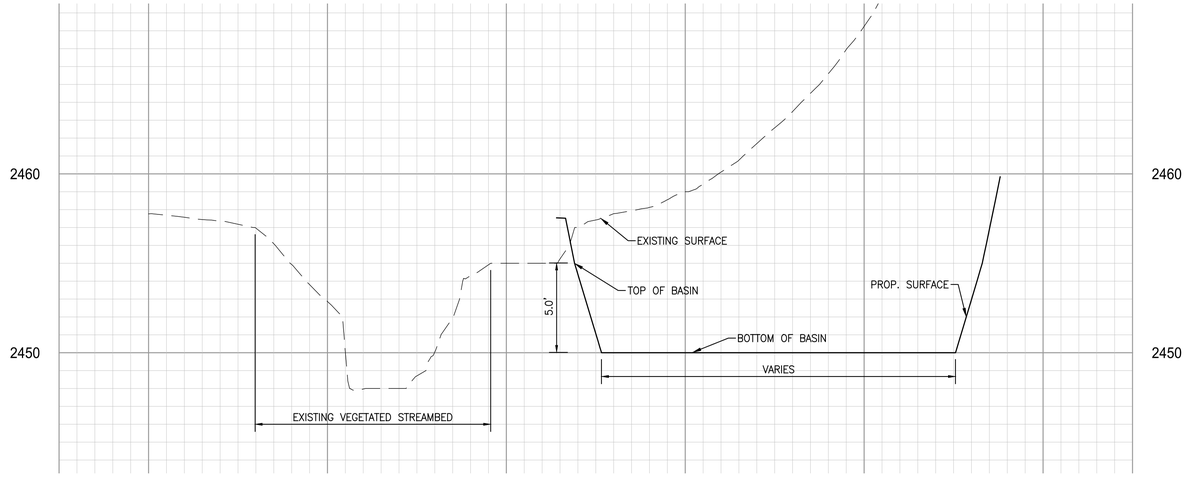


E-E
HORIZ: 1"=40'
VERT: 1"=4'



F-F
HORIZ: 1"=40'
VERT: 1"=4'

PRELIMINARY

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CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 2 DETAILS
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
BASIN DETAILS

SCALE: 1"=40'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 8/2/2021			SHEET 3
DESIGNED: EP			OF 3 SHEETS
CHECKED: BJV			DWG. NO.
PLN CK REF:			
F.B.			

Appendix 2: Construction Plans

Grading and Drainage Plans

Construction plans to be completed during Final Engineering.
This report is for preliminary approval.

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

August 13, 2021

Exeter Property Group
4602 East University Drive, Suite 185
Phoenix, Arizona 85034

Attention: Mr. Andrew Greybar
Senior Project Manager

Project No.: **21G133-2**

Subject: **Results of Infiltration Testing**
Proposed E-Commerce Development
Cherry Valley Avenue, West of Fabian Lane
Beaumont, California

Reference: Geotechnical Investigation, Proposed E-Commerce Development, Beaumont, California, prepared by Southern California Geotechnical, Inc. (SCG), prepared for Exeter Property Group, SCG Project No. 21G133-1.

Mr. Greybar:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Change Order No. 21G133-CO, dated July 14, 2021. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with the guidelines published in Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A, prepared for the Riverside County Department of Environmental Health (RCDEH), dated December, 2013.

Site and Project Description

The subject site is located on the south side of Cherry Valley Boulevard, 1,500± feet west of the intersection of Cherry Valley Boulevard and Fabian Lane in Beaumont, California. The site is bounded to the north by Cherry Valley Boulevard, to the east by single-family residences (SFRs) and vacant lots, to the south by Brookside Avenue, to the southwest by the Redlands Freeway (Interstate 10) and to the west by vacant land. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several irregular to rectangular-shaped parcels which total 178.4± acres in size. The site is presently developed with three (3) single-family residences and several small abandoned buildings located in the northeastern area of the site. Remnants of shade structures including Portland cement concrete panels and sawed-off poles are present

throughout the northeastern areas of the site. Several above-ground storage tanks are also present throughout the northeastern area of the site. One of the smaller abandoned structures possesses a below-grade room with what appears to be a turbine. The remaining areas of the site are presently vacant and undeveloped. Five (5) circular to oval-shaped leech ponds are located in the west-central area of the site. Two (2) additional leech ponds are located in the south-central area of the site. Ground surface cover consist of exposed soil and moderate to dense native grass and weed growth. Several large trees are located in the southern areas of the site. Limited areas of trash and debris are located throughout the site.

Detailed topographic information was obtained from the conceptual grading plan prepared by Albert A. Webb Associates (Webb). Based on the provided plan, the northeastern to northern two-thirds of the site slopes downward to the southwest at a gradient of 4± percent. The seven (7) circular leech ponds located in the west-central and south-central areas of the site are surrounded by a berm that is 5± feet higher than the surrounding topography. The northwestern area of the site possesses several east-west and southeast-northwest trending drainage courses. The drainage features possess gradual to steep side walls with elevation differences of up to 15± feet below the surrounding topography. To the south of the leech pits, the site slopes towards the south to southwest at a gradient of 10± percent. The topography descends by 50± feet in this area. Another significant east-west trending drainage is located at the base of the descending slope, located in the southern-most region of the site. The drainage possesses gradual to steep side walls with an elevation difference up 10± feet below the surrounding topography. A hill, located to the southeast of this drainage, is approximately 20 to 30 feet higher than the surrounding topography. The hill possesses slope gradients ranging from 14 to 40± percent. To the south of the hill, the site topography slopes gently to the west at a gradient of 3.5± percent, where it meets up with a tributary drainage to the previously mentioned bisecting drainage. The area to the southwest of the bisecting drainage slopes to the west a gradient of 2.5± percent. Another hill with a north-facing descending slope is located at the southwest corner of the site. The slope has a gradient of 20± percent. The maximum site elevation is 2581± feet mean sea level (msl), in the northeast corner of the site. The minimum site elevation is 2406± feet msl, located in drainage swale channel located in the southern-most region of the site.

Proposed Development

Based on the conceptual site plan prepared by Webb, the site will be developed with three (3) new E-Commerce buildings. Building 1 will be 985,860± ft^2 in size, located in the western area of the site. Building 2 will be 1,254,000± ft^2 in size, located in the east-central region of the site. Lastly, Building 3 will be 358,370± ft^2 in size, located in the north-central area of the site. A cross-dock configuration will be constructed on Building 1 and Building 2, along the east/west and north/south building walls, respectively. Dock-high doors will be constructed along a portion of the southern building wall of Building 3. The buildings will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete (PCC) pavements in the truck court, and areas of concrete flatwork and landscape planters. Several new fill and cut slopes will be constructed along all permitters, as well as within the site. The new fill slopes will range from 10 to 40± feet in height and will possess slope inclinations not to exceed 2h:1v (horizontal to vertical). New retaining walls will also be required to establish the

new site grades. The new retaining walls will possess maximum retained heights ranging from 10 to 50± feet.

The proposed development will include on-site stormwater infiltration. Based on our conversations with the project civil engineer and the proposed site plan, infiltration systems will consist of two (2) below-grade chambers and one (1) detention basin. One of the infiltration chamber systems will be located in the northern area of the site (south of Building 3). The bottom of the chambers are expected to range from 28 to 34± feet below the existing site grades. The second infiltration chamber system will be located in the southern area of the site (south of Building 2). The bottom of the chambers are expected to range from 24 to 36± feet below the existing site grades. The detention basin will be located in the south-central area of the site. The bottom of the basin will be at an elevation of, approximately 10 to 43± feet, below the existing site grades.

Concurrent Study

SCG concurrently conducted a geotechnical investigation at the subject site, also referenced above. The investigation conducted for this project consisted of forty-four (44) borings advanced to depths of 10 to 50± feet, and seven (7) trenches excavated to depths of 6½ to 10½± feet below the existing site grades. Artificial fill soils were encountered at the ground surface of several boring and trench locations. The fill soils generally consist of loose to medium dense silty fine sands and clayey fine to medium sands. The fill soils possess a disturbed and mottled appearance, resulting in their classification as artificial fill. Native alluvium was encountered beneath the artificial fill soils or at the ground surface at several of the borings and trench locations. The alluvial soils extend to depths of 2½ to 10± feet below ground surface in the northern areas of the site, and 25 to 50± feet below ground surface in the southern areas of the site. The alluvial soils generally consist of loose to very dense silty fine sands and silty fine to medium sands. Older alluvial soils were encountered at the ground surface, beneath the artificial fill, and/or beneath the alluvium of the boring and trench locations, extending to at least the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of medium dense to very dense silty fine sands, silty fine to medium sands, silty fine to coarse sands and silty fine sands to fine sandy silts.

Groundwater

Groundwater was not encountered at any of the boring or trench locations. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet below existing site grades at the time of the subsurface investigation.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level and recent groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring wells in this database are located in the northeast corner of the site. Water level readings within one of these monitoring wells indicates a historic high groundwater level of 317± feet below the ground surface in September 1990. Water level readings within another of these monitoring

wells indicates a recent high groundwater level of 412± feet below the ground surface in December 2020.

Subsurface Exploration

Scope of Exploration

The subsurface exploration conducted for the infiltration testing consisted of sixteen (16) infiltration test borings, advanced to depths ranging from 10 to 43± feet below the existing site grades. The infiltration borings were advanced using a truck-mounted drilling rig, equipped with 8-inch-diameter hollow stem augers and were logged during drilling by a member of our staff. The approximate locations of the infiltration test borings (identified as I-1 through I-16) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Upon the completion of the infiltration borings, the bottom of each test boring was covered with 2± inches of clean ¾-inch gravel. A sufficient length of 3-inch-diameter perforated PVC casing was then placed into each test hole so that the PVC casing extended from the bottom of the test hole to the ground surface. Clean ¾-inch gravel was then installed in the annulus surrounding the PVC casing.

Geotechnical Conditions

Alluvial soils were encountered at the ground surface some of the infiltration borings, extending to depths of 4 to 32± feet below existing site grades. The alluvial soils in generally consist of loose to dense silty fine sands, silty fine to medium sands, clayey sands, fine to coarse sands, and fine to coarse sandy silts with variable gravel content. Older alluvium was encountered at the ground surface or beneath the alluvium at most of the boring locations. The older alluvium generally consists of medium dense to dense fine sands, fine to coarse sands, silty fine sands, silty fine to medium sands, and clayey fine to medium sands, extending to the maximum depth explored of 43± feet.

Infiltration Testing

As previously mentioned, the infiltration testing was performed in general accordance with the Riverside County guidelines: Riverside County – Low Impact Development BMP Design Handbook – Section 2.3 of Appendix A.

Pre-soaking

In accordance with the county infiltration standards all sixteen (16) of the infiltration test borings were pre-soaked prior to the infiltration testing. The pre-soaking process consisted of filling the test borings by inverting a full 5-gallon bottle of clear water supported over each hole so that the water level reaches a level of at least 5 times the hole's radius above the gravel at the bottom of each hole. The pre-soaking was completed after all of the water had percolated through each test hole or after 15 hours since initiating the pre-soak. Based on the results of the pre-soaking process, different infiltration procedures were used during the infiltration testing at the infiltration boring locations.

Infiltration Testing

Following the pre-soaking process of the infiltration test borings, SCG performed the infiltration testing. Each test hole was filled with water to a depth of at least 5 times the hole's radius above the gravel at the bottom of each test hole, and less than or equal to the water level used during the pre-soaking process. In accordance with the Riverside County guidelines, since "sandy soils" and "non-sandy" conditions were encountered at the bottom of the infiltration borings tests were run for an additional hour with measurements taken at 10-minute intervals for "sandy" conditions and 30-minute intervals for six hours in "non-sandy" conditions. After each reading, the borings were refilled to the correct water level above the gravel at the bottom of each test hole. The water level readings are presented on the spreadsheets enclosed with this report. The infiltration rates for each of the timed intervals are also tabulated on the spreadsheets.

The infiltration rates from the test are tabulated in inches per hour. In accordance with the typically accepted practice, it is recommended that the most conservative reading from the latter part of the infiltration tests be used as the design infiltration rate. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Test Elevation (feet) MSL	Soil Description	Infiltration Rate (inches/hour)
I-1	22	2496	Red Brown fine to coarse Sandy Silt	4.0
I-2	25	2495	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-3	31	2494	Red Brown Clayey fine to coarse Sand, trace Silt	0.0
I-4	34	2496	Red Brown Silty fine to medium Sand, trace coarse Sand	0.0
I-5	24	2474½	Red Brown Silty fine to medium Sand, trace coarse Sand	4.4
I-6	25	2474	Red Brown Silty fine to medium Sand, trace coarse Sand	3.6
I-7	30	2474	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel	3.7
I-8	30	2474	Brown Gravelly fine to coarse Sand, little Silt	8.0
I-9	36	2475	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel	4.2
I-10	35	2475	Brown fine to coarse Sand, trace fine Gravel, trace Silt	8.7
I-11	10	2446	Brown Silty fine to medium Sand, trace fine Gravel	0.8

I-12	14	2443	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel	4.8
I-13	28	2445	Brown fine to coarse Sand, little fine Gravel, little Silt	19.4
I-14	16	2444	Gray Brown Gravelly fine to coarse Sand, little Silt	13.5
I-15	27	2449	Red Brown Silty fine to coarse Sand, trace fine Gravel	15.7
I-16	43	2445	Red Brown Silty fine to medium Sand, trace coarse Sand	14.6

Laboratory Testing

Moisture Content

The moisture contents for the recovered soil samples within the borings were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the bottom of each infiltration test boring have been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of these tests are presented on Plates C-1 through C-17 of this report.

Design Recommendations

Sixteen (16) infiltration tests were performed at the subject site. As noted above, the infiltration rates at these locations range from 0 to 19.4 inches per hour.

Based on the results of the infiltration testing, we recommend the following infiltration rates for the proposed infiltration systems:

Infiltration System	Site Location	Infiltration Rate (Inches per Hour)
A	North-Central	0
B	South-Central	5.4
C	South-Central	11.5

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration system to identify the soil classification at the base of the chamber system. It should be confirmed that the soils at the base of the proposed

infiltration system corresponds with those presented in this report to ensure that the performance of the system will be consistent with the rates reported herein.

The design of the proposed storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Beaumont and/or County of Riverside guidelines. However, it is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of such materials would decrease the effective infiltration rates. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rate recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rates are based on infiltration testing at sixteen (16) discrete locations and the overall infiltration rate of the storm water infiltration system could vary considerably.

Infiltration Rate Considerations

The infiltration rates presented herein was determined in accordance with the City of Beaumont and/or County of Riverside guidelines and are considered valid only for the time and place of the actual test. Varying subsurface conditions will exist in other areas of the site, which could alter the recommended infiltration rates presented above. The infiltration rates will decline over time between maintenance cycles as silt or clay particles accumulate on the BMP surface. The infiltration rate is highly dependent upon a number of factors, including density, silt and clay content, grainsize distribution throughout the range of particle sizes, and particle shape. Small changes in these factors can cause large changes in the infiltration rates.

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. Changes in soil moisture content will affect the infiltration rate. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Construction Considerations

The infiltration rates presented in this report are specific to the tested locations and tested depths. Infiltration rates can be significantly reduced if the soils are exposed to excessive disturbance or compaction during construction. Compaction of the soils at the bottom of the infiltration system can significantly reduce the infiltration ability of the basins. Therefore, the subgrade soils within proposed infiltration system areas should not be over-excavated, undercut or compacted in any significant manner. **It is recommended that a note to this effect be added to the project plans and/or specifications.**

We recommend that a representative from the geotechnical engineer be on-site during the construction of the proposed infiltration systems to identify the soil classification at the base of each system. It should be confirmed that the soils at the base of the proposed infiltration systems

correspond with those presented in this report to ensure that the performance of the systems will be consistent with the rates reported herein.

We recommend that scrapers and other rubber-tired heavy equipment not be operated on the basin bottom, or at levels lower than 2 feet above the bottom of the system, particularly within basins. As such, the bottom 24 inches of the infiltration systems should be excavated with non-rubber-tired equipment, such as excavators.

Basin Maintenance

The proposed project may include infiltration basins. Water flowing into these basins will carry some level of sediment. Wind-blown sediments and erosion of the basin side walls will also contribute to sediment deposition at the bottom of the basin. This layer has the potential to significantly reduce the infiltration rate of the basin subgrade soils. Therefore, a formal basin maintenance program should be established to ensure that these silt and clay deposits are removed from the basin on a regular basis. Appropriate vegetation on the basin sidewalls and bottom may reduce erosion and sediment deposition.

Basin maintenance should also include measures to prevent animal burrows, and to repair any burrows or damage caused by such. Animal burrows in the basin sidewalls can significantly increase the risk of erosion and piping failures.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration area could potentially be damaged due to saturation of the subgrade soils. **The proposed infiltration systems for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building(s), it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

The infiltration system designer should also give special consideration to the effect that the proposed infiltration systems may have on nearby subterranean structures, open excavations, or descending slopes. In particular, infiltration systems should not be located near the crest of descending slopes, particularly where the slopes are comprised of granular soils. Such systems will require specialized design and analysis to evaluate the potential for slope instability, piping failures and other phenomena that typically apply to earthen dam design. This type of analysis is beyond the scope of this infiltration test report, but these factors should be considered by the infiltration system designer when locating the infiltration systems.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and

preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

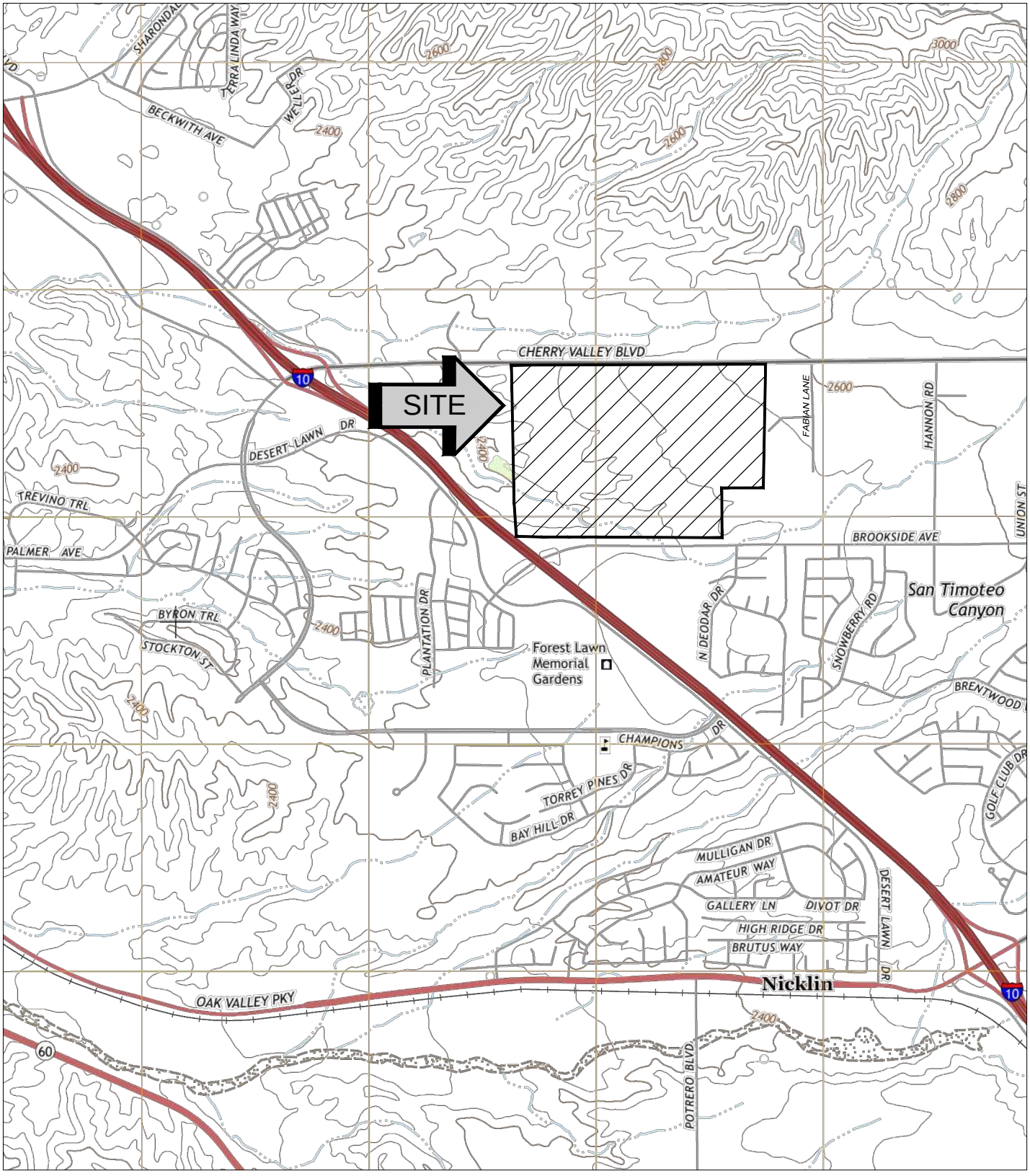
SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Jose A. Zuniga
Staff Engineer

Robert G. Trazo, GE 2655
Principal Engineer

Distribution: (1) Addressee

Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Boring Log Legend and Logs (20 pages)
Infiltration Test Results Spreadsheets (16 pages)
Grain Size Distribution Graphs (17 pages)



SOURCE: USGS TOPOGRAPHIC MAP OF THE EL CASCO QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2015.

SITE LOCATION MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

CHERRY VALLEY BOULEVARD

BROOKSIDE AVENUE

PROPOSED BUILDING 3
358,370 S.F.

INFILTRATION SYSTEM "A"

PROPOSED BUILDING 1
985,860 S.F.

PROPOSED BUILDING 2
1,254,000 S.F.

INFILTRATION SYSTEM "B"

INFILTRATION SYSTEM "C"

PROPOSED INFILTRATION BASIN

PROPOSED RETAINING WALL

PROPOSED RETAINING WALL

PARCEL 4
RETAIL

NAP

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-33 B-34 B-35 B-36 B-37 B-38 B-39 B-40 B-41 B-42 B-43 B-44

T-1 T-2 T-3 T-4 T-5 T-6 T-7

I-1 I-2 I-3 I-4 I-5 I-6 I-7 I-8 I-9 I-10 I-11 I-12 I-13 I-14 I-15 I-16

NORTH

SoCalGeo

GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION (SCG PROJECT NO. 21G133-1)
- APPROXIMATE TRENCH LOCATION (SCG PROJECT NO. 21G133-1)

INFILTRATION TEST LOCATION PLAN

PROPOSED E-COMMERCE DEVELOPMENT

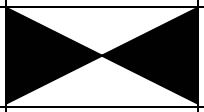
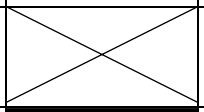
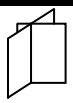
BEAUMONT, CALIFORNIA

SCALE: 1" = 300'	
DRAWN: JAZ CHKD: RGT	
SCG PROJECT 21G133-2	
PLATE 2	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

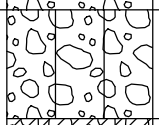
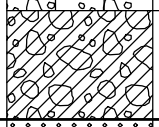
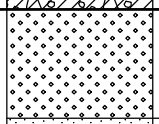
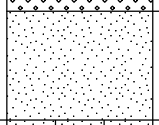
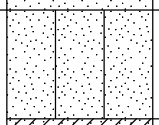
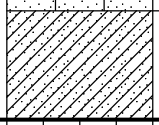
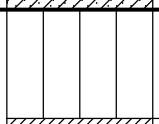
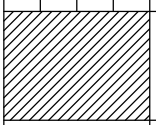
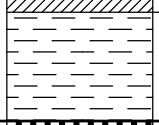
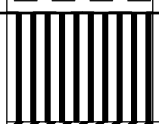
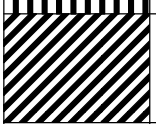
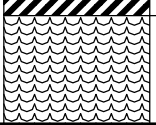
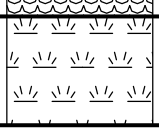
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-1

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2518 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, medium dense-damp to moist							
		12					9					
5												
		12					10					
10												
					Brown fine Sand, trace medium to coarse Sand, trace fine Gravel, trace Silt, medium dense-damp							
		17					7					
15												
					Brown Silty fine to medium Sand, medium dense-damp							
		14					6					
20												
		18			Red Brown Silty fine to coarse Sand, medium dense-damp		6			26		
					Red Brown fine to coarse Sandy Silt, medium dense-damp to moist		10			51		
					Boring Terminated at 22'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-2

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2520 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Gray Brown Clayey fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist							
		10					10					
5												
					Brown Silty fine Sand, trace medium Sand, medium dense-damp							
		16					7					
10												
		13					6					
15												
					Red Brown fine Sandy Silt to Silty fine Sand, loose to medium dense-moist							
		10					11					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-moist							
		16					11			48		
25												
					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-3

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2525 feet MSL							
					ALLUVIUM: Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, loose to medium dense-damp to moist							
5		8					12					
10		10					8					
15		13					10					
20		20					10					
					OLDER ALLUVIUM: Red Brown Clayey fine to medium Sand, medium dense-moist							
25		21					13					
					Red Brown Clayey fine to coarse Sand, trace Silt, medium dense-moist							
30		22					12			49		
					Boring Terminated at 31'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-4

JOB NO.: 21G133-2 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2530 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		8			ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, loose to medium dense-damp to moist		6					
10		19					11					
15		16					9					
20		10			Red Brown fine to coarse Sand, trace fine to coarse Gravel, trace Silt, loose to medium dense-damp to moist		8					
25		15			Gray Brown fine to coarse Sand, medium dense-damp		3					
30		10			Red Brown fine Sandy Silt, trace coarse Gravel, loose to medium dense-moist		15					
		16			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, slightly cemented, medium dense-moist		12			39		
					Boring Terminated at 34'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-4**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-5

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2498.5 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		14					6					
5					OLDER ALLUVIUM: Brown fine to coarse Sandy Silt, trace fine to coarse Gravel, trace Clay, medium dense-damp		7					
					Brown Silty fine to coarse Sand, trace coarse Gravel, slightly cemented, medium dense-damp							
		27					8					
10												
					Brown fine Sand, little medium Sand, trace coarse Sand, medium dense-damp							
		26					5					
15												
					Brown fine to coarse Sand, trace fine Gravel, dense-damp							
		37					4					
20												
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
		26					7			28		
					Boring Terminated at 24'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-6

JOB NO.: 21G133-2 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2499 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown fine Sandy Clay, little medium Sand, slightly cemented, very stiff-damp							
5		19					9					
					Brown Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
10		24					5					
					Red Brown fine Sand, trace to little Silt, medium dense-damp							
15		20					6					
					Red Brown Silty fine Sand, trace calcareous veining, medium dense-moist							
20		29					10					
					Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp							
25		29					7			35		
					Boring Terminated at 25'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-7

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp							
5		33					5					
					Red Brown Clayey fine to medium Sand, slightly cemented, medium dense-moist							
10		16					12					
					Red Brown fine to coarse Sand, little Silt, medium dense to dense-damp							
15		24					4					
		48					3					
20					Gray Brown fine Sand, dense-damp							
		32					5					
25					Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp							
		25					7			36		
30					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-7**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-8

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, medium dense-damp							
		24					3					
5					Red Brown fine Sandy Silt, trace medium Sand, trace fine Gravel, trace Clay, medium dense-damp		5					
					Brown fine to medium Sand, trace coarse Sand, little Silt, medium dense-damp							
		17					5					
10												
		28					7					
15					Brown fine to medium Sandy Silt, trace coarse Sand, medium dense-damp		7					
					Brown Silty fine Sand, little medium Sand, trace fine to coarse Gravel, medium dense-damp							
		22					5					
20												
		24					6					
25												
					Brown fine to coarse Sand, little Silt, very dense-damp							
		65					6					
					Brown Gravelly fine to coarse Sand, little Silt, very dense-damp		4			12		
30												
					Boring Terminated at 30'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-8**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2511 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					OLDER ALLUVIUM: Red Brown Clayey fine Sand, little Silt, slightly cemented, medium dense to dense-damp to moist							
5		30					8					
10		21					11					
15		36			Brown Clayey fine to medium Sand, slightly cemented, dense-damp		8					
20		38			Brown fine to medium Sand, little coarse Sand, trace Silt, dense-damp		4					
25		19			Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		8					
30		27					12					
					Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel, medium dense-damp							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-9

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
	X	27					7			34		
					Boring Terminated at 36'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-9b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-10

JOB NO.: 21G133-2 | DRILLING DATE: 7/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2510 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, porous, trace fine root fibers, medium dense-damp							
5		20					4					
					Red Brown Clayey fine to medium Sand, trace coarse Gravel, slightly cemented, dense-moist							
10		33					11					
					Red Brown Silty fine to medium Sand, dense-damp							
15		31					6					
					Brown fine to coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					4					
					Red Brown fine to medium Sand, trace fine Gravel, dense-damp							
25		37					5					
					Red Brown Silty fine Sand, dense-moist							
30		36					11					
					Brown fine to coarse Sand, trace fine Gravel, trace Silt, dense-dry to damp							
		43					3			9		
					Boring Terminated at 35'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-10**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-11

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2456 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Gray Brown Silty fine to medium Sand, trace fine root fibers, medium dense-dry to damp							
		14					2					
5												
					Brown Silty fine to medium Sand, trace fine Gravel, medium dense-damp							
		21					7			37		
10												
					Boring Terminated at 10'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-11**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-12

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2457 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
5		69			ALLUVIUM: Light Gray fine to coarse Sand, little fine to coarse Gravel, very dense-damp		4					
10		20			Gray Brown Silty fine Sand, medium dense- damp to moist		9					
		41			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel, slightly cemented, dense-damp		7			38		
					Boring Terminated at 14'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-12**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-13

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2473 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Light Gray fine to coarse Sand, little fine Gravel, trace fine root fibers, dense-dry to damp							
5		41			@ 5 to 6½ feet, slightly cemented		2					
					Brown Silty fine Sand, trace fine Gravel, medium dense-damp							
10		29					6					
15		25					8					
					Gray Brown fine to medium Sand, little coarse Sand, trace Silt, trace fine Gravel, dense-damp							
20		38					6					
					Brown fine to coarse Sand, little fine Gravel, little Silt, very dense-damp							
25		50/4"					4			14		
					Boring Terminated at 28'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-13**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-14

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2460 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown to Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, medium dense-damp							
5		22					4					
10		21			@ 10 to 11½ feet, trace fine Gravel		8					
					Gray Brown Gravelly fine to coarse Sand, little Silt, very dense-dry to damp							
15		50/5"					3			14		
					Boring Terminated at 16'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-14**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-15

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2476 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, trace coarse Gravel, trace fine root fibers, dense-damp							
5		49					6					
					Brown fine to medium Sand, little coarse Sand, dense-dry to damp							
10		37					3					
					Red Brown Silty fine Sand, trace medium Sand, dense-damp							
15		35					9					
					Gray Brown fine to coarse Sand, trace fine Gravel, very dense-damp							
20		50/5"					9					
					OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine Gravel, slightly cemented, very dense-damp							
25		70					4			27		
					Boring Terminated at 27'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-15**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2488 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Red Brown Silty fine to medium Sand, medium dense-damp							
5		27					5					
					Red Brown Silty fine Sand, medium dense-damp							
10		23					8					
15		30			@ 15 to 16½ feet, trace medium Sand, dense-moist		11					
20		26					11					
					OLDER ALLUVIUM: Brown fine to coarse Sand, trace fine Gravel, trace Silt, very dense-dry to damp							
25		63					3					
30		59					4					
					Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. I-16

JOB NO.: 21G133-2 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: ---
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		50/5"			Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, very dense-dry to moist		3					
40												
		35					11					
					OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, dense-very moist		18			39		
					Boring Terminated at 43'							

TBL 21G133-2.GPJ SOCALGEO.GDT 8/13/21

TEST BORING LOG **PLATE B-16b**

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	22.00	(ft)

Infiltration Test Hole: I-1

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:00 AM	25.00	19.00	23.04	YES	SANDY SOILS
	Final	11:25 AM		20.92			
2	Initial	11:28 AM	25.00	19.00	23.16	YES	SANDY SOILS
	Final	11:53 AM		20.93			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:00 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:10 PM		19.90			
2	Initial	12:11 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:21 PM		19.91			
3	Initial	12:22 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:32 PM		19.90			
4	Initial	12:33 PM	10.00	19.00	0.91	2.55	4.03
	Final	12:43 PM		19.91			
5	Initial	12:44 PM	10.00	19.00	0.90	2.55	3.98
	Final	12:54 PM		19.90			
6	Initial	12:55 PM	10.00	19.00	0.90	2.55	3.98
	Final	1:05 PM		19.90			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-2

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	10:50 AM		22.47			
2	Initial	10:51 AM	25.00	22.20	3.24	NO	NON-SANDY SOILS
	Final	11:16 AM		22.47			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:18 AM	30.00	22.20	0.32	2.64	0.46
	Final	11:48 AM		22.52			
2	Initial	11:50 AM	30.00	22.20	0.30	2.65	0.43
	Final	12:20 PM		22.50			
3	Initial	12:22 PM	30.00	22.20	0.30	2.65	0.43
	Final	12:52 PM		22.50			
4	Initial	12:55 PM	30.00	22.20	0.30	2.65	0.43
	Final	1:25 PM		22.50			
5	Initial	1:28 PM	30.00	22.50	0.00	2.50	0.00
	Final	1:58 PM		22.50			
6	Initial	2:00 PM	30.00	22.50	0.00	2.50	0.00
	Final	2:30 PM		22.50			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	31.00	(ft)

Infiltration Test Hole: I-3

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:00 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		29.00			
2	Initial	9:28 AM	25.00	29.00	0.00	NO	NON-SANDY SOILS
	Final	9:53 AM		29.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	10:30 AM		29.00			
2	Initial	10:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:00 AM		29.00			
3	Initial	11:00 AM	30.00	29.00	0.00	2.00	0.00
	Final	11:30 AM		29.00			
4	Initial	11:30 AM	30.00	29.00	0.00	2.00	0.00
	Final	12:00 PM		29.00			
5	Initial	12:00 PM	30.00	29.00	0.00	2.00	0.00
	Final	12:30 PM		29.00			
6	Initial	12:30 PM	30.00	29.00	0.00	2.00	0.00
	Final	1:00 PM		29.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	34.00	(ft)

Infiltration Test Hole: I-4

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:30 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	8:55 AM		32.30			
2	Initial	9:00 AM	25.00	32.30	0.00	NO	NON-SANDY SOILS
	Final	9:25 AM		32.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	10:00 AM		32.30			
2	Initial	10:00 AM	30.00	32.00	0.30	1.85	0.60
	Final	10:30 AM		32.30			
3	Initial	10:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:00 AM		32.30			
4	Initial	11:00 AM	30.00	32.30	0.00	1.70	0.00
	Final	11:30 AM		32.30			
5	Initial	11:30 AM	30.00	32.30	0.00	1.70	0.00
	Final	12:00 PM		32.30			
6	Initial	12:00 PM	30.00	32.30	0.00	1.70	0.00
	Final	12:30 PM		32.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	24.00	(ft)

Infiltration Test Hole: I-5

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:00 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:25 AM		24.00			
2	Initial	8:26 AM	25.00	22.00	24.00	YES	SANDY SOILS
	Final	8:51 AM		24.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	8:52 AM	10.00	22.00	1.62	1.19	14.33
	Final	9:02 AM		23.62			
2	Initial	9:03 AM	10.00	22.00	1.00	1.50	7.20
	Final	9:13 AM		23.00			
3	Initial	9:14 AM	10.00	22.00	0.75	1.63	5.02
	Final	9:24 AM		22.75			
4	Initial	9:25 AM	10.00	22.00	0.64	1.68	4.16
	Final	9:35 AM		22.64			
5	Initial	9:36 AM	10.00	22.00	0.68	1.66	4.47
	Final	9:46 AM		22.68			
6	Initial	9:47 AM	10.00	22.00	0.67	1.67	4.39
	Final	9:57 AM		22.67			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	25.00	(ft)

Infiltration Test Hole: I-6

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:45 PM	25.00	21.00	43.80	YES	SANDY SOILS
	Final	4:10 PM		24.65			
2	Initial	4:12 PM	25.00	21.00	37.80	YES	SANDY SOILS
	Final	4:37 PM		24.15			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:38 PM	10.00	21.00	1.30	3.35	4.44
	Final	4:48 PM		22.30			
2	Initial	4:49 PM	10.00	21.00	1.10	3.45	3.65
	Final	4:59 PM		22.10			
3	Initial	5:00 PM	10.00	21.00	1.20	3.40	4.04
	Final	5:10 PM		22.20			
4	Initial	5:11 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:21 PM		22.10			
5	Initial	5:22 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:32 PM		22.10			
6	Initial	5:33 PM	10.00	21.00	1.10	3.45	3.65
	Final	5:43 PM		22.10			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-7

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:30 AM	25.00	28.20	14.16	YES	SANDY SOILS
	Final	9:55 AM		29.38			
2	Initial	9:56 AM	25.00	28.20	14.40	YES	SANDY SOILS
	Final	10:21 AM		29.40			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:22 AM	10.00	28.20	0.60	1.50	4.32
	Final	10:32 AM		28.80			
2	Initial	10:33 AM	10.00	28.20	0.41	1.60	2.79
	Final	10:43 AM		28.61			
3	Initial	10:44 AM	10.00	28.00	0.71	1.65	4.70
	Final	10:54 AM		28.71			
4	Initial	10:55 AM	10.00	28.00	0.60	1.70	3.86
	Final	11:05 AM		28.60			
5	Initial	11:06 AM	10.00	28.00	0.66	1.67	4.31
	Final	11:16 AM		28.66			
6	Initial	11:17 AM	10.00	28.00	0.58	1.71	3.71
	Final	11:27 AM		28.58			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	30.00	(ft)

Infiltration Test Hole: I-8

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	9:25 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	9:50 AM		30.30			
2	Initial	9:51 AM	25.00	28.30	24.00	YES	SANDY SOILS
	Final	10:16 AM		30.30			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	10:18 AM	10.00	28.30	1.35	1.03	13.59
	Final	10:28 AM		29.65			
2	Initial	10:29 AM	10.00	28.30	1.03	1.19	9.14
	Final	10:39 AM		29.33			
3	Initial	10:40 AM	10.00	28.30	0.97	1.22	8.42
	Final	10:50 AM		29.27			
4	Initial	10:51 AM	10.00	28.30	0.94	1.23	8.08
	Final	11:01 AM		29.24			
5	Initial	11:02 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:12 AM		29.23			
6	Initial	11:13 AM	10.00	28.30	0.93	1.24	7.96
	Final	11:23 AM		29.23			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	36.00	(ft)

Infiltration Test Hole: I-9

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	1:10 PM	25.00	31.00	51.60	YES	SANDY SOILS
	Final	1:35 PM		35.30			
2	Initial	1:36 PM	25.00	31.00	45.60	YES	SANDY SOILS
	Final	2:01 PM		34.80			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	2:02 PM	10.00	31.00	1.70	4.15	4.73
	Final	2:12 PM		32.70			
2	Initial	2:13 PM	10.00	31.00	1.60	4.20	4.40
	Final	2:23 PM		32.60			
3	Initial	2:24 PM	10.00	31.00	1.57	4.22	4.30
	Final	2:34 PM		32.57			
4	Initial	2:25 PM	10.00	31.00	1.55	4.23	4.24
	Final	2:35 PM		32.55			
5	Initial	2:36 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:46 PM		32.54			
6	Initial	2:47 PM	10.00	31.00	1.54	4.23	4.20
	Final	2:57 PM		32.54			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	35.00	(ft)

Infiltration Test Hole: I-10

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	11:10 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	11:35 AM		35.00			
2	Initial	11:36 AM	25.00	33.00	24.00	YES	SANDY SOILS
	Final	12:01 PM		35.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	12:02 PM	10.00	33.00	1.43	1.29	11.82
	Final	12:12 PM		34.43			
2	Initial	12:13 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:23 PM		34.20			
3	Initial	12:24 PM	10.00	33.00	1.20	1.40	9.19
	Final	12:34 PM		34.20			
4	Initial	12:35 PM	10.00	33.00	1.15	1.43	8.67
	Final	12:45 PM		34.15			
5	Initial	12:46 PM	10.00	33.00	1.14	1.43	8.57
	Final	12:56 PM		34.14			
6	Initial	12:57 PM	10.00	33.00	1.15	1.43	8.67
	Final	1:07 PM		34.15			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	10.00	(ft)

Infiltration Test Hole	I-11

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:20 AM	25.00	3.00	31.80	YES	SANDY SOILS
	Final	10:45 AM		5.65			
2	Initial	10:46 AM	25.00	3.00	12.60	YES	SANDY SOILS
	Final	11:11 AM		4.05			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:12 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:22 AM		3.50			
2	Initial	11:23 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:33 AM		3.50			
3	Initial	11:34 AM	10.00	3.00	0.50	6.75	0.87
	Final	11:44 AM		3.50			
4	Initial	11:45 AM	10.00	3.00	0.45	6.78	0.78
	Final	11:55 AM		3.45			
5	Initial	11:56 AM	10.00	3.00	0.45	6.78	0.78
	Final	12:06 PM		3.45			
6	Initial	12:07 PM	10.00	3.00	0.45	6.78	0.78
	Final	12:17 PM		3.45			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where: Q = Infiltration Rate (in inches per hour)

ΔH = Change in Height (Water Level) over the time interval

r = Test Hole (Borehole) Radius

Δt = Time Interval

H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	14.00	(ft)

Infiltration Test Hole: I-12

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	3:15 PM	25.00	10.00	33.60	YES	SANDY SOILS
	Final	3:40 PM		12.80			
2	Initial	3:41 PM	25.00	10.00	32.40	YES	SANDY SOILS
	Final	4:06 PM		12.70			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	4:07 PM	10.00	10.00	1.50	3.25	5.27
	Final	4:17 PM		11.50			
2	Initial	4:18 PM	10.00	10.00	1.47	3.27	5.14
	Final	4:28 PM		11.47			
3	Initial	4:38 PM	10.00	10.00	1.45	3.28	5.06
	Final	4:48 PM		11.45			
4	Initial	4:49 PM	10.00	10.00	1.44	3.28	5.01
	Final	4:59 PM		11.44			
5	Initial	5:00 PM	10.00	10.00	1.43	3.29	4.97
	Final	5:10 PM		11.43			
6	Initial	5:11 PM	10.00	10.00	1.40	3.30	4.85
	Final	5:21 PM		11.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Caleb Brackett

Test Hole Radius	4	(in)
Test Depth	28.00	(ft)

Infiltration Test Hole	I-13

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:35 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:00 PM		29.20			
2	Initial	1:01 PM	25.00	26.20	36.00	YES	SANDY SOILS
	Final	1:26 PM		29.20			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:27 PM	10.00	26.20	2.15	0.73	28.93
	Final	1:37 PM		28.35			
2	Initial	1:38 PM	10.00	26.20	2.44	0.58	39.21
	Final	1:48 PM		28.64			
3	Initial	1:49 PM	10.00	26.20	1.77	0.92	19.64
	Final	1:59 PM		27.97			
4	Initial	2:00 PM	10.00	26.20	1.74	0.93	19.04
	Final	2:10 PM		27.94			
5	Initial	2:11 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:21 PM		27.96			
6	Initial	2:22 PM	10.00	26.20	1.76	0.92	19.44
	Final	2:32 PM		27.96			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	16.00	(ft)

Infiltration Test Hole: I-14

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	8:15 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	8:40 AM		16.00			
2	Initial	8:41 AM	25.00	12.00	48.00	YES	SANDY SOILS
	Final	9:06 AM		16.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	9:07 AM	10.00	12.00	3.20	2.40	14.96
	Final	9:17 AM		15.20			
2	Initial	9:18 AM	10.00	12.00	3.10	2.45	14.22
	Final	9:28 AM		15.10			
3	Initial	9:29 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:39 AM		15.00			
4	Initial	9:40 AM	10.00	12.00	3.00	2.50	13.50
	Final	9:50 AM		15.00			
5	Initial	9:51 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:01 AM		15.00			
6	Initial	10:02 AM	10.00	12.00	3.00	2.50	13.50
	Final	10:12 AM		15.00			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	27.00	(ft)

Infiltration Test Hole: I-15

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	12:54 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:19 PM		27.00			
2	Initial	1:20 PM	25.00	23.00	48.00	YES	SANDY SOILS
	Final	1:45 PM		27.00			

Test Data

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	1:48 PM	10.00	23.00	3.60	2.20	18.25
	Final	1:58 PM		26.60			
2	Initial	1:59 PM	10.00	23.00	3.50	2.25	17.38
	Final	2:09 PM		26.50			
3	Initial	2:10 PM	10.00	23.00	3.45	2.28	16.96
	Final	2:20 PM		26.45			
4	Initial	2:21 PM	10.00	23.00	3.38	2.31	16.38
	Final	2:31 PM		26.38			
5	Initial	2:32 PM	10.00	23.00	3.35	2.33	16.13
	Final	2:42 PM		26.35			
6	Initial	2:43 PM	10.00	23.00	3.30	2.35	15.74
	Final	2:53 PM		26.30			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

INFILTRATION CALCULATIONS

Project Name	Proposed E-Commerce Development
Project Location	Beaumont, CA
Project Number	21G133-2
Engineer	Jose Zuniga

Test Hole Radius	4	(in)
Test Depth	43.00	(ft)

Infiltration Test Hole: I-16

Soil Criteria Test

Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (in)	Did 6 inches of water seep away in less than 25 minutes?	Sandy Soils or Non-Sandy Soils?
1	Initial	10:25 AM	25.00	40.00	33.84	YES	SANDY SOILS
	Final	10:50 AM		42.82			
2	Initial	10:51 AM	25.00	40.00	34.80	YES	SANDY SOILS
	Final	11:16 AM		42.90			

Test Data

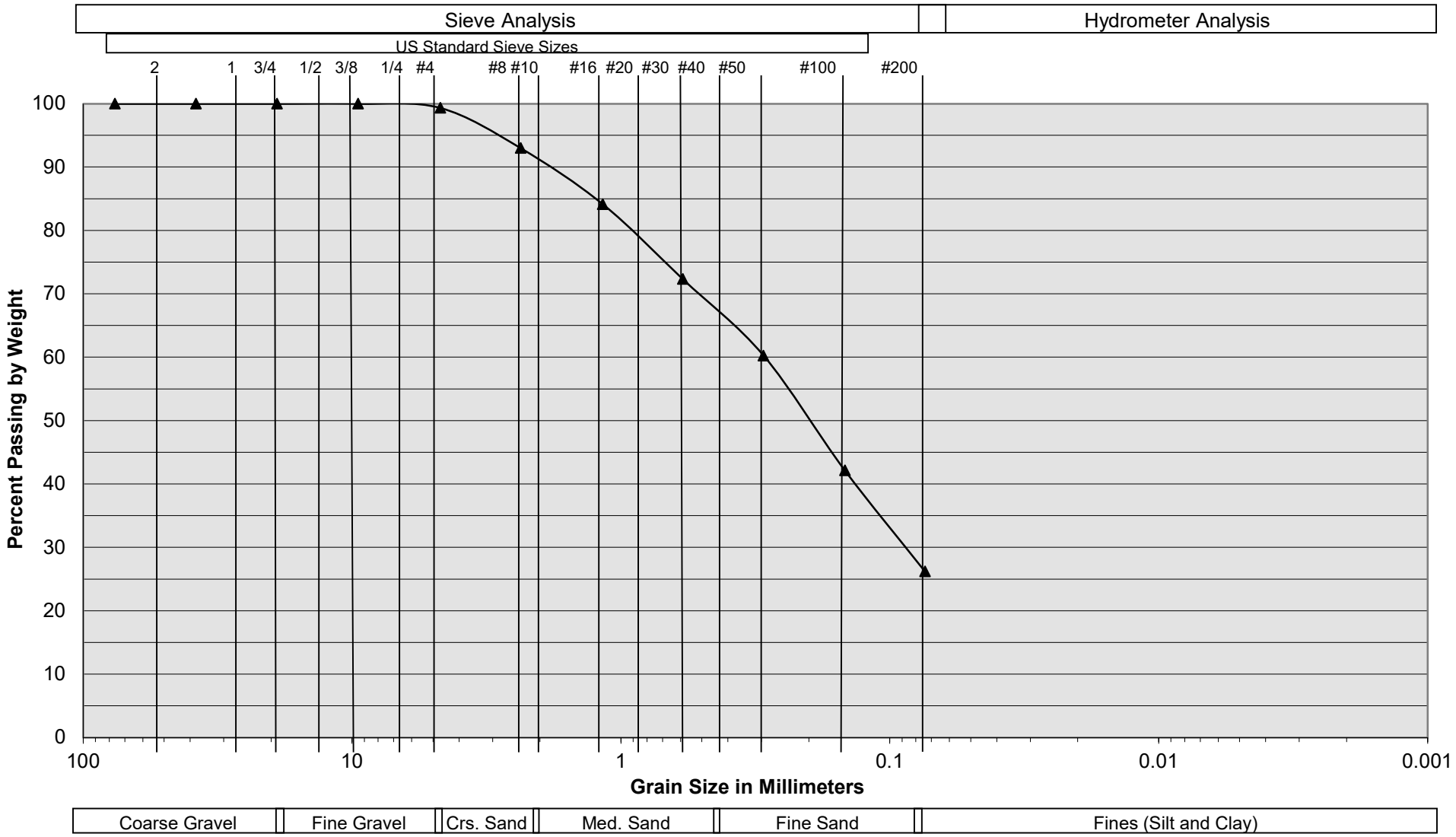
Interval Number		Time	Time Interval (min)	Water Depth (ft)	Change in Water Level (ft)	Average Head Height (ft)	Infiltration Rate Q (in/hr)
1	Initial	11:17 AM	10.00	40.00	2.80	1.60	19.02
	Final	11:27 AM		42.80			
2	Initial	11:28 AM	10.00	40.00	2.90	1.55	20.27
	Final	11:38 AM		42.90			
3	Initial	11:39 AM	10.00	40.00	2.35	1.83	14.16
	Final	11:49 AM		42.35			
4	Initial	11:50 AM	10.00	40.00	2.20	1.90	12.77
	Final	12:00 PM		42.20			
5	Initial	12:01 PM	10.00	40.00	2.35	1.83	14.16
	Final	12:11 PM		42.35			
6	Initial	12:12 PM	10.00	40.00	2.40	1.80	14.64
	Final	12:22 PM		42.40			

Per County Standards, Infiltration Rate calculated as follows:

$$Q = \frac{\Delta H(60r)}{\Delta t(r + 2H_{avg})}$$

Where:
- Q = Infiltration Rate (in inches per hour)
- ΔH = Change in Height (Water Level) over the time interval
- r = Test Hole (Borehole) Radius
- Δt = Time Interval
- H_{avg} = Average Head Height over the time interval

Grain Size Distribution



Sample Description	I-1 @ 20½'
Soil Classification	Red Brown Silty fine to coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 1

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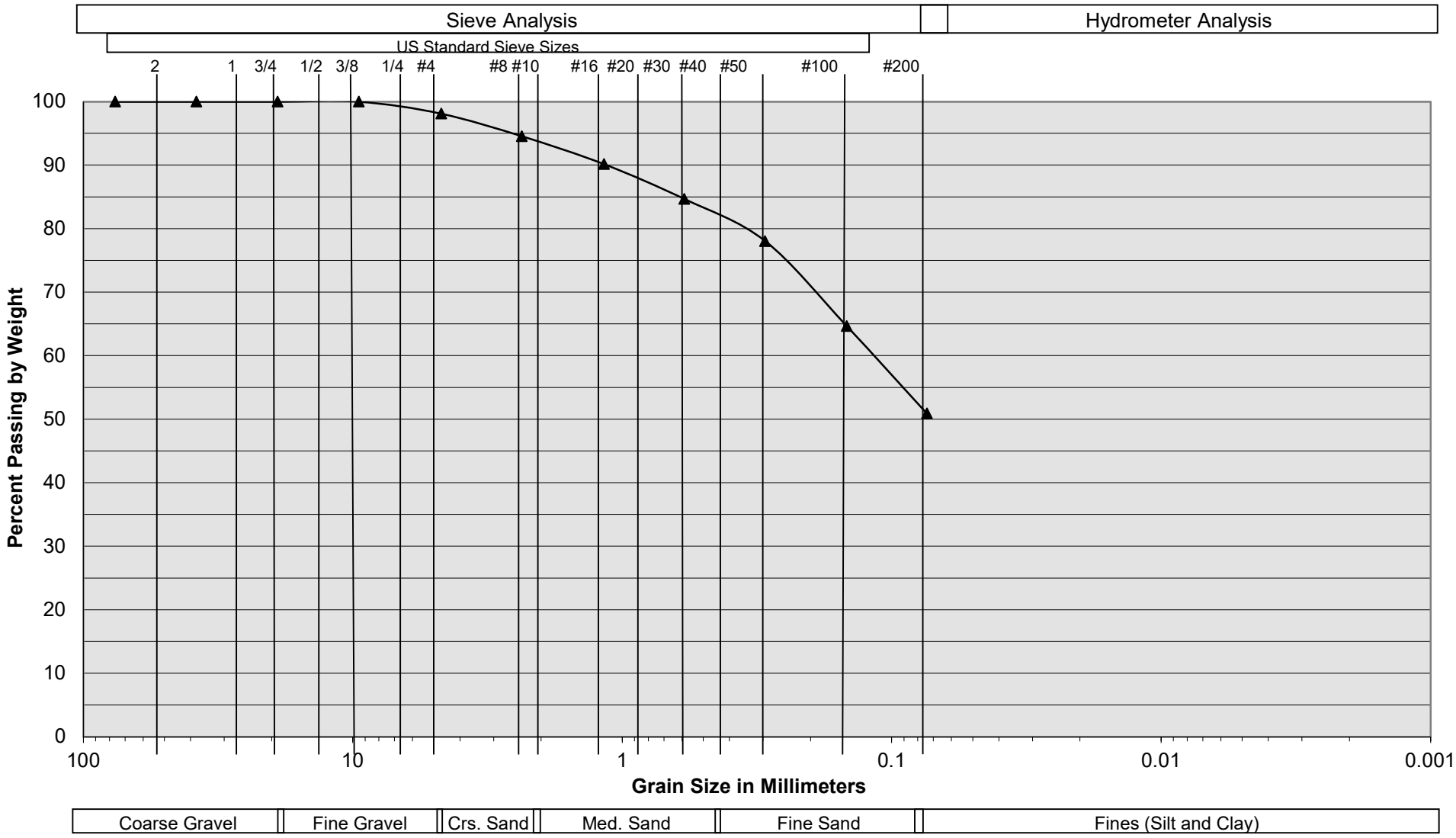
Grain Size Distribution



Sample Description	I-1 @ 21½'
Soil Classification	Red Brown fine to coarse Sandy Silt

Proposed E-Commerce Development
Beaumont, CA
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PLATE C- 2

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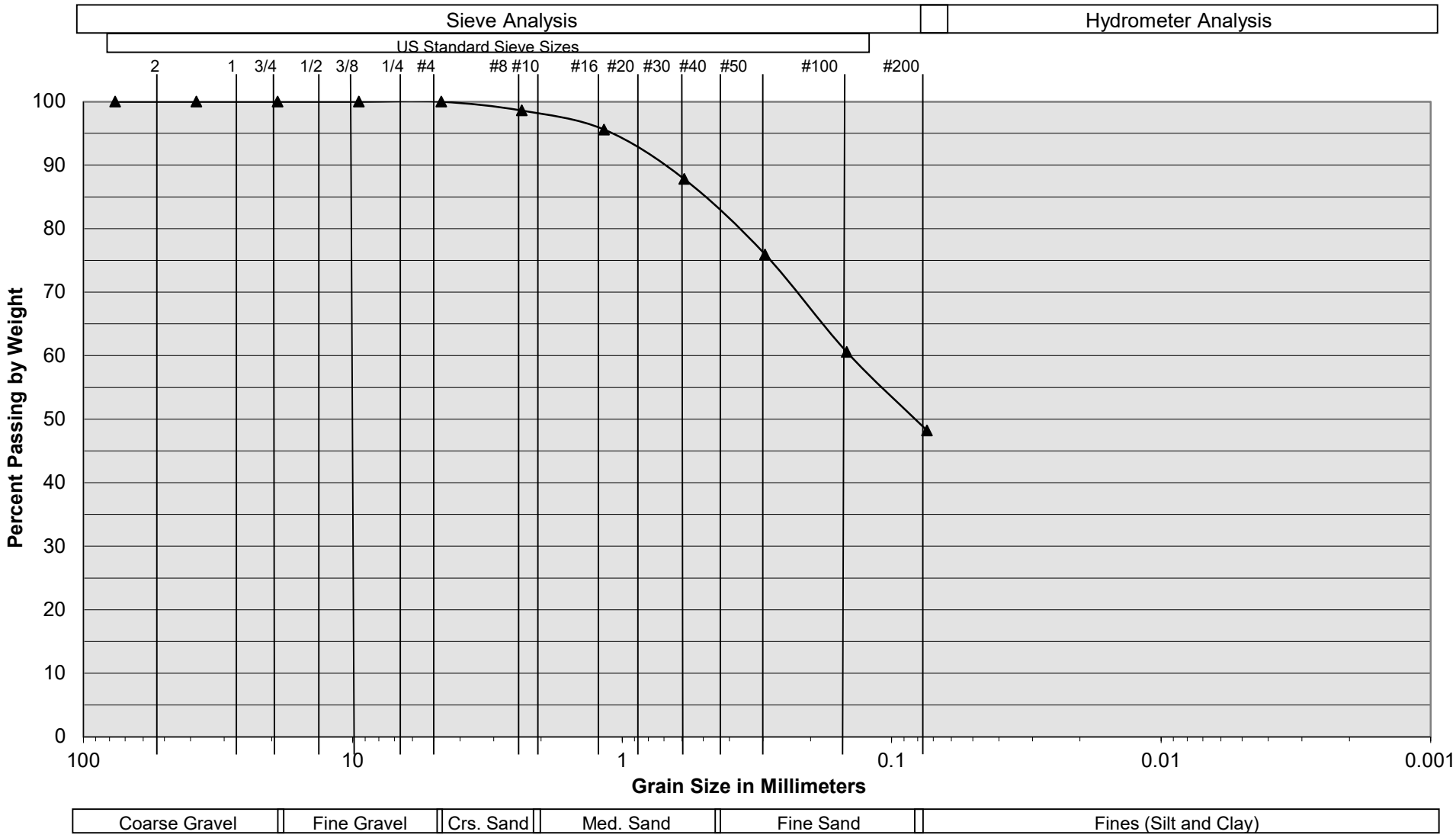

Sample Description	I-2 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 3

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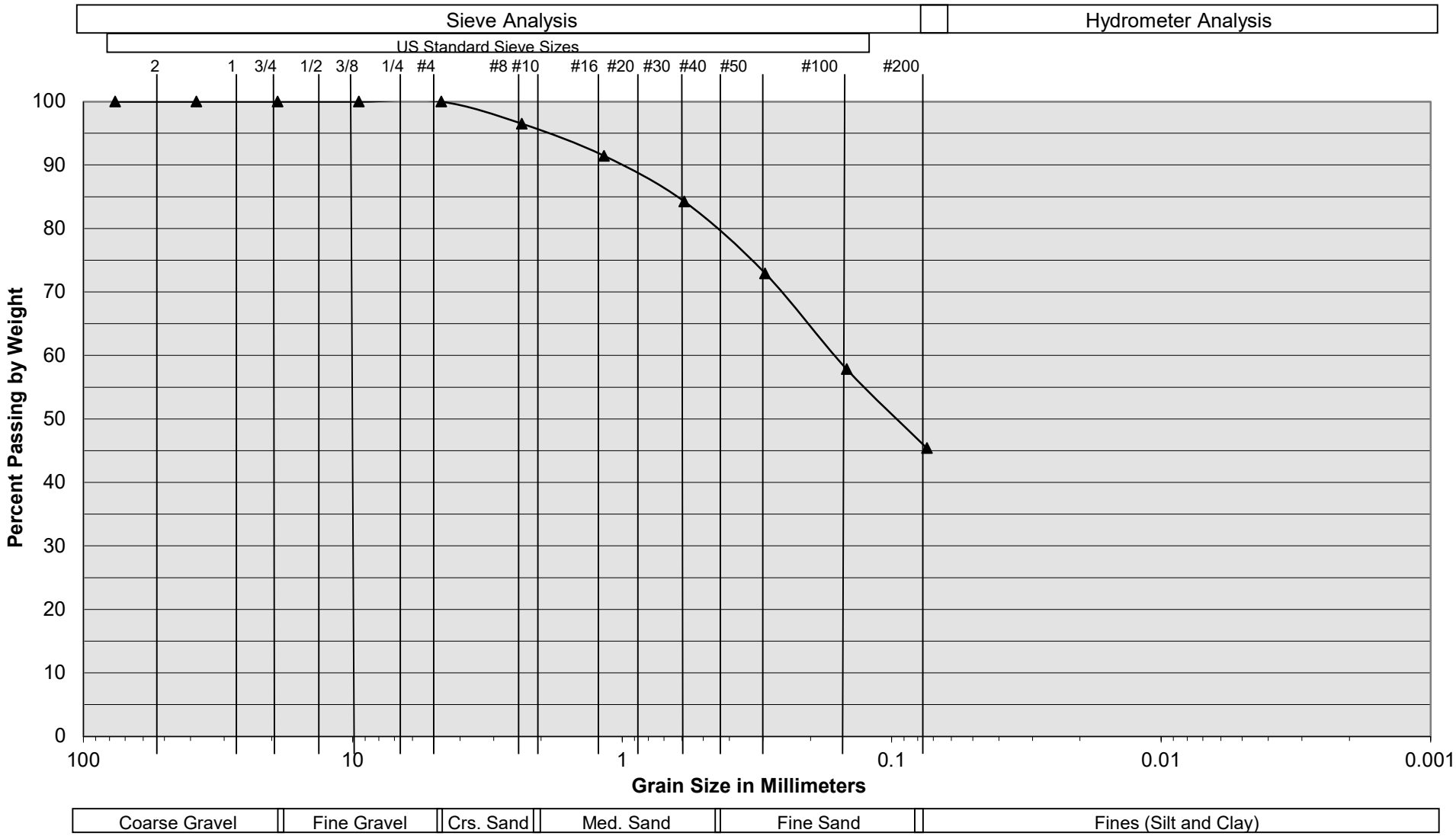

Sample Description	I-3 @ 29½'
Soil Classification	Red Brown Clayey fine to coarse Sand, trace Silt

Proposed E-Commerce Development
Beaumont, CA
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PLATE C- 4

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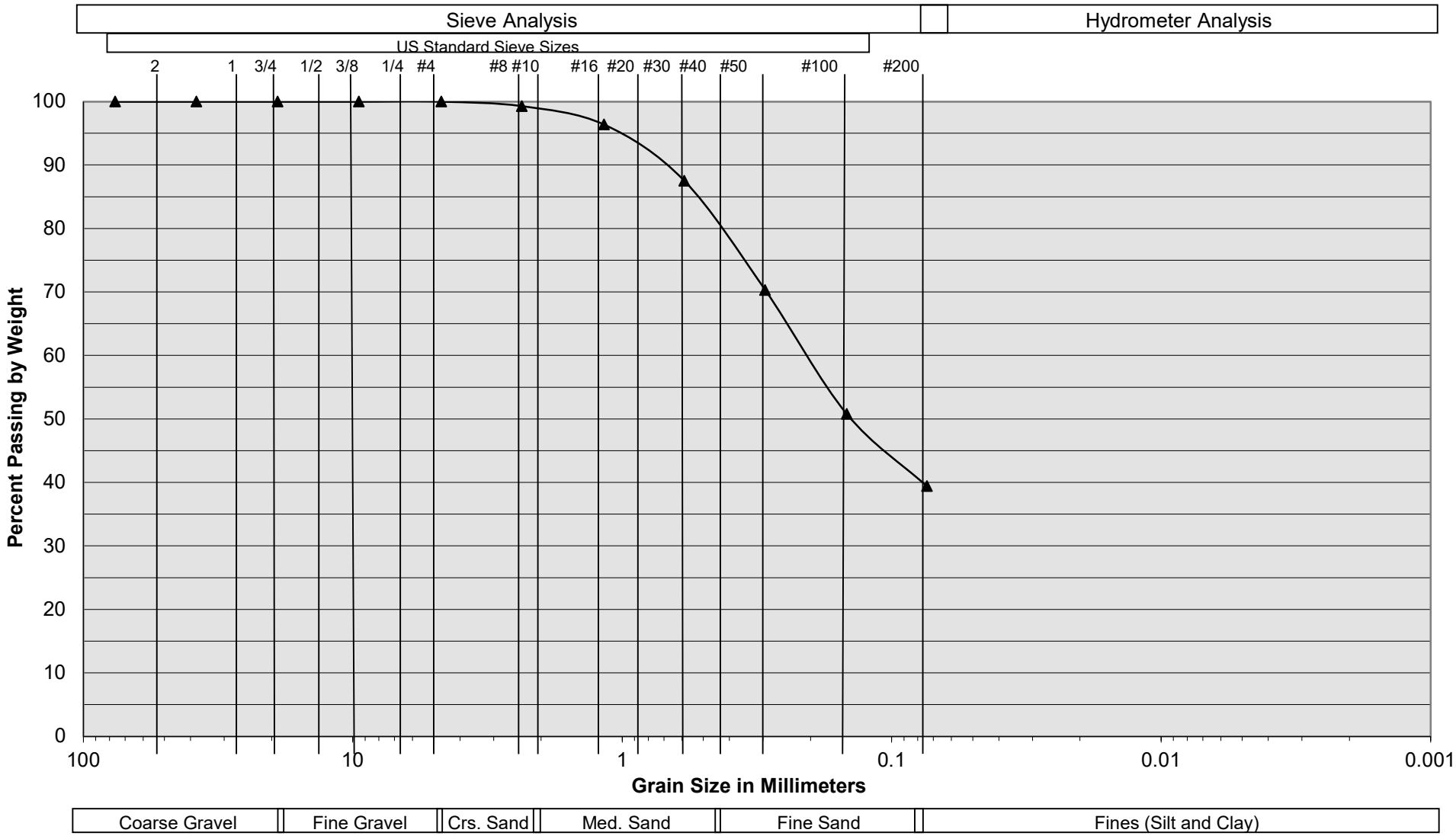

Sample Description	I-4 @ 32½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
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PLATE C- 5

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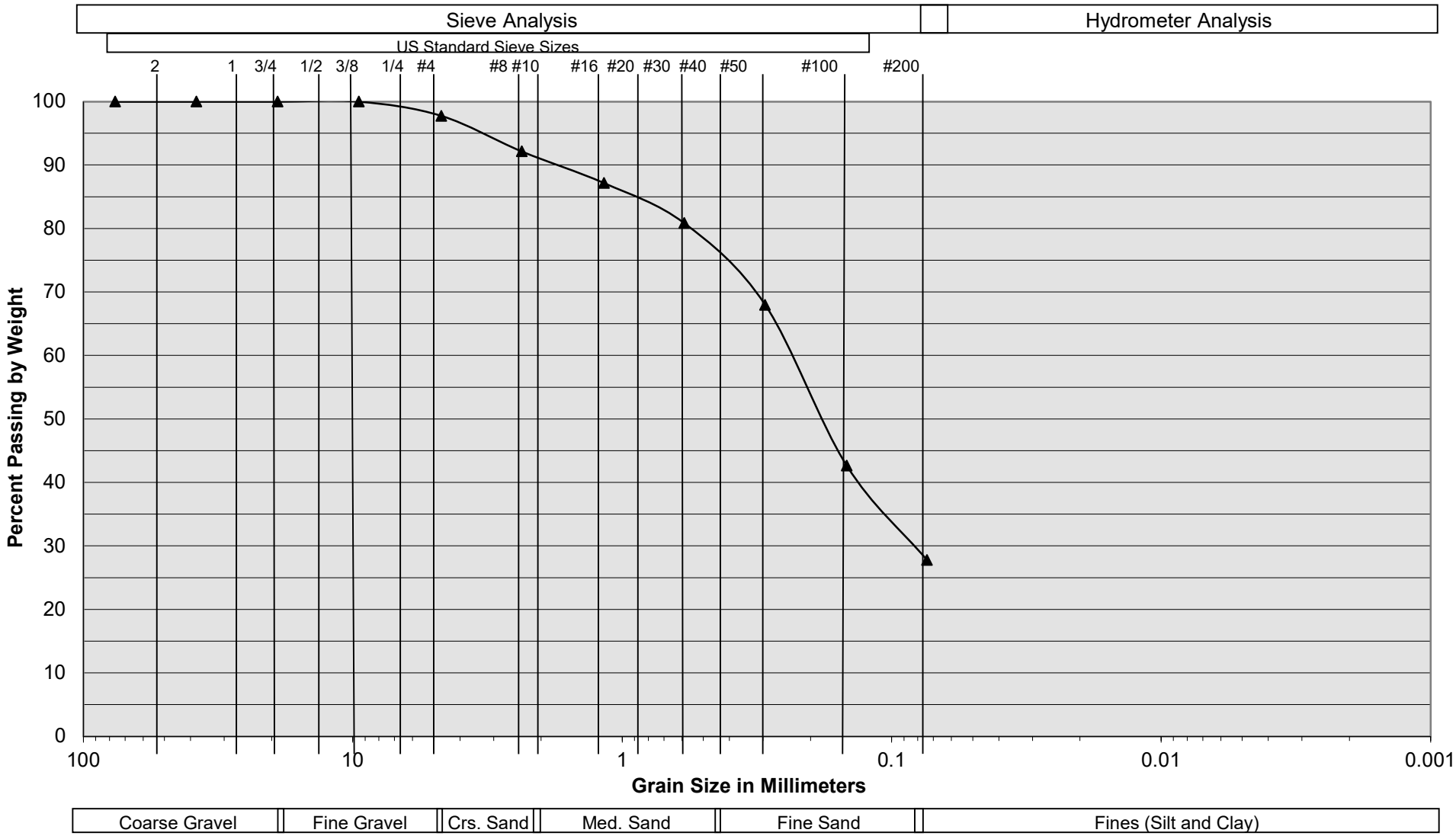
Grain Size Distribution



Sample Description	I-5 @ 22½'
Soil Classification	Red Brown Silty fine to medium Sand, little coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 6

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Grain Size Distribution

Sample Description	I-6 @ 23½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
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PLATE C- 7

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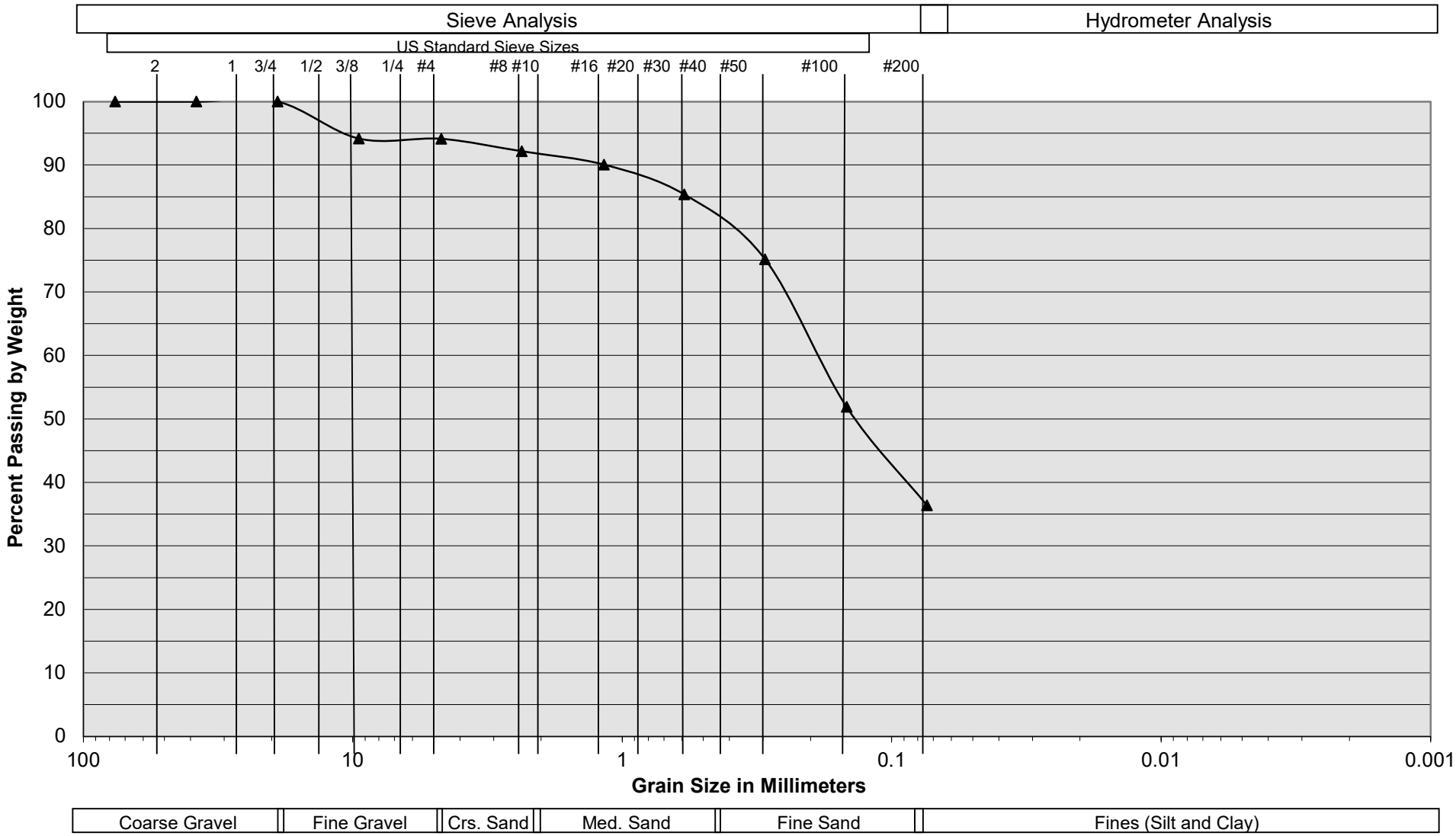
Grain Size Distribution



Sample Description	I-7 @ 28½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 8

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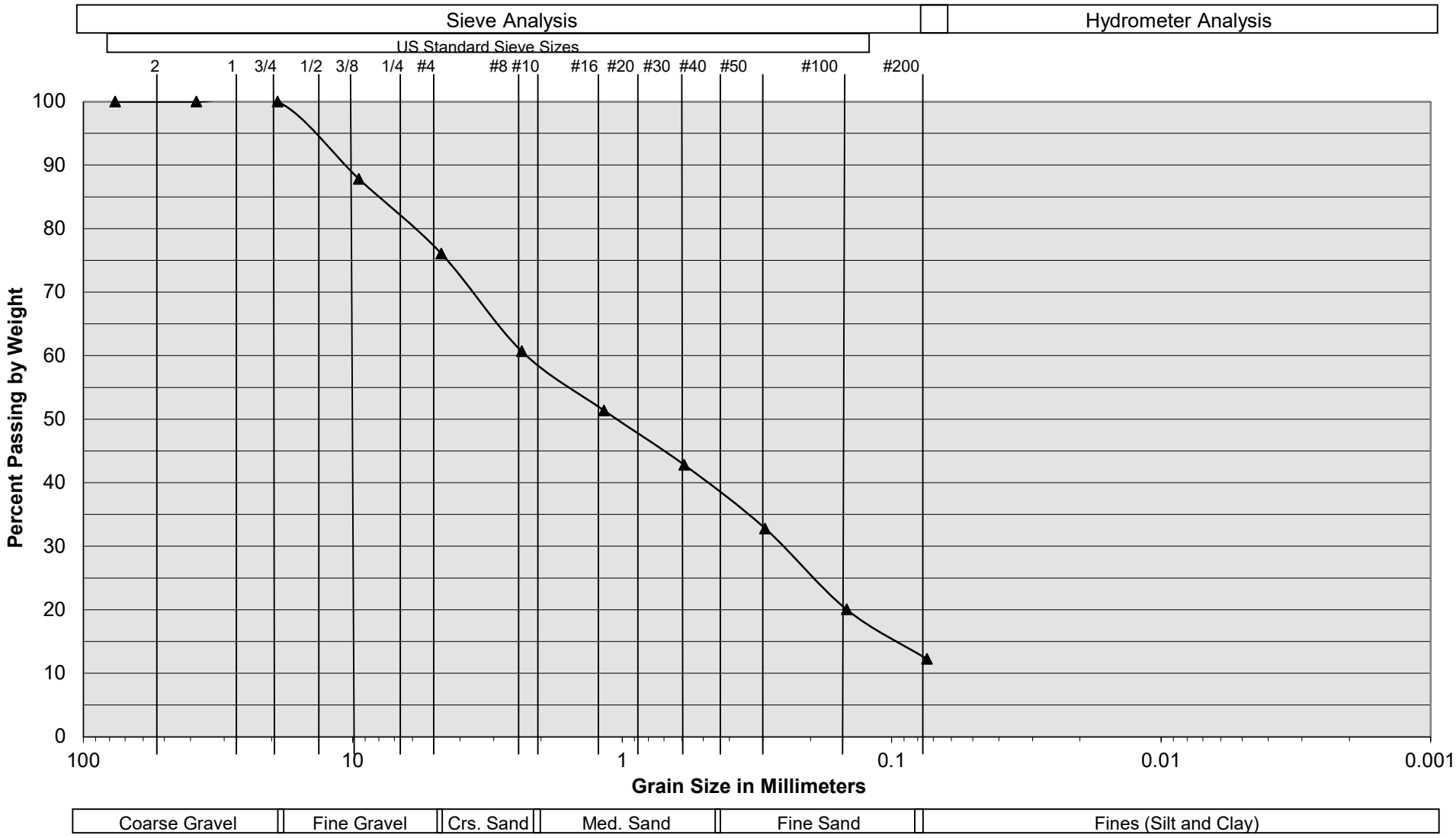
A California Corporation

Grain Size Distribution

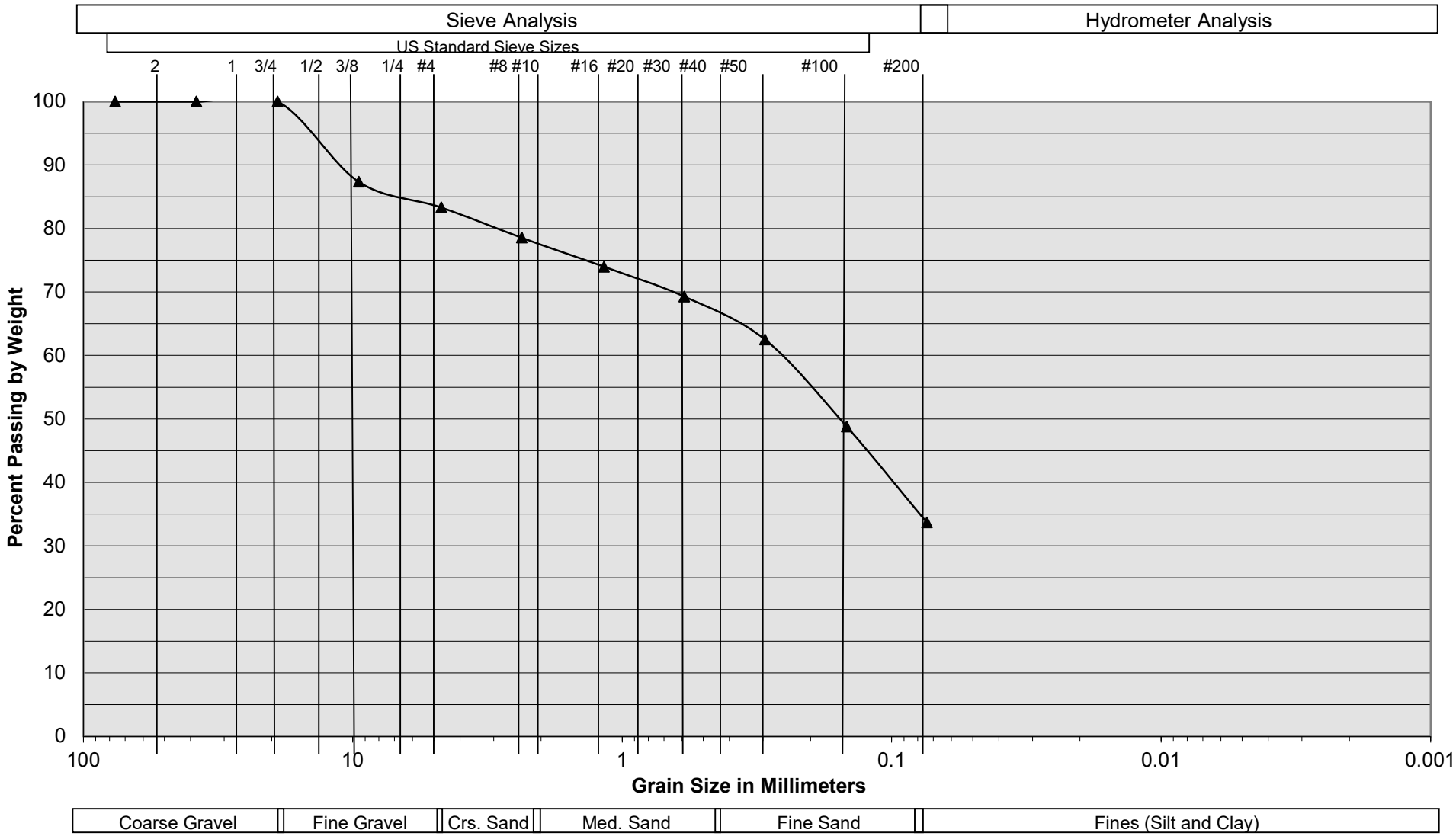


Sample Description	I-8 @ 29'
Soil Classification	Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 9

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

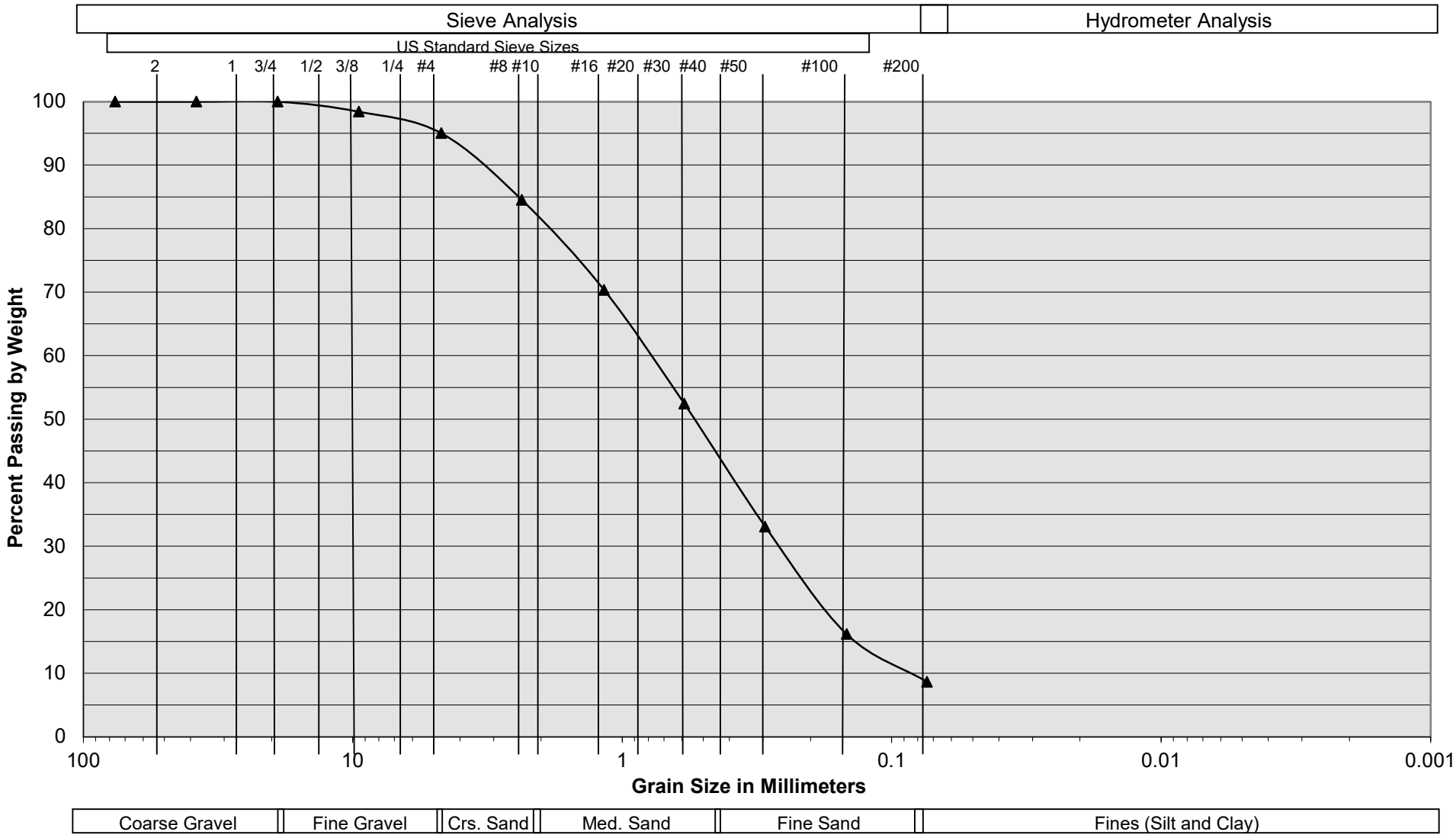


Sample Description	I-9 @ 34½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, some fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 10

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

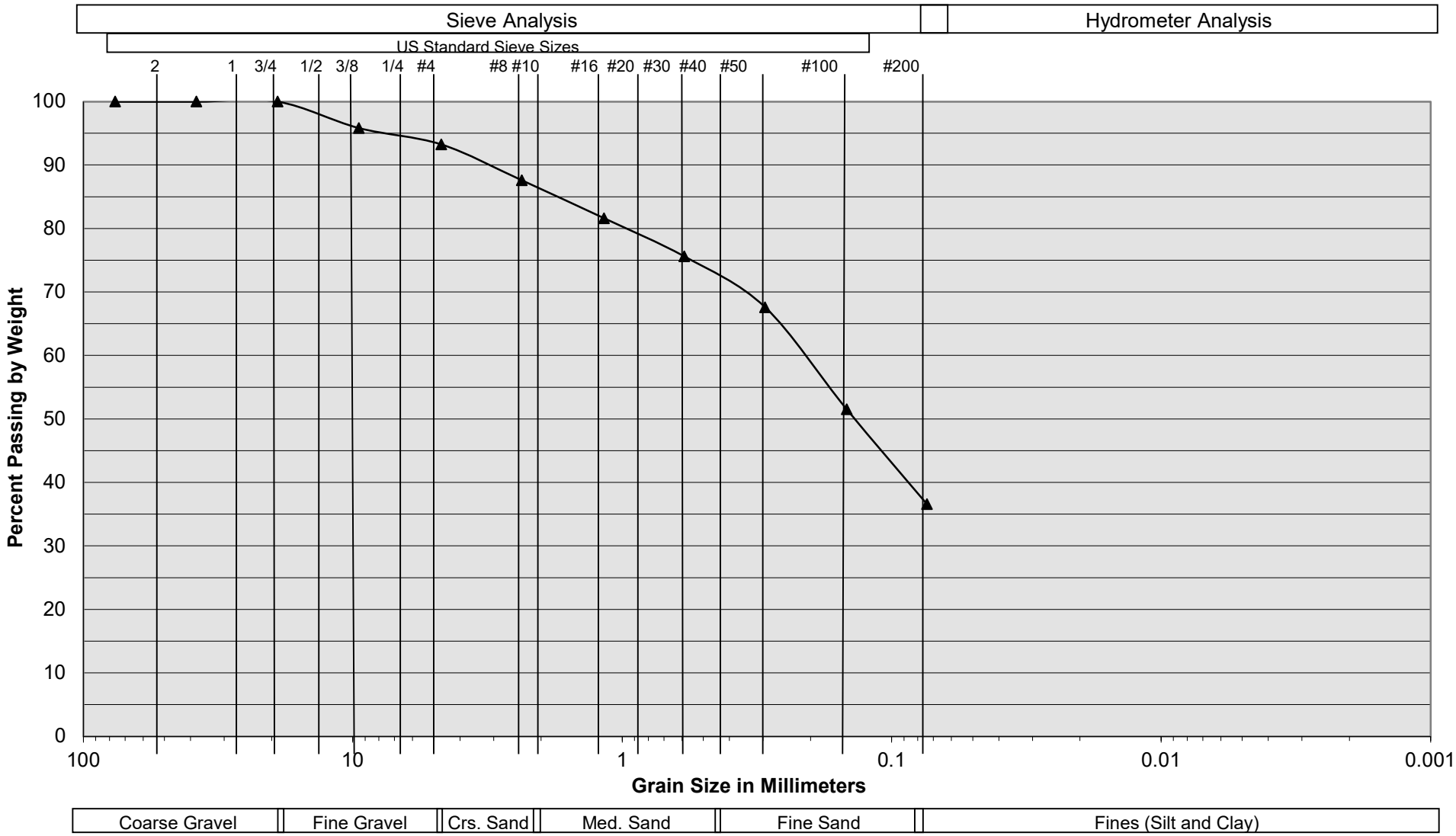


Sample Description	I-10 @ 33½'
Soil Classification	Brown fine to coarse Sand, trace fine Gravel, trace Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 11

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

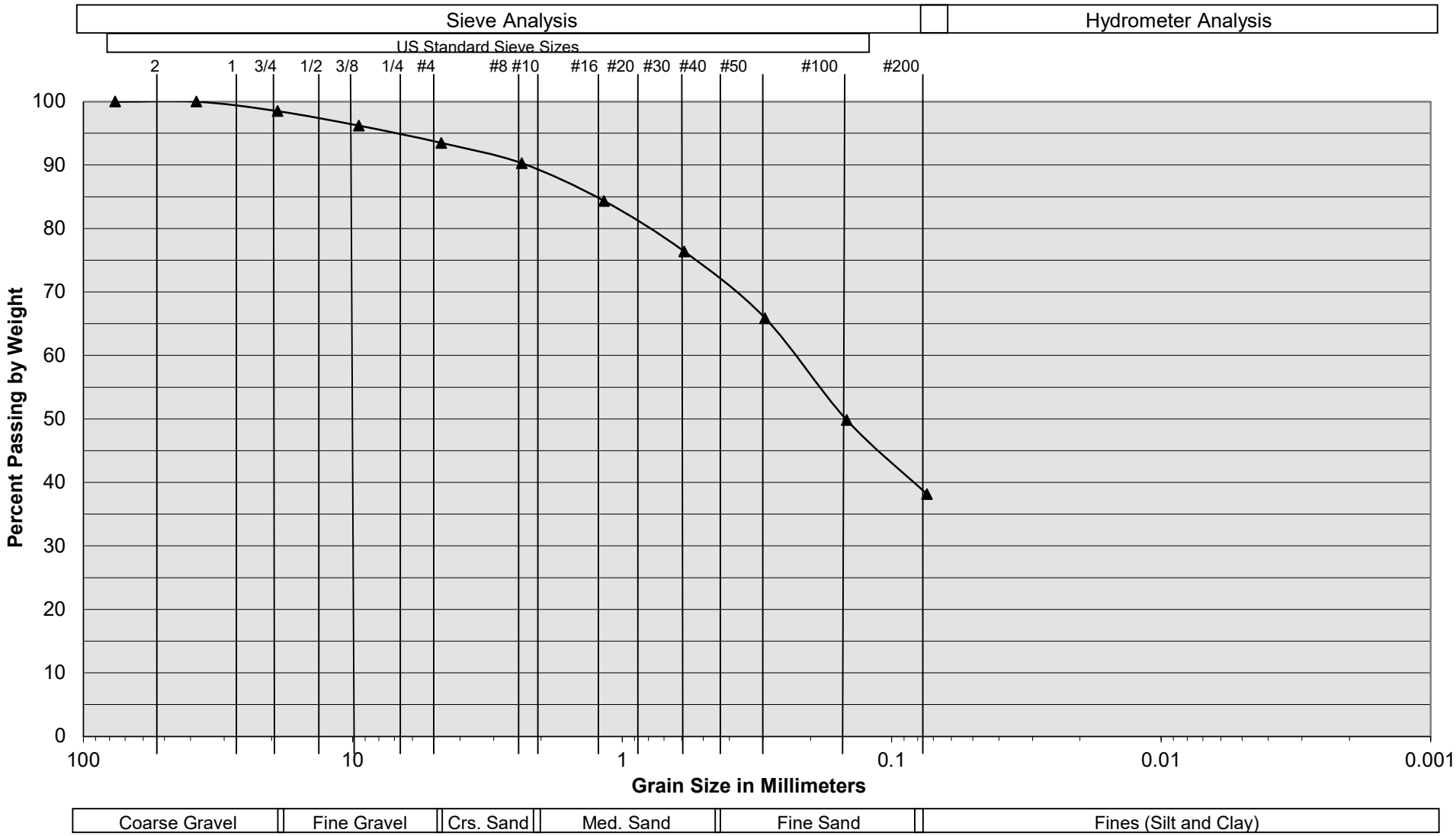


Sample Description	I-11 @ 8½'
Soil Classification	Brown Silty fine to medium Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 12

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

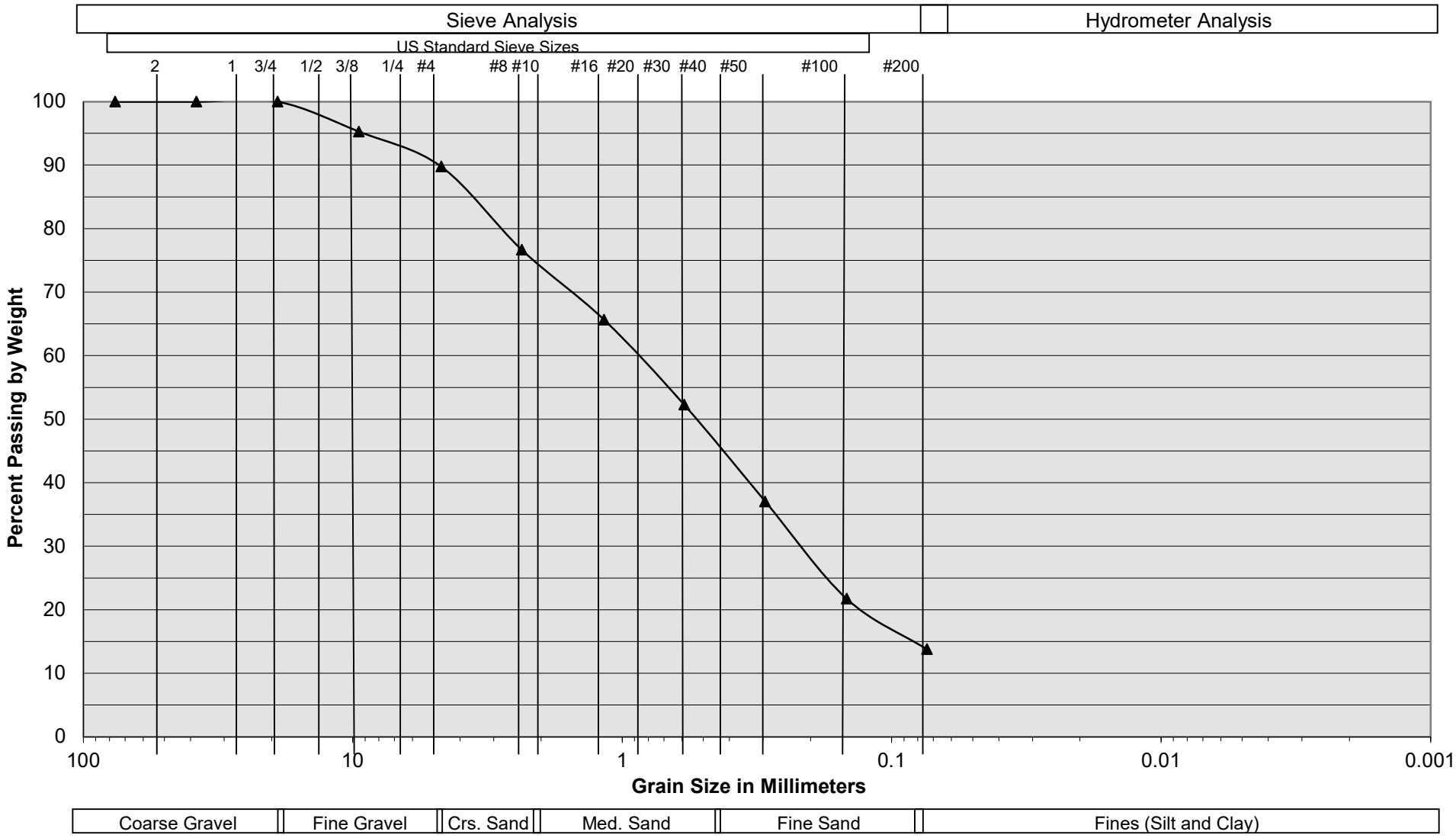


Sample Description	I-12 @12½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine to coarse Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 13

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

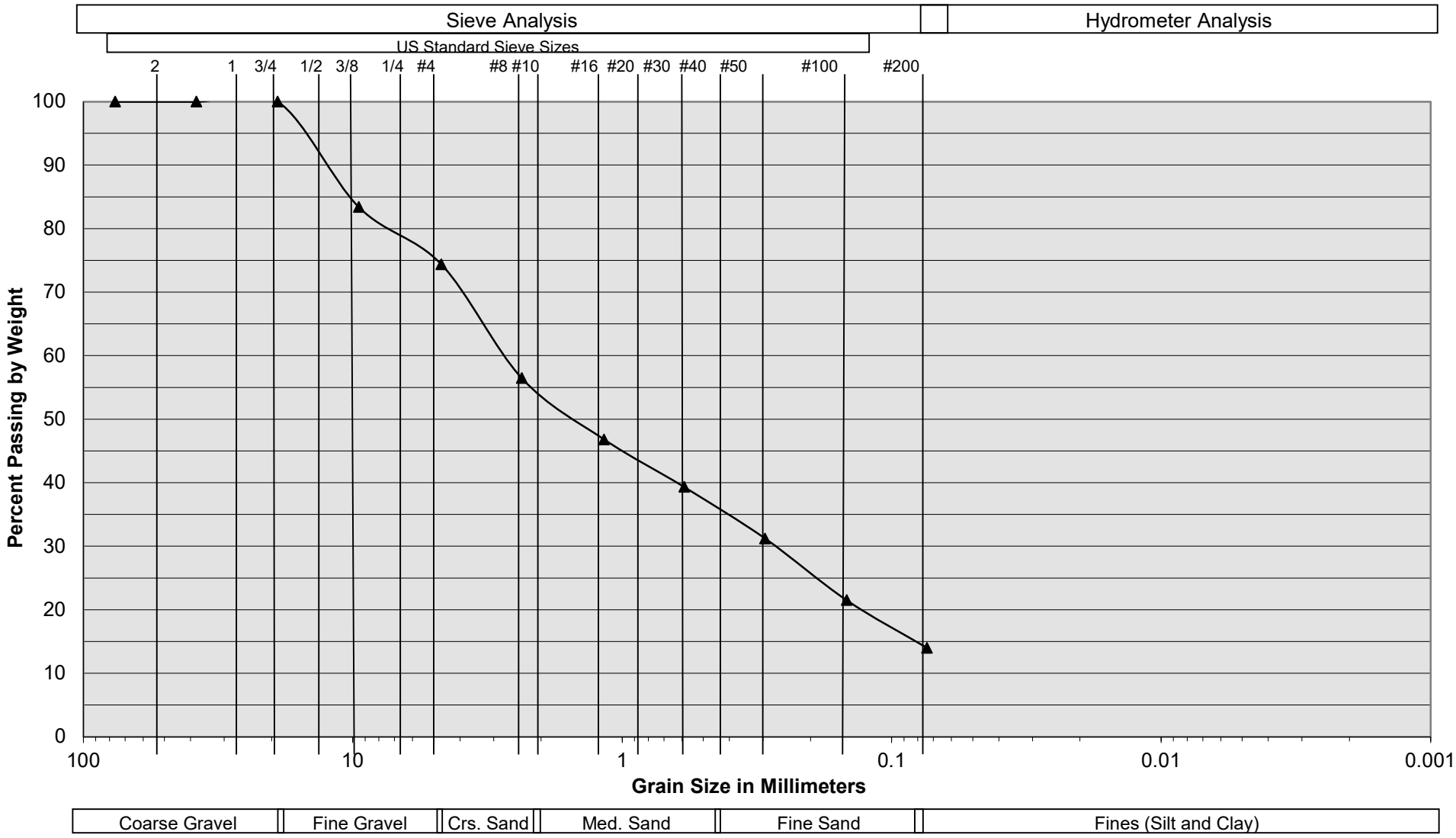


Sample Description	I-13 @ 26½'
Soil Classification	Brown fine to coarse Sand, little fine Gravel, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 14

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

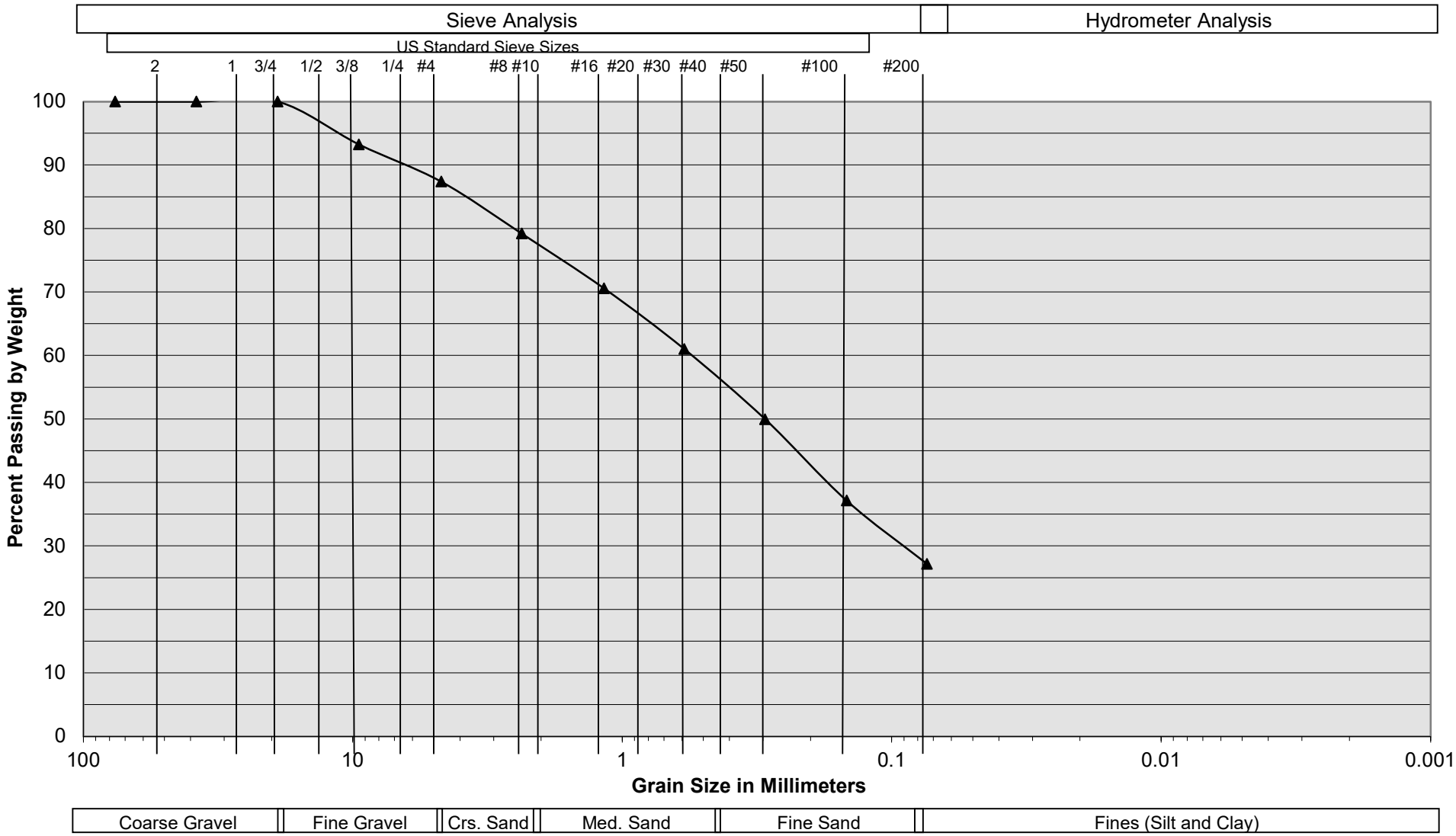


Sample Description	I-14 @ 14½'
Soil Classification	Gray Brown Gravelly fine to coarse Sand, little Silt

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 15

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-15 @ 25½'
Soil Classification	Red Brown Silty fine to coarse Sand, trace fine Gravel

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 16

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution

Sample Description	I-16 @ 41½'
Soil Classification	Red Brown Silty fine to medium Sand, trace coarse Sand

Proposed E-Commerce Development
Beaumont, CA
Project No. 21G133-2
PLATE C- 17

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

GEOTECHNICAL INVESTIGATION
PROPOSED E-COMMERCE DEVELPOMENT

Cherry Avenue, West of Fabian Way
Beaumont, California
For
Exeter Property Group

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

August 12, 2021

Exeter Property Group
4602 East University Drive, Suite 185
Phoenix, Arizona 85034

Attention: Mr. Andrew Greybar
Senior Project Manager

Project No.: **21G133-1**

Subject: **Geotechnical Investigation**
Proposed E-Commerce Development
Cherry Valley Avenue, West of Fabian Lane
Beaumont, California

Mr. Greybar

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

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Distribution: (1) Addressee

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1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Geotechnical Design Considerations.

- Portions of the western and southern areas of the subject site are located within mapped zones of moderate liquefaction hazard. However, based on the subsurface profile identified in this report, the proposed grading, and the available groundwater data, liquefaction is not considered a design concern for this project.
- Artificial fill soils were encountered at several of the boring and trench locations, extending to depths of 1½ to 12± feet. These soils are considered to consist of undocumented fill materials. One of the borings identified artificial fill soils, extending to a depth of 29½± feet. The deeper fill soils are located within a former drainage canyon which appears to have been filled-in to establish the currently existing site grades. The fill soils are underlain by native alluvium, extending at least to the maximum depth explored of 50± feet.
- The proposed buildings will require cuts of up to 45 feet and fills of up to 65 feet to achieve the new building pad elevations.
- Field and laboratory testing indicates that some of the younger alluvial soils are moderately compressible, especially when exposed to the loads that will be exerted by the relatively deep new fills.
- The alluvial soils located within the southwest draining canyons and the existing undocumented fill materials are not considered suitable for support of the proposed fills and structures.
- Remedial grading is recommended to consist of overexcavation of existing fill, and alluvial soils, due to collapse/consolidation potential. These soils should be replaced as compacted fill.

Site Preparation

- Initial site preparation should include stripping of any surficial vegetation. The surficial vegetation, trees, and any organic soils should be properly disposed of off-site.
- Remedial grading is recommended to be performed within the new building pad areas. The existing soils within the building pad areas should be overexcavated to a depth of 6 feet below proposed pad grade. All existing artificial fill materials should also be removed from the new building pad areas. The soils within the proposed foundation influence zones should be overexcavated to a depth of at least 6 feet below proposed foundation bearing grades.
- Additional remedial grading (10 to 30 feet below existing grade) should be performed in the proposed deep fill areas to remove compressible alluvial soils that could result in significant settlements if allowed to remain in place.
- The recommended areas and depths of overexcavation are illustrated on Plate 4 of this report.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Conventional shallow foundations, supported in newly placed compacted fill.
- 3,000 lbs/ft^2 maximum allowable soil bearing pressure.
- Reinforcement consisting of at least four (4) No. 5 rebars (2 top and 2 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slabs

- Conventional Slab-on-Grade, 6 inches thick.
- Modulus of Subgrade Reaction: k = 100 psi/in.
- Reinforcement is not required for geotechnical conditions. The actual floor slab reinforcement should be determined by the structural engineer, based on the imposed slab loading.

Pavement Design Recommendations

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R=40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0 or less)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 21P157, dated February 11, 2021 and our Change Order No. 21G133-CO, dated July 14, 2021. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

Based on the grading plan prepared by Albert A. Webb Associates, the project will utilize new retaining walls ranging from 10 to 50± feet in height. These walls will be utilized in conjunction with new cut and fill slopes which will be required to establish the new site grades. It is recommended that an analysis be performed once grading and foundation plans become available to determine the stability of the proposed retaining wall and slope configurations. It may be necessary to perform an additional subsurface exploration in order to provide specific geotechnical design considerations for the new retaining wall systems.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located on the south side of Cherry Valley Boulevard, 1,500± feet west of the intersection of Cherry Valley Boulevard and Fabian Lane in Beaumont, California. The site is bounded to the north by Cherry Valley Boulevard, to the east by single-family residences (SFRs) and vacant lots, to the south by Brookside Avenue, to the southwest by the Redlands Freeway (Interstate 10) and to the west by vacant land. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The overall site consists of several irregular to rectangular-shaped parcels which total 178.4± acres in size. The site is presently developed with three (3) single-family residences and several small abandoned buildings located in the northeastern area of the site. Remnants of shade structures including Portland cement concrete panels and sawed-off poles are present throughout the northeastern areas of the site. Several above-ground storage tanks are also present throughout the northeastern area of the site. One of the smaller abandoned structures possesses a below-grade room with what appears to be a turbine. The remaining areas of the site are presently vacant and undeveloped. Five (5) circular to oval-shaped leech ponds are located in the west-central area of the site. Two (2) additional leech ponds are located in the south-central area of the site. Ground surface cover consist of exposed soil and moderate to dense native grass and weed growth. Several large trees are located in the southern areas of the site. Limited areas of trash and debris are located throughout the site.

Detailed topographic information was obtained from the conceptual grading plan prepared by Albert A. Webb Associates (Webb). Based on the provided plan, the northeastern to northern two-thirds of the site slopes downward to the southwest at a gradient of 4± percent. The seven (7) circular leech ponds located in the west-central and south-central areas of the site are surrounded by a berm that is 5± feet higher than the surrounding topography. The northwestern area of the site possesses several east-west and southeast-northwest trending drainage courses. The drainage features possess gradual to steep side walls with elevation differences of up to 15± feet below the surrounding topography. To the south of the leech pits, the site slopes towards the south to southwest at a gradient of 10± percent. The topography descends by 50± feet in this area. Another significant east-west trending drainage is located at the base of the descending slope, located in the southern-most region of the site. The drainage possesses gradual to steep side walls with an elevation difference up 10± feet below the surrounding topography. A hill, located to the southeast of this drainage, is approximately 20 to 30 feet higher than the surrounding topography. The hill possesses slope gradients ranging from 14 to 40± percent. To the south of the hill, the site topography slopes gently to the west at a gradient of 3.5± percent, where it meets up with a tributary drainage to the previously mentioned bisecting drainage. The area to the southwest of the bisecting drainage slopes to the west a gradient of 2.5± percent. Another hill with a north-facing descending slope is located at the southwest corner of the site. The slope has a gradient of 20± percent. The maximum site elevation is 2581± feet mean sea level (msl), in the northeast corner of the site. The minimum site elevation is 2406± feet msl, located in drainage swale channel located in the southern-most region of the site.

3.2 Proposed Development

Based on the conceptual site plan prepared by Webb, the site will be developed with three (3) new E-Commerce buildings. Building 1 will be 985,860± ft^2 in size, located in the western area of the site. Building 2 will be 1,254,000± ft^2 in size, located in the east-central region of the site. Lastly, Building 3 will be 358,370± ft^2 in size, located in the north-central area of the site. A cross-dock configuration will be constructed on Building 1 and Building 2, along the east/west and north/south building walls, respectively. Dock-high doors will be constructed along a portion of the southern building wall of Building 3. The buildings will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete (PCC) pavements in the truck court, and areas of concrete flatwork and landscape planters. Several new fill and cut slopes will be constructed along all permitters, as well as within the site. The new fill slopes will range from 10 to 40± feet in height and will possess slope inclinations not to exceed 2h:1v (horizontal to vertical). New retaining walls will also be required to establish the new site grades. The new retaining walls will possess maximum retained heights ranging from 10 to 50± feet.

Detailed structural information has not been provided. We assume that the new buildings will be single-story structures of tilt-up concrete construction, typically supported on a conventional shallow foundation system with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 5 to 7 kips per linear foot, respectively.

No significant amounts of below-grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the assumed topography, cuts of 45± feet and fills of up to 65± feet are expected to be necessary to achieve the proposed site grades.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of forty-four (44) borings advanced to depths of 10 to 50± feet, and seven (7) trenches excavated to depths of 6½ to 10½± feet below the existing site grades. Four (4) of the borings were advanced to a depth of 50± feet, as a part of the liquefaction evaluation. All of the borings and trenches were logged during the drilling and excavation by members of our staff.

The borings were advanced with hollow-stem augers, by a truck-mounted drilling rig. The trenches were excavated using a backhoe with a 36-inch-wide bucket. Representative bulk and undisturbed soil samples were taken during drilling. Relatively undisturbed samples were taken with a split barrel "California Sampler" containing a series of one inch long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. Samples were also taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings (identified as Boring Nos. B-1 through B-44) and trenches (identified as Trench Nos. T-1 through T-7) are indicated on the Boring and Trench Location Plan, included as Plate 2 in Appendix A of this report. The Boring and Trench Logs, which illustrate the conditions encountered at the boring and trench locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Pavements

Portland Cement Concrete (PCC) was encountered at the ground surface of Boring Nos. B-14, B-19 and B-25. The pavement sections consist of 2± inches of PCC. Boring Nos. B-19 and B-25 encountered 2± inches of slurry beneath the existing PCC pavements.

Artificial Fill

Artificial fill soils were encountered at the ground surface of several boring locations and one trench location, extending to depths of 1½ to 29½± feet below ground surface. The fill soils generally consist of loose to medium dense silty fine sand and clayey fine to medium sand. Occasional layers of medium dense silty fine to coarse sand and soft to stiff fine sandy clays were encountered. Varying amounts of fine root fibers were encountered in the silty fine sand layers. The fill soil possesses a disturbed and mottled appearance, resulting in their classification as

artificial fill. The deepest fill soils were encountered within Boring No. B-43, in the area of a former drainage channel. At this locations, the artificial fill soils included rubber and concrete debris.

Alluvium

Native alluvium was encountered beneath the artificial fill soils or at the ground surface at all of the boring locations. The alluvial soils extend to depths of 1½ to 12± feet below ground surface in the northern areas of the site, and 25 to 50± feet below ground surface in the southern areas of the site. The alluvial soils generally consist of loose to very dense silty fine sands and silty fine to medium sands. These soils possess fine root fibers near the ground surface and occasional porosity. Occasional layers of medium dense silty fine sand to fine sandy silt, fine to coarse sand, clayey silt, fine sandy silt and medium stiff silty clay were encountered in the deeper borings located in the southern areas.

Older Alluvium

Older alluvial deposits were encountered at the ground surface, or beneath the artificial fill and alluvium at all of the boring locations, extending to at least the maximum depth explored of 50± feet below ground surface. The older alluvial soils generally consist of medium dense to very dense silty fine sands, silty fine to medium sands, silty fine to coarse sands and silty fine sands to fine sandy silts. Several layers of medium dense to dense clayey fine sands, clayey fine to coarse sands and very stiff to hard fine sandy clays were encountered. Occasional layers of medium dense to dense fine sandy silts, fine to coarse sands and stiff fine to medium sandy clay were encountered.

Groundwater

Groundwater was not encountered at any of the boring or trench locations. Based on the lack of any water within the borings and trenches, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet below existing site grades at the time of the subsurface investigation.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level and recent groundwater level for the site. The primary reference used to determine the groundwater depths in this area is the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring wells in this database are located in the northeast corner of the site. Water level readings within one of these monitoring wells indicates a historic high groundwater level of 317± feet below the ground surface in September 1990. Water level readings within another of these monitoring wells indicates a recent high groundwater level of 412± feet below the ground surface in December 2020.

4.3 Regional Geology

The subject site is located within the Peninsular Ranges province. The Peninsular Ranges province consists of several northwesterly-trending ranges in the southwestern California. The province is truncated to the north by the east-west trending Transverse Ranges. Prior to the mid-Mesozoic, the region was covered by seas and thick marine sedimentary and volcanic sequences were deposited. The bedrock geology that dominates the elevated areas of the Peninsular Ranges

consists of high-grade metamorphic rocks intruded by Mesozoic plutons. During the Cretaceous, extensive mountain building occurred during the emplacement of the southern California batholith. The Peninsular Ranges have been significantly disrupted by Tertiary and Quaternary strike-slip faulting along the Elsinore and San Jacinto faults. This tectonic activity has resulted in the present terrain.

4.4 Geologic Conditions

Regional geologic conditions were obtained from the Geologic Map of the El Casco 7.5' Quadrangle, Riverside County, California, by Thomas W. Dibblee, Jr., 2003 (Plate 3a) and Geologic and Geophysical Map of the El Casco 7.5' Quadrangle, Riverside County, California, with Accompanying Geologic-Map Database, Geologic Map by Jonathan C. Matti and Pamela M. Cossette, Digital Database by Douglas M. Hirshchberg, Jordan G. Matti and Pamela M. Cossette, 2015 (Plate 3b). Plate 3a indicates that the site is underlain by alluvial deposits (Map Symbol Qa) in the southwestern area of the site and older alluvium (Map Symbol Qoa) in the northeastern area of the site. The alluvium is described as alluvial sand, gravel and clay, covered by residual soil. The older alluvium is described as light reddish brown alluvial gravel and sand, of granitic and gneissic detritus of San Bernardino Mountains in north areas, and brownish gray in south areas. Plate 3b indicates that the site is underlain by young axial-valley deposits and very young wash deposits (Map Symbols Qvywm and Qya5) in southwestern area of the site and old alluvial-fan deposits and very old alluvial-fan deposits (Map Symbols Qof2 and Qvof3) in the northwestern area of the site. The very young wash deposits are described as very slightly to slightly consolidated sandy and gravelly sediment in active channels. The remaining units were not described in detail.

Based on the materials encountered at the boring locations, the northeastern portion of the site is underlain by older alluvium and the southwestern portion of the site is underlain by alluvium. It is in our opinion that the material encountered throughout the site is consistent with the mapped geologic units.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. The field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring and Trench Logs.

Consolidation

Selected soil samples were tested to determine their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-42 in Appendix C of this report.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge equivalent to 144 pounds per square foot. The sample is then inundated with water and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	Expansion Index	Expansive Potential
B-20 @ 0 to 5 feet	45	Low
B-22 @ 0 to 5 feet	28	Low

Maximum Dry Density and Optimum Moisture Content

Representative bulk samples have been tested for their maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557 and are presented on Plates C-43 through C-45 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Direct Shear

Direct shear testing was performed on one representative sample to determine its shear strength parameters. The test was performed in accordance with ASTM D-3080. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Each of the three samples are then loaded with different normal loads and the resulting shear strength is determined for that particular normal load. The shearing of the samples is performed at a rate slow enough to permit the dissipation of excess pore water pressure. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The results of the direct shear test are presented on Plate C-46 in Appendix C of this report

Soluble Sulfates

Representative samples of the near-surface soil were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Sulfate Classification
B-4 @ 0 to 5 feet	0.001	Not Applicable (S0)
B-20 @ 0 to 5 feet	0.002	Not Applicable (S0)
B-25 @ 0 to 5 feet	0.002	Not Applicable (S0)

Corrosivity Testing

Representative bulk samples of the near-surface soils were submitted to a subcontracted corrosion engineering laboratory to identify potentially corrosive characteristics with respect to common construction materials. The corrosivity testing included a determination of the electrical resistivity, pH, and chloride and nitrate concentrations of the soils, as well as other tests. The results of some of these tests are presented below.

Sample Identification	Saturated Resistivity (ohm-cm)	pH	Chlorides (mg/kg)	Nitrates (mg/kg)
B-4 @ 0 to 5 feet	4,800	7.3	5.5	4.3
B-20 @ 0 to 5 feet	4,800	7.5	7.7	17
B-25 @ 0 to 5 feet	5,200	7.6	5.6	4.1

R-value Testing

R-value testing was conducted on one (1) representative soil sample recovered from the site. The R-(resistance) value was determined for representative soils samples in accordance with CA Test Method 301. This test provides a measure of the pavement support characteristics of the soils, and is used in the pavement thickness design procedure. The results of the R-value testing are as follows:

Sample Identification	**Soil Classification**	**R-Value**
B-4 @ 0 to 5 feet	Brown Silty Sand	60

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site-specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structures should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. In addition, our review of the Riverside County RCIT GIS website that the site is not located within a Riverside County fault zone. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

Based on standards in place at the time of this report, the proposed development is expected to be designed in accordance with the requirements of the 2019 edition of the California Building Code (CBC), which was adopted on January 1, 2020. The 2019 California Building Code (CBC) provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural

system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2019 CBC Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool, a web-based software application available at the website www.seismicmaps.org. This software application calculates seismic design parameters in accordance with several building code reference documents, including ASCE 7-16, upon which the 2019 CBC is based. The application utilizes a database of risk-targeted maximum considered earthquake (MCE_R) site accelerations at 0.01-degree intervals for each of the code documents. The table below was created using data obtained from the application. The output generated from this program is included as Plate E-1 in Appendix E of this report.

The 2019 CBC requires that a site-specific ground motion study be performed in accordance with Section 11.4.8 of ASCE 7-16 for Site Class D sites with a mapped S_1 value greater than 0.2. However, Section 11.4.8 of ASCE 7-16 also indicates an exception to the requirement for a site-specific ground motion hazard analysis for certain structures on Site Class D sites. The commentary for Section 11 of ASCE 7-16 (Page 534 of Section C11 of ASCE 7-16) indicates that "In general, this exception effectively limits the requirements for site-specific hazard analysis to very tall and or flexible structures at Site Class D sites." **Based on our understanding of the proposed development, the seismic design parameters presented below were calculated assuming that the exception in Section 11.4.8 applies to the proposed structure at this site. However, the structural engineer should verify that this exception is applicable to the proposed structure.** Based on the exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2019 CBC.

2019 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	2.091
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.718
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	2.509
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.221
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.673
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.814

It should be noted that the site coefficient F_v and the parameters S_{M1} and S_{D1} were not included in the SEAOC/OSHPD Seismic Design Maps Tool output for the 2019 CBC. We calculated these parameters-based on Table 1613.2.3(2) in Section 16.4.4 of the 2019 CBC using the value of S_1 obtained from the Seismic Design Maps Tool, assuming that a site-specific ground motion hazards analysis is not required for the proposed building at this site.

Liquefaction

Liquefaction is the loss of the strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and grain size characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Clayey (cohesive) soils or soils which possess clay particles (d<0.005mm) in excess of 20 percent (Seed and Idriss, 1982) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The Riverside County GIS website indicates that an isolated portions of the western and southern-most regions of the site are located within a zone of moderate liquefaction susceptibility. However, based on underlying soil conditions (which include moderate strength older alluvium), the proposed grading which includes fills of up to 65± feet, and the groundwater research performed for this site which indicates that the long-term groundwater table is considered to exist at a depth in excess of 50± feet, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

The ground surface of the subject site is generally underlain by younger native alluvial soils, which are underlain at depth by moderate strength older alluvium. Some areas of the site are covered with a layer of undocumented fill soils extending to depths of 1½ to 12± feet. These soils are considered to consist of undocumented fill materials. One of the borings identified artificial fill soils, extending to a depth of 29½± feet. These deeper fill soils are located within a former drainage canyon which is expected to have been filled-in to establish the currently existing site grades. These undocumented fill soils are not suitable to support the foundations loads of the new structures, and should be removed in their entirety.

Based on the grading plan prepared by Webb, the proposed grading will require deep fill soils ranging from 15 to 65± feet in order to establish the new site grades in the western region of the site. The western region of the site includes several south-west drainage canyons which will require removal of the moderately compressible younger native alluvium, extending between the depths of 12 to 22± feet below the existing site grades. The existing older alluvium at greater depths possess moderate strengths and are expected to be encountered following removal of the younger alluvium. In addition, the deep cuts located in the eastern region of the site are expected to encounter the moderate strength alluvium. Some of the buildings, will be underlain by older alluvium on one side, and deep fill soils on the other side. This condition increases the possibility of excessive differential settlements. Remedial grading will be necessary to mitigate this condition.

Settlement

The recommended remedial grading will remove all of the existing undocumented fill soils and most of the near-surface compressible/collapsible younger alluvial soils, and replace these materials as compacted fill soils. The underlying moderate strength older alluvium which will remain in-place are note expected to be susceptible to settlement from the foundations of the proposed structures. Provided that the recommended remedial grading is completed, the post-construction static settlements of the proposed structures are expected to be within tolerable limits.

Deep Fill Areas

Based on the conceptual grading plan prepared by Webb, the proposed grading will include fills of up to 65± feet within the building pads. In order to reduce the settlement potential of the newly placed fill soils to acceptable levels and avoid excessive differential settlements, fill soils placed at depths greater than 20 feet below proposed pad grade within the building pads should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density.

Settlement of Deep Fill Soils

Subsequent to the proposed grading, the proposed development areas will be underlain by engineered fill soils (design plus remedial), extending to depths of 50 to 85± feet. The primary settlement associated with these fill soils is expected to occur relatively quickly due to the generally granular nature of the on-site soils. Minor amounts of additional settlement may occur due to secondary consolidation effects. The extent of secondary consolidation is difficult to assess precisely, and will be reduced by the proposed mitigation measures recommended herein, but may be in the range of 0.1 to 0.3 percent of the fill thickness. Based on the differential fill thickness that will exist across the building footprints, the structural design will need to consider the distortions that could be caused by the secondary consolidation of the fill soils. Provided that the grading and foundation design recommendations presented in this report are implemented, these settlements are expected to be within the structural tolerances of the proposed buildings.

This report includes recommendations to install settlement monuments within the deep fill areas of Buildings 1 and 2. These monuments will be used to verify that primary consolidation of the remaining alluvial soils is complete, prior to initiating construction of the new buildings.

Cut/Fill Transitions

The conceptual grading plan indicates that several cut/fill transitions will be created within the proposed building pads by the proposed grading. The differing support conditions of the native soils versus the newly compacted fill soils may result in excessive differential settlements if not mitigated. Remedial grading will be required to eliminate the cut/fill transitions which will occur at building pad and foundation bearing grade as well as to reduce the inclinations of the underlying cut/fill contacts.

Expansion

The near-surface soils consist of silty sands and sandy silts with no appreciable clay content. However, some isolated strata of sandy clays and clayey sands were encountered. Expansion

Index (EI) values at the site range from 28 to 45. Mass grading of the site is expected to blend the on-site soils, resulting in a very low to low expansive potential. We recommend that additional expansion index testing be performed at the time of rough grading in order to confirm the expansion potential of the near-surface soils at this site.

Slope Stability

The grading plan indicates that the new slopes (both cut and fill) will occur at inclinations of 2h:1v or flatter. Newly constructed fill slopes, comprised of properly compacted engineered fill, at inclinations of 2h:1v will possess adequate gross and surficial stability.

Cut slopes excavated within the existing granular alluvial soils may be subject to surficial instability due to the lack of cohesion within these materials. Therefore, stability fills may be required within these areas. This condition may affect the proposed cut slopes at the site. The need for stability fills should be determined by SCG as part of the future detailed grading plan review.

Based on the grading plan prepared by Webb, new retaining walls ranging from 10 to 50± feet in height will be utilized in conjunction with new cut and fill slopes at the site. An additional review of the proposed site configuration may be required once detailed grading and foundation plans become available in order to determine the stability of the new retaining wall systems. An additional subsurface exploration may also be required as part of the analysis of the new retaining wall structures.

Soluble Sulfates

The result of the soluble sulfate testing indicates that the selected samples of the on-site soils possess concentrations of sulfates that correspond to Class S0 with respect to the American Concrete Institute (ACI) Publication 318-05 Building Code Requirements for Structural Concrete and Commentary, Section 4.3. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building areas.

Corrosion Potential

The results of laboratory testing indicate that the tested samples of the on-site soils possess saturated resistivity values of 4,800 to 5,200 ohm-cm, and pH values of 7.3 to 7.6. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Sulfides, and redox potential are factors that are also used in the evaluation procedure. We have evaluated the corrosivity characteristics of the on-site soils using resistivity, pH, and moisture content. Based on these factors, and utilizing the DIPRA procedure, the on-site soils are not considered to be corrosive to ductile iron pipe.

Relatively low concentrations (5.5 to 7.7 mg/kg) of chlorides were detected in the samples submitted for corrosivity testing. In general, soils possessing chloride concentrations in excess of 500 parts per million (ppm) are considered to be corrosive with respect to steel reinforcement

within reinforced concrete. Based on the lack of any significant chlorides in the tested samples, the site is considered to have a C1 chloride exposure in accordance with the American Concrete Institute (ACI) Publication 318 Building Code Requirements for Structural Concrete and Commentary. Therefore, a specialized concrete mix design for reinforced concrete for protection against chloride exposure is not considered warranted.

Nitrates present in soil can be corrosive to copper tubing at concentrations greater than 50 mg/kg. The tested samples possess nitrate concentrations ranging from 4.1 to 17 mg/kg. Based on this test result, the on-site soils are not considered to be corrosive to copper pipe.

It should be noted that SCG does not practice in the area of corrosion engineering. Therefore, the client may also wish to contact a corrosion engineer to provide a more thorough evaluation of these conditions.

Shrinkage/Subsidence

Removal and recompaction of the near-surface fill and younger alluvial soils (located in the southwestern region of the site) is estimated to result in an average shrinkage of 6 to 14 percent. This assumes average compaction of 92 percent within the new engineered fill soils. Removal and recompaction of the existing older alluvial soils located in the south and west regions of the site is estimated to result in an average shrinkage of 0 to 8 percent. Engineering fills more than 20 feet below finished grade, where 95 percent compaction is recommended, should be assumed to result in shrinkage of 13 to 20 percent. It should be noted that these shrinkage estimates are based on dry density testing performed on small-diameter samples taken at the boring locations. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test pits where in-place densities are determined using in-situ testing methods instead of laboratory density testing on small-diameter samples. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

These estimates are based on previous experience with nearby projects and the subsurface conditions encountered at the boring and trench locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Foundation and Grading Plan Review

Based on our review of the preliminary grading plans prepared by Webb, new retaining walls with maximum heights of up to 50± feet will be constructed as part of the new development. It is recommended that additional review of the global stability of the proposed site grading be performed by SCG once more detailed rough grading plans become available. An additional subsurface exploration may be required to evaluate the geotechnical design considerations of the retaining wall and new slope configurations.

It is recommended that we be provided with copies of all future foundation and grading plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring and trench locations, and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Initial site stripping should include removal of any surficial vegetation and topsoil. This should include any weeds, grasses, shrubs, and trees. Removal of trees should also include any associated root masses. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered. The scattered trash and debris that is present on the site should be collected and disposed of off-site.

Demolition of minor existing improvements such as buildings, retaining walls, concrete slabs and foundations will be required. Demolition debris should be disposed of off-site. Concrete may also be crushed to a maximum 2-inch particle size and incorporated into new structural fills.

Treatment of Existing Soils: Building Pads

Remedial grading should be performed within the proposed development area in order to remove all of the existing undocumented fill soils. Based on conditions encountered at the boring and trench locations, the undocumented fill soils extend to depths of up to 12± feet. At one of the boring locations, the existing undocumented fill soils extend to a depth of 29½± feet. It is possible that undocumented fill soils may extend to greater depths in unexplored areas of the site. Additional remedial grading should be performed in the deep proposed fill areas (the west and southwest areas of Buildings 1 and 2) to remove the compressible younger alluvial soils that could result in significant settlements if allowed to remain in place. These recommended overexcavations generally range from 12 to 22± feet below existing grade.

Within the influence zones of the new foundations, the overexcavation should extend to a depth of at least 6 feet below proposed foundation bearing grades. The overexcavation area should extend at least 5 feet beyond the building and foundation perimeters, and to an extent equal to the depth of fill below the new foundations. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Additional remedial grading is also recommended to mitigate the native/fill transitions that will be created by the proposed grading. There for the proposed buildings within the cut portion of the site are recommended to be overexcavated to a depth of 10 feet below proposed pad grade and 6 feet below footing grade.

The recommended areas and depths of overexcavation are illustrated on Plate 4 of this report.

To mitigate the relatively steep inclination of the underlying cut/fill contact in the areas of the southwest draining canyons, benching of the sidewalls will be required during fill placement. The horizontal extent of the benching should be sufficient to reduce the inclination of the native fill contact to 3h:1v or flatter. This additional benching is not required outside the areas of the proposed building foundation influence zones.

Following completion of the overexcavations, the subgrade should be evaluated by the geotechnical engineer to verify its suitability to serve as the structural fill subgrade. Some localized areas of deeper excavation may be required if loose, porous, or low-density materials are encountered at the base of the overexcavation. Materials suitable to serve as the structural fill subgrade within the building area should consist of moderate strength alluvial soils which possess an in-situ density equal to at least 85 percent of the ASTM D-1557 maximum dry density. These materials should be moisture conditioned to 0 to 4 percent above optimum moisture content prior to placement of any new fill soils. The previously excavated soils may then be replaced as compacted structural fill.

Deep Fill Areas

In order to reduce the settlement potential of the newly placed fill soils to acceptable levels and avoid excessive differential settlements, fill soils placed at depths greater than 20 feet below proposed building pad grades should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density.

Treatment of Existing Soils: Cut and Fill Slopes

New cut and fill slopes will be constructed within and around the perimeter of the project. All slopes should be at an inclination of 2h:1v or flatter. A keyway should be excavated at the toe of new fill slopes which are not located in fill areas. The keyway should be at least 15 feet wide and 3 feet deep. The recommended width of the keyway is based on 1.5 times the width of typical grading equipment. If smaller equipment is utilized, a smaller keyway may be suitable, at the discretion of the geotechnical engineer. The base of the keyway should slope at least 1 foot downward into the slope. Following completion of the keyway cut, the subgrade soils should be evaluated by the geotechnical engineer to verify that the keyway is founded into competent materials. The resulting subgrade soils should then be scarified to a depth of 10 to 12 inches, moisture conditioned to 0 to 4 percent above optimum moisture content and recompacted. During construction of the new fill slopes, any existing slopes should be benched in accordance with the detail presented on Plate D-4. Benches less than 4 feet in height may be used at the discretion of the geotechnical engineer.

Stability fills for cut slopes will provide a more uniform appearance and allow landscaping on the slope. Should a stability fill for cut slope be necessary, the recommendations for the stability fill will be the same as the recommendations for the fill slopes, mentioned above.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining walls and site walls should be overexcavated to a depth of 3 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. Any undocumented fill soils or disturbed native alluvium within any of these foundation areas should be removed in their

entirety. Retaining wall footings may also be supported directly within bedrock materials, with no overexcavation required. The overexcavation areas should extend at least 5 feet beyond the foundation perimeters, and to an extent equal to the depth of fill below the new foundations. Any erection pads for tilt-up concrete walls are considered to be part of the foundation system. Therefore, these overexcavation recommendations are applicable to erection pads. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning to within 0 to 4 percent above the optimum moisture content, and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

If the full lateral recommended remedial grading cannot be completed for the proposed retaining walls and site walls located along property lines, the foundations for those walls should be designed using a reduced allowable bearing pressure. Furthermore, the contractor should take necessary precautions to protect the adjacent structures during rough grading. Specialized grading techniques, such as A-B-C slot cuts, will likely be required during remedial grading. The geotechnical engineer of record should be contacted if additional recommendations, such as shoring design recommendations, are required during grading.

Treatment of Existing Soils: Flatwork, Parking and Drive Areas

Based on economic considerations, overexcavation of the existing near-surface existing soils in the new flatwork, parking and drive areas is not considered warranted, with the exception of areas where lower strength or unstable soils are identified by the geotechnical engineer during grading. Subgrade preparation in the new flatwork, parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations.

The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. Any such materials should be removed to a level of firm and unyielding soil. The exposed subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 0 to 4 percent above the optimum moisture content, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength surficial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed flatwork, parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within these areas. The grading recommendations presented above do not mitigate the extent of undocumented fill or compressible/collapsible native alluvium in the flatwork, parking and drive areas. As such, some settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the flatwork, parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 0 to 4 percent of the optimum moisture content, and compacted.

- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the current CBC and the grading code of the city of Beaumont.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density, unless noted otherwise. Fill soils placed at depths greater than 20 feet below proposed rough grade should be compacted to at least 95 percent of the ASTM d-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low to non-expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the city of Beaumont. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches. Any soils used to backfill voids around subsurface utility structures, such as manholes or vaults, should be placed as compacted structural fill. If it is not practical to place compacted fill in these areas, then such void spaces may be backfilled with lean concrete slurry. Uncompacted pea gravel or sand is not recommended for backfilling these voids since these materials have a potential to settle and thereby cause distress of pavements placed around these subterranean structures.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils generally consist of silty sands and clayey sands. These materials will be subject to caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, temporary excavation slopes should be made no steeper than 2h:1v. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate

moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

The static groundwater table is considered to exist at a depth greater than 50± feet or more below the existing grades. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

Slopes

Cut slopes within the native alluvium, and manufactured fill slopes will be prone to erosion. Provisions for surface drainage, terrace drains, slope planting and other measures in accordance with CBC requirements should be provided to improve long-term protection of the new slopes. These measures may include installation and maintenance of Hydro seed, polymers or other erosion control measures to provide slope protection until healthy plant grown is established.

Subdrains

Subdrains may be required at the site, particularly in the canyon/drainage areas where deep removals will be required. Specific subdrain recommendations can be provided based on a review of the final development plans, and based on conditions encountered during grading.

Settlement Monitoring

Based upon our understanding of proposed grading, fills on the order of about 80± feet deep (design plus remedial grading will be required. Engineered fills deeper than 20 feet should incorporate a minimum relative compaction of 95 percent, and a moisture content of at least two percentage points above optimum moisture content. A settlement monitoring program should be implemented, consisting of the surveying of surface monuments to monitor settlement of alluvial soils left in-place and/or proposed fills deeper than 30 feet (design plus remedial grading). Survey monument readings for both deep fill areas and for fill over compressible natural ground (Qal) should be conducted following the completion of fill placement. Survey monument locations should be selected by the geotechnical consultant. Survey readings should be taken weekly for the first month and on a weekly basis thereafter until vertical movement of the fill mass achieve 90 percent of primary compression, begin secondary compression or the estimated remaining settlement is less than one inch. Construction of proposed structures should not commence until approved by the geotechnical consultant based on the results of the settlement monitoring. The survey bench marks used for the monitoring should be confirmed with the geotechnical consultant prior to initial readings being performed.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pads will be underlain by newly placed structural fill soils, extending to a depth of at least 6 feet below foundation bearing grade, which are underlain by native alluvial soils. Based on this subsurface profile, the proposed structures may be supported on shallow foundations.

Conventional Spread Footing Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 3,000 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Four (4) No. 5 rebars (2 top and 2 bottom), due to the differential fill depths.
- Minimum foundation embedment: 12 inches into newly placed structural fill soils, and at least 24 inches below adjacent exterior grade.
- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressure presented above may be increased by one-third when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill or suitable native alluvium (where reduced bearing pressures are utilized), with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 0 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 60-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch (1/500 deflection ratio).

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 2,500 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floors of the proposed structures may be constructed as a conventional slabs-on-grade supported on newly placed structural fill, which is underlain by moderate strength alluvium. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of Subgrade Reaction: k = 100 psi/in.

- Minimum slab reinforcement: Reinforcement is not required for geotechnical conditions. However, slab reinforcement may be required for structural design considerations. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading, and the settlement estimates provided previously.

- Slab underlayment: If moisture sensitive floor coverings will be used then minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire slab area where such moisture sensitive floor coverings are expected. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as 15 mil Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview. Where moisture sensitive floor coverings are not anticipated, the vapor barrier may be eliminated.

- Moisture condition the floor slab subgrade soils to 0 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

- The floor slabs should be structurally connected to the foundations as detailed by the structural engineer.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

The grading plan prepared by Webb indicates that the site will utilize several retaining walls along the perimeters of the site. Retaining walls are also expected within the truck dock areas of the proposed buildings. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the trench and boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. These near-surface soils generally consist of sands and silty sands and occasional clayey sands. These materials are expected to possess friction angles of at least 30 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		Soil Type
		On-Site Silty Sands
Internal Friction Angle (ϕ)		30°
Unit Weight		132 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	44 lbs/ft^3
	At-Rest Condition (level backfill)	66 lbs/ft^3
	Active Condition (2h:1v backfill)	71 lbs/ft^3

The walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2019 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. The recommended seismic pressure distribution is triangular in shape, assumed to occur at the top of the wall, decreasing to 0 at the base of the wall. For a level backfill condition behind the top of the wall, the seismic lateral earth pressure is 44H lbs/ft^2, where H is the overall height of the wall. Where the ground surface above the wall consists of a 2h:1v sloping condition, the seismic lateral earth pressure is 71H lbs/ft^2. The seismic pressure distribution is based on the Mononobe-Okabe equation, utilizing the PGA_M ground acceleration of 1.024g. The 2019 CBC does not provide definitive guidance on determination of the design acceleration to be used in generating the seismic lateral earth pressure. In accordance with standard geotechnical practice, we have calculated the design acceleration as $^2/_3$ of the PGA_M. However, for combinations of high ground motion and steep slopes above the wall, the Mononobe-Okabe equation gives unrealistic high estimates of active earth pressures. Therefore, the seismic earth pressure for the sloping condition presented above was calculated using a design acceleration equal to 50% of the PGA_M.

Retaining Wall Foundation Design

The retaining wall foundations should be underlain by at least 3 feet of newly placed structural fill. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site sands and silty sands may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a minimum 1-foot thick layer of free-draining granular material (less than 5 percent passing the No. 200 sieve) be placed against the face of the retaining walls. This material should extend from the top of the retaining wall footing to within 1 foot of the ground surface on the back side of the retaining wall. This material should be approved by the geotechnical engineer. In lieu of the 1-foot thick layer of free-draining material, a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls, may be used. If the layer of free-draining material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The layer of free draining granular material should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557-91). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 20-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The near-surface soils generally consist of silty sands and clayey sands. Based on their classification, these materials are expected to possess good pavement support characteristics. The results of the R-value testing indicate that a sample of these soils possesses an R-value of 60. In order to allow for areas of lower strength soils, the subsequent pavement design is based upon an assumed R-value of 40. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering-controlled conditions. It is recommended that R-value testing be performed after completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R=40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0 or less)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. Any reinforcement within the PCC pavements should be determined by the project structural engineer. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

7.0 GENERAL COMMENTS

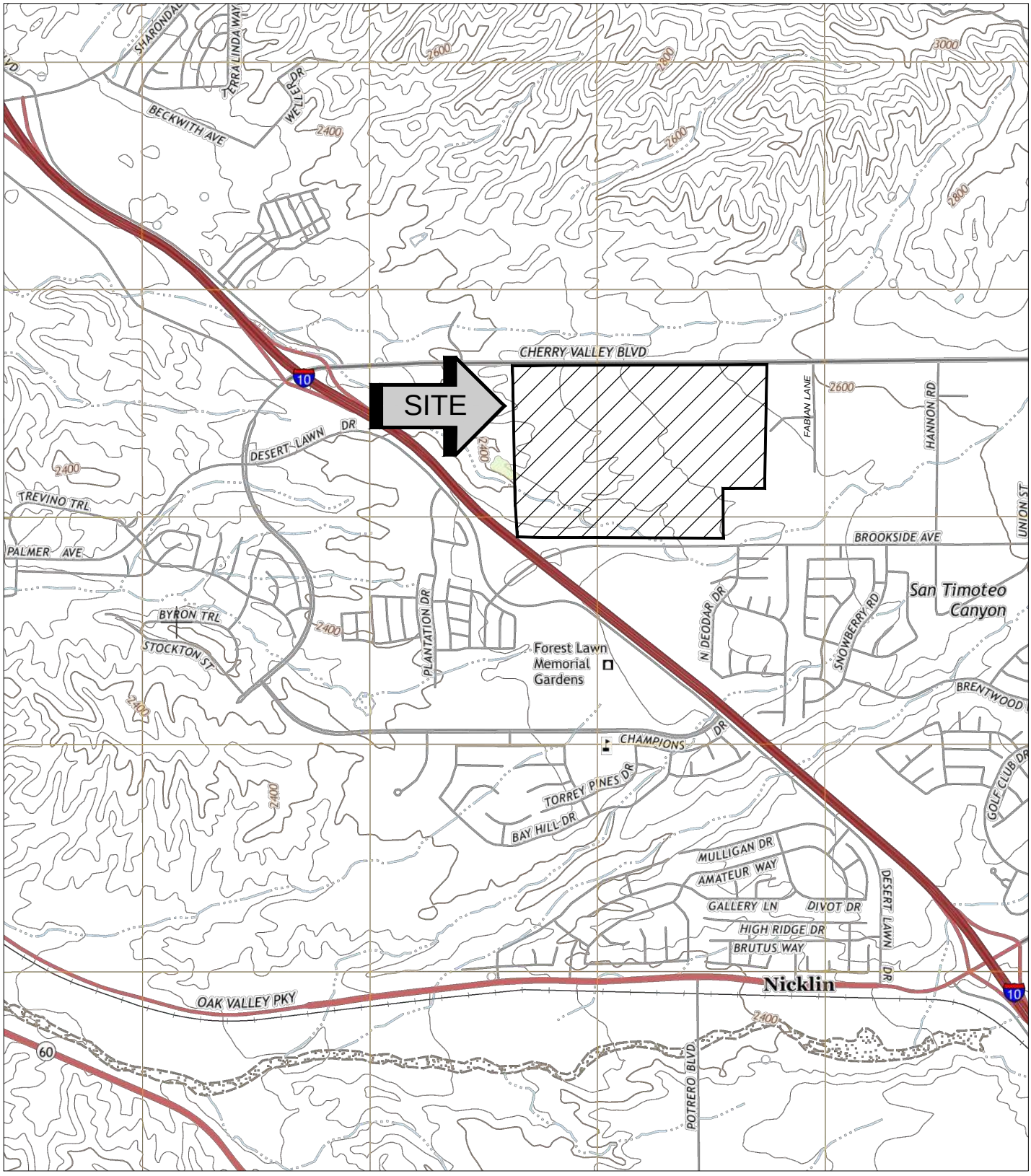
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: USGS TOPOGRAPHIC MAP OF THE EL CASCO QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, 2015.

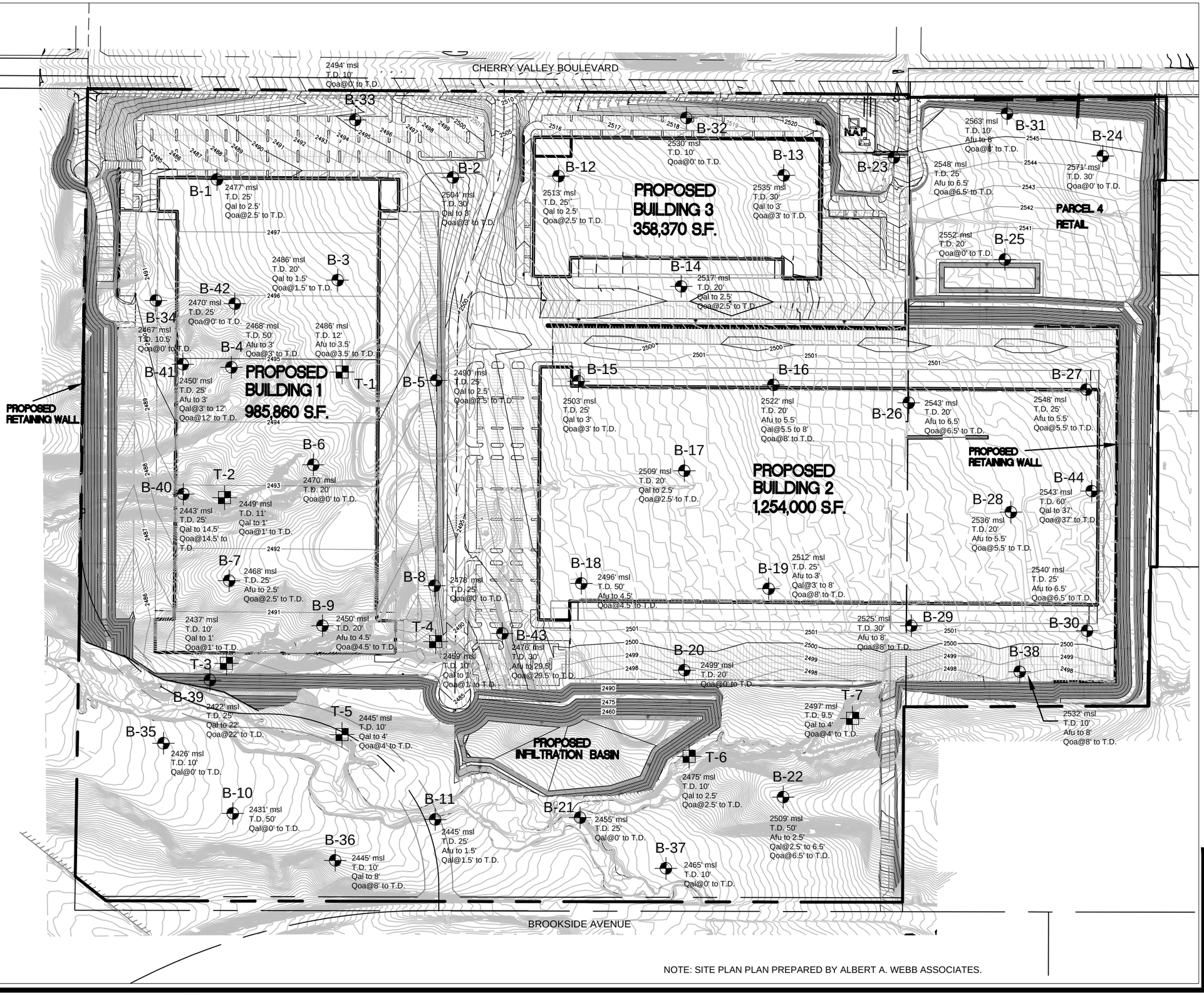
SITE LOCATION MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MD CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 1	

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

BORING LOCATION

TRENCH LOCATION

Afu - ARTIFICIAL FILL
Qal - ALLUVIUM
Qoa - OLDER ALLUVIUM

NOTE: SITE PLAN PLAN PREPARED BY ALBERT A. WEBB ASSOCIATES.

BORING AND TRENCH LOCATION PLAN

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

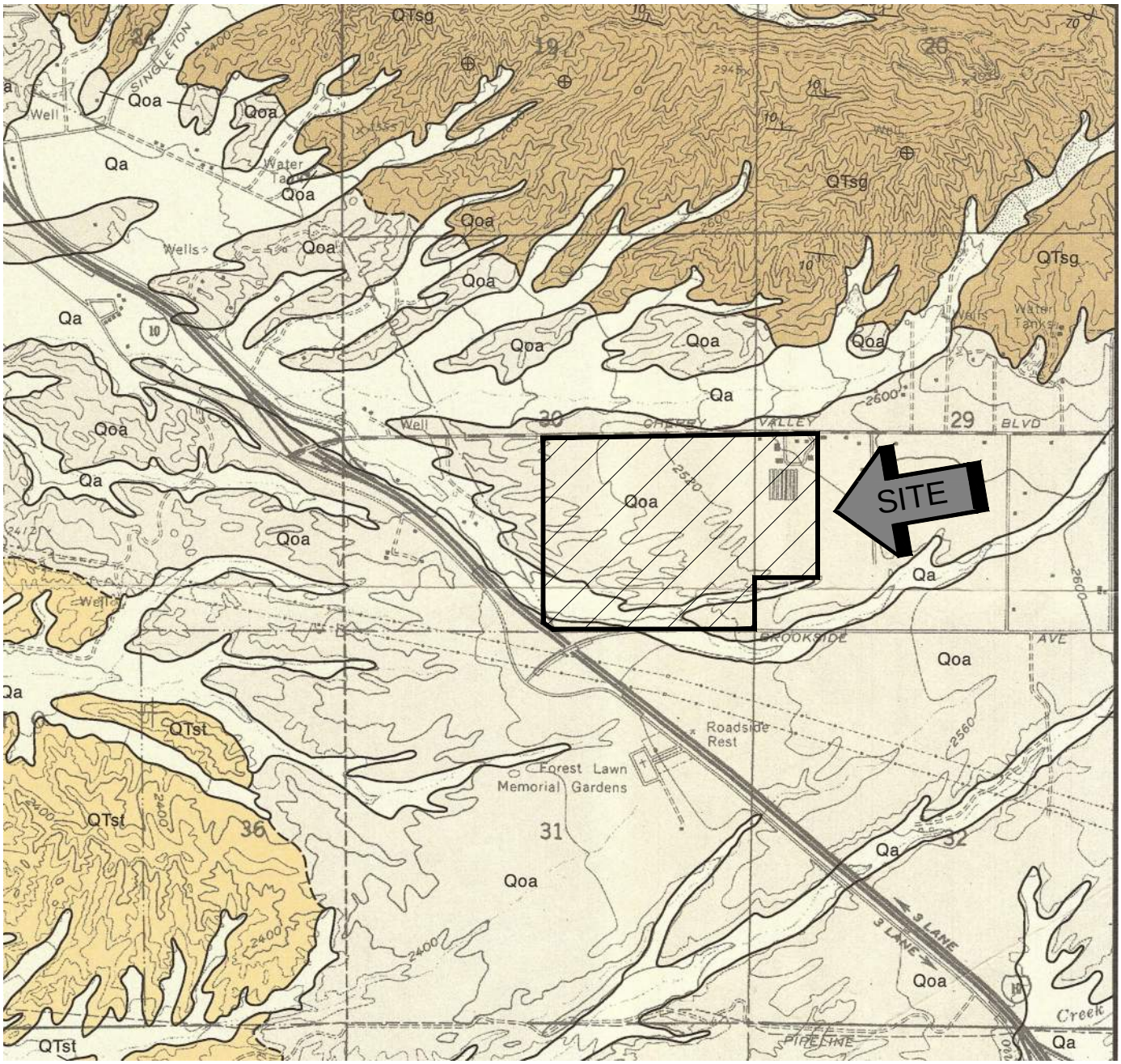
SCALE: 1" = 300'

DRAWN: JAH
CHKD: RGT

SCG PROJECT
21G133-1

PLATE 2

SOUTHERN CALIFORNIA GEOTECHNICAL



LEGEND

Qa / Qg

SURFICIAL SEDIMENTS
Unindurated, undissected

Qg *Alluvial gravel and sand of stream channels*
Qa *Alluvial sand, gravel and clay of level areas, covered by residual soil*

Qoa

OLDER SURFICIAL SEDIMENTS
Weakly indurated alluvial fan deposits derived from local terrains

Qoa *Alluvial gravel and sand, light reddish brown and of granitic and gneissic detritus of San Bernardino Mountains in north areas, brownish gray in south area; top surface slopes slightly from source terrains*

SOURCE: "GEOLOGIC MAP OF THE EL CASCO 7.5' QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA" BY THOMAS W. DIBBLE, JR., 2003.

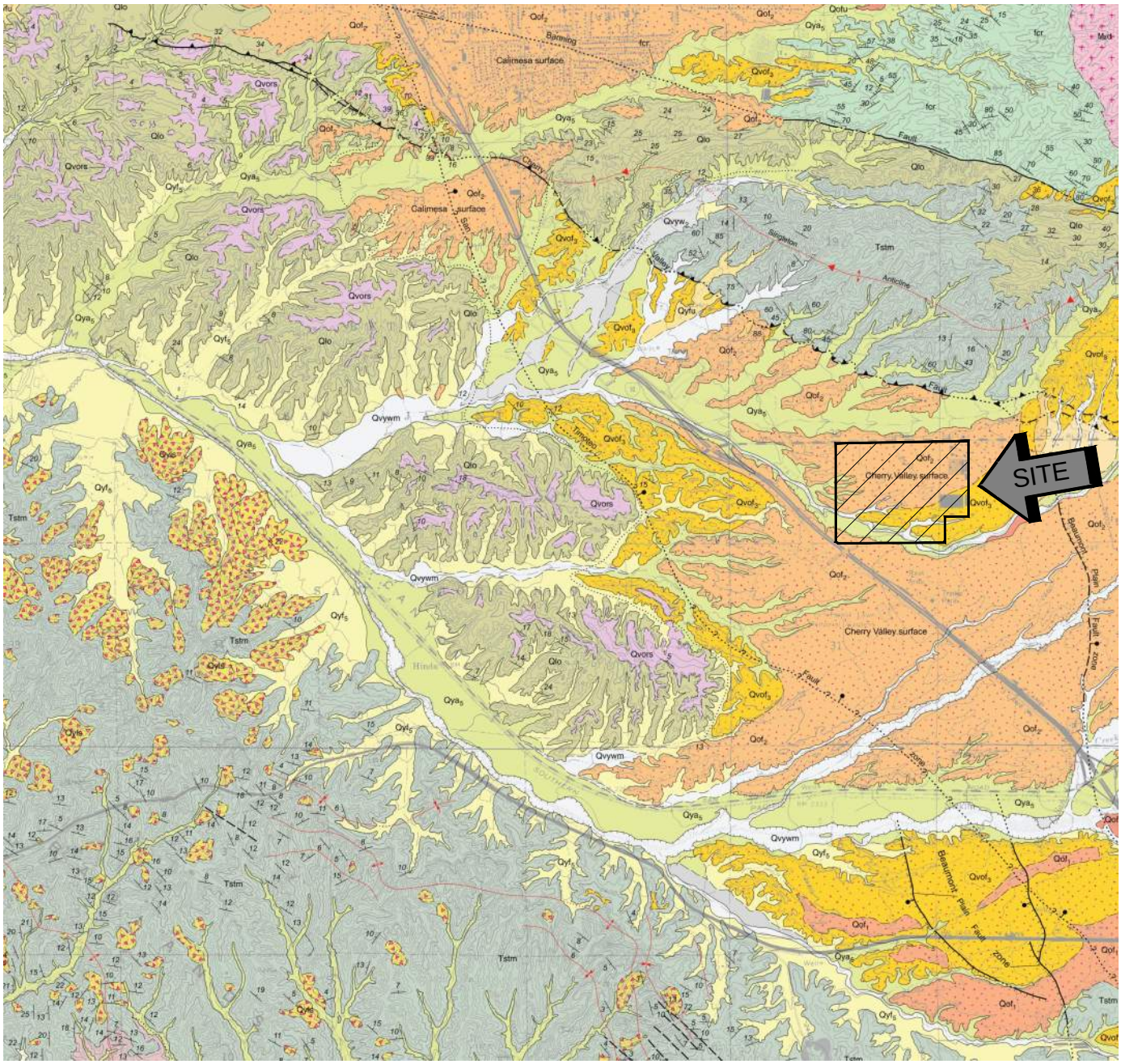
GEOLOGIC MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: JAH CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 3a	

SOUTHERN CALIFORNIA GEOTECHNICAL



CORRELATION OF MAP UNITS

Qvywm	**Very young wash deposits, modern**—Very slightly to slightly consolidated sandy and gravelly sediment in active channels
Qya5	**Young axial-valley deposits, unit 5 (uppermost Holocene)**
Qof2	**Old alluvial-fan deposits, unit 2 (upper to middle Pleistocene)**
Qvof3	**Very old alluvial-fan deposits, unit 3 (middle Pleistocene)**

SOURCE: "GEOLOGIC AND GEOPHYSICAL MAP OF THE EL CASCO 7.5' QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA, WITH ACCOMPANYING GEOLOGIC-MAP DATABASE" GEOLOGIC MAP BY JONATHAN C. MATTI, AND PAMELA M. COSSETTE, DIGITAL DATABASE BY DOUGLAS M. HIRSHCHBERG, JORDAN G. MATTI, AND PAMELA M. COSSETTE, 2015.

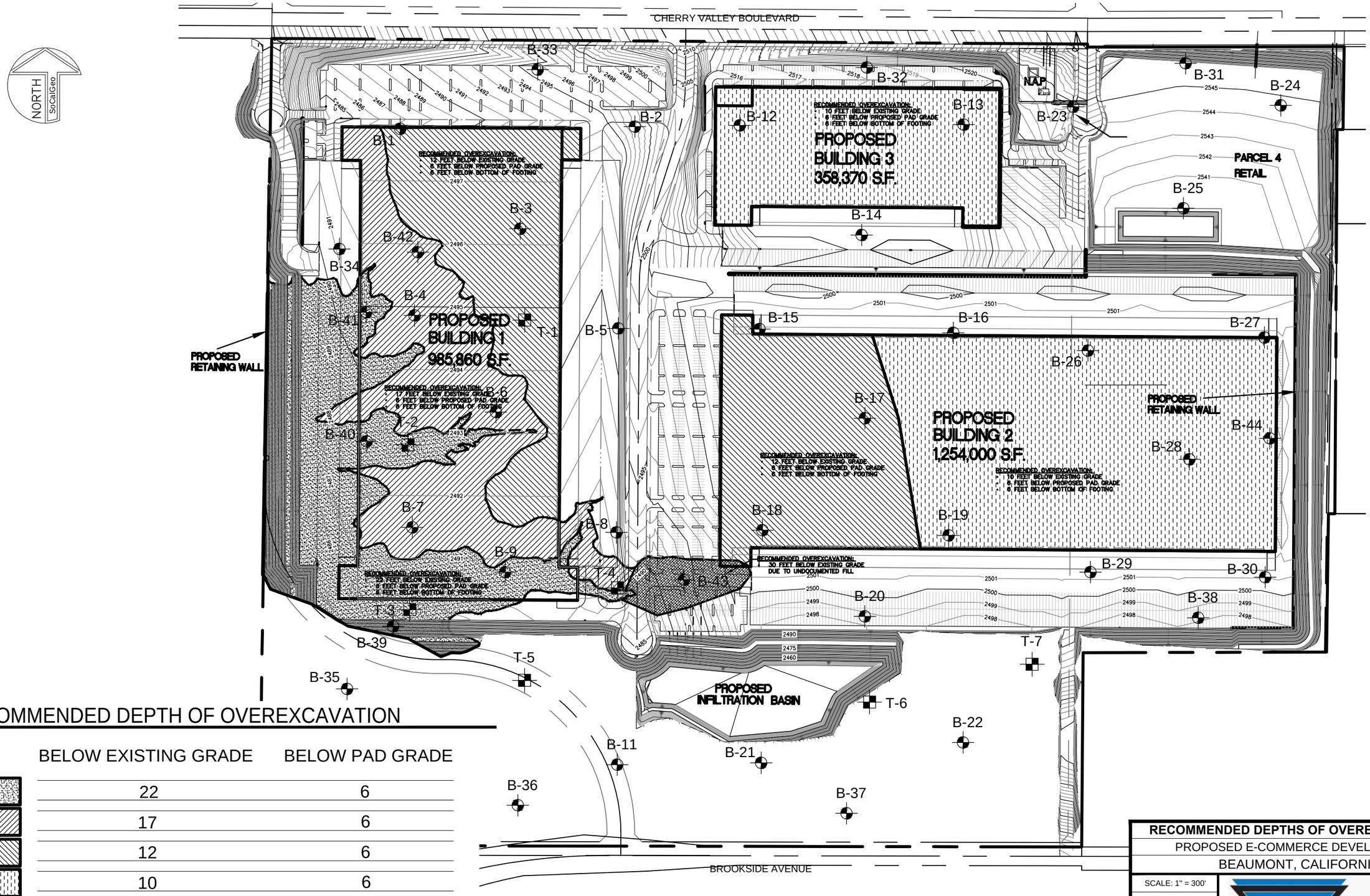
GEOLOGIC MAP

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: JAH CHKD: RGT	
SCG PROJECT 21G133-1	
PLATE 3b	

SOUTHERN CALIFORNIA GEOTECHNICAL



RECOMMENDED DEPTH OF OVEREXCAVATION

BELOW EXISTING GRADE	BELOW PAD GRADE
22	6
17	6
12	6
10	6
30	6

NOTE: SITE PLAN PLAN PREPARED BY ALBERT A. WEBB ASSOCIATES.

RECOMMENDED DEPTHS OF OVEREXCAVATION

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

SCALE: 1" = 300'

DRAWN: PM
CHKD: RGT

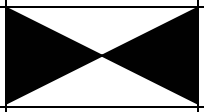
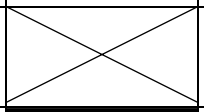
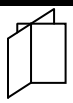
SCG PROJECT
21G133-1

PLATE 4

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

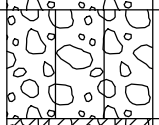
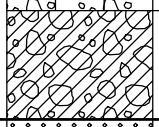
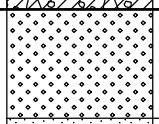
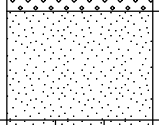
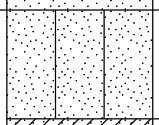
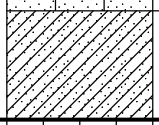
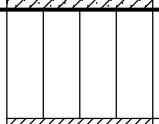
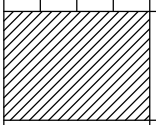
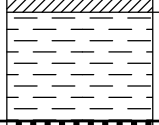
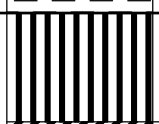
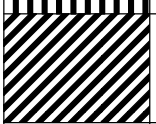
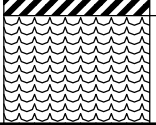
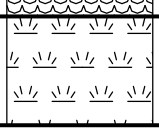
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 17 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2477 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		28			ALLUVIUM: Brown Silty fine Sand, trace clay, little fine root fibers, porous, medium dense-damp	108	8					
		64			OLDER ALLUVIUM: Red Brown Clayey fine Sand, little Silt, trace medium Sand, dense-damp	114	7					
5		76/11"			Red Brown Silty fine Sand, trace medium Sand, medium dense to very dense-damp	116	8					
		76				108	5					
		64					5					
10												
		22					6					
15												
		18			Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp to moist		10					
20												
		19					3					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-1**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2504 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Brown Silty fine Sand, trace to little Clay, little fine root fibers, medium dense-damp to moist		8					EI = 41 @ 0 to 5 feet
		28			OLDER ALLUVIUM: Brown Clayey fine Sand, little Silt, trace medium Sand, medium dense to dense-damp to moist		10					
5		36					8					
		19			Brown to Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		4					
10												
		27			@13½ feet, trace Clay, trace, trace fine to coarse Gravel		10					
15												
		22					6					
20												
		26					6					
25												
		21	4.5		Red Brown fine Sandy Clay, little medium Sand, trace coarse Sand, medium dense-moist		11					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-2**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 17 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2486 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Dark Brown Silty fine Sand, slightly porous, little fine root fibers, medium dense-damp to moist							
		21				104	8					
					OLDER ALLUVIUM: Red Brown Silty fine Sand, trace Clay, trace medium Sand, medium dense-moist							
		42				112	10					
5					Red Brown Clayey fine Sand, little Silt, slightly cemented, medium dense-moist							
		44				115	9					
					Red Brown, Silty fine Sand, trace medium to coarse Sand, medium dense-damp							
		42				108	7					
		44				119	6					
10												
		10			@ 13½ feet, little medium to coarse Sand, trace fine Gravel		5					
15												
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist							
		14					9					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2468 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		26			FILL: Red Brown Silty fine Sand, little Clay, trace fine root fibers, mottled, medium dense-moist		10					
					FILL: Red Brown fine to medium Sandy Clay, cemented, very stiff-moist							
		50/5"	1.5		OLDER ALLUVIUM: Red Brown fine to medium Sand, cemented, very dense-dry		11					
5		78	4.5		Red Brown fine to medium Sandy Clay, cemented, very dense-damp		6 7					
		32			Red Brown Silty fine to medium Sand, trace to little Clay, dense-damp		7					
10		37			@ 9 feet, little fine to coarse Gravel		6					
					Red Brown Silty fine to coarse Sand, little fine to coarse Gravel, dense-damp							
15		43					5					
					Red Brown Silty fine Sand, medium dense-moist to very moist							
		20					10					
20												
		36					15					
25												
		34					14					
30					Gray Brown fine to coarse Sand, little to fine Gravel, dense-dry							
					Red Brown fine Sandy Silt, medium dense-moist							
		22					15					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-4a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown fine Sandy Silt, medium dense-moist to very moist							
					Gray Brown Silty fine to coarse Sand, trace fine Gravel, very dense-damp							
40		58					6					
					Red Brown to Gray Brown fine to coarse Sand, very dense-dry to damp							
45		57					4					
		50/5"					6					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-4b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2489 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		32			ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, slightly porous, trace fine root fibers, medium dense-moist	95	11					
		38	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay, medium dense-moist	107	10					
5		34			Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist	104	10					
		42				115	10					
		37			@ 9 feet, little Clay, trace fine Gravel	105	16					
10												
					Red Brown Silty fine Sand, trace to little Clay, dense to very dense-moist							
		50					12					
15												
					Gray Brown fine to coarse Sand, little fine to coarse Gravel, trace Clay, medium dense-dry to damp							
		20					3					
20												
					Gray Brown Silty fine Sand, dense-damp							
		32					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2470 feet MSL							
		61	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay to Clayey fine Sand, trace fine root fibers, slightly cemented, hard to dense-damp to moist	100	8					
		67	4.5			124	10					
5		50	4.5			107	9					
		49	4.5			112	9					
		41			Red Brown Silty fine to medium Sand, trace coarse Gravel, medium dense-moist	94	12					
10												
					Red Brown Silty fine to coarse Sand, trace coarse Gravel, medium dense to dense-damp							
		28					8					
15												
					Red Brown Clayey fine Sand, 2" Clay lense, dense-moist							
		38					13					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-6**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-7

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2468 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		32			FILL: Red Brown Clayey fine to medium Sand, little Silt, medium dense-moist	115	14					
		72/10"			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, dense to very dense-damp to moist	116	7					
5		49				113	8					
		58			Gray Brown Silty fine to medium Sand, little Clay , trace coarse Sand, dense-damp	113	6					
		23			Light Brown Silty fine Sand, trace to little medium to coarse Sand, medium dense-damp	105	5					
10												
		38			Red Brown Silty fine Sand to fine Sandy Silt, trace Calcareous nodules, dense-moist		10					
15												
		74/11"			Light Brown Silty fine to coarse Sand, trace fine to coarse Gravel, very dense-damp		4					
20												
		73/11"			@23½ feet, trace fine Gravel		6					
25												
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-7**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-8

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 11 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2478 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		16			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace to little Silt, medium dense to dense-moist		13					
		42					13					
5		23			Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist		9					
		36			Brown Silty fine to coarse Sand, trace fine Gravel, dense-damp		6					
10												
					Red Brown Silty fine Sand, trace medium Sand, trace fine root fibers, medium dense-moist							
		24					12					
15												
		27			@18½ feet, trace Clay nodules		10					
20												
					Gray Brown Silty fine to coarse Sand, trace fine Gravel, dense-damp							
		36					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-8**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-9

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 12 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2450 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			FILL: Dark Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, trace Clay, medium dense-moist	114	11					
		40			FILL: Brown Clayey fine to coarse Sand, little Silt, medium dense-damp	114	6					
5		27			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace Calcareous nodules, medium dense-damp	100	6					
		51			Red Brown Silty fine to coarse Sand, trace Calcareous nodules, dense-damp	96	5					
		48				111	5					
10												
		46			Red Brown Silty fine Sand, trace to little medium to coarse Sand, trace Calcareous nodules, dense-moist		9					
15												
		53			Gray Brown Silty fine to coarse Sand, trace Calcareous nodules, very dense-damp		5					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-9**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-10

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2431 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		10			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, trace fine root fibers, loose to medium dense-damp to moist		10					
		12			@3½ feet, trace fine Gravel, little to medium Sand		3					
5		13					5					
		16					5					
10												
		10			Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, trace fine Gravel, medium dense-damp		7					
15												
		14			Red Brown to Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-damp		7					
20												
		15			Gray Brown fine to coarse Sand, trace Silt, trace fine Gravel, medium dense-damp		3					
25												
		11			Dark Red Brown Silty fine to medium Sand, trace to little Clay, trace coarse Sand, little fine Gravel, medium dense-moist		9					
30												
		20			Gray Brown fine to coarse Sand, little to some fine to coarse Gravel, medium dense-damp		5					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-10a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-10

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 36 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Gray Brown fine to coarse Sand, little to some fine to coarse Gravel, medium dense-damp							
		74/10"			@ 38½ feet, very dense		6					
40												
		24	2.0		Brown Clayey Silt, very stiff to hard-moist to very moist		20					
45												
		46					13					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-10b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-11

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2445 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		10			FILL: Dark Brown Silty fine Sand, some fine root fibers, loose-very moist	112	17					
		26			ALLUVIUM: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace coarse Gravel, trace fine root fibers, loose to medium dense-moist	113	14					
5		23			Red Brown Silty fine Sand, trace Clay, slightly porous, medium dense-damp to moist	100	6					
		15				108	5					
		26			@ 9 feet, little medium Sand	98	11					
10												
		18			Gray Brown fine to coarse Sand, trace Silt, trace fine Gravel, medium dense-damp	118	5					
15												
		21			@ 18½ feet, little Silt		8					
20												
		19					7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-11**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-12

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 19 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2513 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		5			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, little Clay, very loose-very moist	112	17					
		58	4.5		OLDER ALLUVIUM: Dark Red Brown fine Sandy Clay, trace medium Sand, little Silt, hard-moist	113	14					
5		42			Red Brown Silty fine Sand, trace medium Sand, slightly porous, trace fine root fibers, medium dense-damp	100	6					
		28			Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp	108	5					
10		20			Red Brown Silty fine Sand, medium dense-moist	98	11					
					Gray Brown Silty fine to coarse Sand, medium dense-damp							
15		36				118	5					
		18					8					
20												
		30			Light Brown Silty fine to medium Sand, little Clay, dense-damp		7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-12**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-13

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 23 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2534 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		13			ALLUVIUM: Brown Silty fine Sand, trace Clay, little fine root fibers, medium dense-moist		11					
		21			OLDER ALLUVIUM: Red Brown Clayey fine Sand, trace medium Sand, medium dense-moist		11					
5		15			Red Brown Silty fine Sand, trace medium Sand, medium dense-damp to moist		7					
		15					10					
10					Brown Silty fine to medium Sand, trace fine to coarse Gravel, medium dense-damp							
		20					7					
15												
		19					7					
20					Red Brown Silty fine Sand to fine Sandy Silt, medium dense to dense-damp to moist							
		19					10					
25												
		34					8					
30					Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, dense-very moist		43					
					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-13**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-14

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 13 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2516 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete							
		26	3.5		ALLUVIUM: Brown fine Sandy Clay, trace medium to coarse Sand, little Silt, very stiff-very moist	115	16					
		31			OLDER ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-very moist	96	15					
5		25			@ 5 feet, trace Clay, no fine Gravel	117	13					
		29			Brown Silty fine Sand, trace medium Sand, medium dense-moist	113	10					
		45				119	11					
10												
		16					9					
15												
		28			@ 18½ feet, little medium to coarse Sand		6					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-14**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-15

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2503 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Brown Silty fine Sand, medium dense-damp		7					
		15			OLDER ALLUVIUM: Red Brown Silty fine Sand, little Clay, medium dense-moist		13					
5		17					11					
		28			Red Brown Silty fine Sand to fine Sandy Silt, trace Clay, medium dense-damp		14					
10					Red Brown fine Sandy Silt, little to some Clay, medium dense-moist to very moist							
		26					17					
15					Red Brown Silty fine Sand to fine Sandy Silt, medium dense to dense-moist							
		31					11					
20												
		23					10					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-15**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-16

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 14 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2522 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		7			FILL: Dark Brown Silty fine Sand, little Clay, trace medium to coarse Sand, occasional Cobbles, loose-very moist		17					
		24			FILL: Dark Brown Silty fine Sand, trace Clay, trace fine to coarse Gravel, medium dense-moist		12					
5		16			ALLUVIUM: Brown Silty fine to medium Sand, little Clay, trace coarse Sand, medium dense-moist		11					
		43			OLDER ALLUVIUM: Red Brown Silty fine Sand, trace medium to coarse Sand, little Clay, dense-moist		13					
10												
		16			Red Brown Silty fine to medium Sand, trace coarse Sand, medium dense-damp		7					
15												
		20			Red Brown Silty fine Sand, trace to little medium to coarse Sand, medium dense-damp to moist		8					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-16**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-17

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2509 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		17			ALLUVIUM: Dark Brown Silty fine Sand, trace medium to coarse sand, trace fine Gravel, medium dense-moist	106	11					
		42			OLDER ALLUVIUM: Brown Clayey fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp to moist	111	14					
5		25				116	6					
		31			Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, trace Clay, medium dense-moist	119	11					
		31			Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, medium dense to dense-moist to very moist	99	24					
10												
		24					11					
15												
		48			@ 18½ feet, little medium to coarse Sand		12					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-17**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-18

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2496 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		6	3.0		FILL: Red Brown fine to medium Sandy Clay, trace fine root fibers, medium stiff to stiff-very moist	101	15					
		15	3.0			116	14					
5		14			OLDER ALLUVIUM: Red Brown SIlty fine to coarse Sand, little Clay, trace fine to coarse Gravel, loose to medium dense-damp to moist	114	12					
		24				95	8					
		13			Red Brown fine to medium Sandy Clay, medium stiff to stiff-very moist	109	16					
10												
		10	1.5				15					
15												
		20					17					
20												
		24			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-damp		5					
25												
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist							
		15					13					
30												
					Red Brown Silty fine Sand, dense-damp							
		36					7					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-18a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-18

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 38 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown Silty fine Sand, dense-damp							
					Red Brown Silty fine Sand to fine Sandy Silt, dense-damp							
		41					7					
40												
		24			@ 43½ feet, trace medium to coarse Sand, medium dense		6					
45												
					Brown Silty fine to medium Sand to fine to medium Sandy Silt, trace to little coarse Sand, medium dense-damp to moist							
		19					9					
50												
					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-18b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-19

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2512 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete 2± inches Slurry							
		4			FILL: Brown Silty fine Sand, little medium Sand, very loose-very moist		31					Poor Recovery
		9			ALLUVIUM: Brown Silty fine to medium Sand, little Silt, trace coarse Sand, trace Calcareous nodules, loose to medium dense-very moist		14					
5		23					14					
		10			OLDER ALLUVIUM: Red Brown Silty fine Sand, little Clay, trace medium to coarse Sand, trace fine to coarse Gravel, loose to medium dense-moist		11					
10												
					Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, dense-damp							
		40					4					
15												
					Brown Silty fine Sand, trace Clay, little medium to coarse Sand, medium dense-moist							
		29					10					
20												
		21					12					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-19**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-20

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2498 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		52			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, little Silt, dense-moist	119	8					EI = 45 @ 0 to 5 feet
		38			Red Brown Clayey fine Sand little Silt, trace fine root fibers, trace fine Gravel, medium dense-moist	118	12					
5		73			Red Brown Silty fine to coarse Sand, trace fine Gravel, dense-moist	119	12					
		42			Gray Brown Silty fine to coarse Sand, trace fine Gravel, medium dense to dense-damp	114	6					
10		67				121	4					
		25					4					
15												
		58					8					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-20**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-21

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2458 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		14			ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, medium dense-damp to moist		10					
		13			@ 3½ to 12 feet, little medium to coarse Sand		6					
5		17					7					
		10					7					
10												
					Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, loose to medium dense-damp to moist		9					
15		116					7					
		23				107	8					
20												
					Gray Brown Silty fine to coarse Sand, little fine to coarse Gravel, very dense-damp to moist							
		71					9					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-21**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-22

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					SURFACE ELEVATION: 2508 feet MSL							
		22	4.5		FILL: Brown fine Sandy Clay, trace medium Sand, little to some fine root fibers, stiff-very moist	112	14					EI = 28 @ 0 to 5 feet
		13			ALLUVIUM: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, slightly cemented, loose to medium dense-damp	102	5					
5		30				112	5					
		74	4.5		OLDER ALLUVIUM: Red Brown fine Sandy Clay, trace fine root fibers, hard-moist	112	12					
		31/11"	4.5			119	9					
10												
		31			Gray Brown to Red Brown Silty fine to coarse Sand, little fine to Coarse Gravel, medium dense to dense-damp to moist		8					
15												
		23					7					
20												
		23			Red Brown Silty fine Sand to fine Sandy Silt, medium dense-moist		11					
25												
		18					12					
30												
		24					8					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-22a

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-22

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 41 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Red Brown Silty fine Sand to fine Sandy Silt, medium dense-damp							
					Gray Brown fine Sandy Silt, trace medium Sand, dense-damp							
40		32					7					
					Gray Brown Silty fine Sand, trace medium Sand, medium dense-damp							
45		23					7					
					Gray Brown Silty fine Sand to fine Sandy Silt, medium dense-damp							
		18					15					
50					Boring Terminated at 50'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-22b**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-23

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2547 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		15			FILL: Red Brown Silty fine Sand, trace medium to coarse Sand, slightly porous, loose to medium dense-damp	105	6					
		42				117	6					
5		20			@ 5 feet, trace to little Clay, trace fine Gravel	103	7					
		18			OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, medium dense-damp	112	4					
		24			Red Brown Silty fine Sand, trace medium Sand, medium dense-moist	108	9					
10												
		27			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-damp		5					
15												
		18					3					
20												
		16			Red Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, medium dense-damp		7					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-23**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-24

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2570 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		13			ALLUVIUM: Red Brown Silty fine to medium Sand, trace medium to coarse Sand, loose-very moist		15					
		6			Red Brown Silty fine Sand, trace medium to coarse Sand, loose-moist		10					
5		13			Red Brown Silty fine to coarse Sand, trace fine to coarse Gravel, medium dense-moist		10					
		12			Brown Silty fine Sand, trace medium to coarse Sand, trace fine to coarse Gravel, medium dense-damp		10					
10												
		16			Red Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-damp to moist		6					
15												
		14					8					
20												
		15					7					
25												
		15					11					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-24**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-25

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2551 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					2± inches Portland Cement Concrete 2± inches slurry							
		9			ALLUVIUM: Red Brown Clayey fine Sand, trace medium Sand, little Silt, loose to medium dense-very moist	115	15					
		10			@ 3 feet, trace fine coarse Gravel	121	15					
5		22				116	10					
		17			Red Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist	117	9					
		28			Gray Brown Silty fine to coarse Sand, trace fine Gravel, loose to medium dense-moist	121	9					
10												
					Brown Silty fine Sand, trace medium to coarse Sand, loose to medium dense-moist							
		12					10					
15												
		9					12					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-25**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-26

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 15 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2533 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Red Brown Silty fine Sand, trace fine root fibers, trace medium Sand, loose-damp							
		9				107	7					
		9			FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand, loose to medium dense-moist	123	11					
5		40				121	12					
		22			ALLUVIUM: Brown Silty fine Sand, trace medium Sand, trace Clay, medium dense-moist	117	13					
		22			@ 9 feet, little Clay	117	12					
10												
		11			@ 13½ to 20 feet, trace fine to coarse Gravel, medium dense-damp		8					
15												
		16					7					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-26**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-27

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2548 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		28			FILL: Red Brown Silty fine Sand, trace medium Sand, trace fine Gravel, trace fine root fibers, medium dense-moist		9					
		16			@ 3½ feet, little medium to coarse Sand		9					
5		12			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-moist		11					
		14			Red Brown Silty fine Sand, trace medium to coarse Sand, medium dense-moist		10					
10												
		13					9					
15												
		10					9					
20												
		46			Red Brown Clayey fine to coarse Sand, little Silt, little fine to coarse Gravel, dense-moist		11					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-27**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-28

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 16 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2536 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0		16			FILL: Red Brown Clayey fine to coarse Sand, little Silt to fine root fibers, medium dense-moist		13					
		22			@ 3½ feet, fine to little fine to coarse Gravel, medium dense-damp		13					
5		19			OLDER ALLUVIUM: Brown Silty fine Sand, little Clay, little medium to coarse Sand, trace fine Gravel, medium dense-moist		12					
		11					9					
10												
		14					7					
15												
		14					10					
20					Boring Terminated at 20'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-28**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-29

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2524 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		6			FILL: Dark Brown Silty fine Sand, trace medium to coarse Sand, loose-moist		12					
		11			@ 3½ feet. trace Clay		11					
5		12			FILL: Red Brown Silty fine Sand, trace to little medium to coarse Sand, trace fine Gravel, trace Clay nodules, medium dense-moist		14					
		20			OLDER ALLUVIUM: Red Brown Clayey fine to coarse Sand, trace fine Gravel, medium dense-moist to very moist		16					
10												
		35			Red Brown Clayey fine to coarse Sand, little Silt, trace fine Gravel, trace calcareous nodules, dense-moist		12					
15												
		63			Red Brown Silty fine to coarse Sand, little Clay, trace fine Gravel, very dense-moist		9					
20												
		21			Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense to dense-damp to moist		14					
25												
		32					8					
30					Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-29

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-30

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2540 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					FILL: Brown Silty fine to coarse Sand, trace fine root fibers, dense-damp to moist							
		56				125	7					
		50			@ 3 feet, trace fine to coarse Gravel, trace rope	126	8					
5		49				118	11					
		39			OLDER ALLUVIUM: Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp	104	7					
		40			@ 9 feet, occasional Cobbles		5					Disturbed Sample
10												
					Brown Silty fine Sand, little Clay, trace to little medium to coarse Sand, trace fine to coarse Gravel, medium dense-moist							
		15					15					
15												
					Brown Silty fine Sand to fine Sandy Silt, trace Clay, medium dense-moist							
		17					17					
20												
					Red Brown Clayey fine to coarse Sand, little Silt, trace fine to coarse Gravel, dense-moist							
		38					14					
25												
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-30**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-31

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 9 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2562 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9			FILL: Red Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace fine root fibers, loose to dense-damp		7					
		19					7					
5		36					7					
		18			OLDER ALLUVIUM: Light Red Brown Silty fine to coarse Sand, medium dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-31**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-32

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 8 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2530 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		14			OLDER ALLUVIUM: Red Brown to Brown Silty fine Sand, trace medium to coarse Sand, medium dense to very dense-damp		7					
		57			@ 3½ feet little medium to coarse Sand		6					
5		25					6					
		36			@ 8½ feet, trace fine Gravel		6					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-32**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-33

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 9 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2494 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		20			OLDER ALLUVIUM: Red Brown, Silty fine Sand, trace medium Sand, trace Clay, trace fine root fibers, medium dense-damp		5					
		32	4.5		Red Brown Clayey fine Sand to fine Sandy Clay, trace fine Gravel, dense-dry to damp		3					
5		58	2.5				6					
		40			Red Brown Silty fine Sand, trace Clay, dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-33**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-34

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2467 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		34			OLDER ALLUVIUM: Red Brown Silty fine Sand, little fine root fibers, dense-damp		6					
		55	4.5		Red Brown Clayey fine Sand to fine Silty Clay, little Silt, trace medium to coarse Sand, dense to very dense-dry		8					
5		60	4.5				8					
		37	4.5				8					
		26			Red Brown Silty fine Sand, dense-damp		7					
10					Boring Terminated at 10½'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-34**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-35

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2425 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		8			ALLUVIUM: Brown Silty fine Sand, trace to little medium Sand, trace fine root fibers, loose to medium dense-dry		5					
		8					3					
5		13					4					
		7					7					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-35**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-36

JOB NO.: 21G133-1 | DRILLING DATE: 3/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 8 feet
LOCATION: Beaumont, California | LOGGED BY: Jaime Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2445 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		4			ALLUVIUM: Dark Brown to Brown, Silty fine to medium Sand, trace to little coarse Sand, trace to little coarse Sand, trace fine root fibers, loose to medium dense-damp		8					
		12			@ 3½ feet, slightly porous		5					
5		12					6					
		16	2.0		OLDER ALLUVIUM: Red Brown fine Sandy Clay, slightly cemented, very stiff-damp		6					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-36**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-37

JOB NO.: 21G133-1 | DRILLING DATE: 3/15/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2465 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		18			ALLUVIUM: Dark Brown to Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, trace fine root fibers, medium dense-moist		9					
		13			@ 3½ feet, trace Clay		10					
5		16					7					
		15			Brown fine Sandy Silt, trace medium to coarse Sand, medium dense-damp to moist		8					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-37**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-38

JOB NO.: 21G133-1 | DRILLING DATE: 3/12/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 7 feet
LOCATION: Beaumont, California | LOGGED BY: Ryan Bremer | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2532 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9	1.5		FILL: Red Brown fine Sandy Clay, trace medium to coarse Sand, trace fine root fibers, trace fine Gravel, loose-very moist		19					
		20			FILL: Red Brown Silty fine to coarse Sand, little Clay, medium dense-moist		13					
5		20					10					
		18			OLDER ALLUVIUM: Red Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp		5					
10					Boring Terminated at 10'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-38**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-39

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 21 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2421 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
0					ALLUVIUM: Brown Silty fine Sand, trace medium to coarse Sand, trace fine root fibers, medium dense-dry to damp							
		17				105	2					
					Gray Brown fine Sand, medium dense-dry to damp							
					Brown Silty fine Sand, medium dense-dry to damp							
		20				108	2					
5					Gray Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-dry							
					Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, medium dense-damp							
		19				104	6					
10												
					Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel, loose to medium dense-damp to moist							
		14				104	7					
15												
		21				105	11					
20					Gray Brown fine Sand, trace medium to coarse Sand, trace fine Gravel, medium dense-moist							
					OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, medium dense-very moist							
		39				99	21					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-39**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-40

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2443 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					ALLUVIUM: Brown Silty fine to medium Sand, trace coarse Sand, medium dense-dry to damp							
		22				113	2					
					Brown Clayey fine Sand, trace medium Sand, medium stiff-dry to damp							
		20				103	2					
5												
					Brown Silty fine Sand, trace medium Sand, medium dense-damp							
		18				105	4					
10												
		25				107	4					
15					OLDER ALLUVIUM: Gray Brown fine to coarse Sand, medium dense to dense-damp							
		57				117	3					
20												
					Gray Brown Silty fine Sand, trace Silt, trace medium to coarse Sand, medium dense-damp to moist							
		37				115	8					
25					Red Brown fine Sandy Clay, little to some Silt, trace medium to coarse Sand, slightly cemented, very stiff-damp							
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-40

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-41

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 20 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2450 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		12			FILL: Brown Silty fine Sand, trace medium to coarse Sand, mottled, loose-moist	126	9					
5		14			ALLUVIUM: Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand, loose to medium dense-damp	102	4					
		16				102	5					
10					Brown to Red Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-damp							
					OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, trace medium to coarse Sand, medium dense-dry to damp							
15		27				105	2					
		30				94	6					
20												
					Gray Brown Silty fine to coarse Sand, medium dense-damp							
		34				110	4					
25					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-41**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-42

JOB NO.: 21G133-1 | DRILLING DATE: 7/14/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 22 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2470 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					OLDER ALLUVIUM: Red Brown Silty fine Sand, medium dense-damp							
		19			Red Brown fine Sandy Clay, little medium Sand, weakly cemented, slightly porous, very stiff-damp	100	5					
5		31				113	7					
10		34			@ 9 feet, little medium Sand	108	5					
					Brown Silty fine Sand, medium dense-damp							
15		24				109	6					
					Gray Brown fine Sand, trace Silt, medium dense-very moist							
20		40			Brown Silty fine Sand, medium dense-very moist	97	15					
25		62			@ 24 feet, trace coarse Sand, trace fine Gravel, dense-damp	113	6					
					Boring Terminated at 25'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-42**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-43

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 26 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2476 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		53	4.5		FILL: Brown to Red Brown fine Sandy Clay, trace medium Sand, trace fine Gravel, slightly cemented, mottled, medium stiff to hard-damp to very moist	114	6					
		47	4.5		@ 4 feet, little Portland cement concrete (PCC) fragments	92	7					
5												
		8	4.5			104	18					
10												
		26	4.5		@ 14 feet, little PCC fragments	118	5					
15												
		12	3.5			110	11					
20												
		54	4.5				10					Poor Recovery
25					@ 27 feet, trace tire tread							
		50/5"	4.5			121	11					
30					OLDER ALLUVIUM: Brown fine to medium Sand, little Silt, trace coarse Sand, trace coarse Gravel, slightly cemented, very dense-moist Boring Terminated at 30'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG

PLATE B-43

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-44

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 53 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: 2543 feet MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9			ALLUVIUM: Brown to Red Brown Silty fine Sand, trace fine root fibers, loose-damp		6					
		19			Brown fine Sandy Clay, trace medium Sand, slightly cemented, stiff to very stiff-damp to moist		8					
5												
		12					9					
10												
		12			Red Brown Silty fine Sand, little Clay, trace medium to coarse Sand, trace fine Gravel, medium dense-moist		9					
15												
		12			Red Brown fine Sandy Clay, little Silt, stiff-moist		10					
20												
		11			Red Brown Silty fine Sand, medium dense-moist		10					
25												
		19					12					
30												
		24			Brown fine to medium Sand, trace coarse Sand, medium dense-damp		3					

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-44a**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-44

JOB NO.: 21G133-1 | DRILLING DATE: 7/16/21 | WATER DEPTH: Dry
PROJECT: Proposed E-Commerce Development | DRILLING METHOD: Hollow Stem Auger | CAVE DEPTH: 53 feet
LOCATION: Beaumont, California | LOGGED BY: Jamie Hayward | READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Brown fine to medium Sand, trace coarse Sand, medium dense-damp							
					OLDER ALLUVIUM: Gray Brown fine to coarse Sand, trace fine to coarse Gravel, dense-damp							
40		43					3					
		45					4					
45												
		56			Gray Brown fine Sand, trace Silt, dense-damp	107	6					
		67/12"			Brown Silty fine to coarse Sand, trace fine to coarse Gravel, slightly cemented, dense to very dense-damp	121	7					
50		97/11"				110	5					
		50/5"				113	4					
		50/4"				112	3					
55												
		32										No Sample Recovery
60					Boring Terminated at 60'							

TBL 21G133.GPJ SOCALGEO.GDT 8/12/21

TEST BORING LOG **PLATE B-44b**

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-1

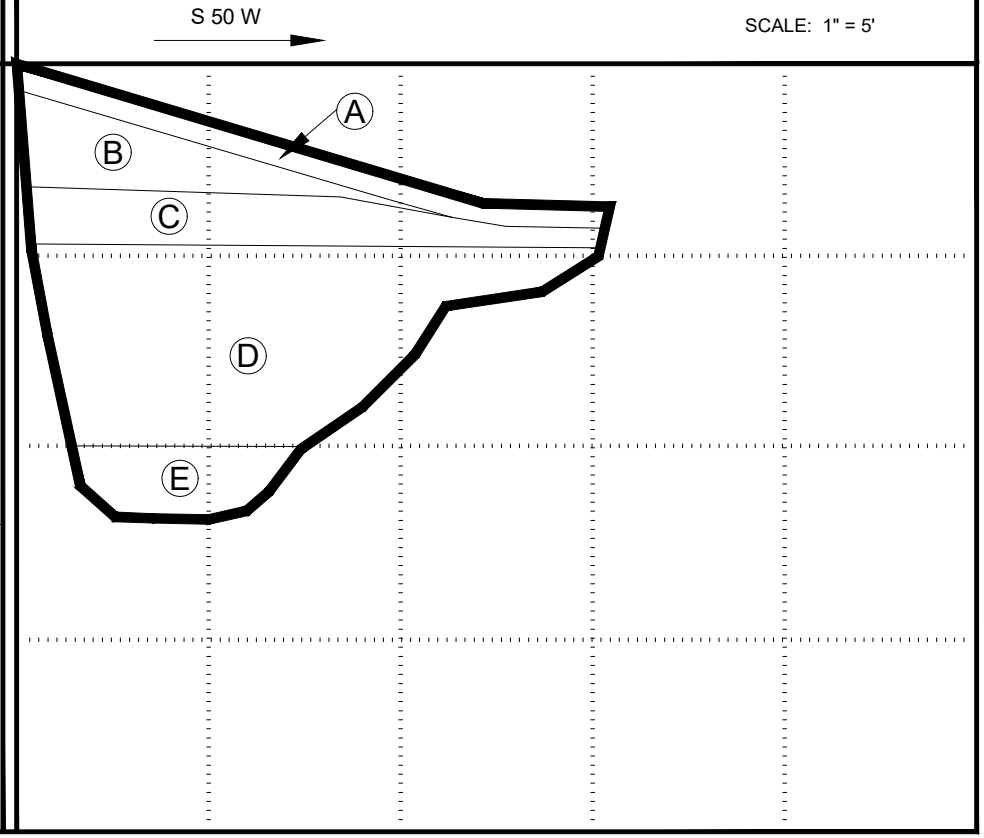
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 50 W
ELEVATION: 2485 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		6	A: FILL: Dark Brown Silty fine Sand, trace fine root fibers, abundantly porous, damp - loose
				B: FILL: Gray Brown fine Sandy Silt, damp - medium dense
	b		10	
				C: OLDER ALLUVIUM: Brown Clayey fine Sand, moist - medium dense
5	b		9	
				D: OLDER ALLUVIUM: Brown Silty fine Sand, damp - medium dense
	b		7	
10				E: OLDER ALLUVIUM: Brown Clayey fine Sand, moist - medium dense to dense
	b		12	
				Trench Terminated @ 12 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-45

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-2

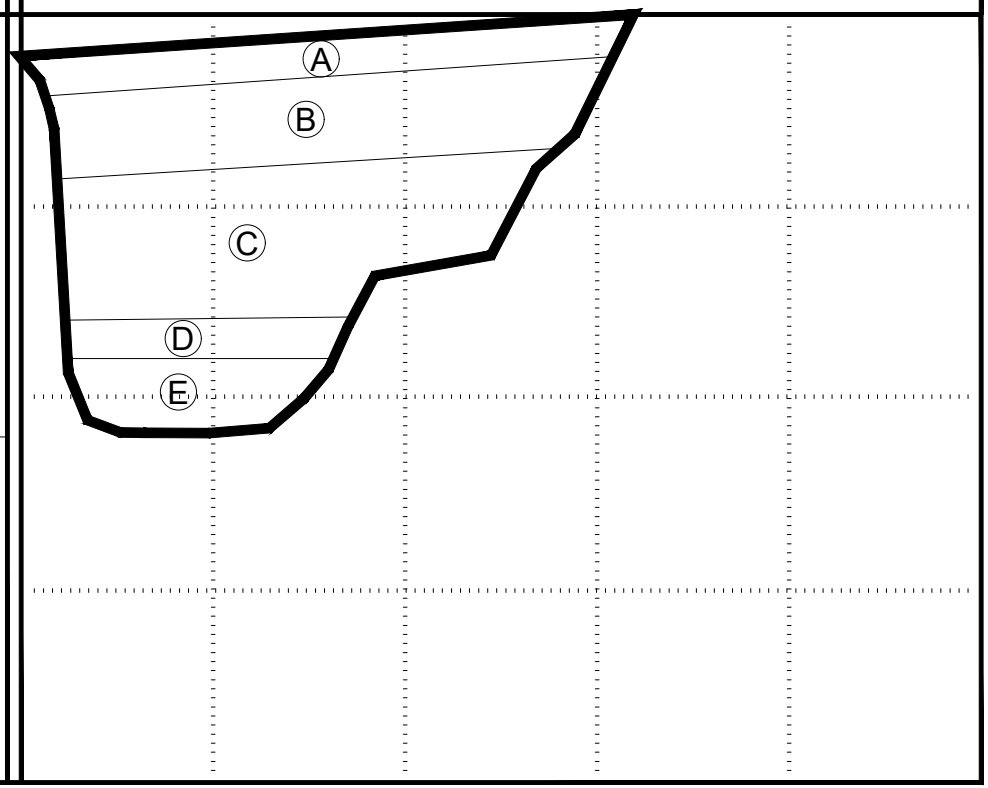
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: N 20 E
ELEVATION: 2448 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		6	
	b		5	A: ALLUVIUM: Gray Brown Silty fine Sand, abundant root fibers, abundantly porous, damp - loose B: OLDER ALLUVIUM: Red Brown Clayey fine Sand, little medium to coarse Sand, moist - medium dense
	b		10	
5	b		4	C: OLDER ALLUVIUM: Brown Silty fine Sand, little medium Sand, damp - medium dense
	b		3	D: OLDER ALLUVIUM: Brown fine to coarse Sand, trace Silt, dry to damp - medium dense
10	b		5	E: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, damp - medium dense
				Trench Terminated @ 11 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-46

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-3

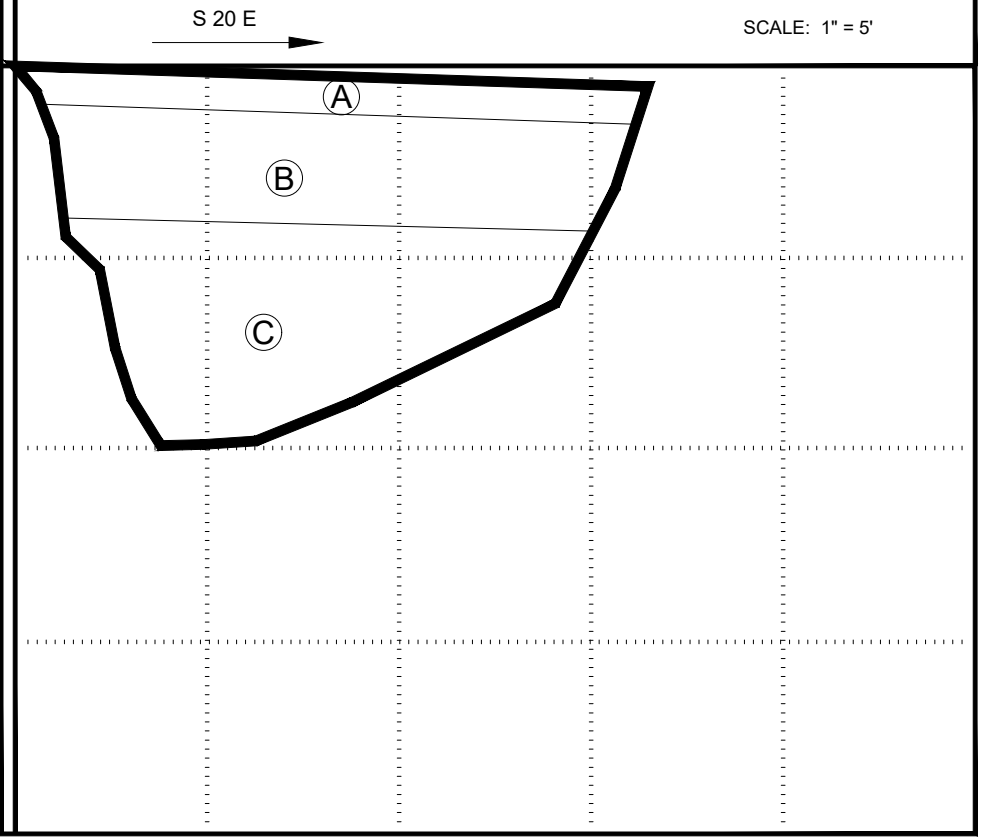
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 20 E
ELEVATION: 2435 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		4	A: ALLUVIUM: Gray Brown Silty fine Sand, abundant root fibers, porous, damp - loose
	b		10	B: OLDER ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, moist - moist
5	b		5	
				C: OLDER ALLUVIUM: Red Brown to Gray Brown Clayey fine to medium Sand, trace coarse Sand, slightly cemented, damp - dense
	b		5	
	b		5	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-47

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-4

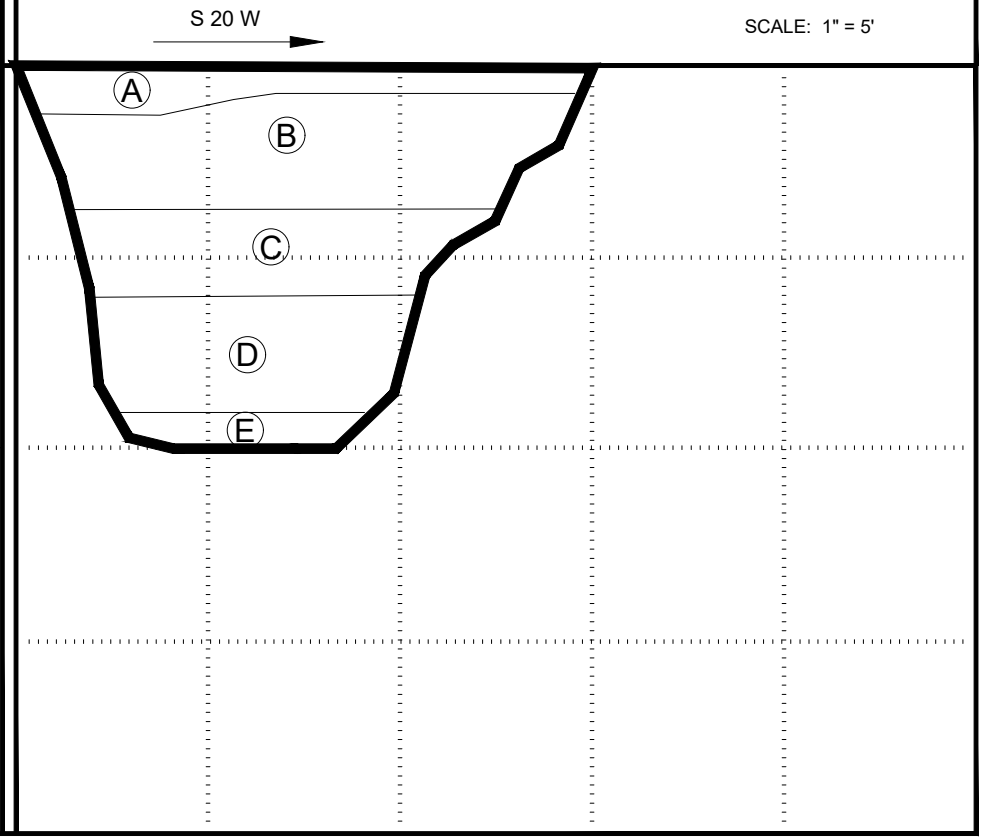
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION:Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 20 W
ELEVATION: 2470 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		17	A: ALLUVIUM: Dark Brown Clayey fine to medium Sand, trace fine root fibers, abundantly porous, moist to very moist - loose
	b		10	B: OLDER ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, moist - medium dense
5	b		5	C: OLDER ALLUVIUM: Red Brown Clayey fine to medium Sand, damp - dense
	b		3	D: OLDER ALLUVIUM: Brown Silty fine Sand, trace Clay, slightly cemented, damp - dense
				E: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, slightly cemented, damp - dense
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-48

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-5

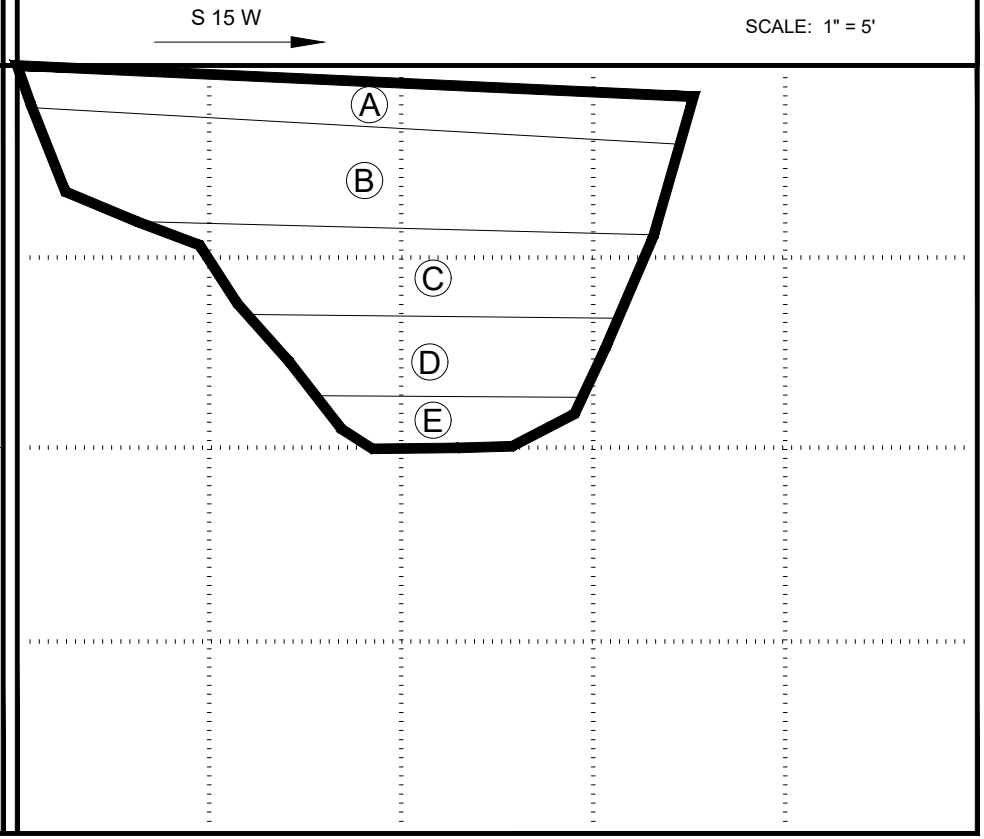
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 15 W
ELEVATION: 2444 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		11	A: ALLUVIUM: Dark Brown Silty fine to medium Sand, abundant fine root fibers, porous, moist - loose
	b		10	B: ALLUVIUM: Gray Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, trace fine root fibers, moist - loose to medium dense
5				C: OLDER ALLUVIUM: Red Brown to Gray Brown Clayey fine Sand, damp to moist - dense
	b		4	D: OLDER ALLUVIUM Brown Clayey fine to medium Sand, little coarse Sand, damp - dense
	b		2	E: OLDER ALLUVIUM: Brown fine to coarse Sand, little fine to coarse Gravel, trace Silt, dry to damp - dense
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-49

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-6

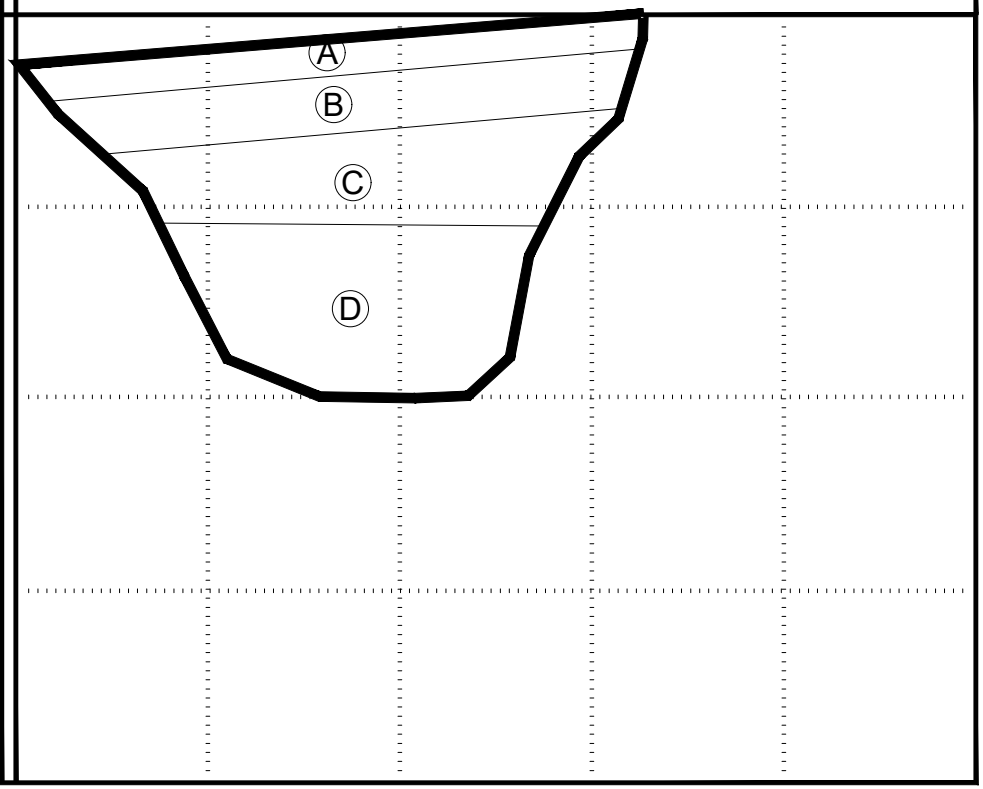
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: N 15 E
ELEVATION: 2475 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		12	A: ALLUVIUM: Brown Clayey fine Sand, trace medium to coarse Sand, trace fine root fibers, slightly porous, moist - loose
				B: ALLUVIUM: Brown Silty fine to medium Sand, moist - damp
	b		10	C: OLDER ALLUVIUM: Red Brown to Brown Clayey fine to medium sand, trace coarse Sand, slightly cemented, damp - dense
5	b		5	
	b		5	D: OLDER ALLUVIUM: Silty fine to medium Sand: Brown Silty fine to coarse Sand, damp - dense
10	b		5	Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-50

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-7

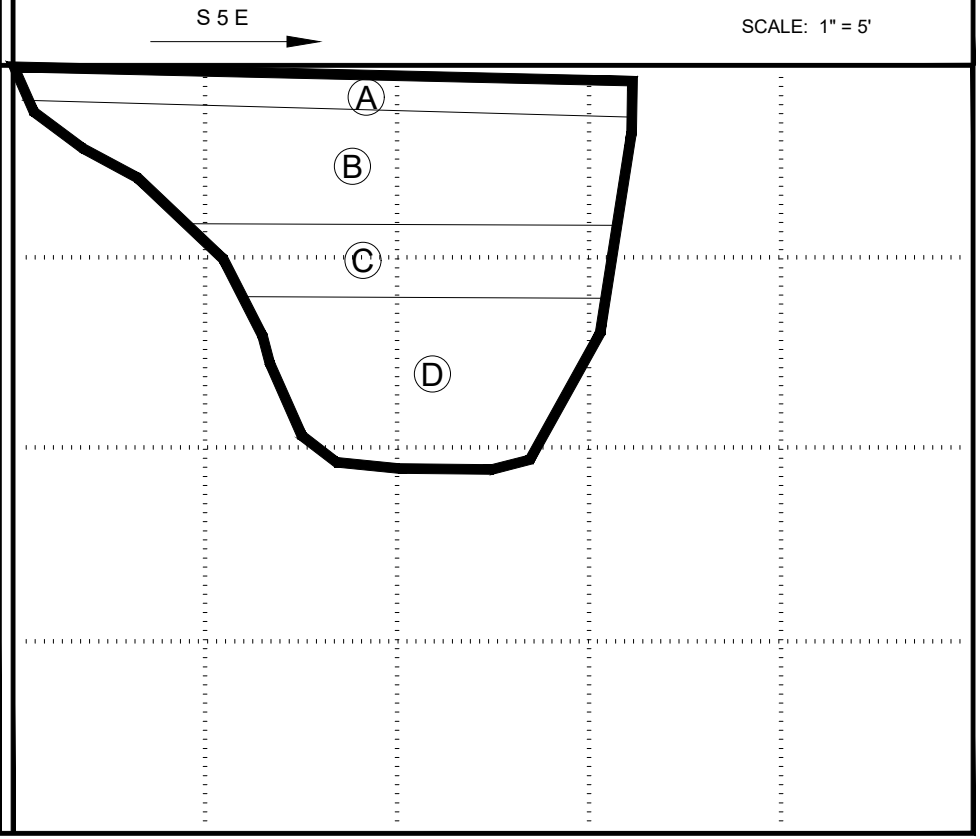
JOB NO.: 21G133-1
PROJECT: Proposed E-Commerce Development
LOCATION: Beaumont, California
DATE: 3/16/2021

EQUIPMENT USED: Backhoe
LOGGED BY: Daryl Kas
ORIENTATION: S 5 E
ELEVATION: 2497 feet msl

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		10	A: ALLUVIUM: Dark Brown Clayey fine to medium Sand, abundant root fibers, porous, damp to moist - loose
	b		10	B: ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine root fibers, slightly porous, damp to moist - loose to medium dense
5	b		7	C: OLDER ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, damp - medium dense
	b		4	D: OLDER ALLUVIUM: Brown fine to coarse Sand, little fine to coarse Sand, trace Silt, damp - medium dense
	b		4	
10				Trench Terminated @ 9.5 feet
15				

GRAPHIC REPRESENTATION



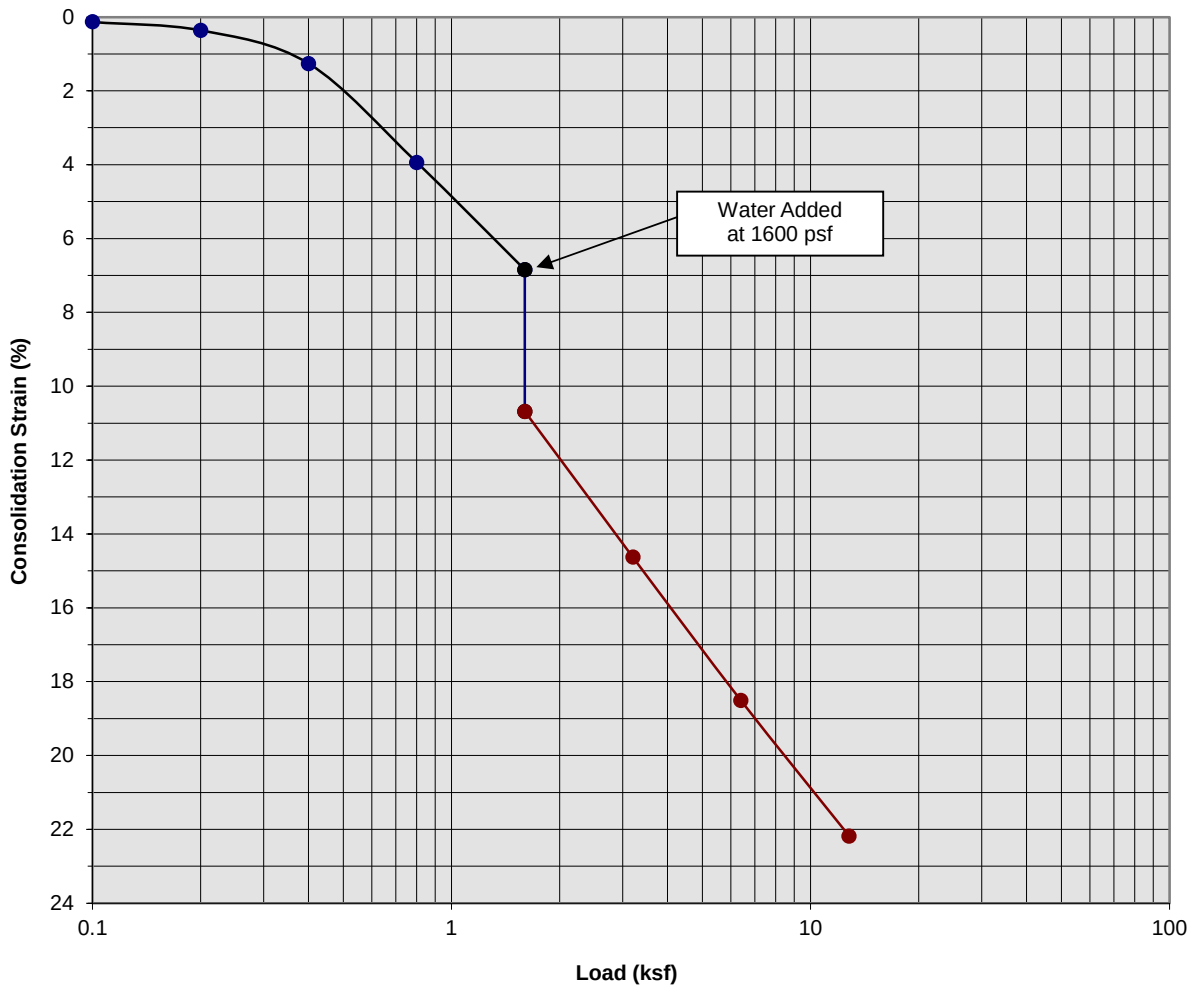
KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-51

APPENDIX C

Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay

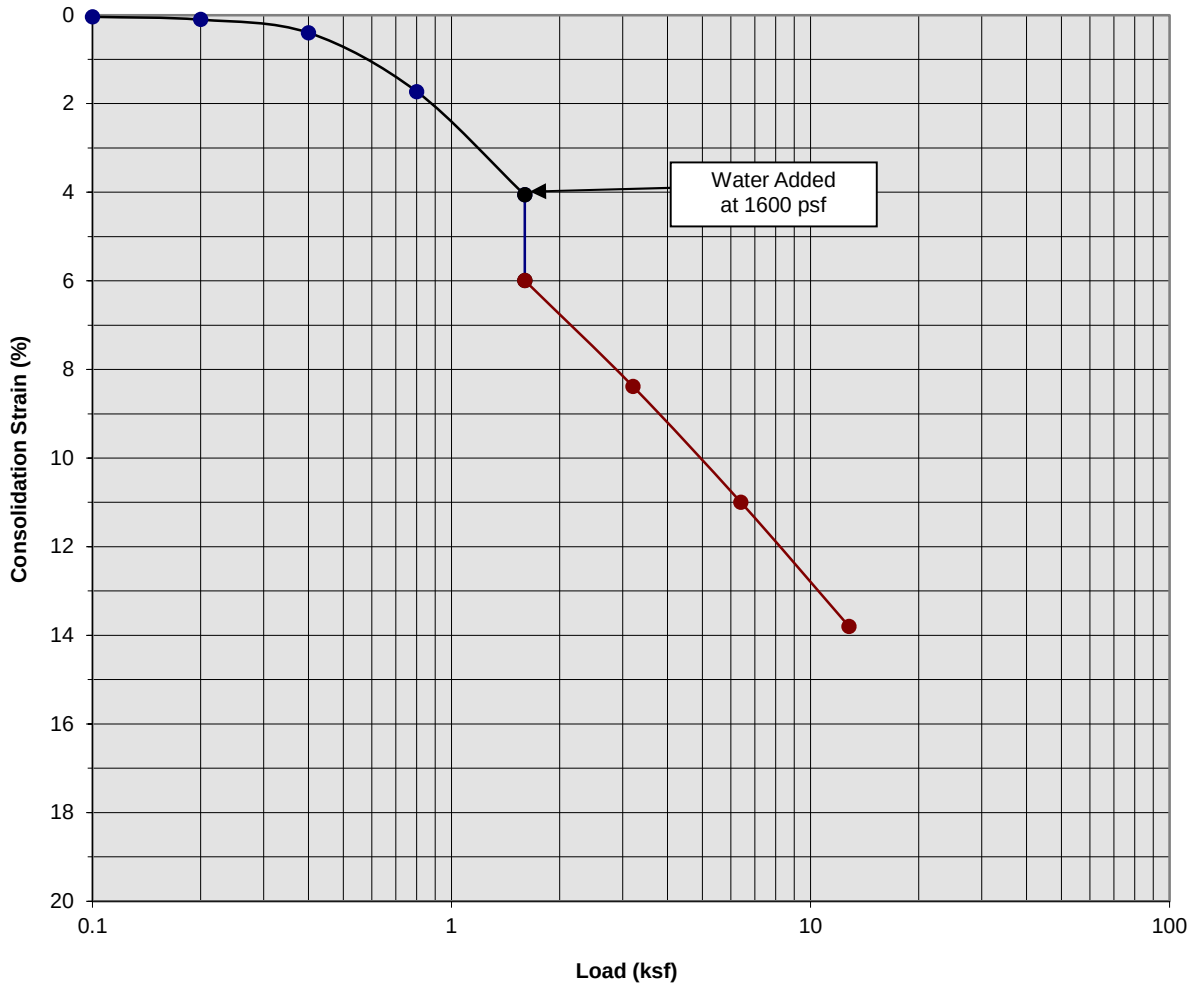
Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	3 to 4	Initial Dry Density (pcf)	107.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	137.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.84

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt

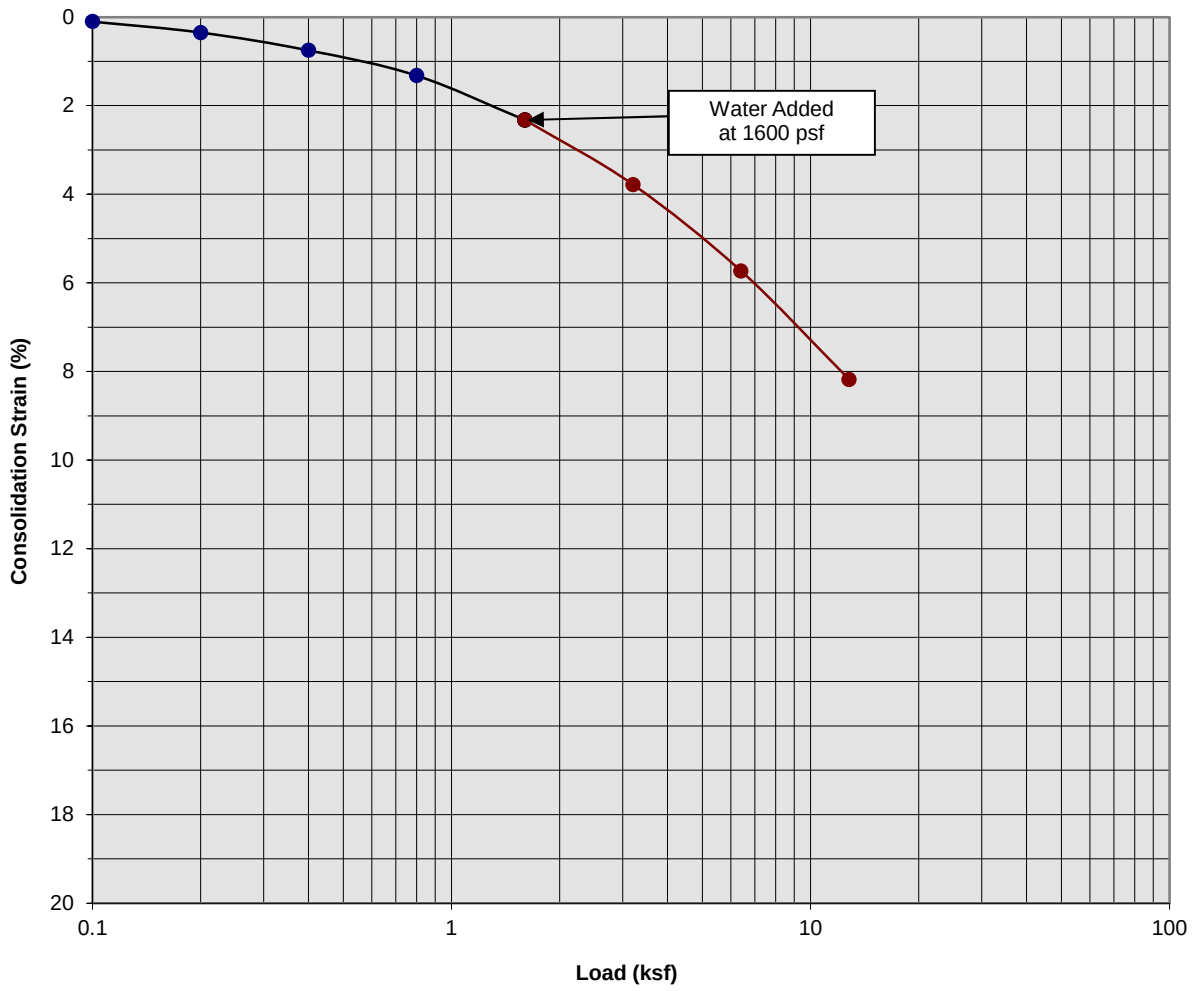
Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	5 to 6	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.93

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt

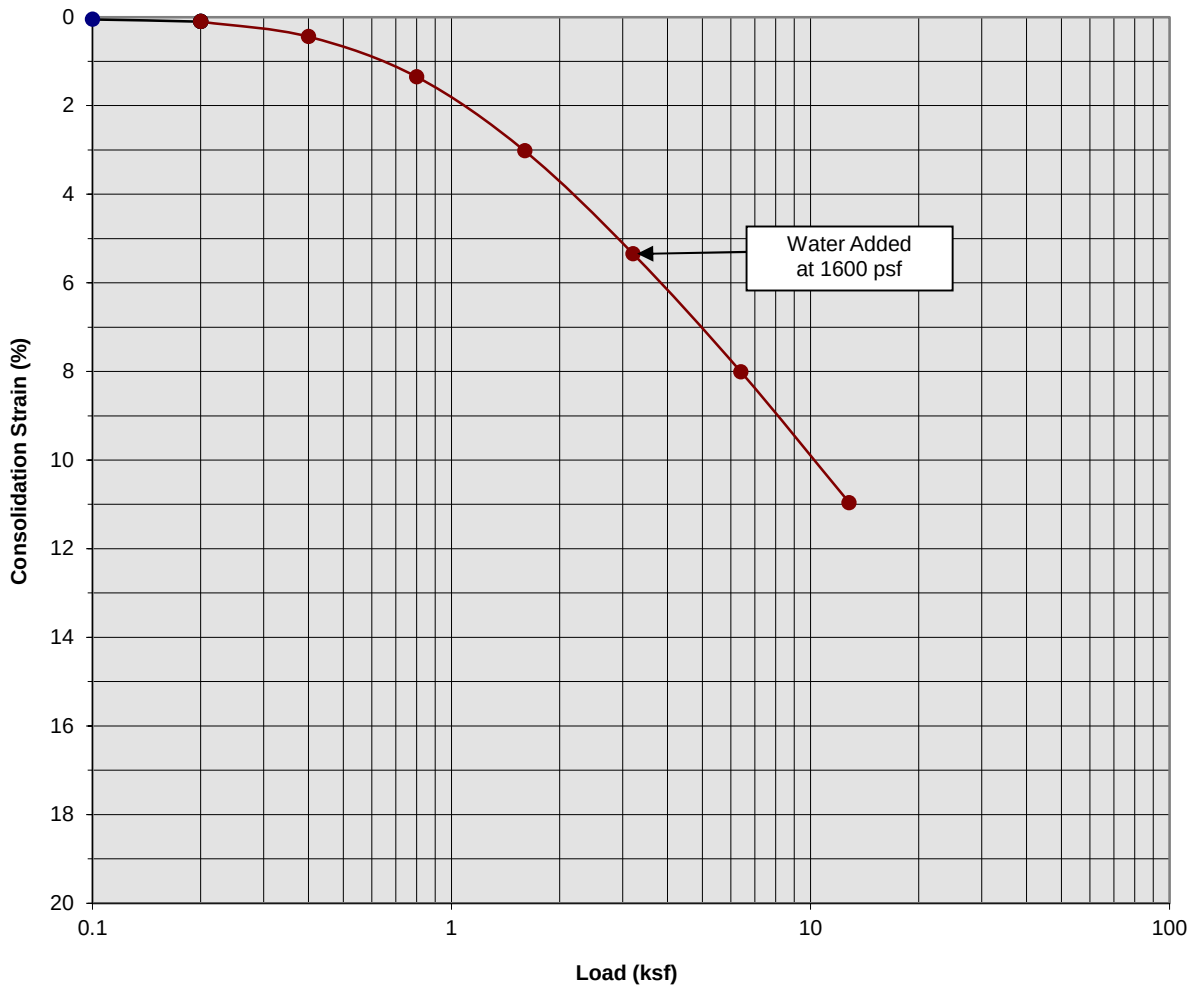
Boring Number:	B-5	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	115.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand to fine Sandy Silt, little Clay, trace fine Gravel

Boring Number:	B-5	Initial Moisture Content (%)	16
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	9 to 10	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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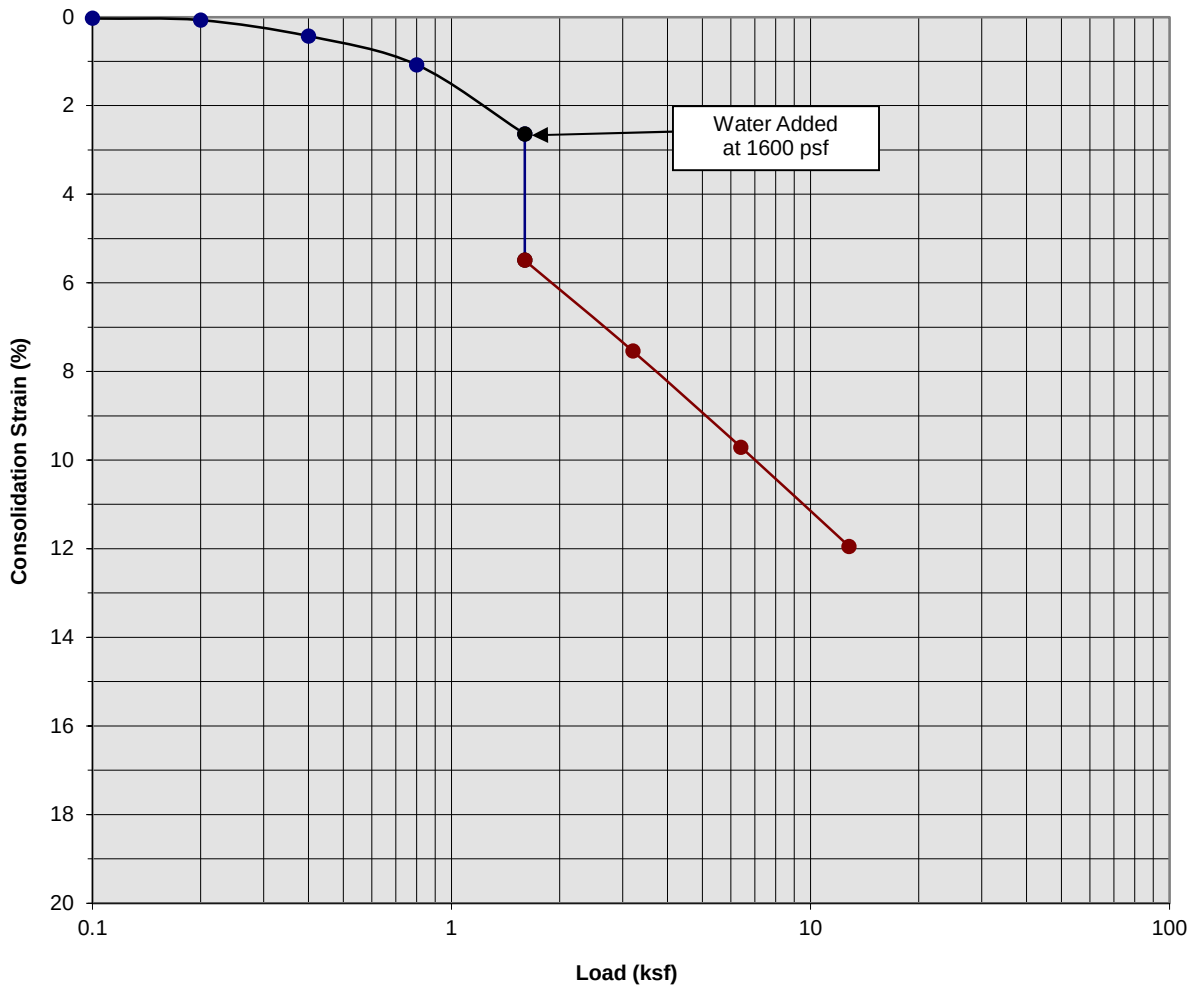
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace coarse Gravel

Boring Number:	B-11	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	3 to 4	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.85

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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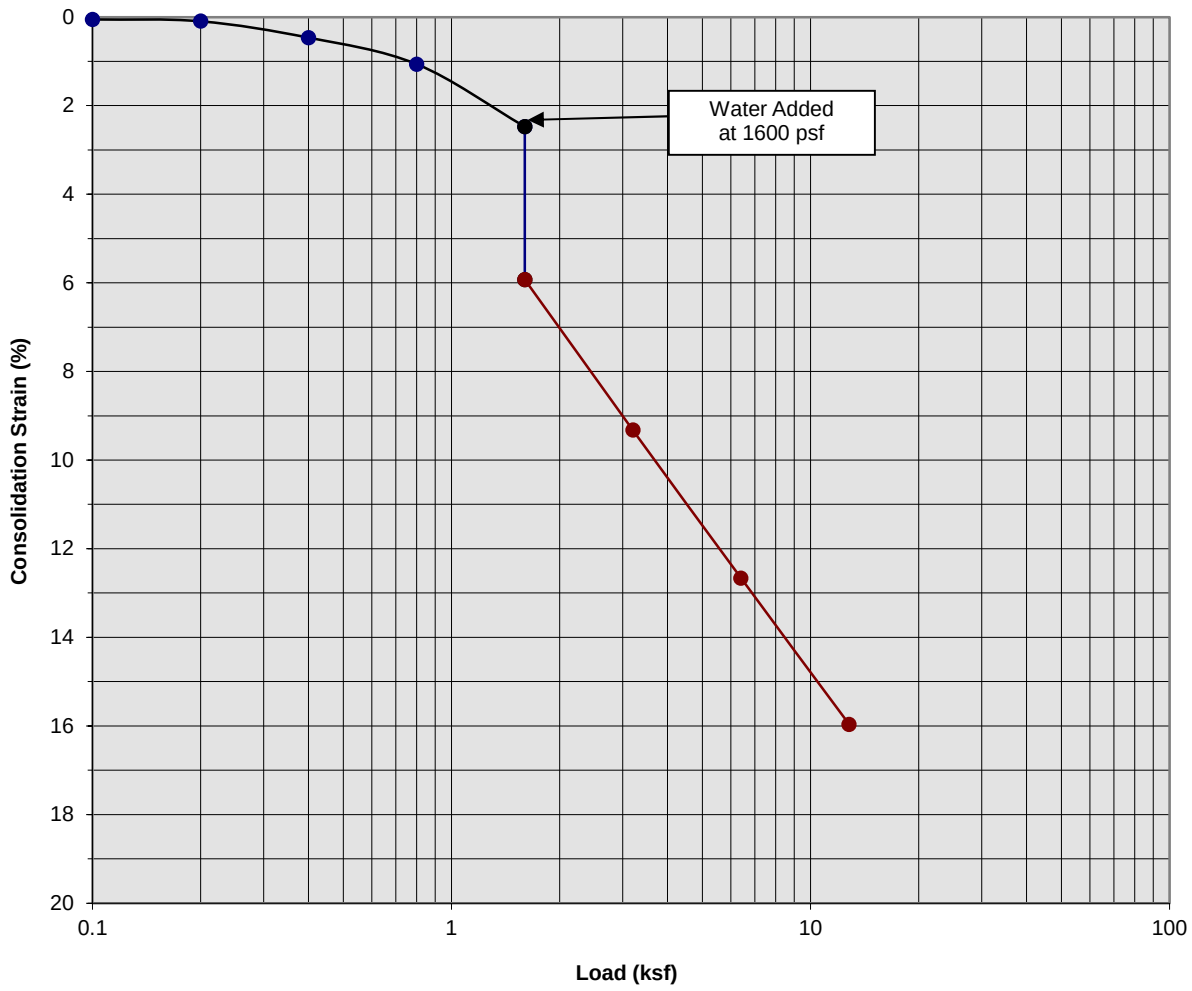
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

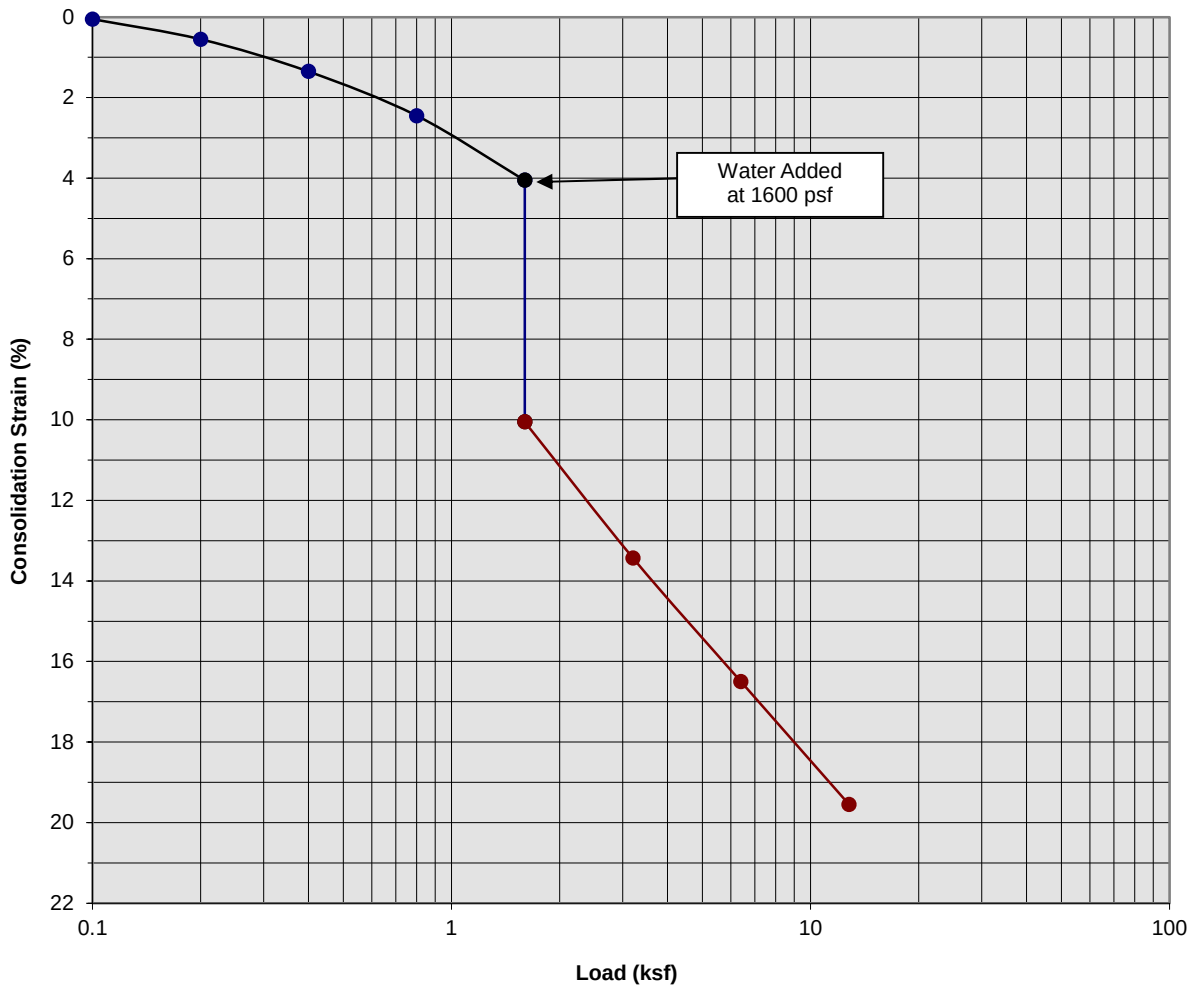
Boring Number:	B-11	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	5 to 6	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.45

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

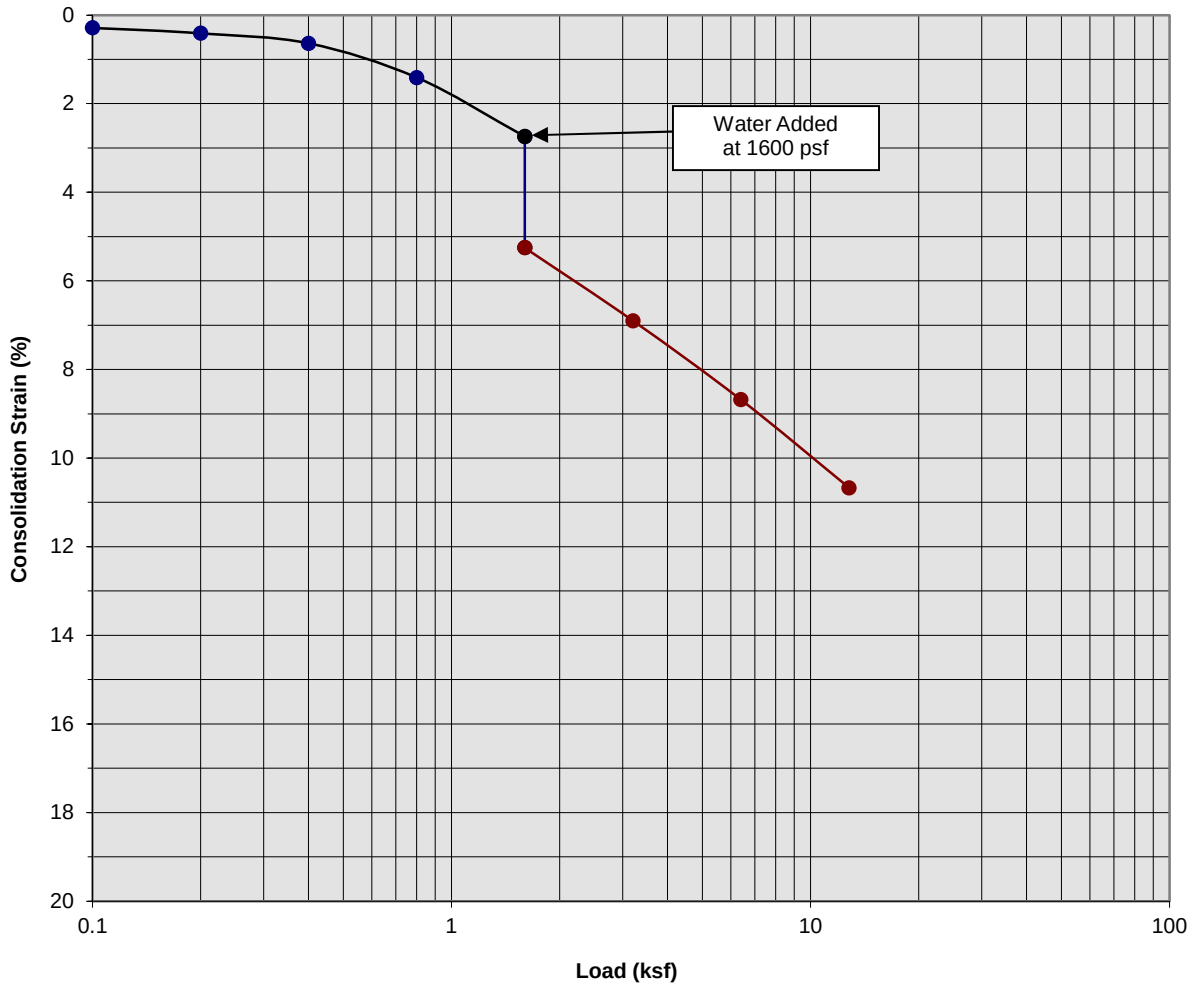
Boring Number:	B-11	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	7 to 8	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.00

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace Clay

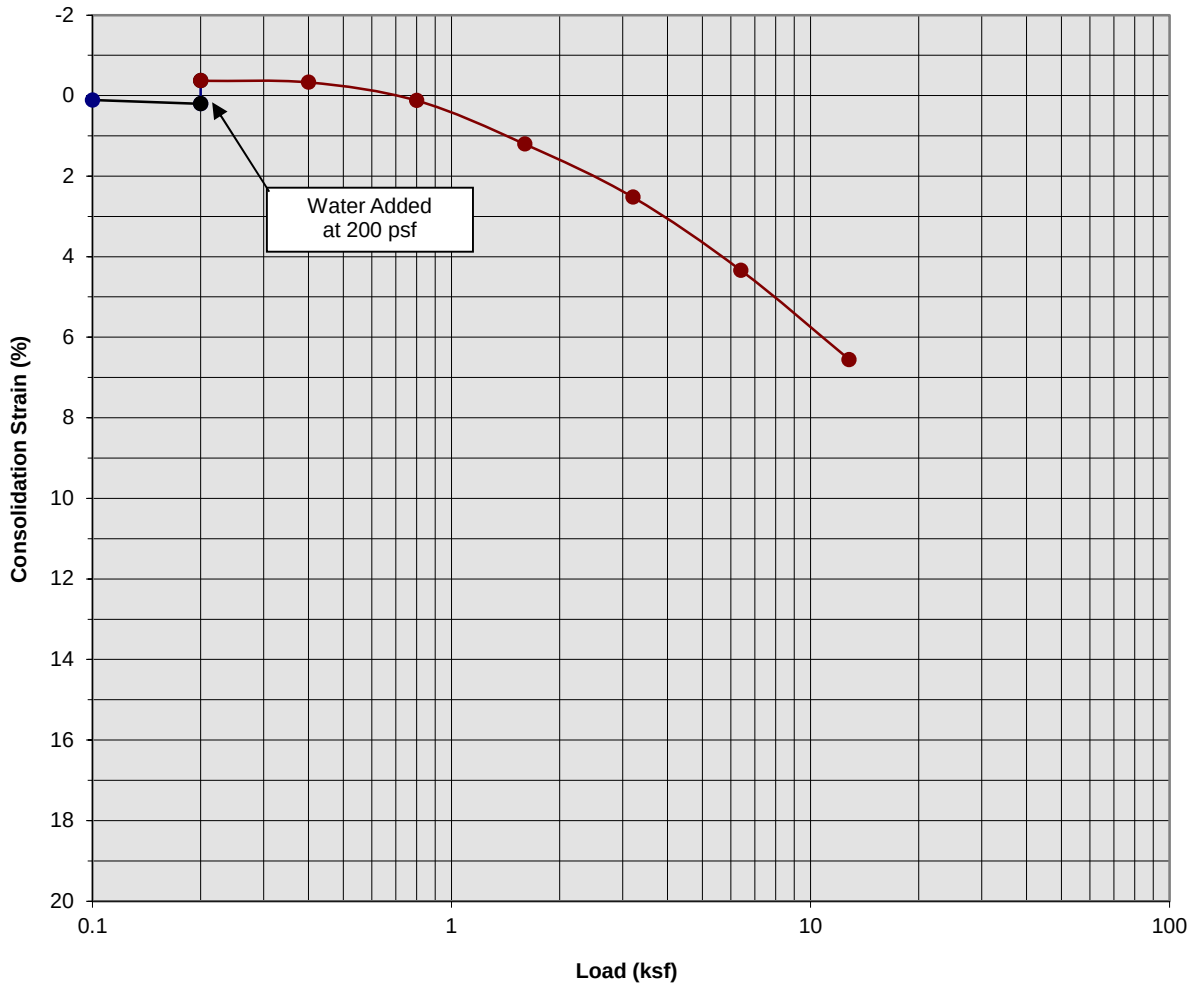
Boring Number:	B-11	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	98.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	109.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.51

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Dark Red Brown fine Sandy Clay, trace medium Sand, trace Silt

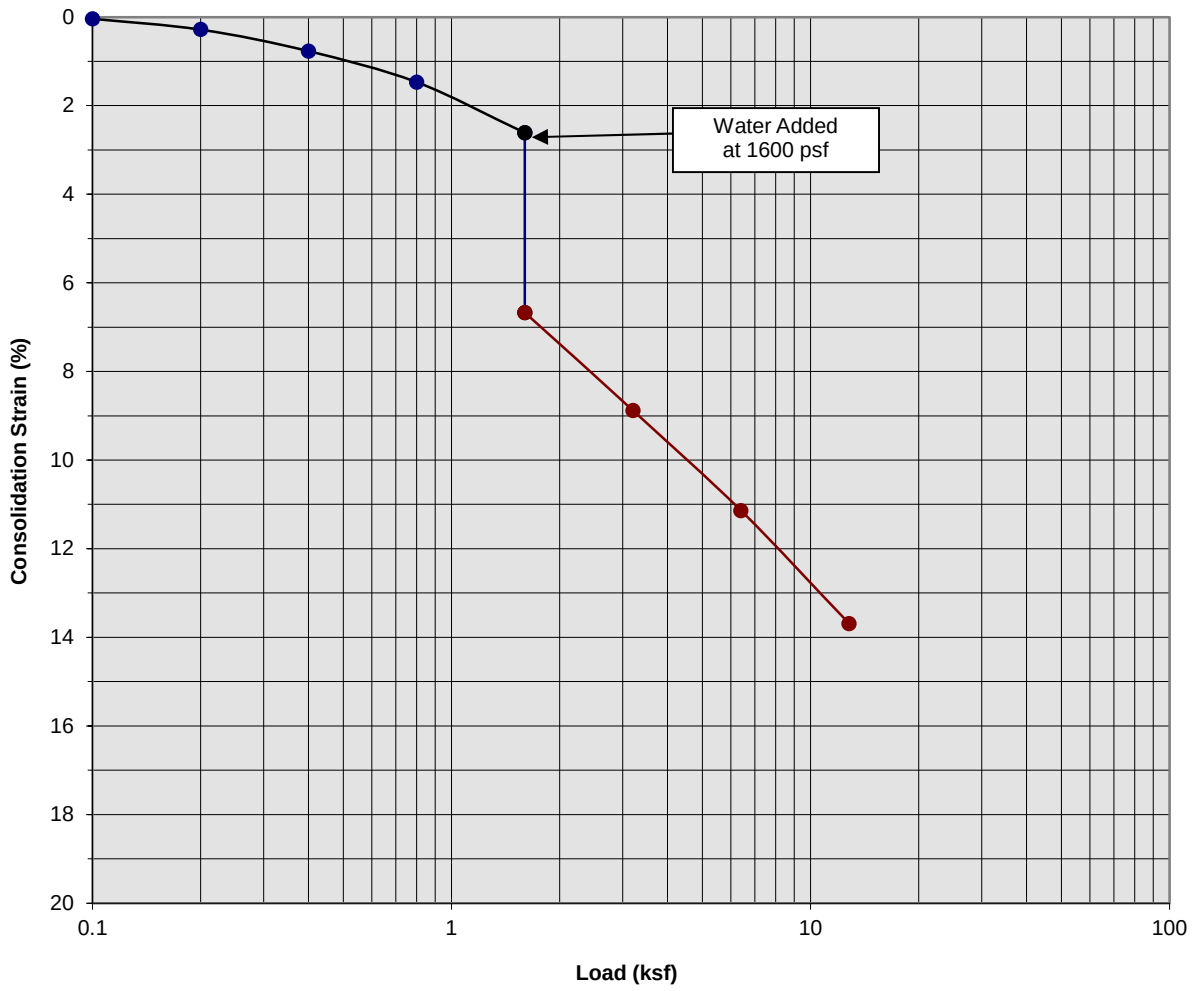
Boring Number:	B-12	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	18
Depth (ft)	3 to 4	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	-0.57

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 9

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace medium Sand

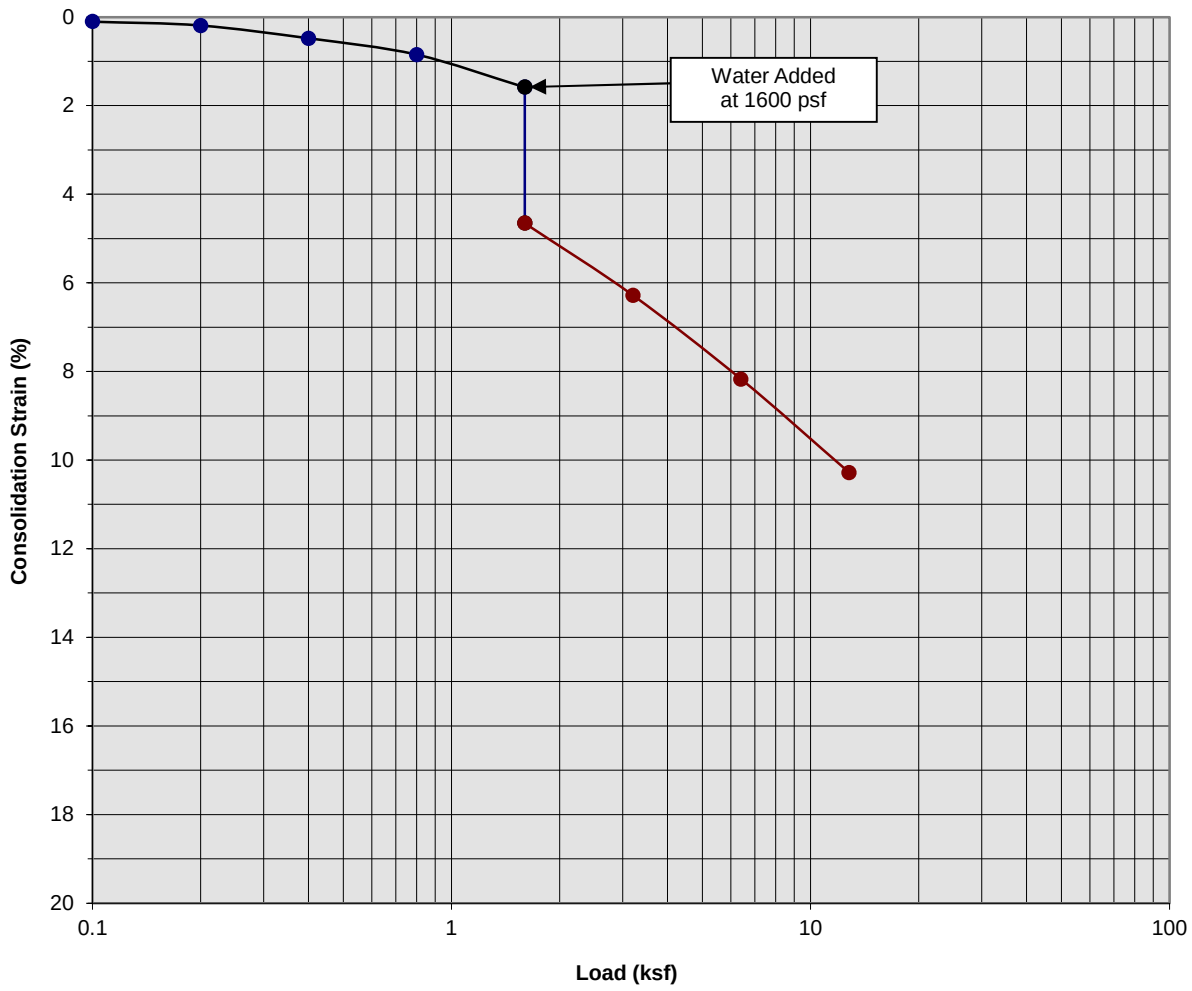
Boring Number:	B-12	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	5 to 6	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.06

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 10

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace coarse Sand

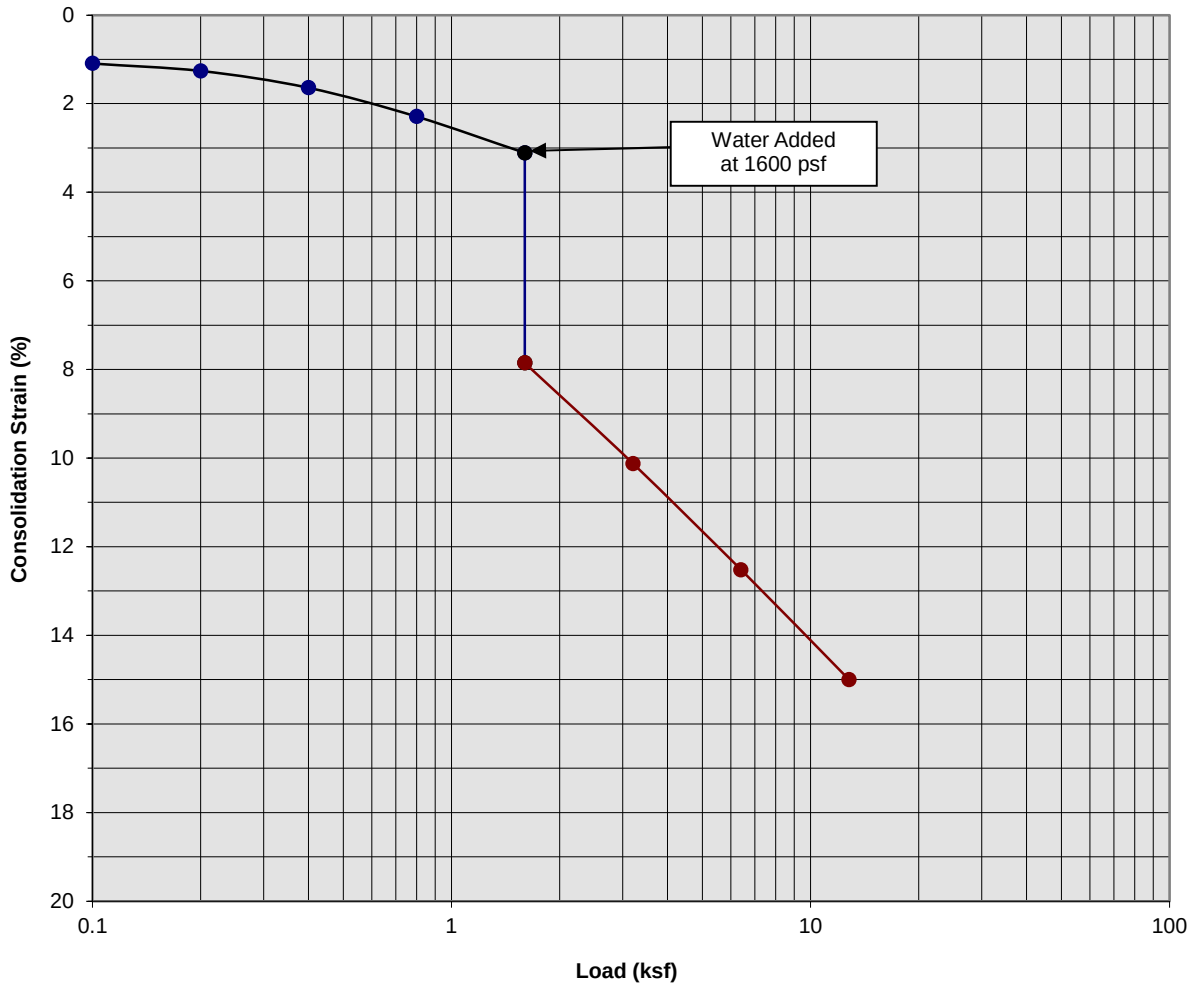
Boring Number:	B-12	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	7 to 8	Initial Dry Density (pcf)	108.1
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	3.07

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 11

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand

Boring Number:	B-12	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	98.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	115.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	4.74

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Beaumont, California
Project No. 21G133-1

PLATE C- 12

SoCalGeo
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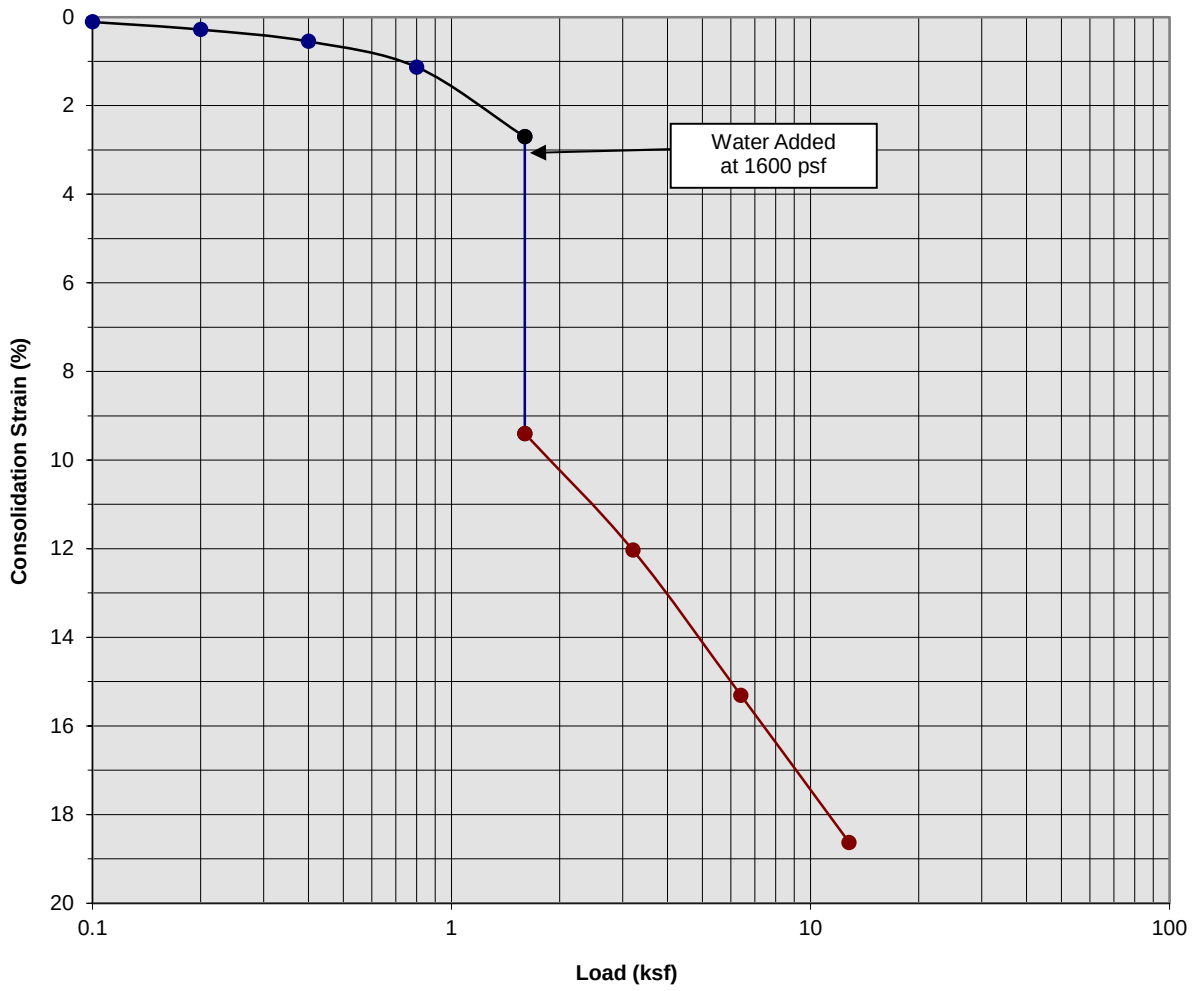
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to coarse Sand

Boring Number:	B-12	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	118.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	133.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.70

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PLATE C- 13

SoCalGeo
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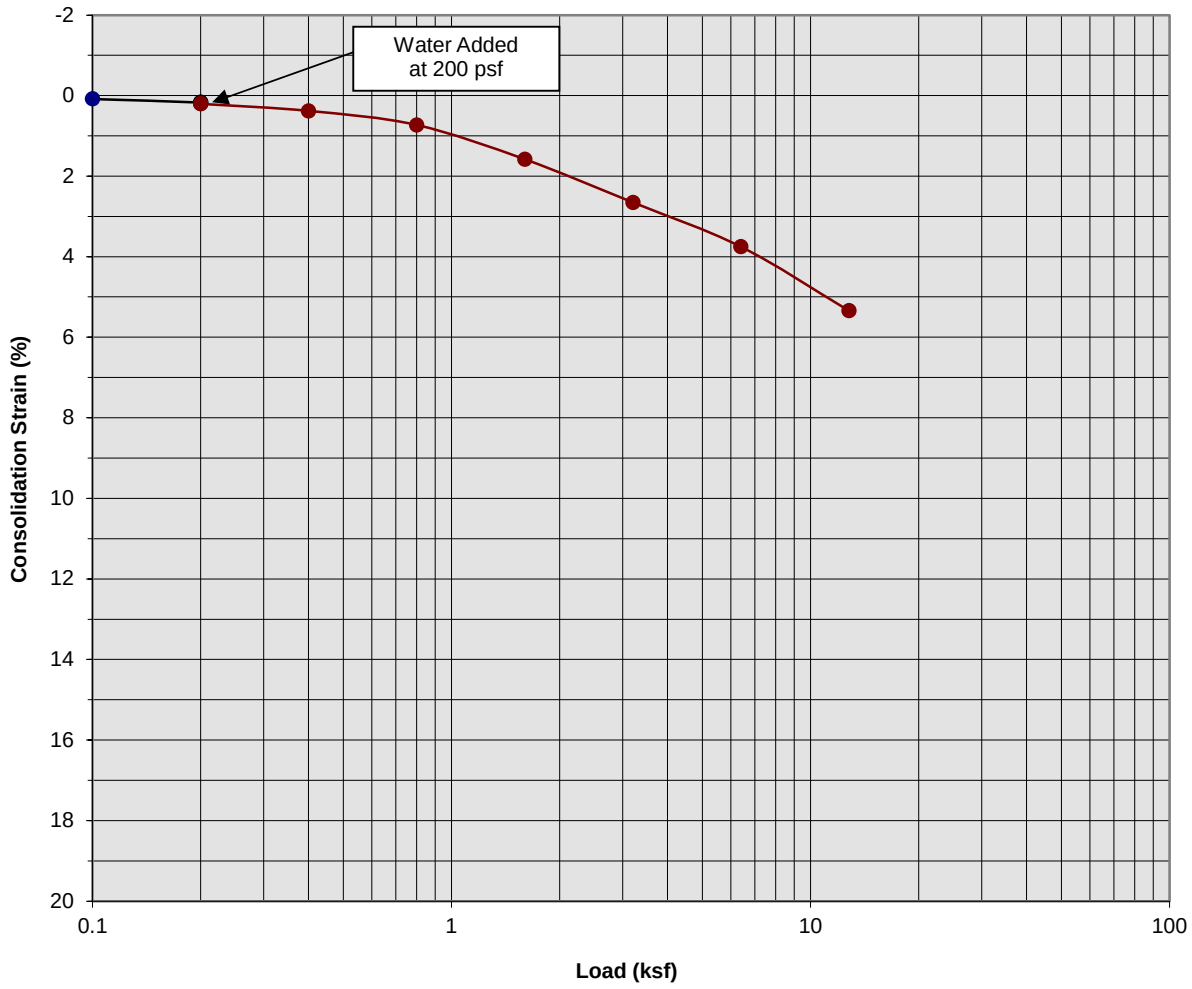
Consolidation/Collapse Test Results



Classification: FILL: Red Brown fine to medium Sandy Clay

Boring Number:	B-18	Initial Moisture Content (%)	15
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	3 to 4	Initial Dry Density (pcf)	114.9
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.03

Proposed E-Commerce Development
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PLATE C- 14

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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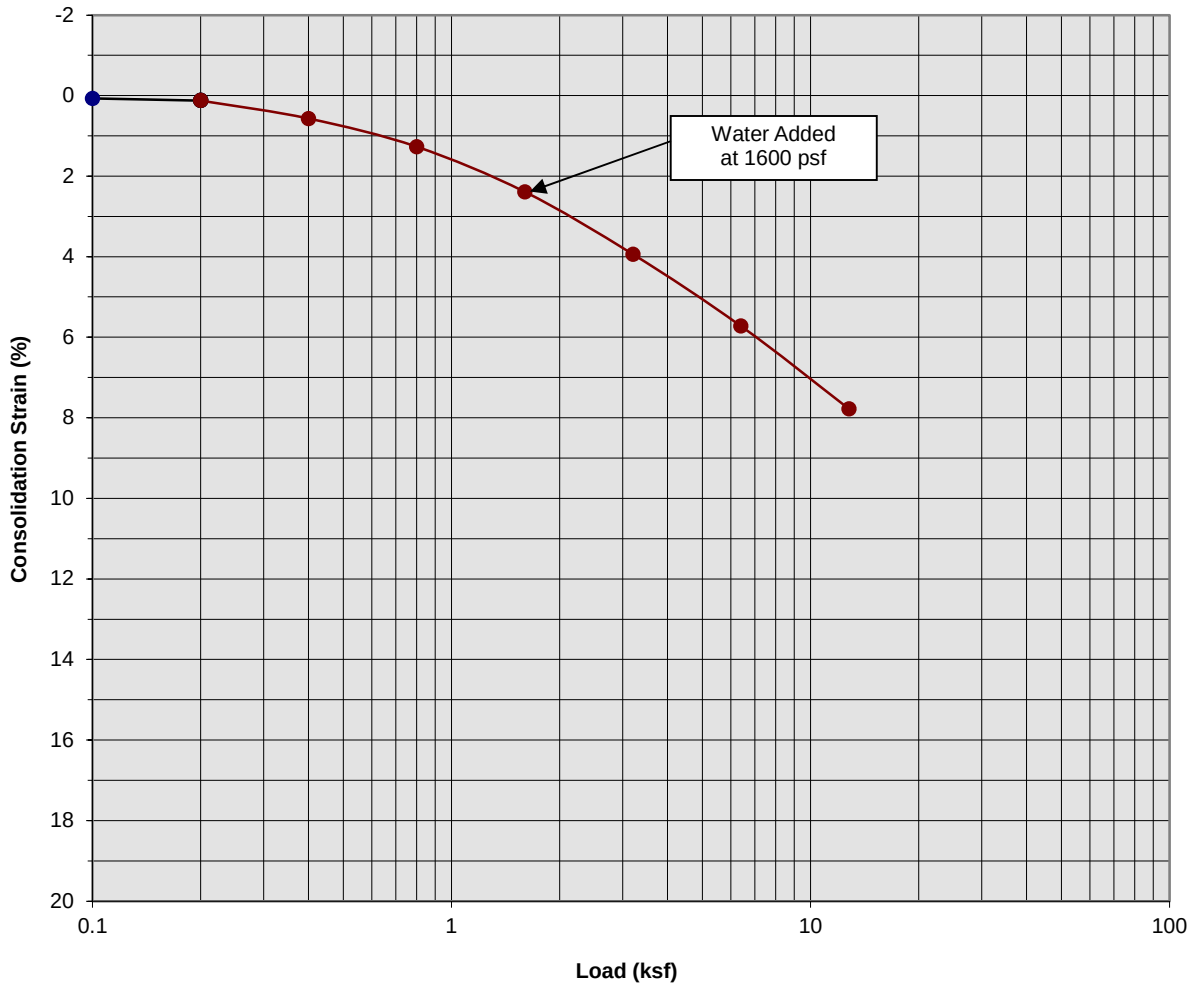
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine to coarse Sand, little Clay

Boring Number:	B-18	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	5 to 6	Initial Dry Density (pcf)	114.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.00

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PLATE C- 15

SoCalGeo
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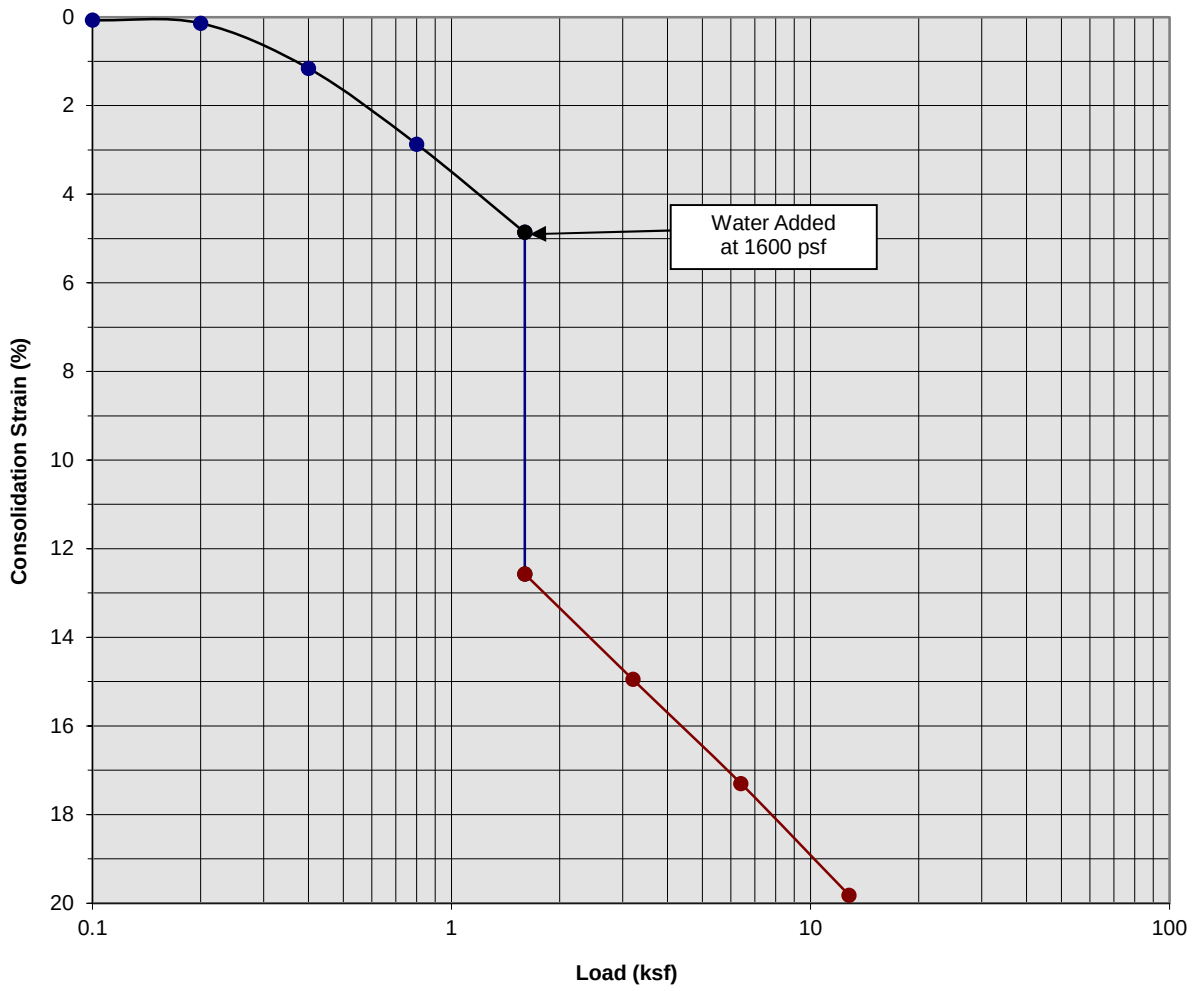
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine to coarse Sand, little Clay

Boring Number:	B-18	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	7 to 8	Initial Dry Density (pcf)	94.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.71

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PLATE C- 16

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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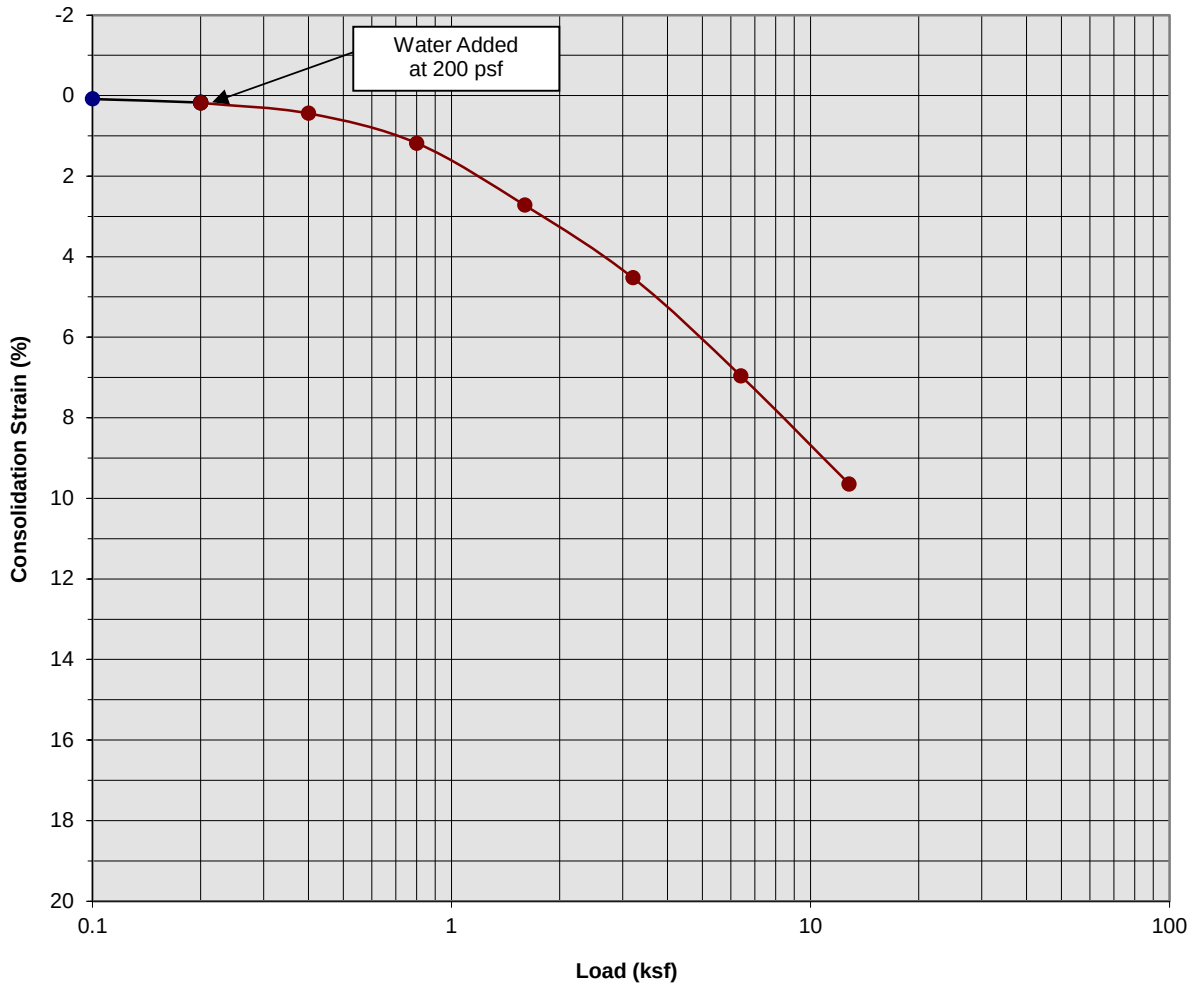
Consolidation/Collapse Test Results



Classification: Red Brown fine to medium Sandy Clay

Boring Number:	B-18	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	108.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.01

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PLATE C- 17

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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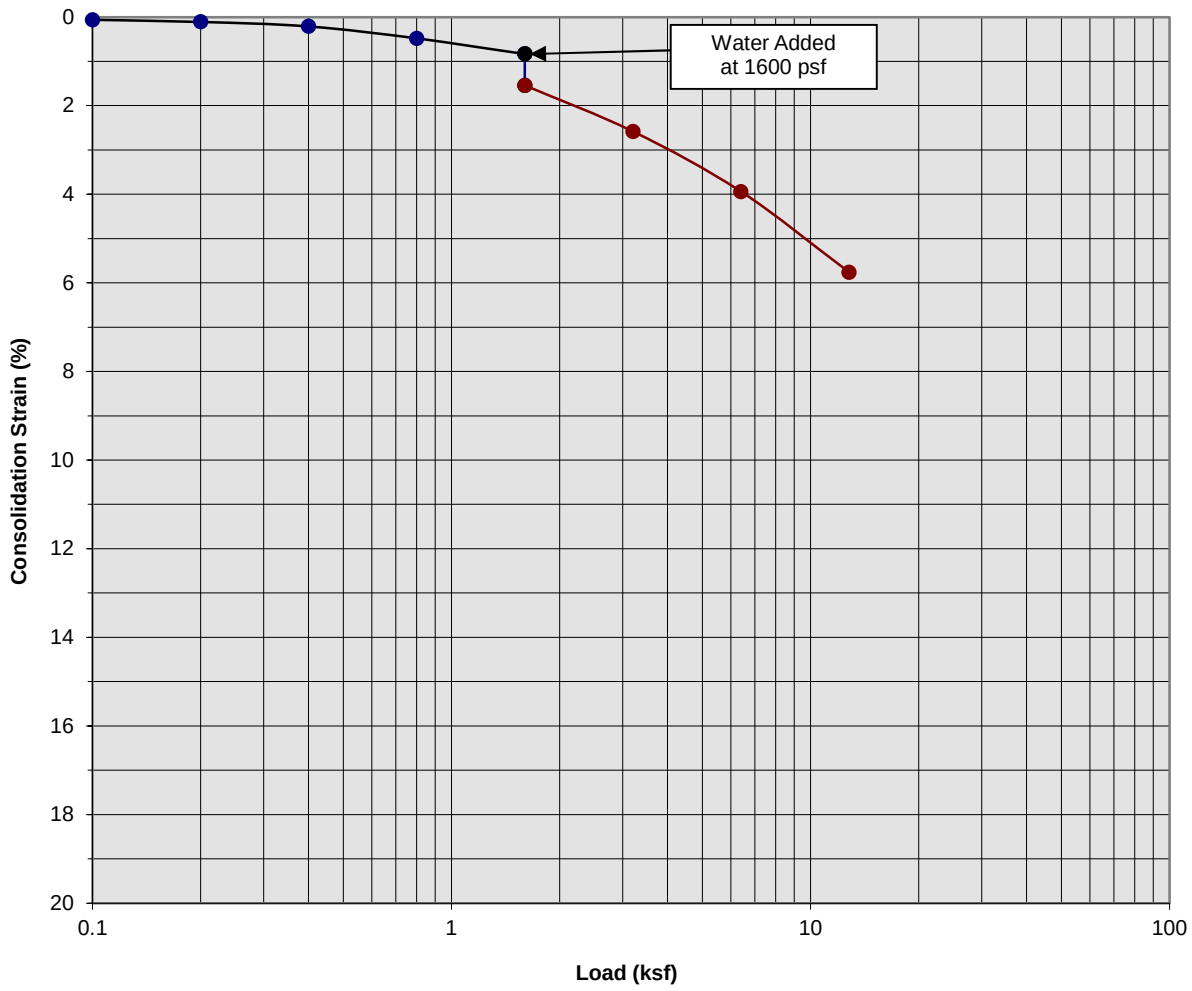
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand to fine Sandy Silt

Boring Number:	B-21	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	19 to 20	Initial Dry Density (pcf)	107.3
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.7
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.71

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Beaumont, California
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PLATE C- 18

SoCalGeo
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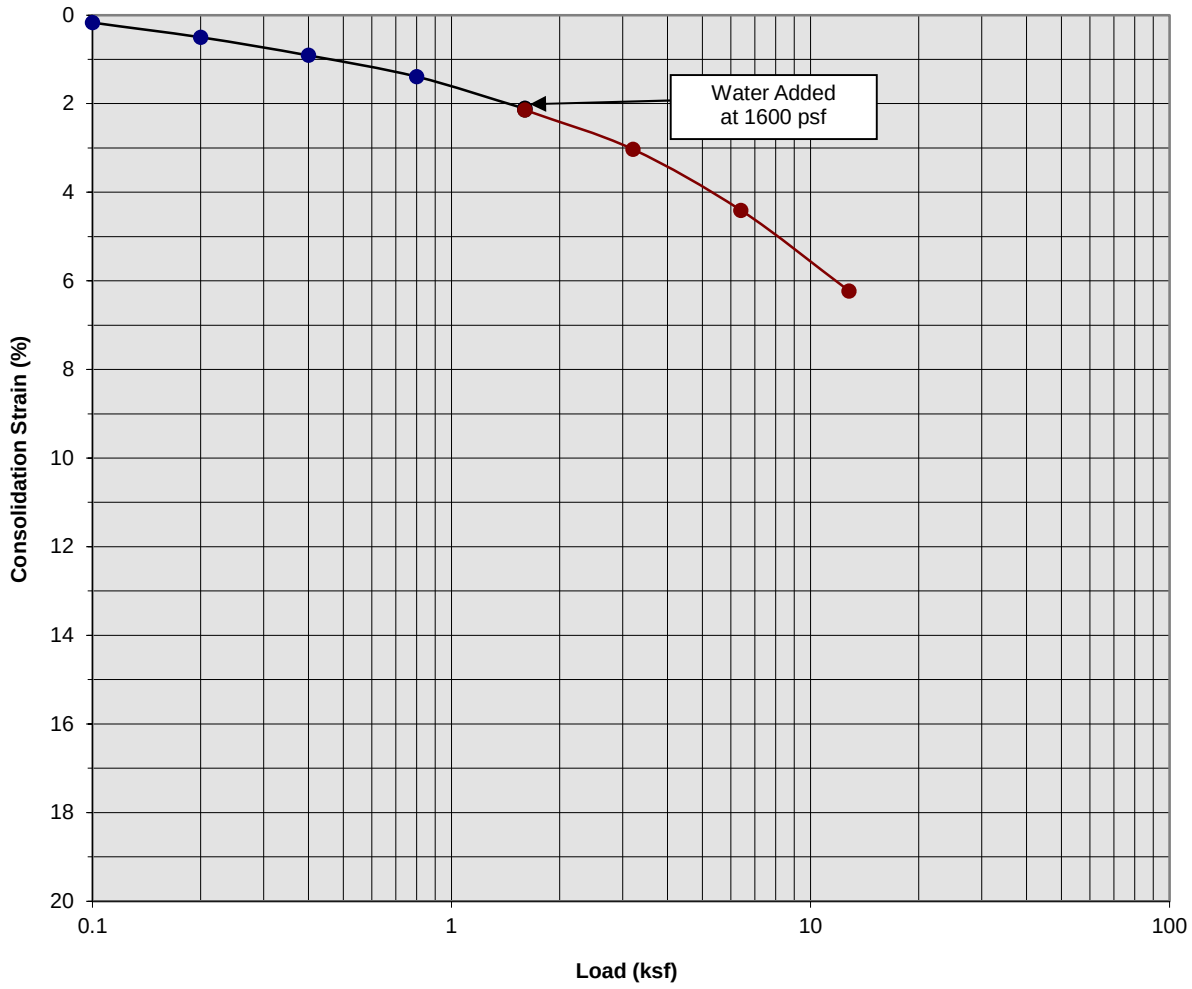
Consolidation/Collapse Test Results



Classification: Red Brown Clayey fine Sand, trace medium Sand, little Silt

Boring Number:	B-25	Initial Moisture Content (%)	14
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	3 to 4	Initial Dry Density (pcf)	120.5
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.6
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.03

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PLATE C- 19

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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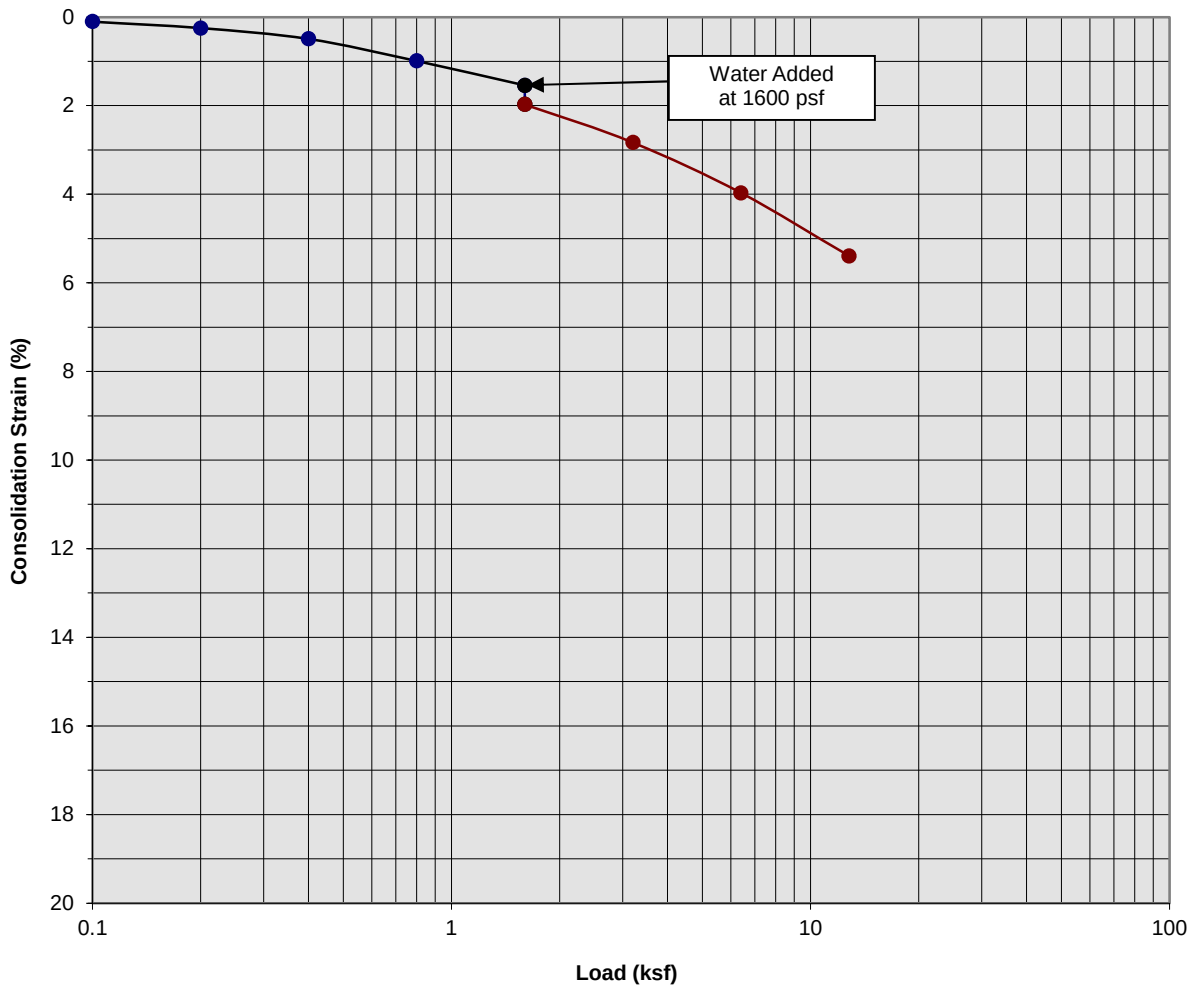
Consolidation/Collapse Test Results



Classification: Red Brown Clayey fine Sand, trace medium Sand

Boring Number:	B-25	Initial Moisture Content (%)	10
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	5 to 6	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	122.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.43

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PLATE C- 20

SoCalGeo
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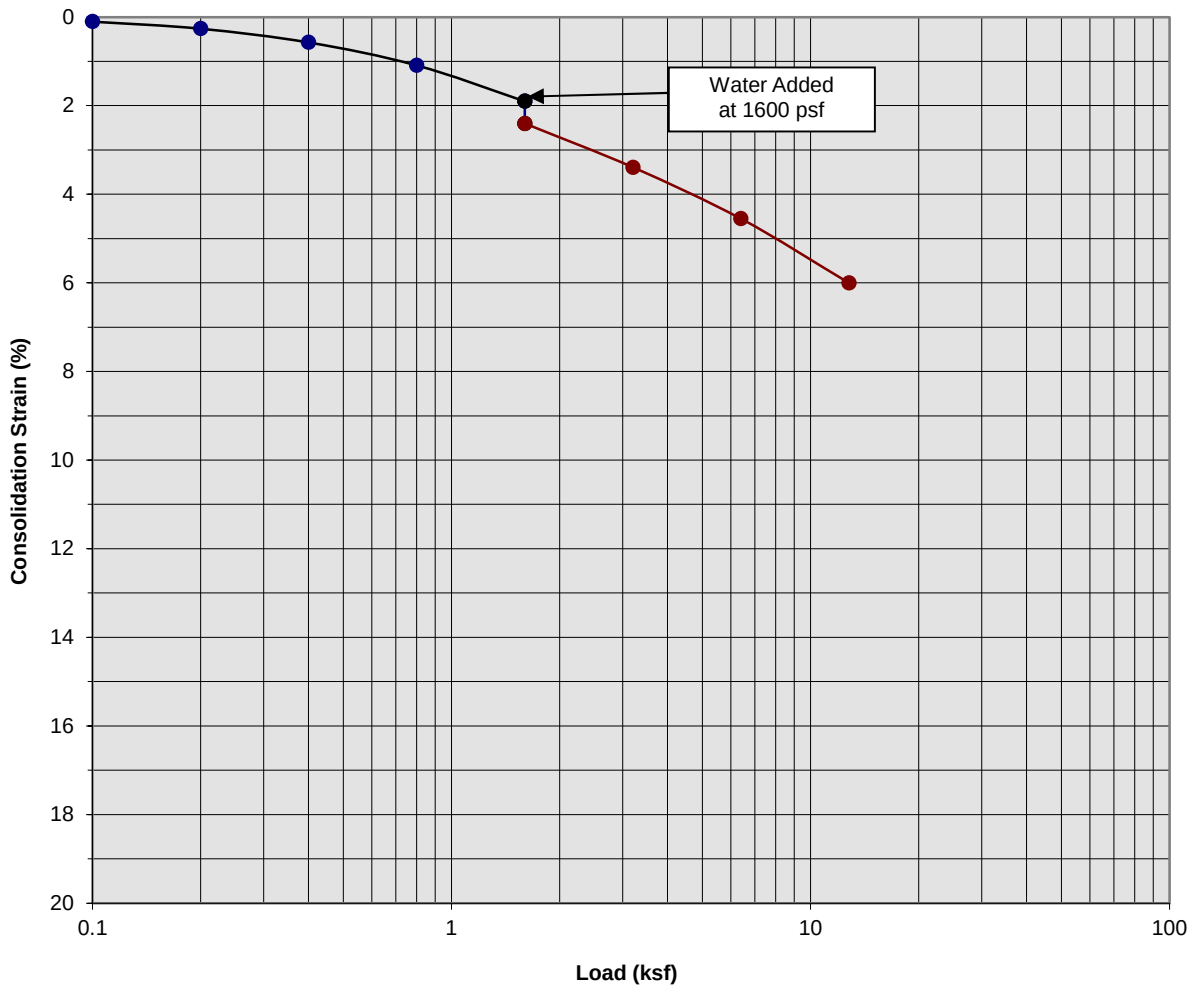
Consolidation/Collapse Test Results



Classification: Red Brown Silty fine Sand, trace medium to coarse Sand

Boring Number:	B-25	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	7 to 8	Initial Dry Density (pcf)	117.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	124.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.50

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PLATE C- 21

SoCalGeo
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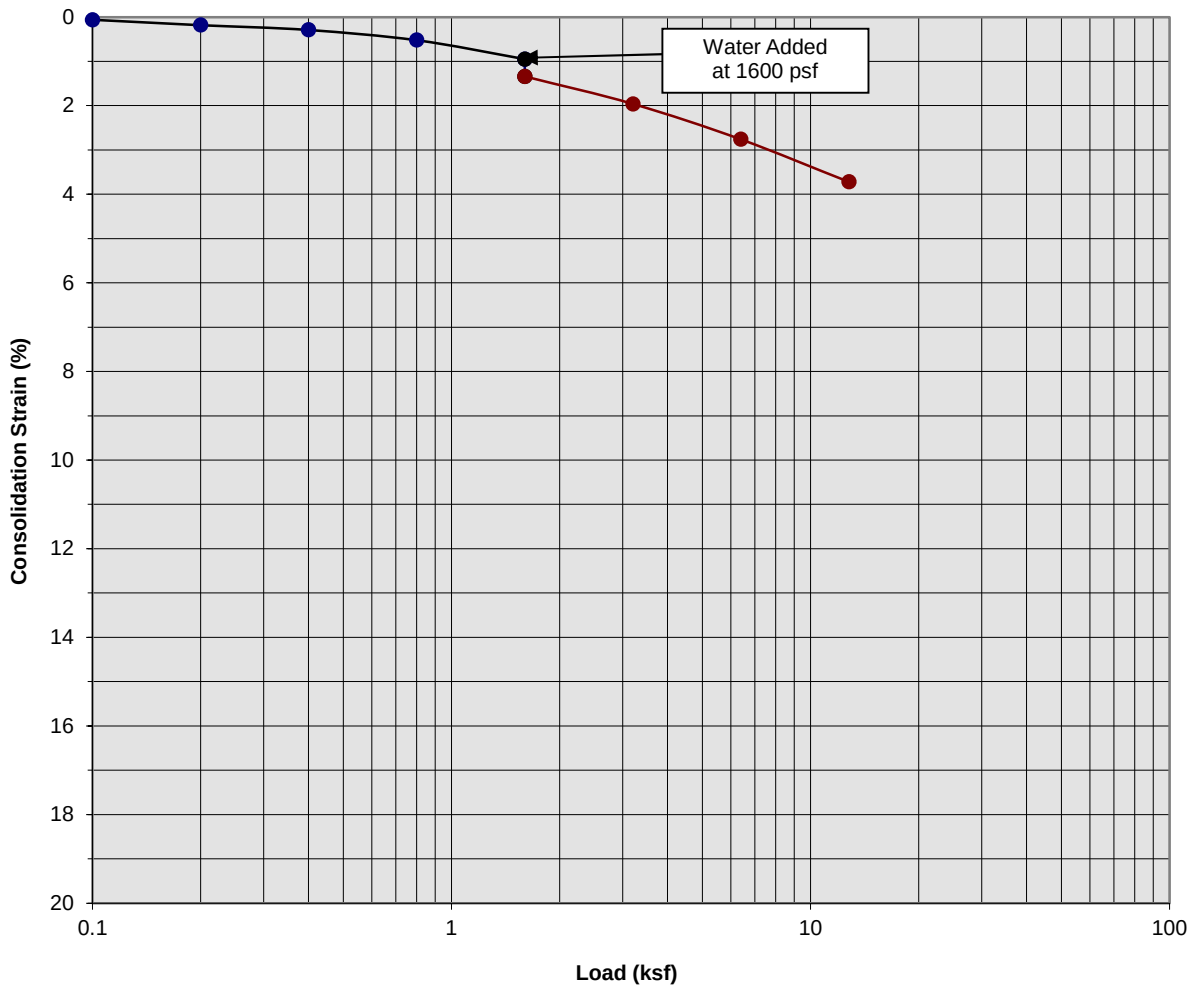
Consolidation/Collapse Test Results



Classification: Gray Brown Silty fine to coarse Sand, trace fine Gravel

Boring Number:	B-25	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	121.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.39

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PLATE C- 22

SoCalGeo
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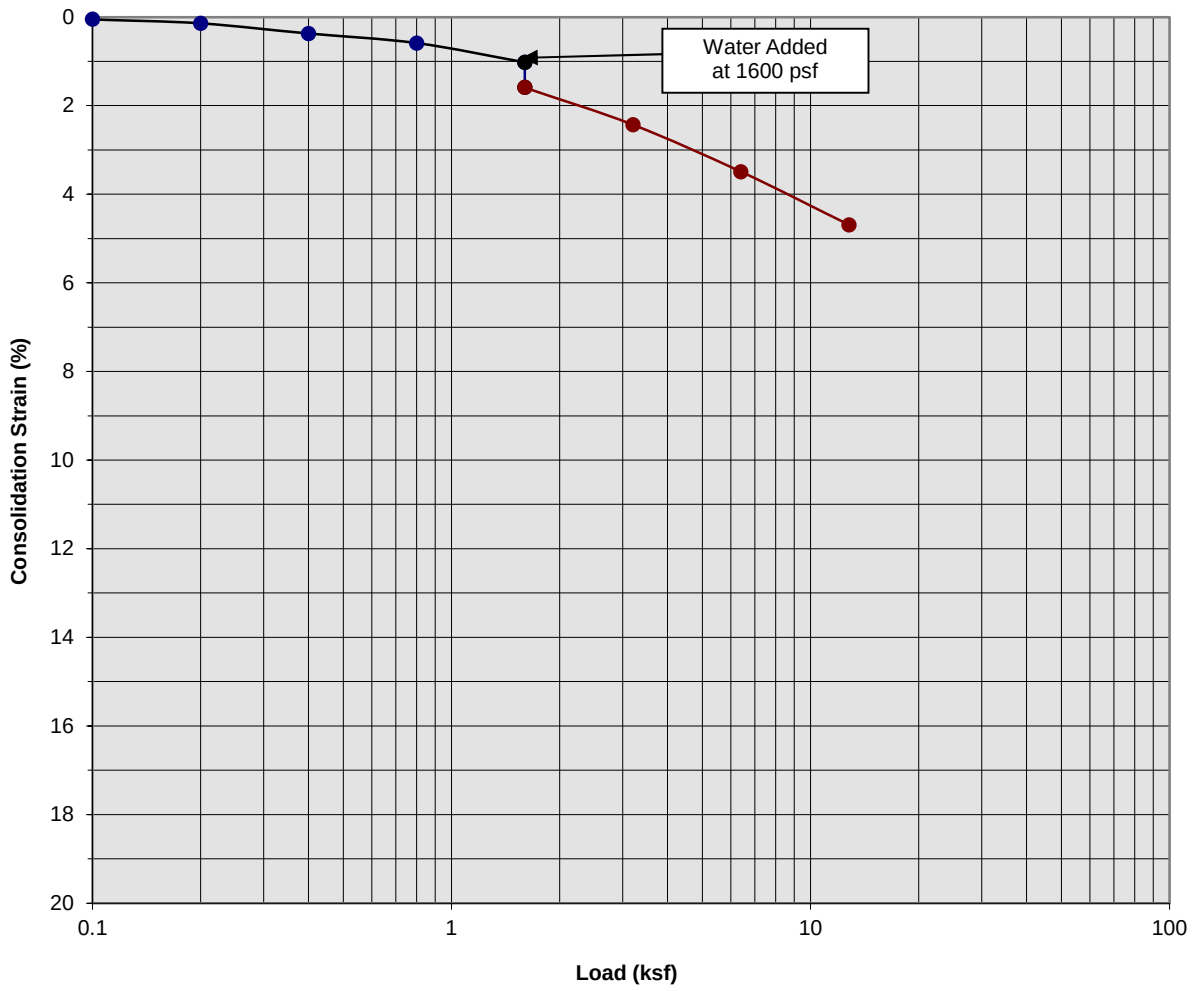
Consolidation/Collapse Test Results



Classification: FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand

Boring Number:	B-26	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	3 to 4	Initial Dry Density (pcf)	123.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	129.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.57

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Beaumont, California
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PLATE C- 23

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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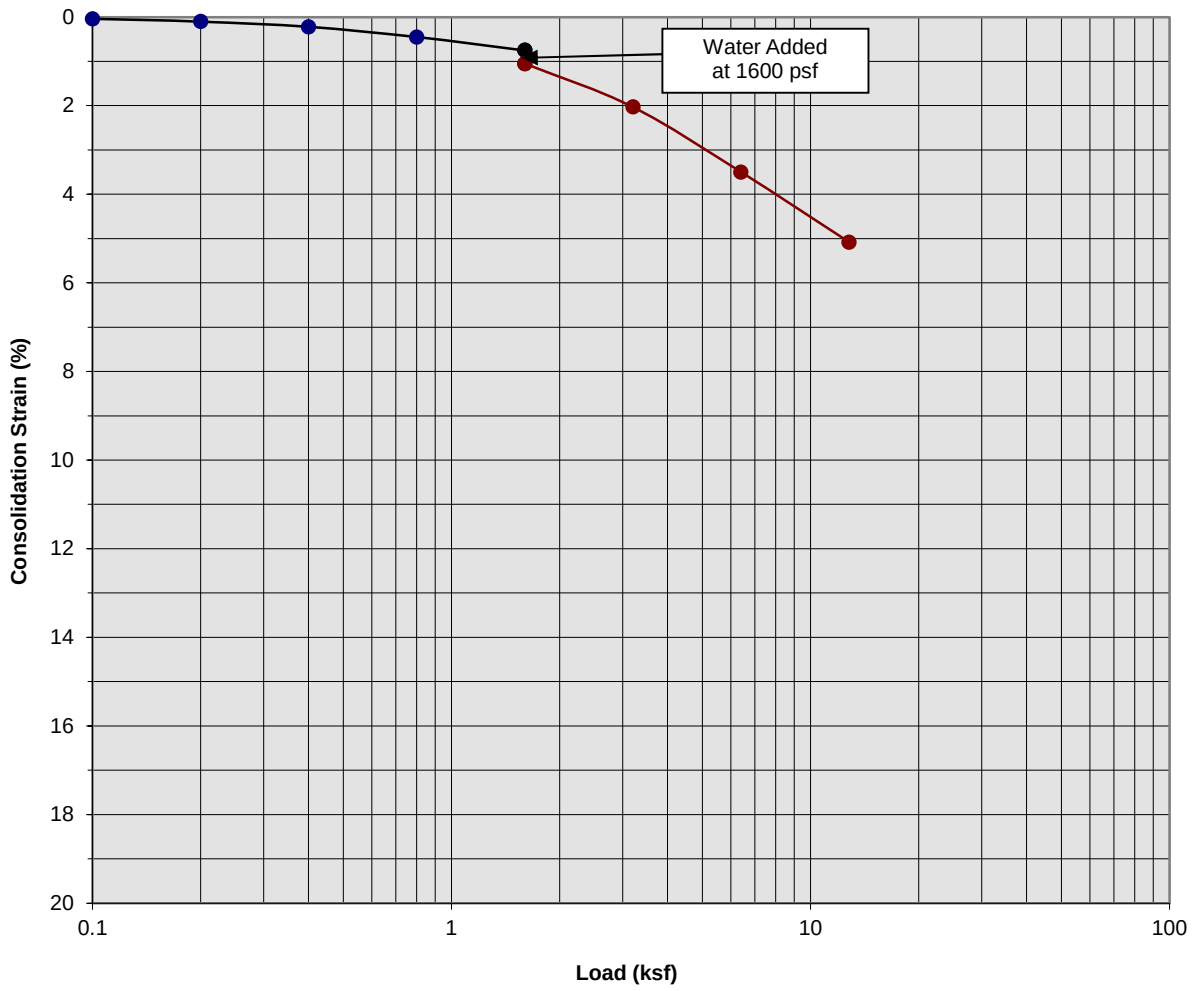
Consolidation/Collapse Test Results



Classification: FILL: Red Brown Clayey fine to medium Sand, trace coarse Sand

Boring Number:	B-26	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	15
Depth (ft)	5 to 6	Initial Dry Density (pcf)	121.8
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.30

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PLATE C- 24

SoCalGeo
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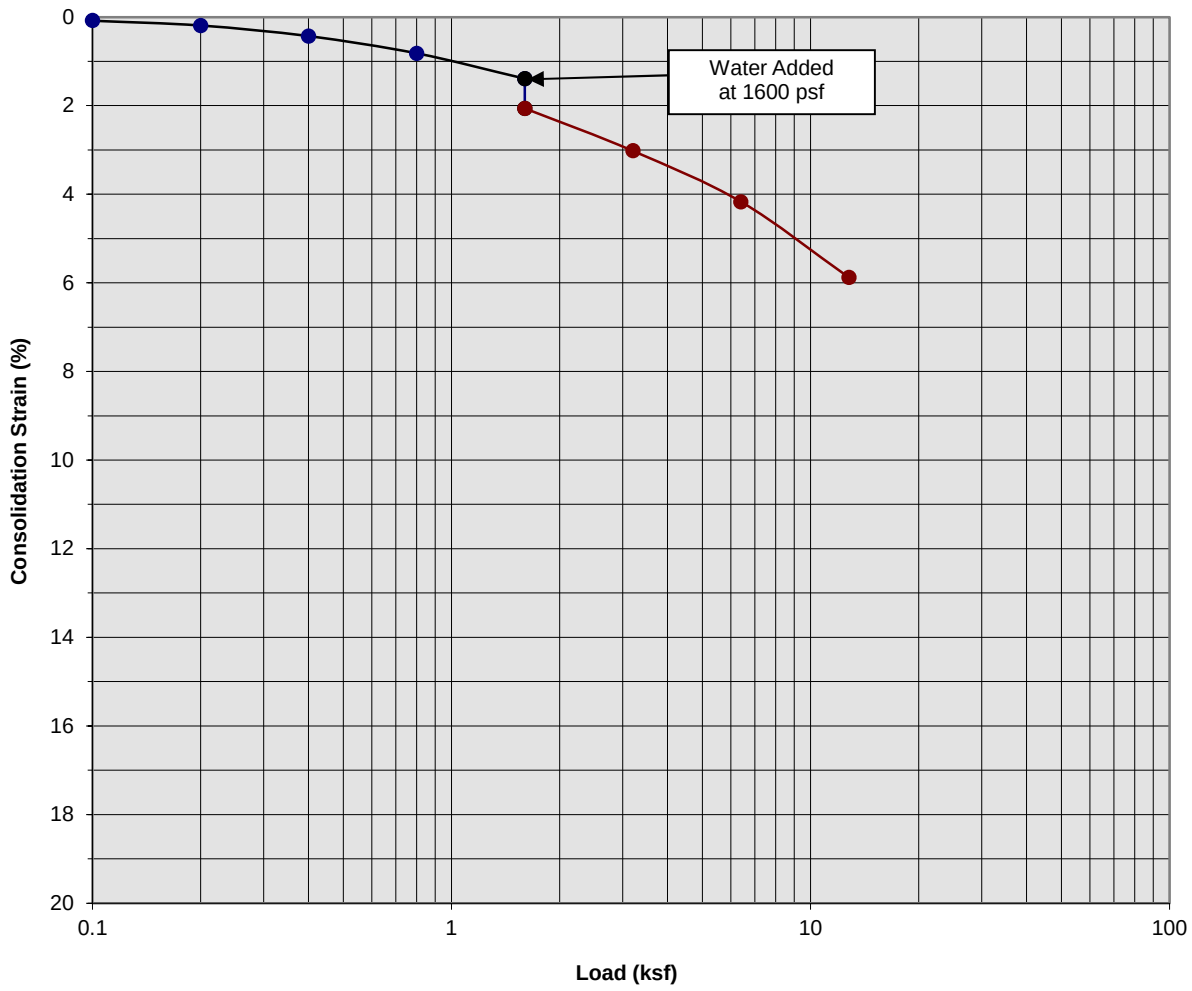
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium Sand, trace Clay

Boring Number:	B-26	Initial Moisture Content (%)	13
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	7 to 8	Initial Dry Density (pcf)	116.4
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.67

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PLATE C- 25

SoCalGeo
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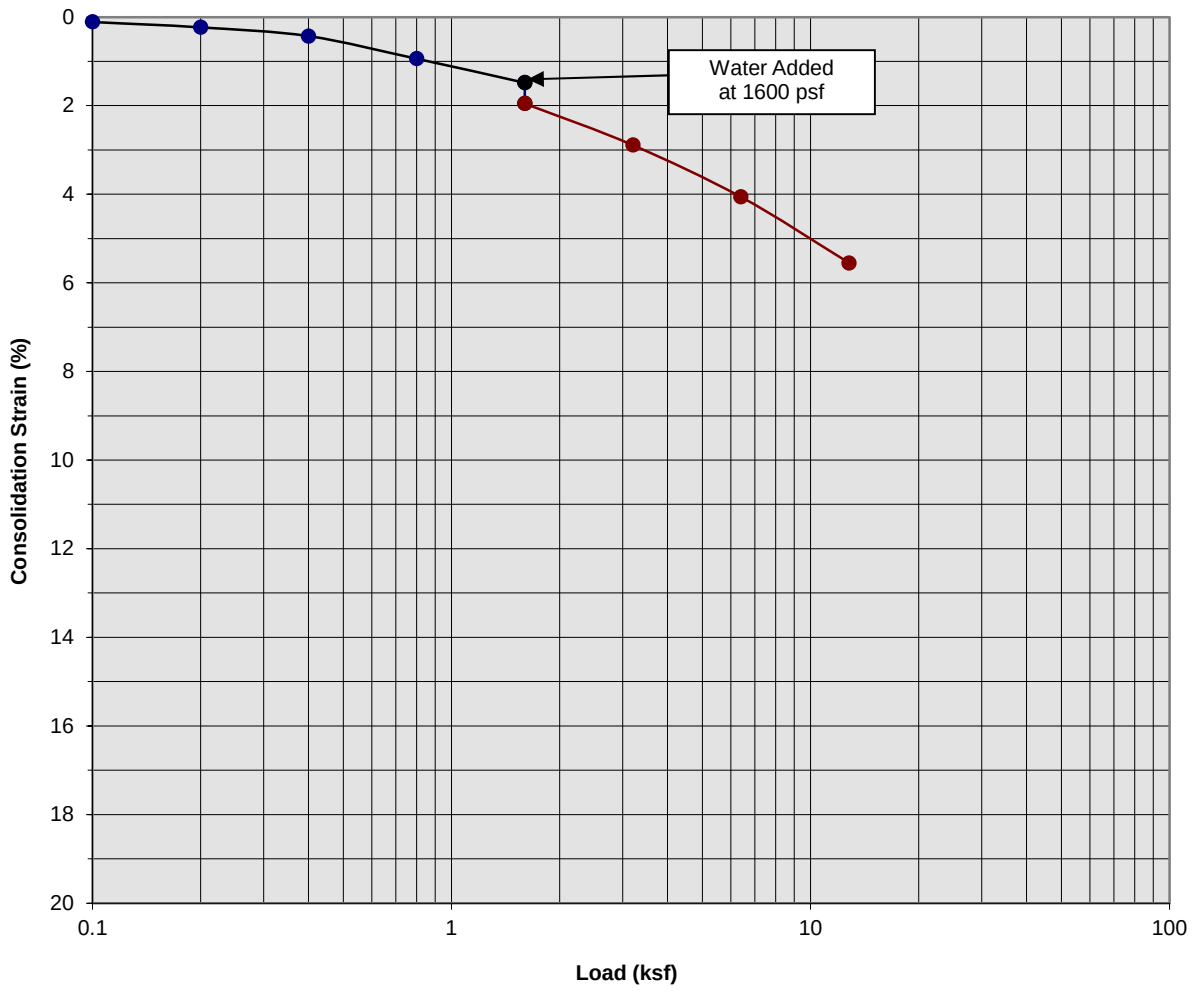
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium Sand, little Clay

Boring Number:	B-26	Initial Moisture Content (%)	12
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	9 to 10	Initial Dry Density (pcf)	117.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.47

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PLATE C- 26

SoCalGeo
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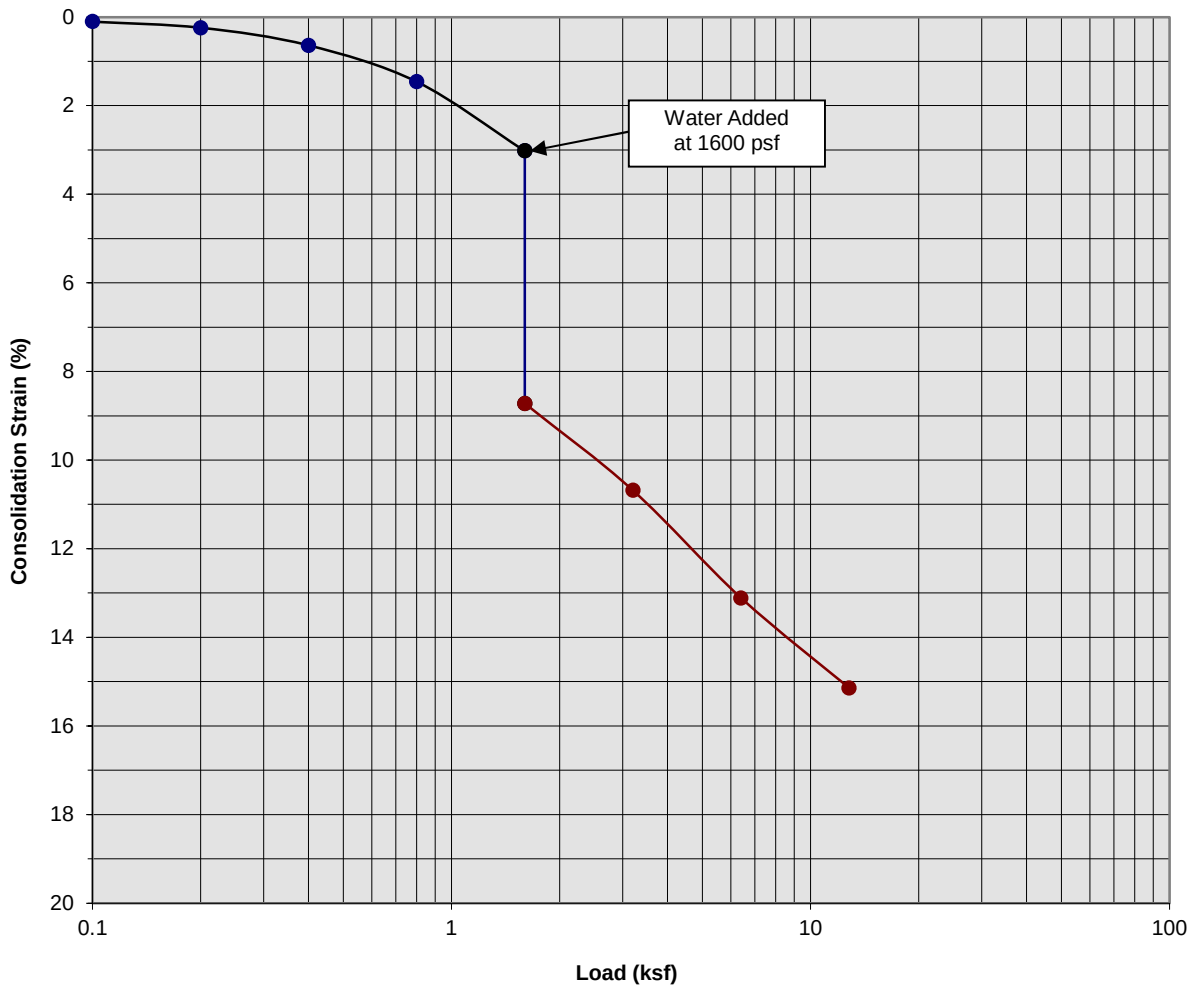
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand

Boring Number:	B-39	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	4 to 5	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	127.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.70

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PLATE C- 27

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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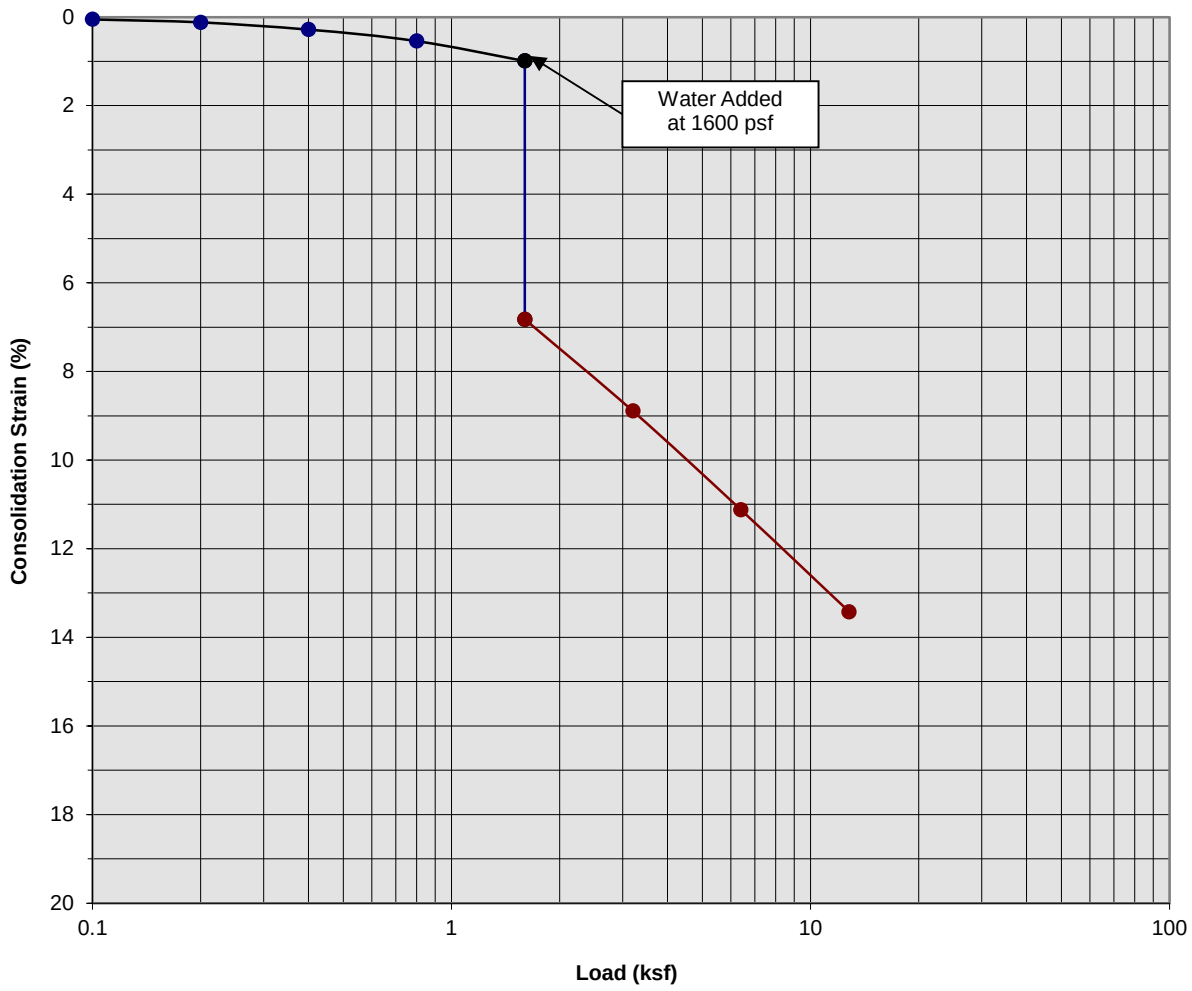
Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.83

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PLATE C- 28

SoCalGeo
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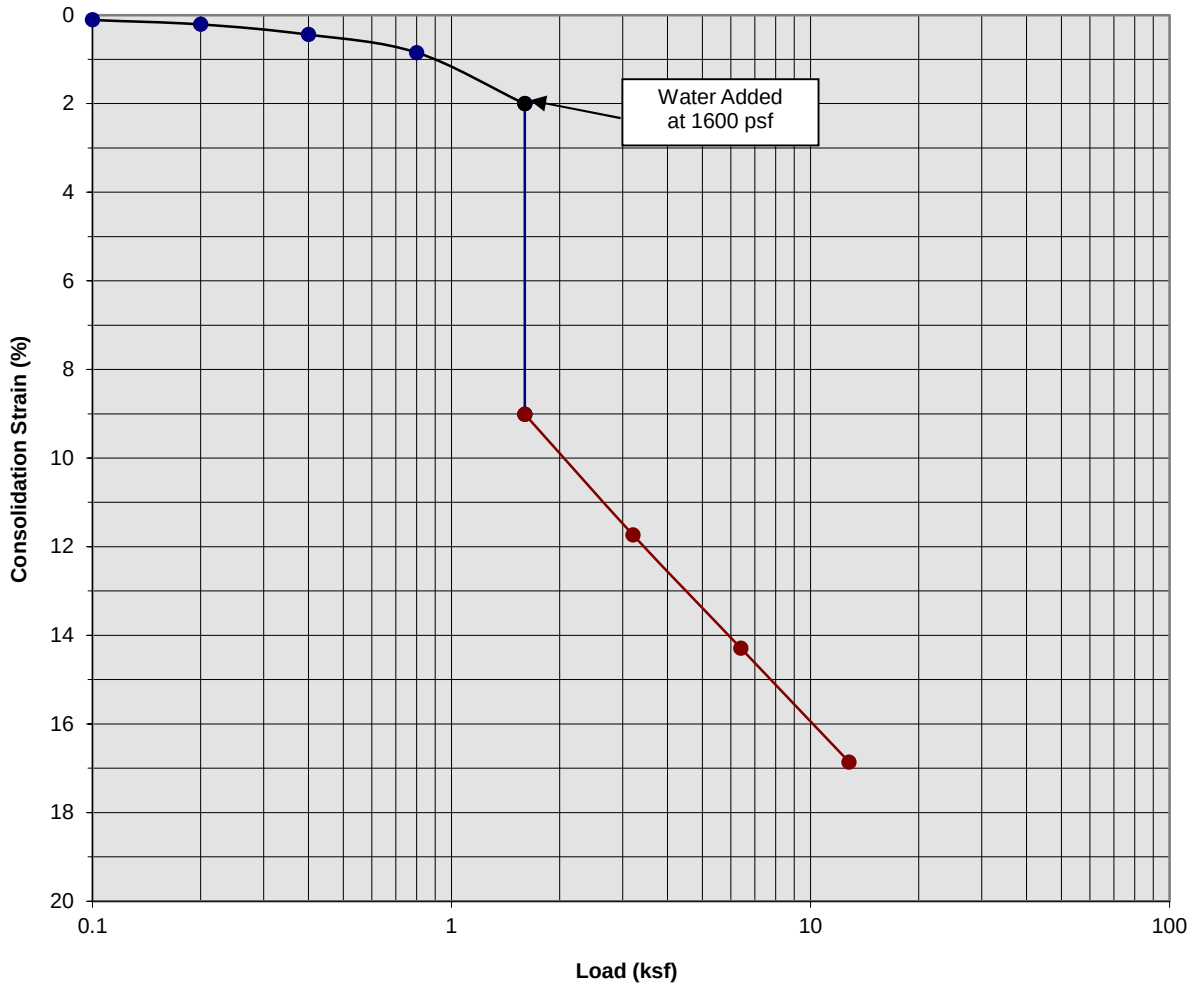
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	104.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.01

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PLATE C- 29

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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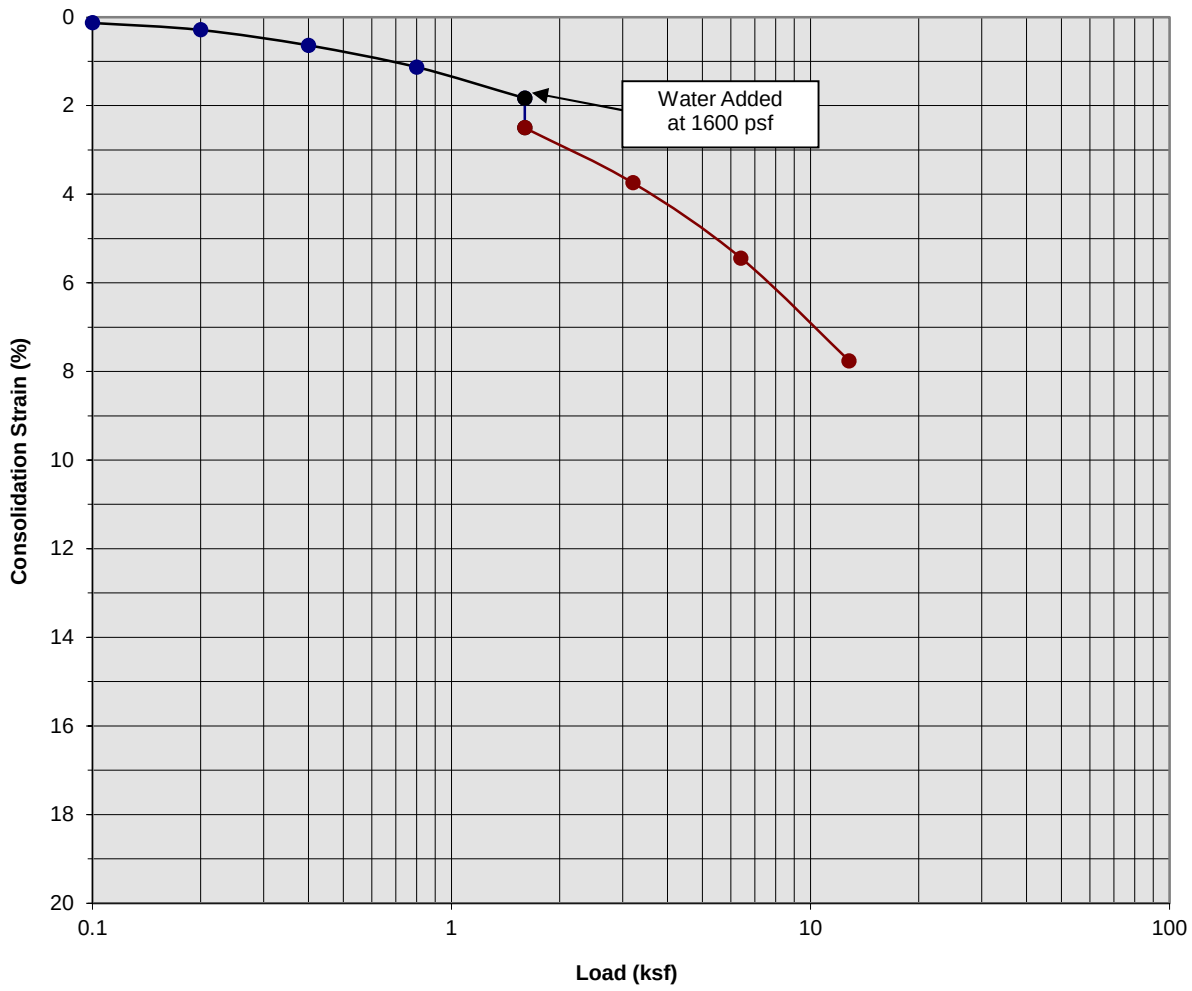
Consolidation/Collapse Test Results



Classification: Gray Brown fine Sand, trace medium to coarse Sand, trace fine Gravel

Boring Number:	B-39	Initial Moisture Content (%)	11
Sample Number:	---	Final Moisture Content (%)	19
Depth (ft)	19 to 20	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.67

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PLATE C- 30

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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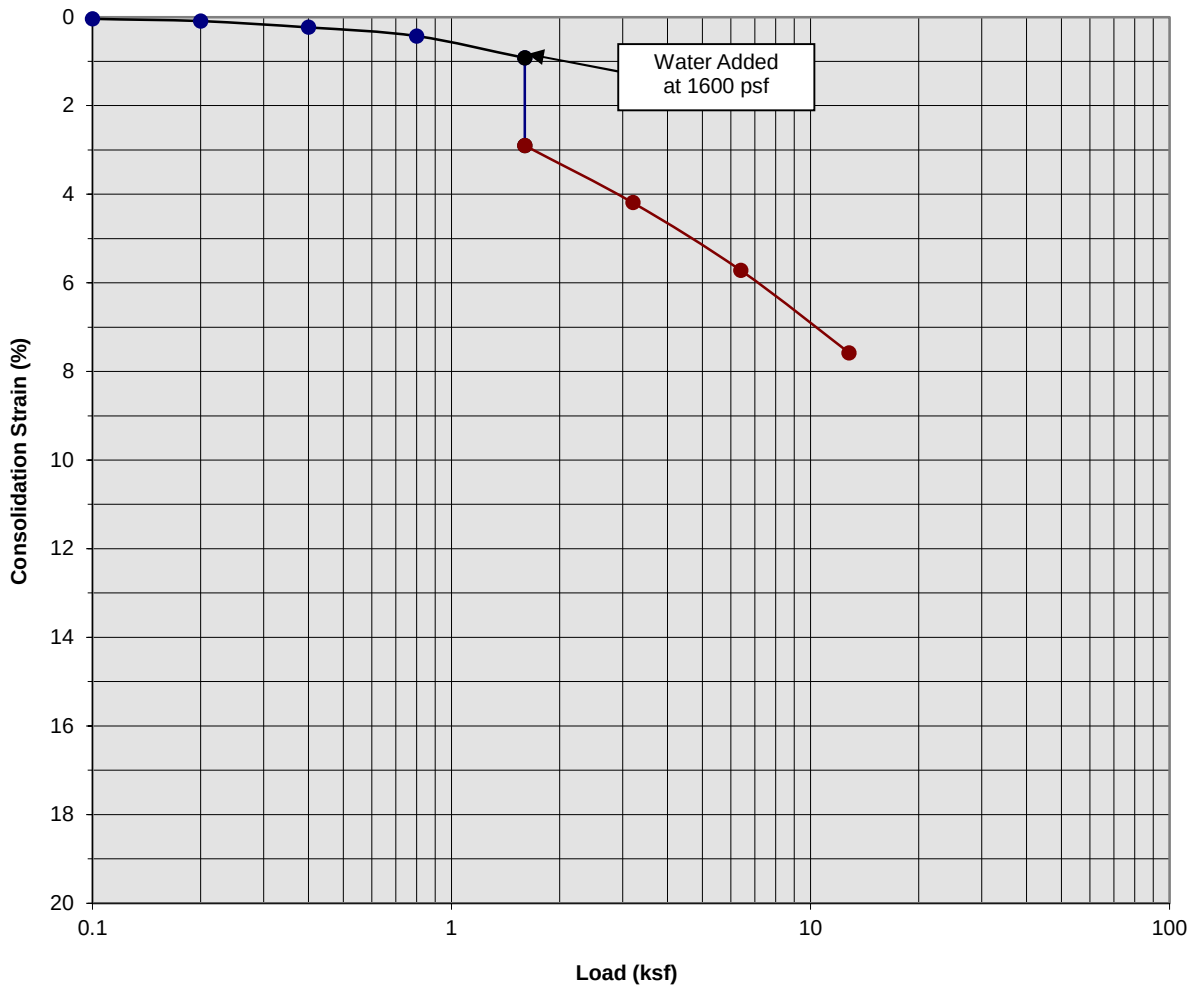
Consolidation/Collapse Test Results



Classification: FILL: Brown Silty fine Sand, trace medium to coarse Sand

Boring Number:	B-41	Initial Moisture Content (%)	9
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	1 to 2	Initial Dry Density (pcf)	126.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	136.3
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.98

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PLATE C- 31

SoCalGeo
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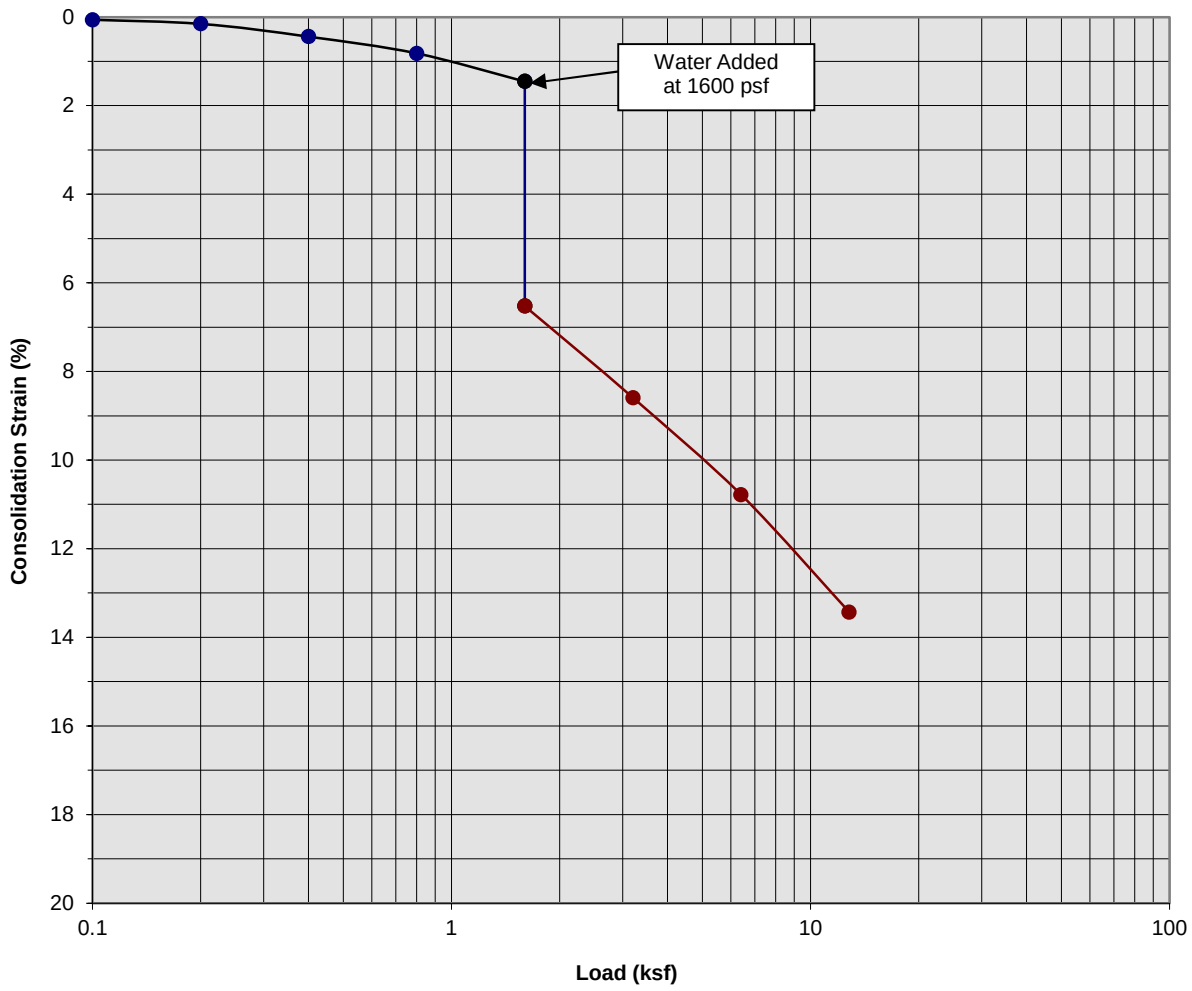
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand to fine Sandy Silt, trace medium to coarse Sand

Boring Number:	B-41	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	4 to 5	Initial Dry Density (pcf)	102.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	5.07

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PLATE C- 32

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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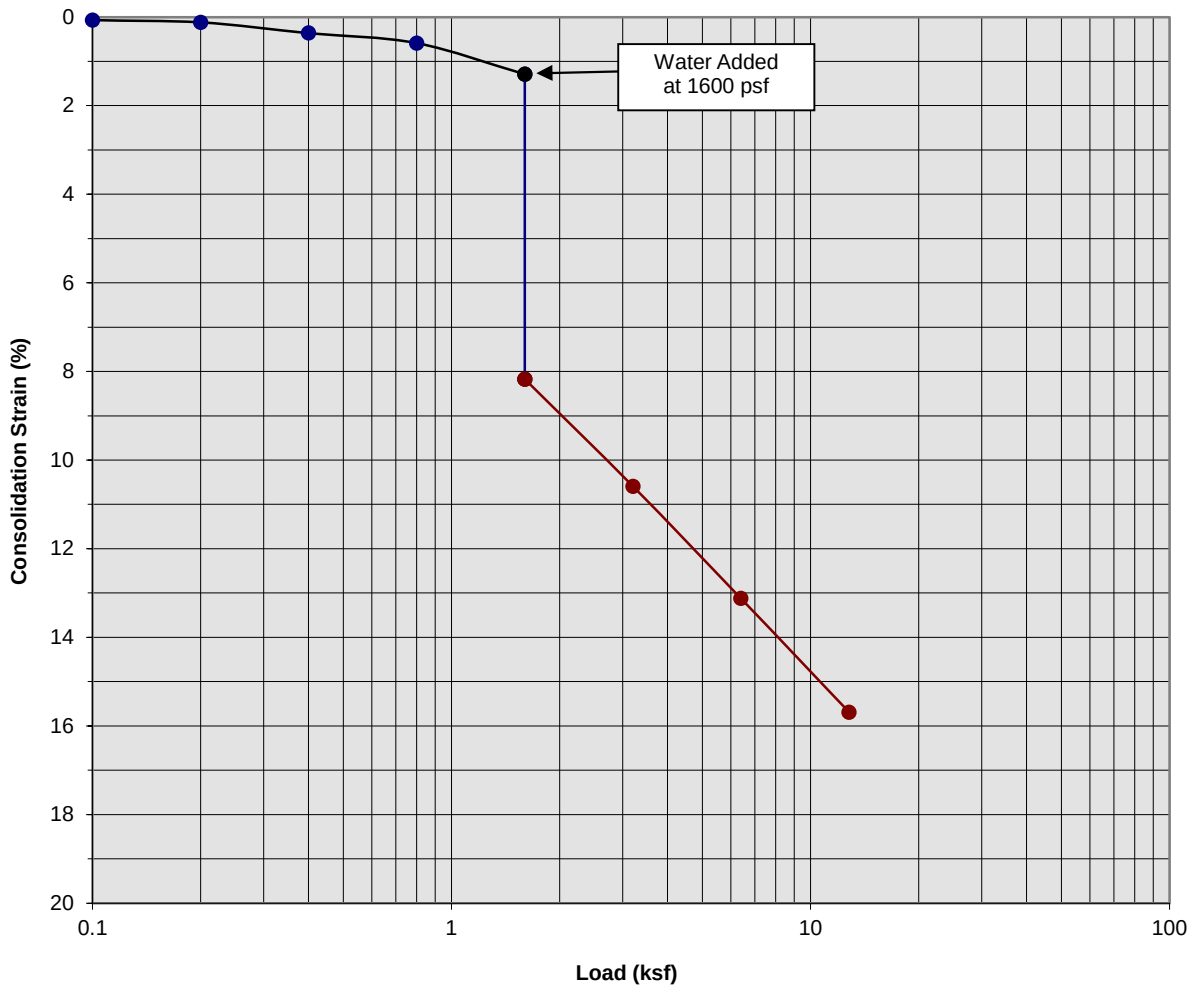
Consolidation/Collapse Test Results



Classification: Brown to Red Brown Silty fine to coarse Sand, trace fine Gravel

Boring Number:	B-41	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	9 to 10	Initial Dry Density (pcf)	101.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	119.8
Specimen Thickness (in)	1.0	Percent Collapse (%)	6.88

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Beaumont, California
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PLATE C- 33

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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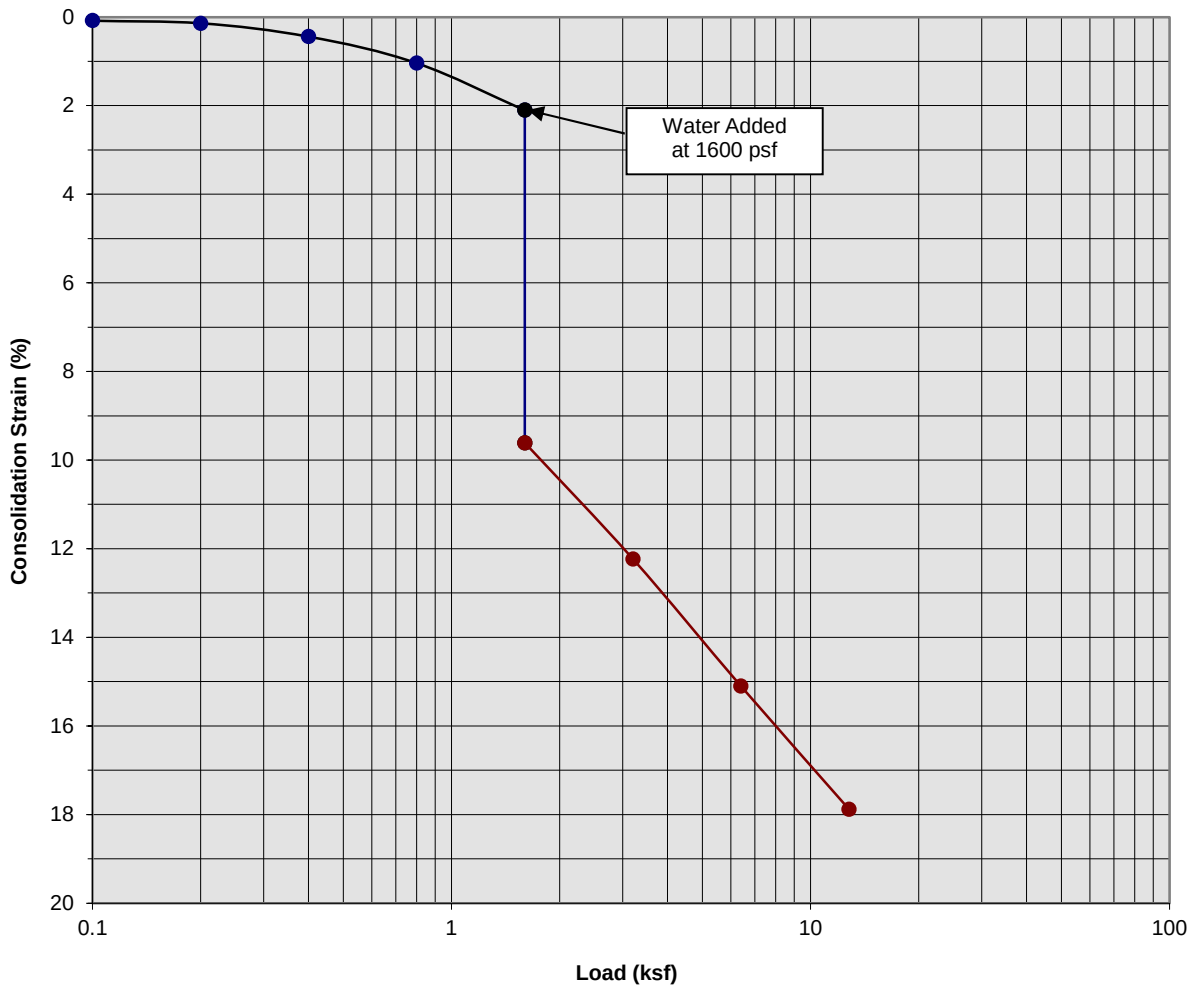
Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand, trace Clay, trace medium to coarse Sand

Boring Number:	B-41	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	16
Depth (ft)	14 to 15	Initial Dry Density (pcf)	105.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	7.51

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PLATE C- 34

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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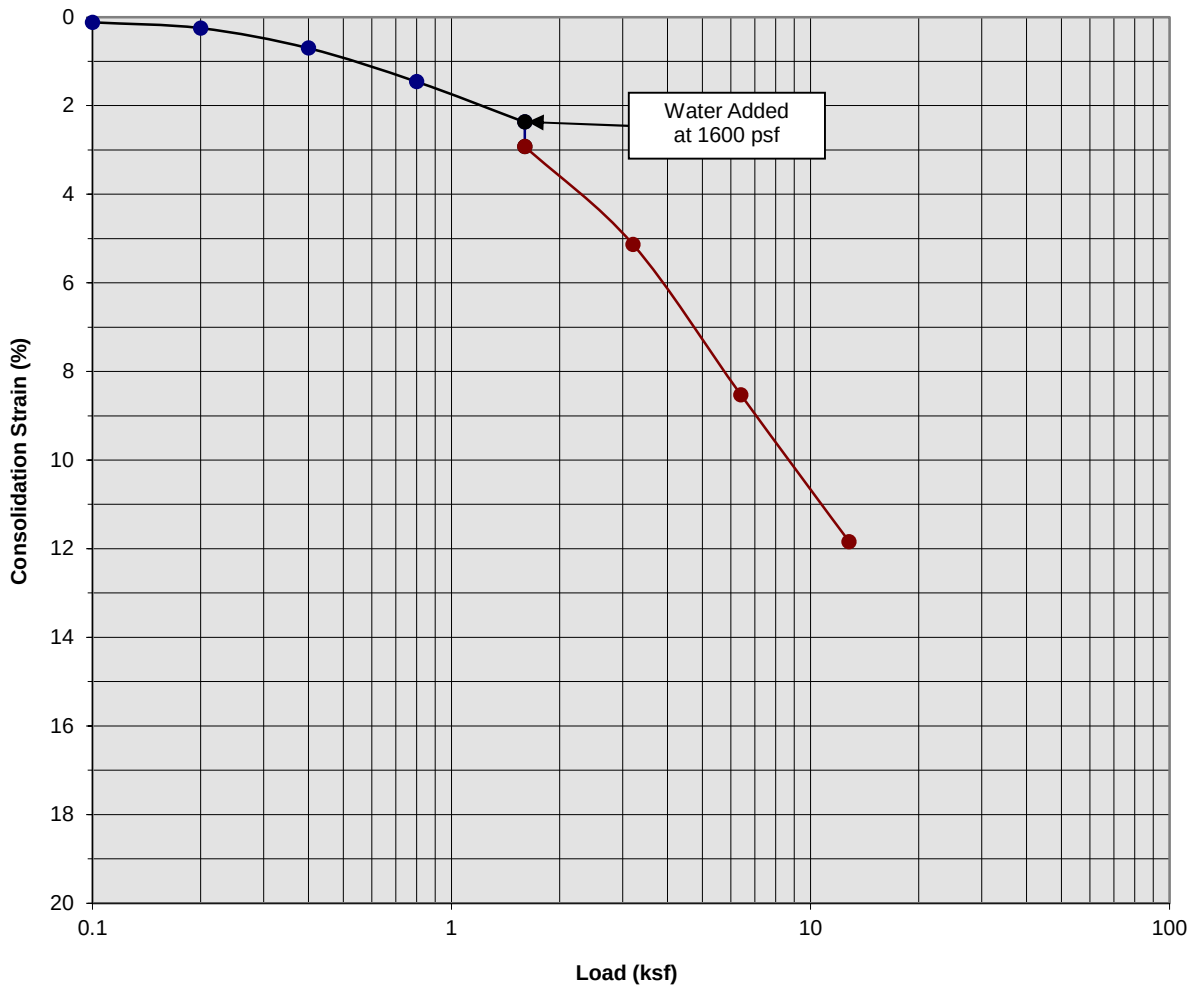
Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

Boring Number:	B-42	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	1 to 2	Initial Dry Density (pcf)	100.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	113.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.55

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PLATE C- 35

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
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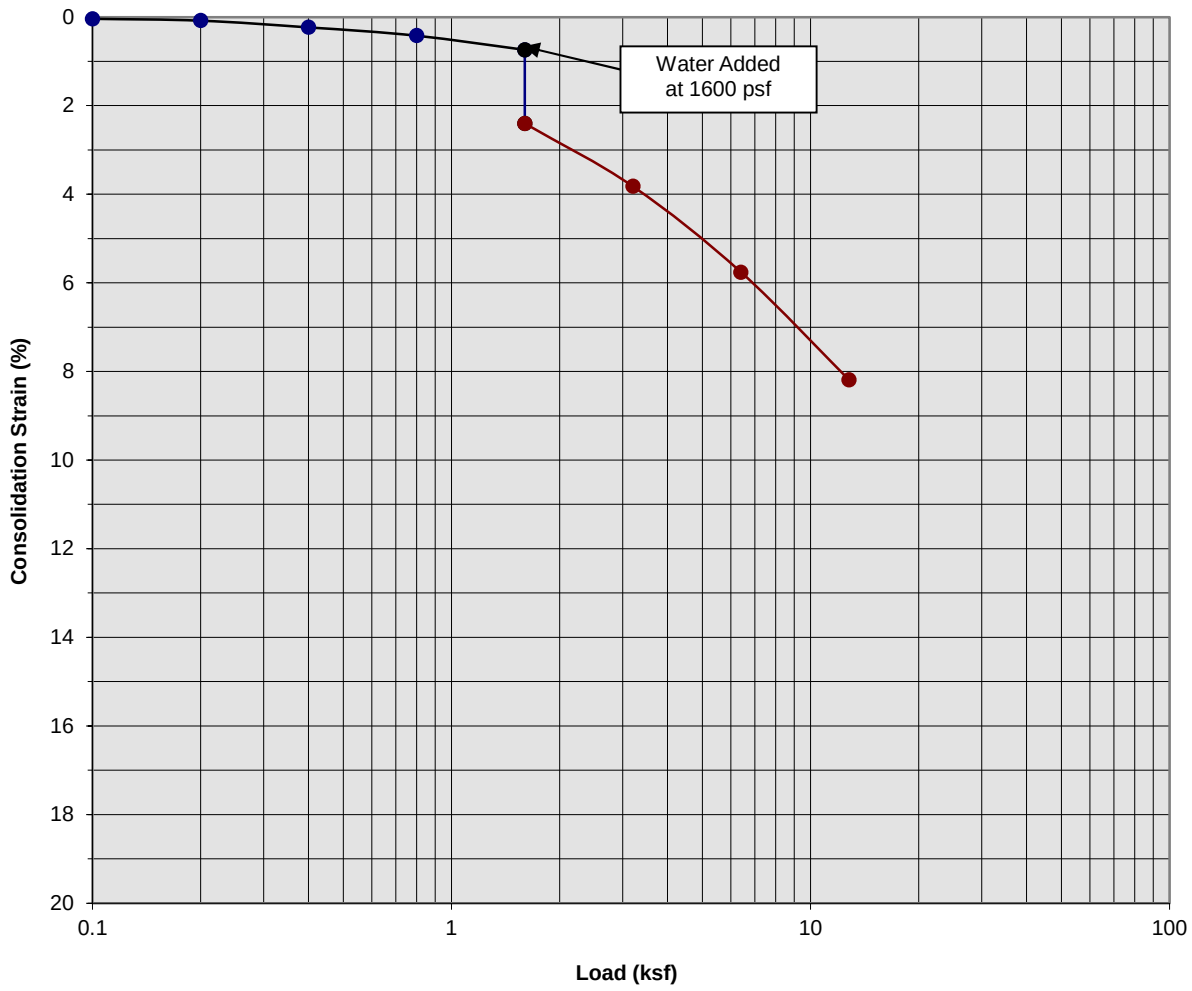
Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

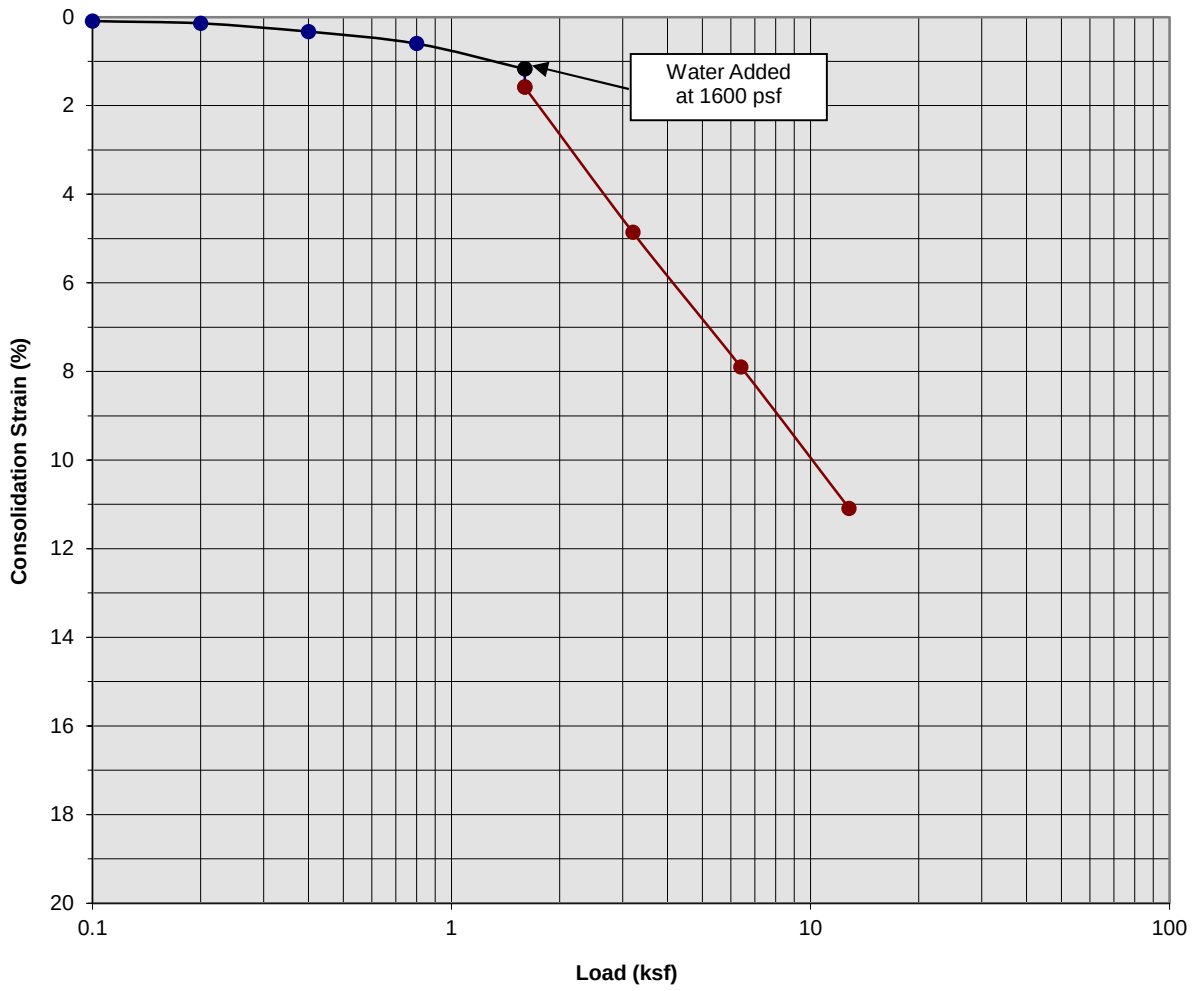
Boring Number:	B-42	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	4 to 5	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.66

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 36

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Red Brown fine Sandy Clay, little medium Sand

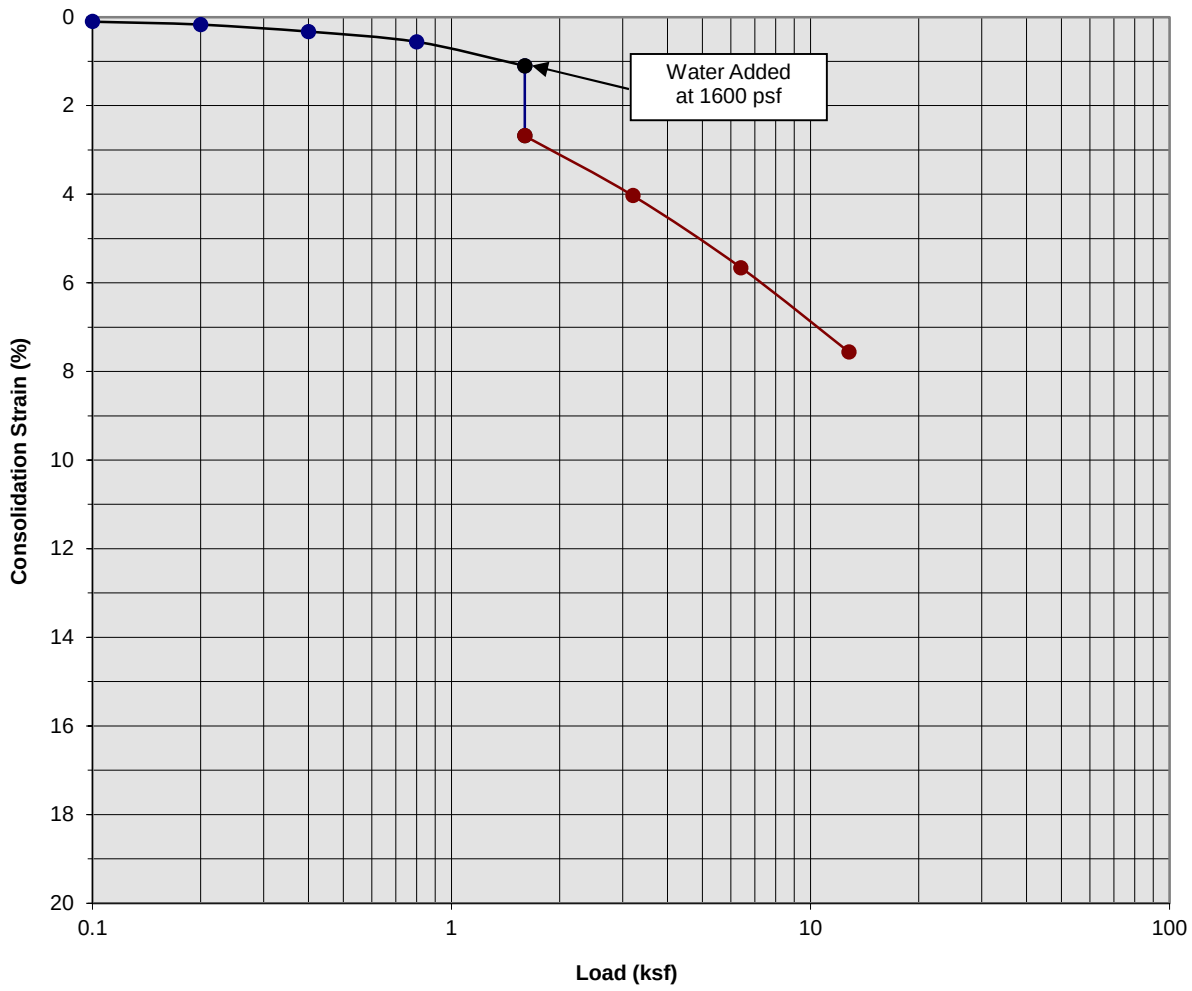
Boring Number:	B-42	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	9 to 10	Initial Dry Density (pcf)	108.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	121.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.41

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 37

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine Sand

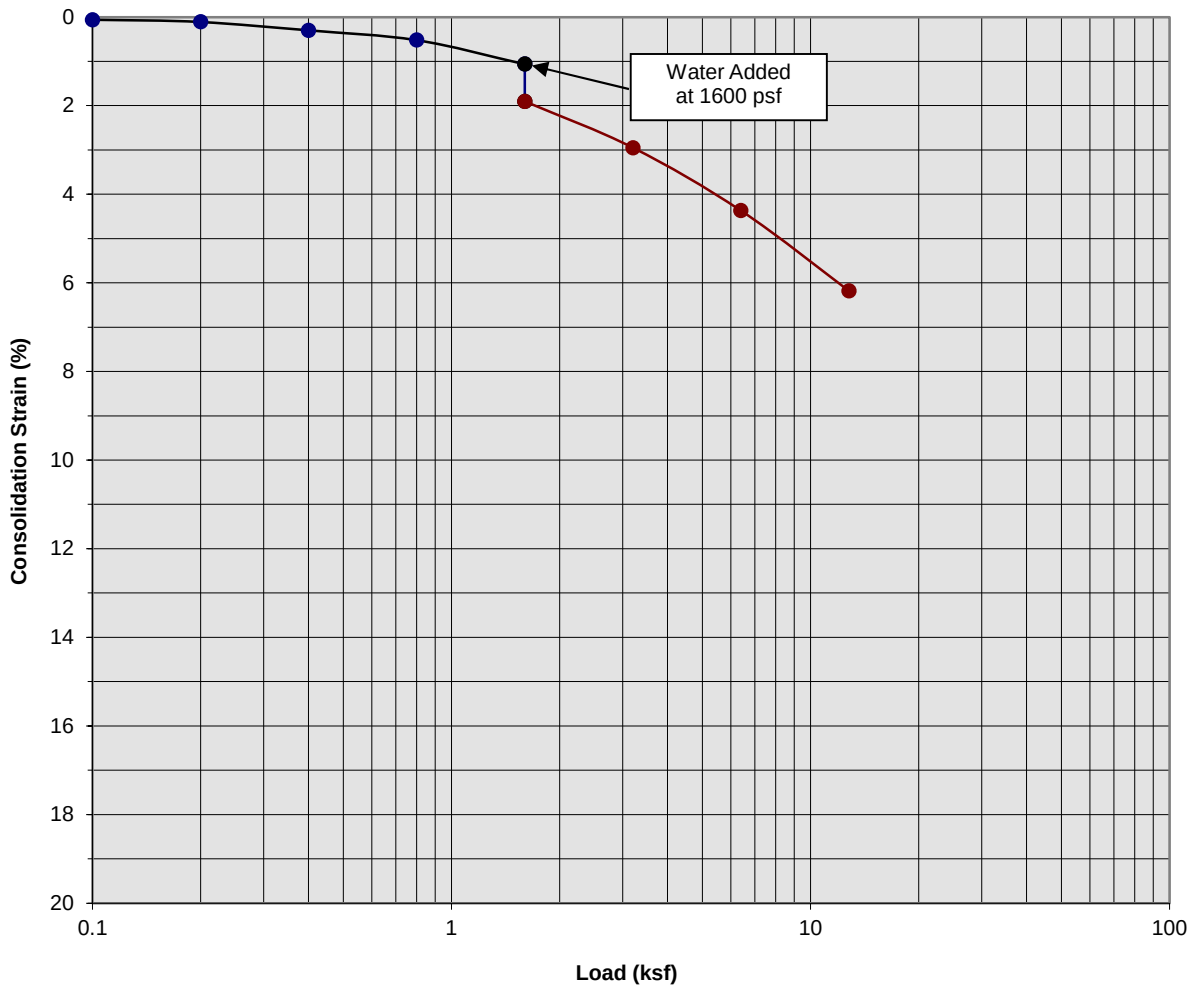
Boring Number:	B-42	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	14 to 15	Initial Dry Density (pcf)	109.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	117.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.58

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 38

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Gray Brown fine Sand, trace Silt

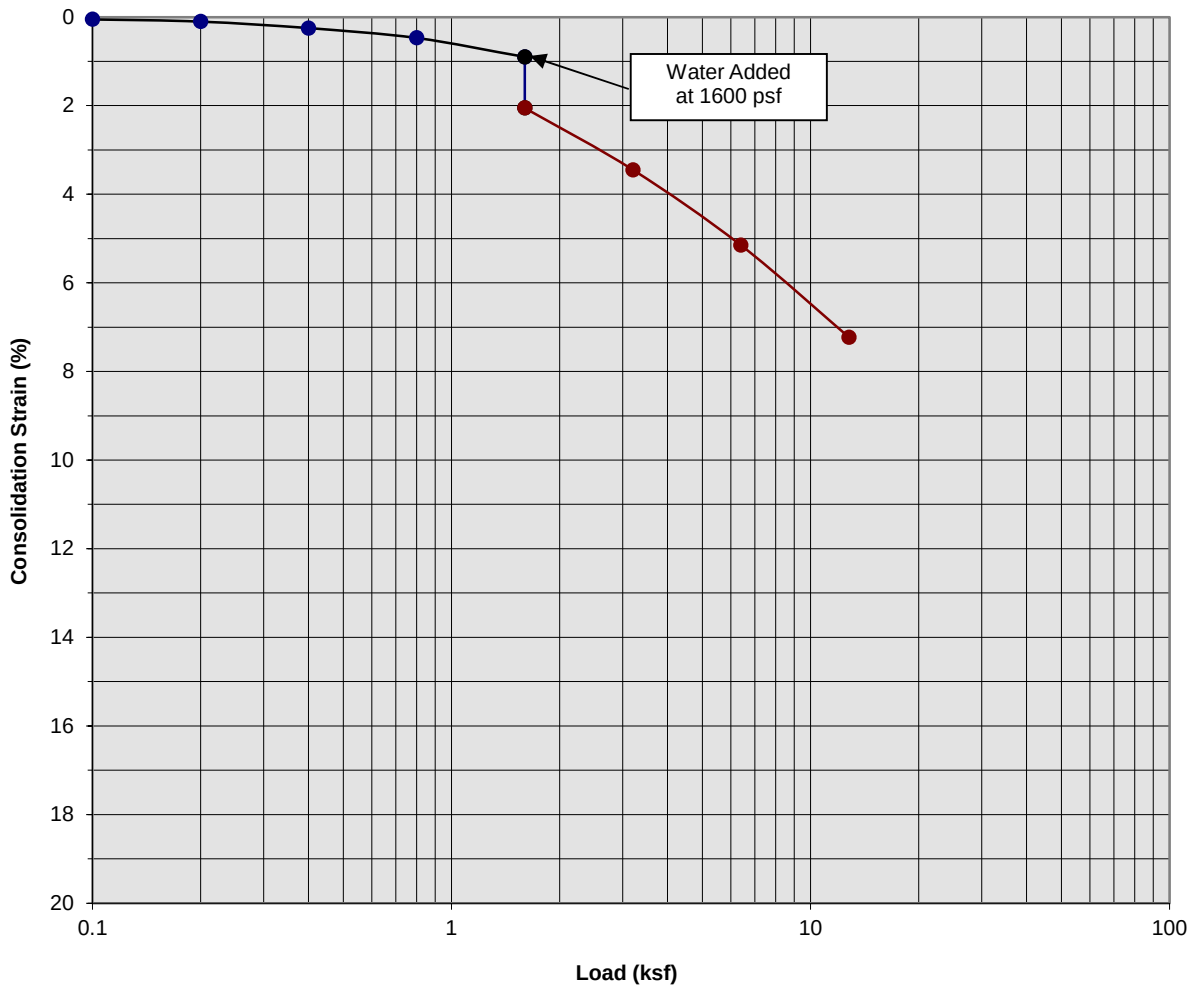
Boring Number:	B-44	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	17
Depth (ft)	46 to 47	Initial Dry Density (pcf)	107.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	114.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.84

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 39

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine to coarse Gravel

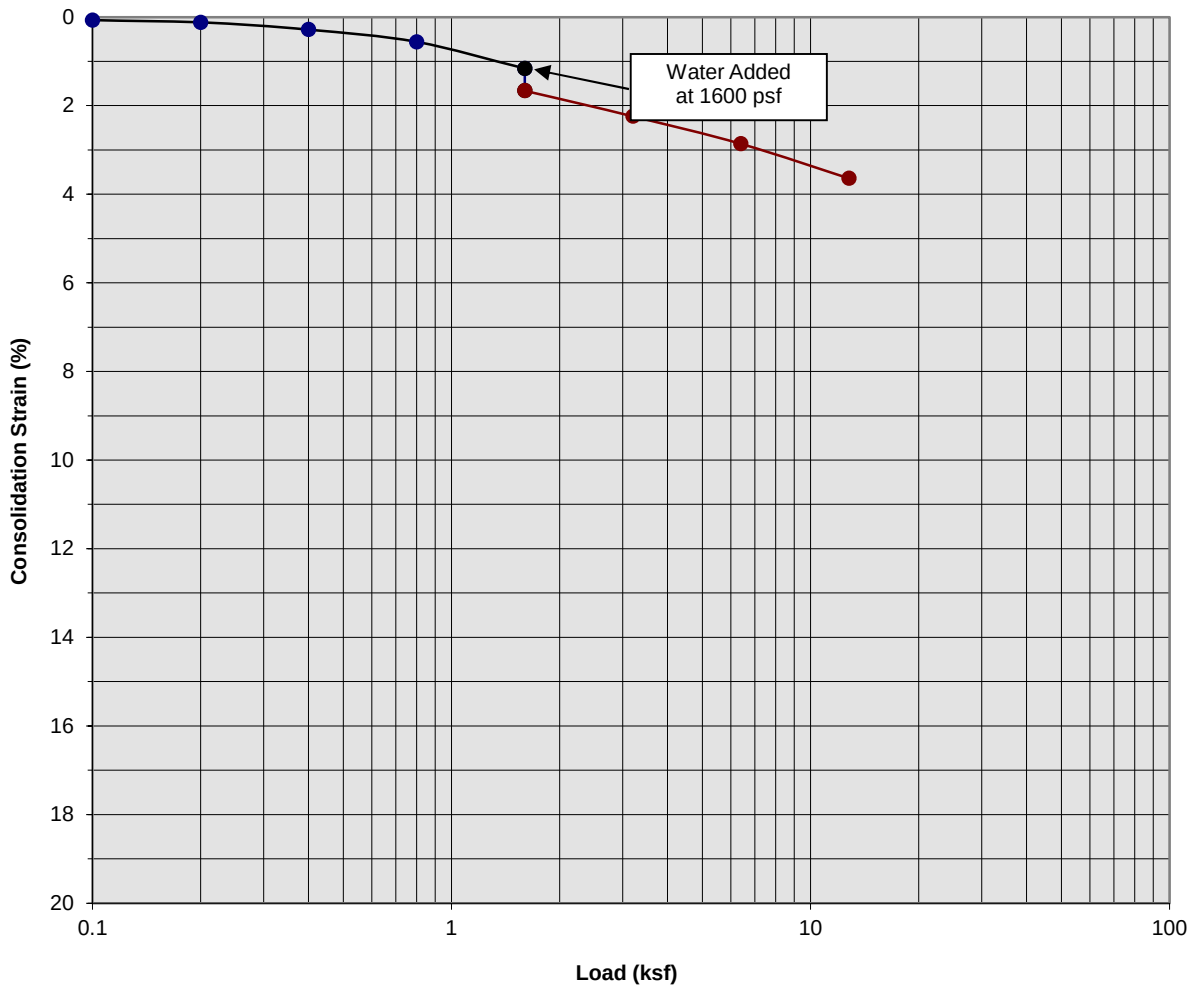
Boring Number:	B-44	Initial Moisture Content (%)	7
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	48 to 49	Initial Dry Density (pcf)	121.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	130.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.15

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 40

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine to coarse Gravel

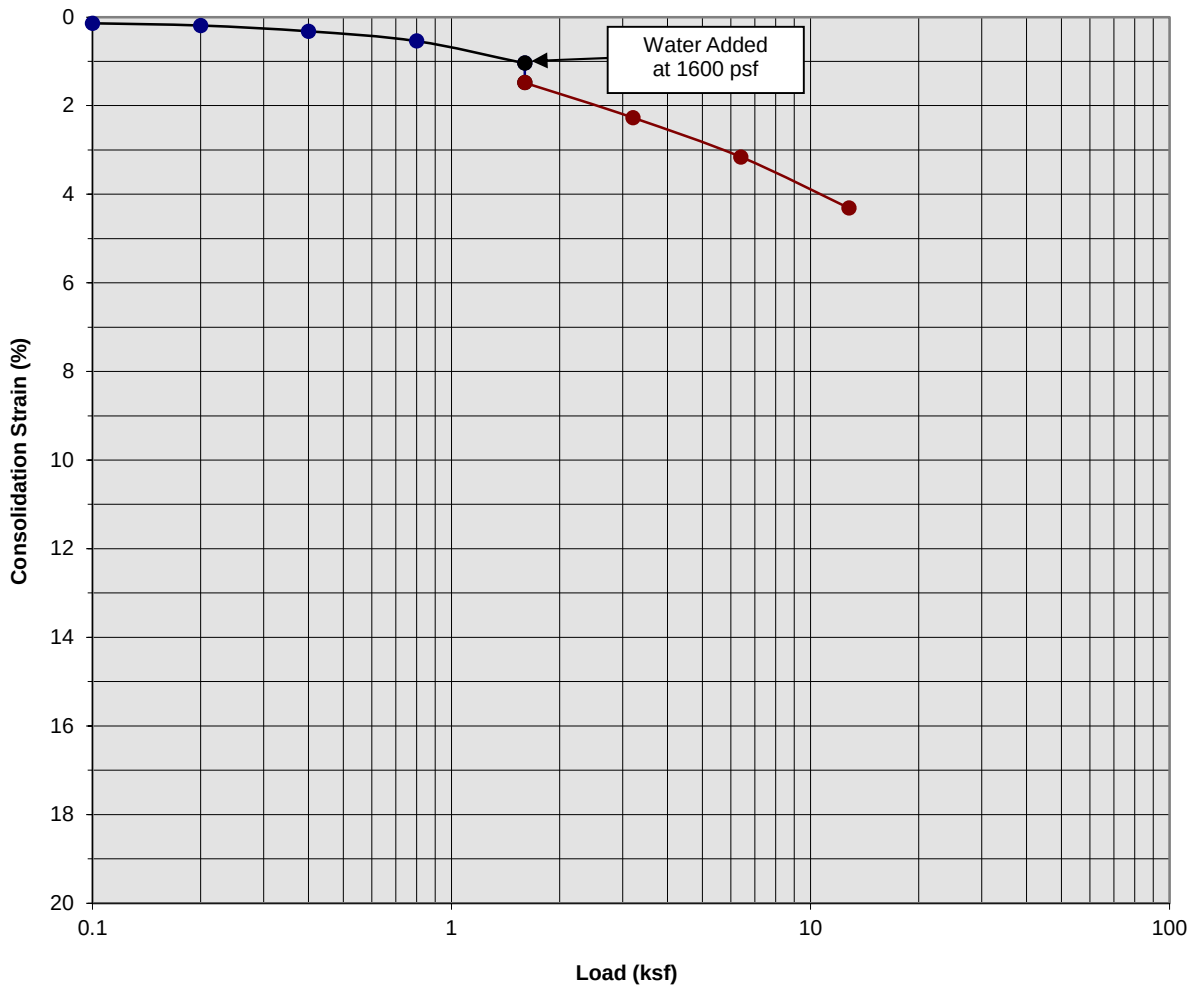
Boring Number:	B-44	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	50 to 51	Initial Dry Density (pcf)	110.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	114.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.50

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 41

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Brown Silty fine to coarse Sand, trace fine Gravel

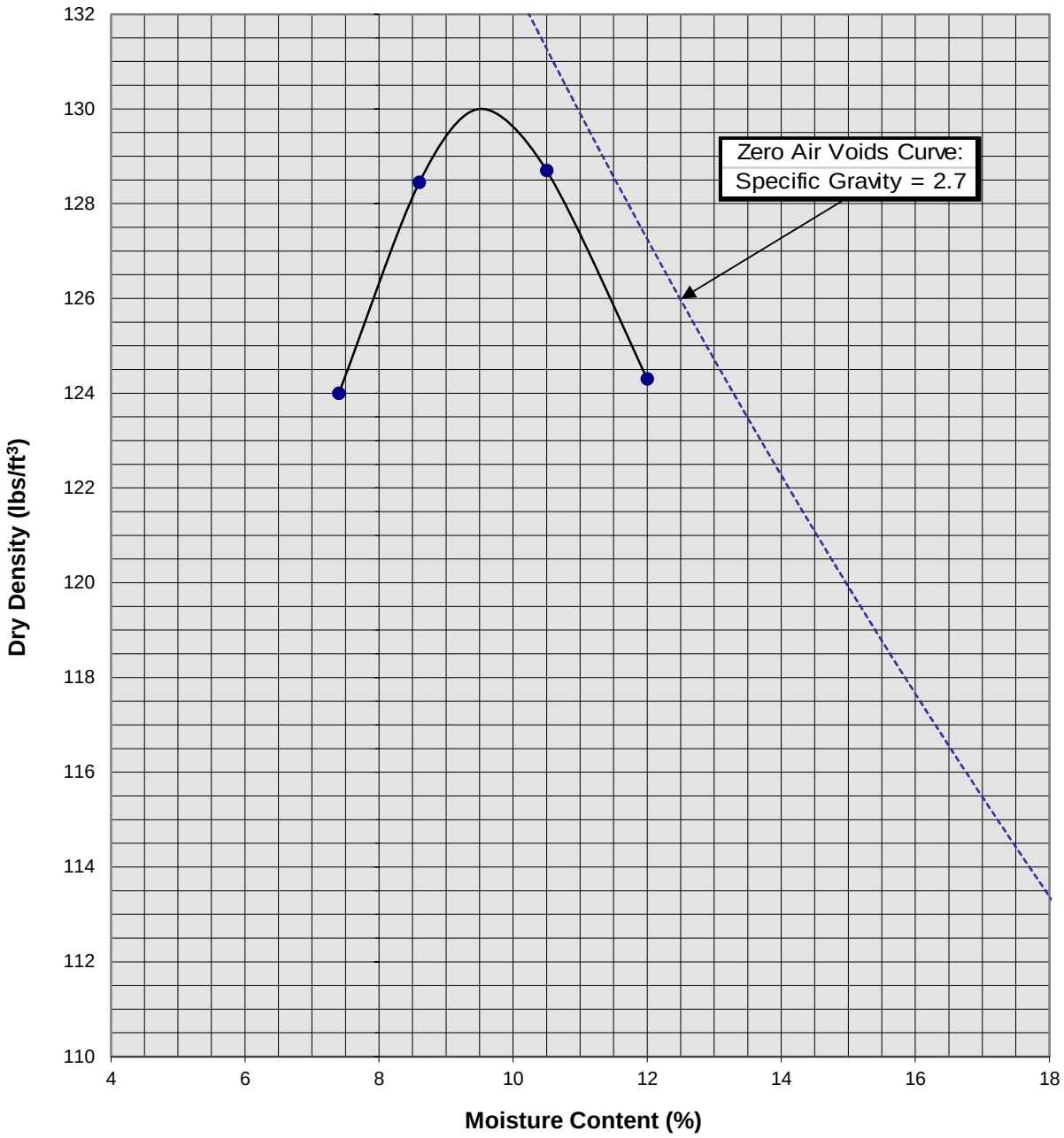
Boring Number:	B-44	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	52 to 53	Initial Dry Density (pcf)	113.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	118.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.44

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133-1

PLATE C- 42

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-14 @ 0-5'
Optimum Moisture (%)	9.5
Maximum Dry Density (pcf)	130
Soil Classification	Brown fine Sandy Clay, trace medium to coarse Sand, little Silt

Proposed E-Commerce Develoment
Beaumont, California
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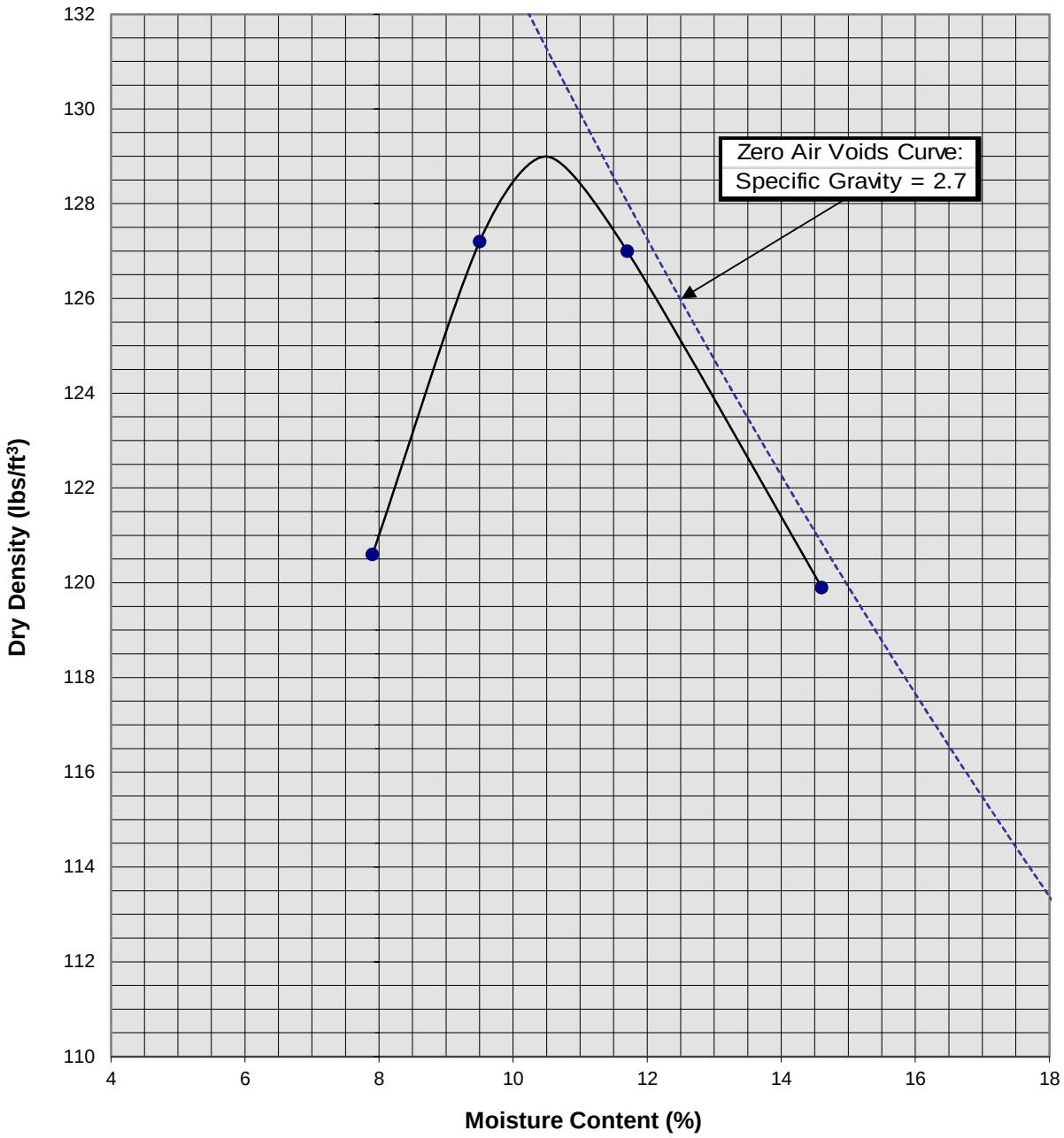
PLATE C-43

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



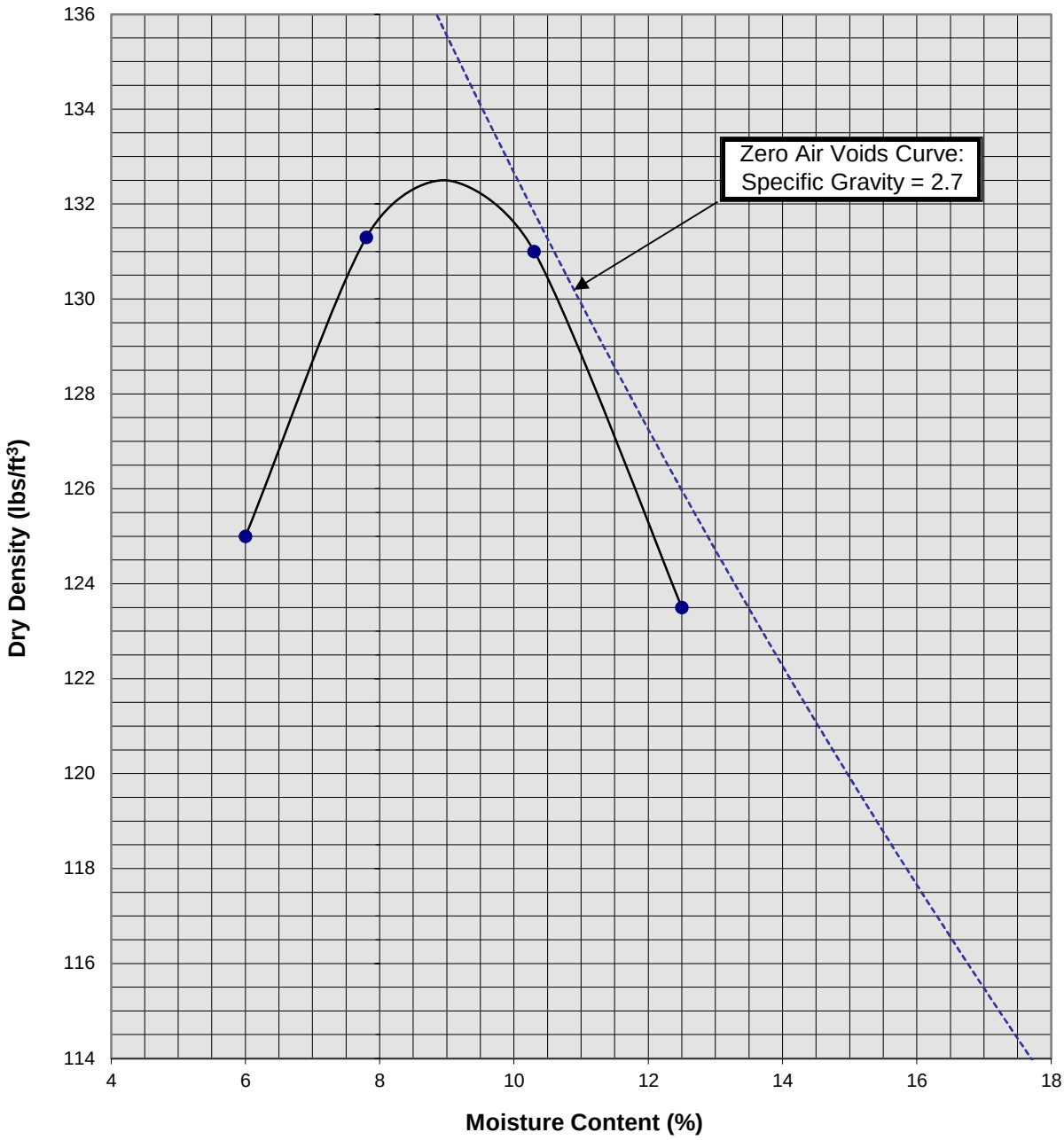
Soil ID Number	B-17 @ 0-5'
Optimum Moisture (%)	10.5
Maximum Dry Density (pcf)	129
Soil Classification	Dark Brown Silty fine Sand, trace medium to coarse Sand, trace fine Gravel

Proposed E-Commerce Develoment
Beaumont, California
Project No. 21G133-1

PLATE C-44

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557

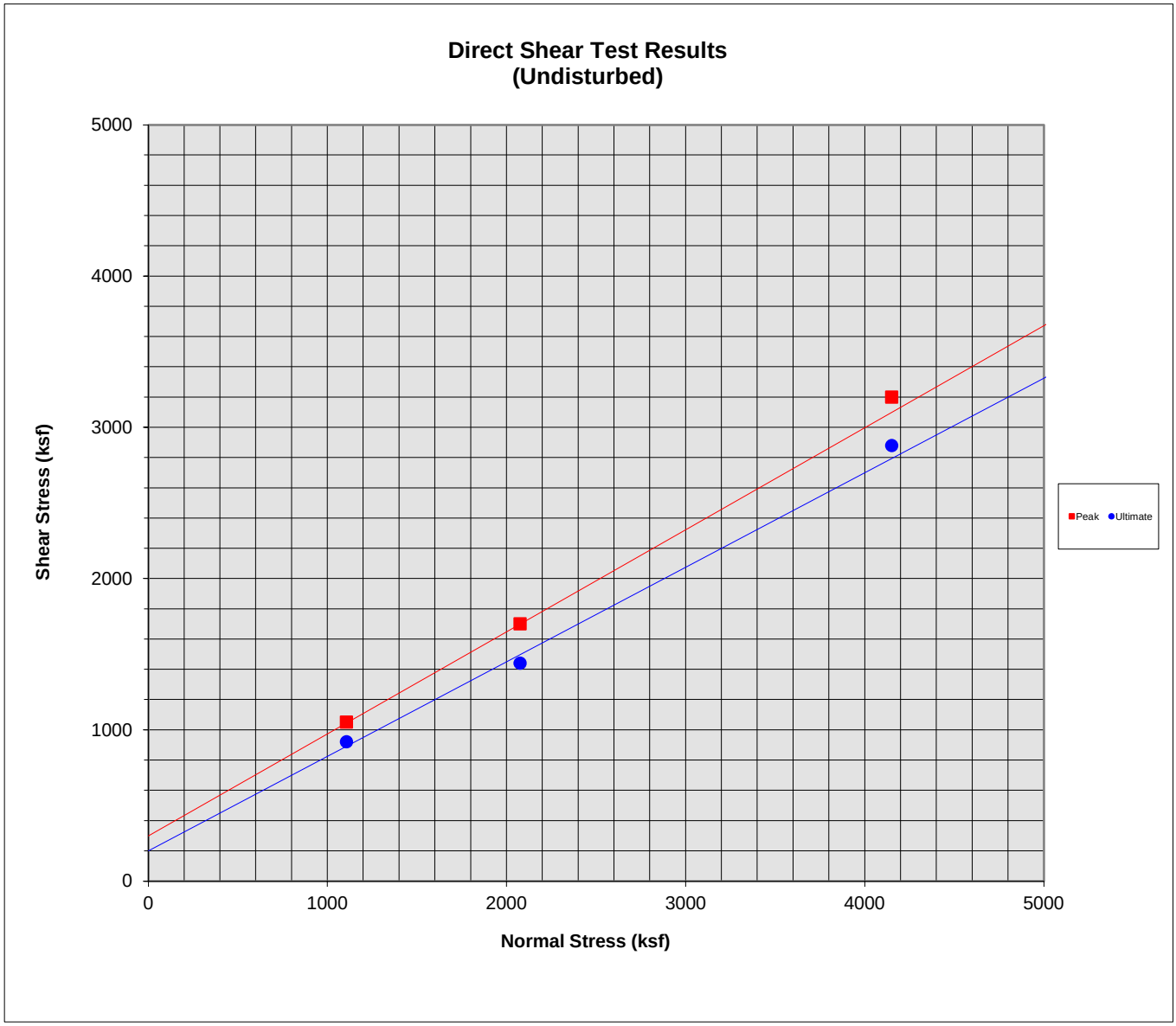


Soil ID Number	B-25 @ 0-5'
Optimum Moisture (%)	9
Maximum Dry Density (pcf)	132.5
Soil Classification	Red Brown Clayey fine Sand, trace medium Sand, little Silt

Proposed E-Commerce Develoment
Beaumont, California
Project No. 21G133-1

PLATE C-45

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation



Sample Description: B-22 @ 5 to 6 feet

Classification: Gray Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel

Sample Data	
Initial Moisture Content	5.0
Final Moisture Content	16.0
Initial Dry Density	112.0
Final Dry Density	---
Specimen Diameter (in)	2.4
Specimen Thickness (in)	1.0

Test Results		
	Peak	Ultimate
ϕ (°)	34.0	32.0
C (psf)	300	200

Proposed E-Commerce Development
Beaumont, California
Project No. 21G133

PLATE C-46

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

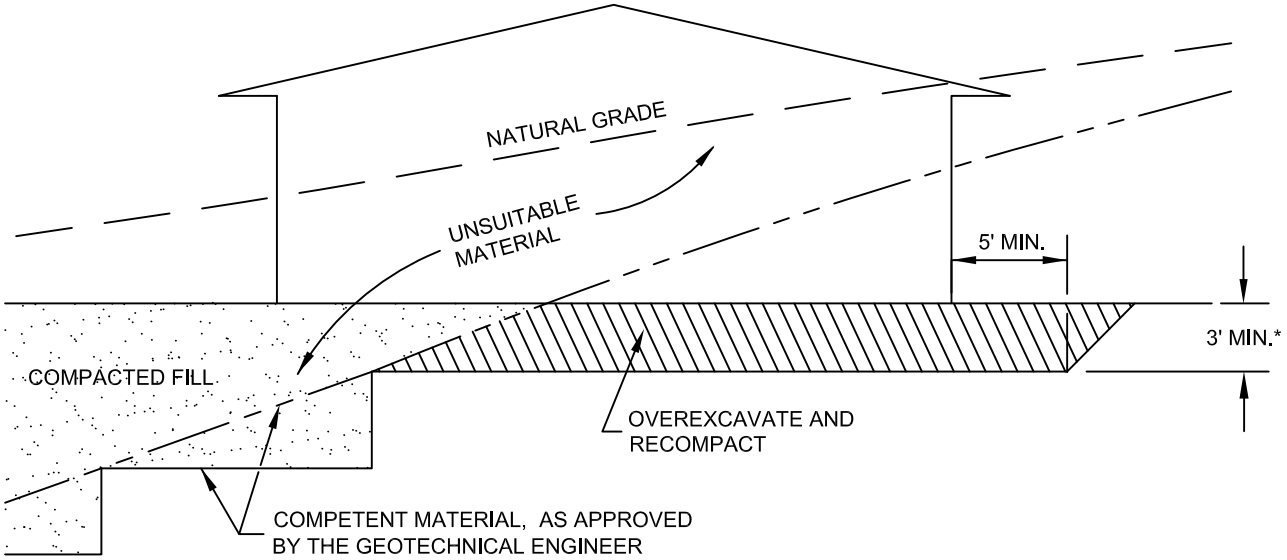
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

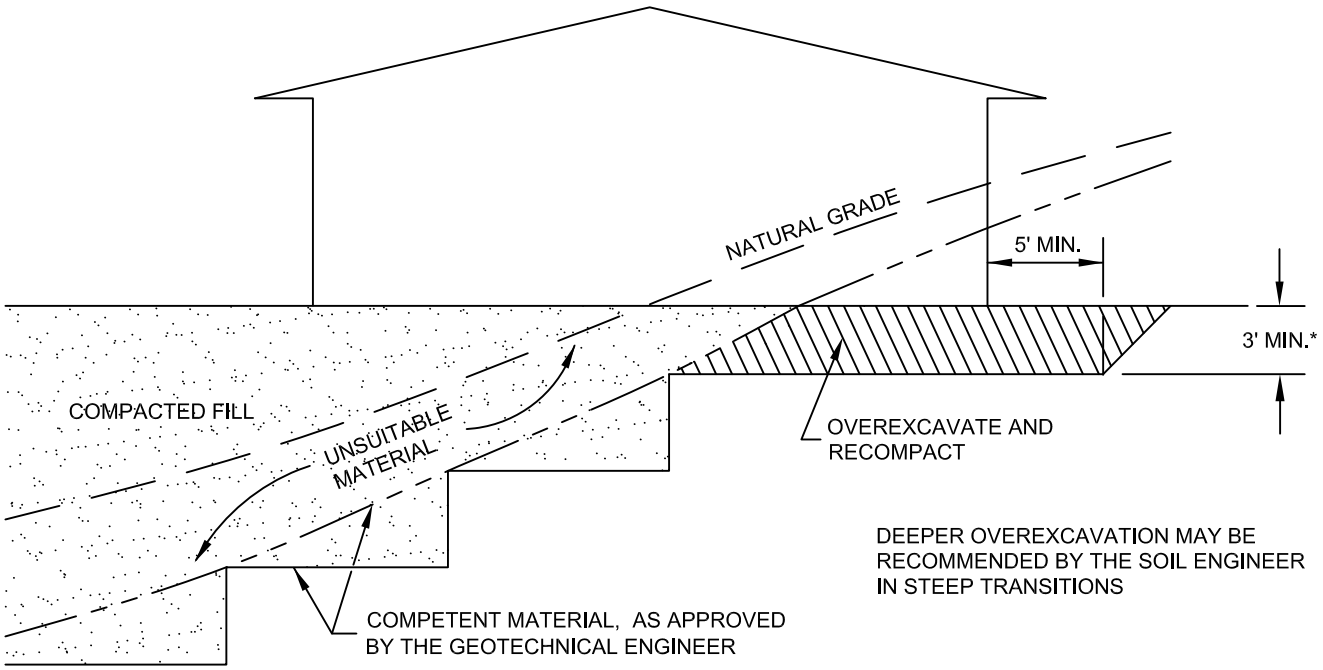
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

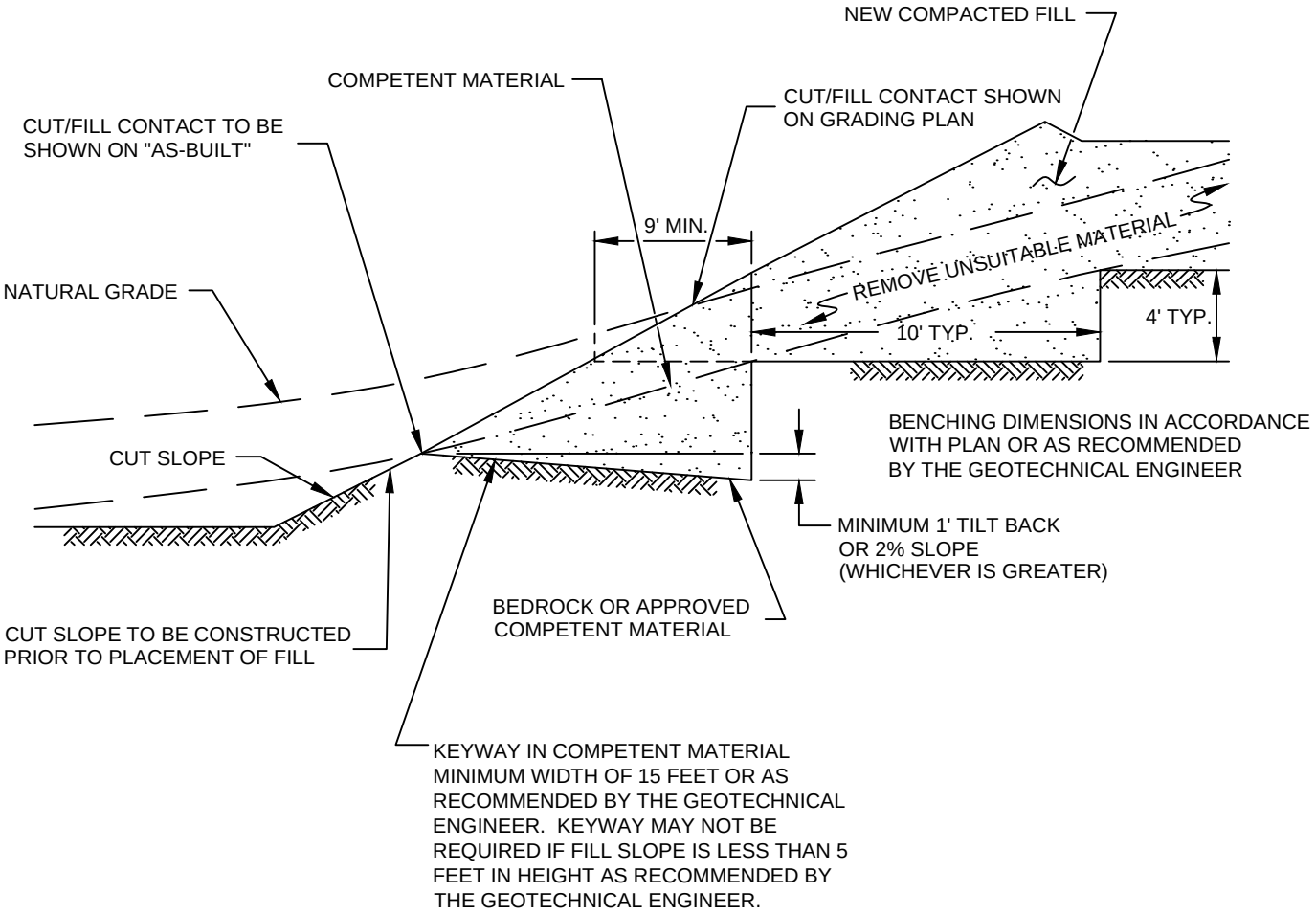
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

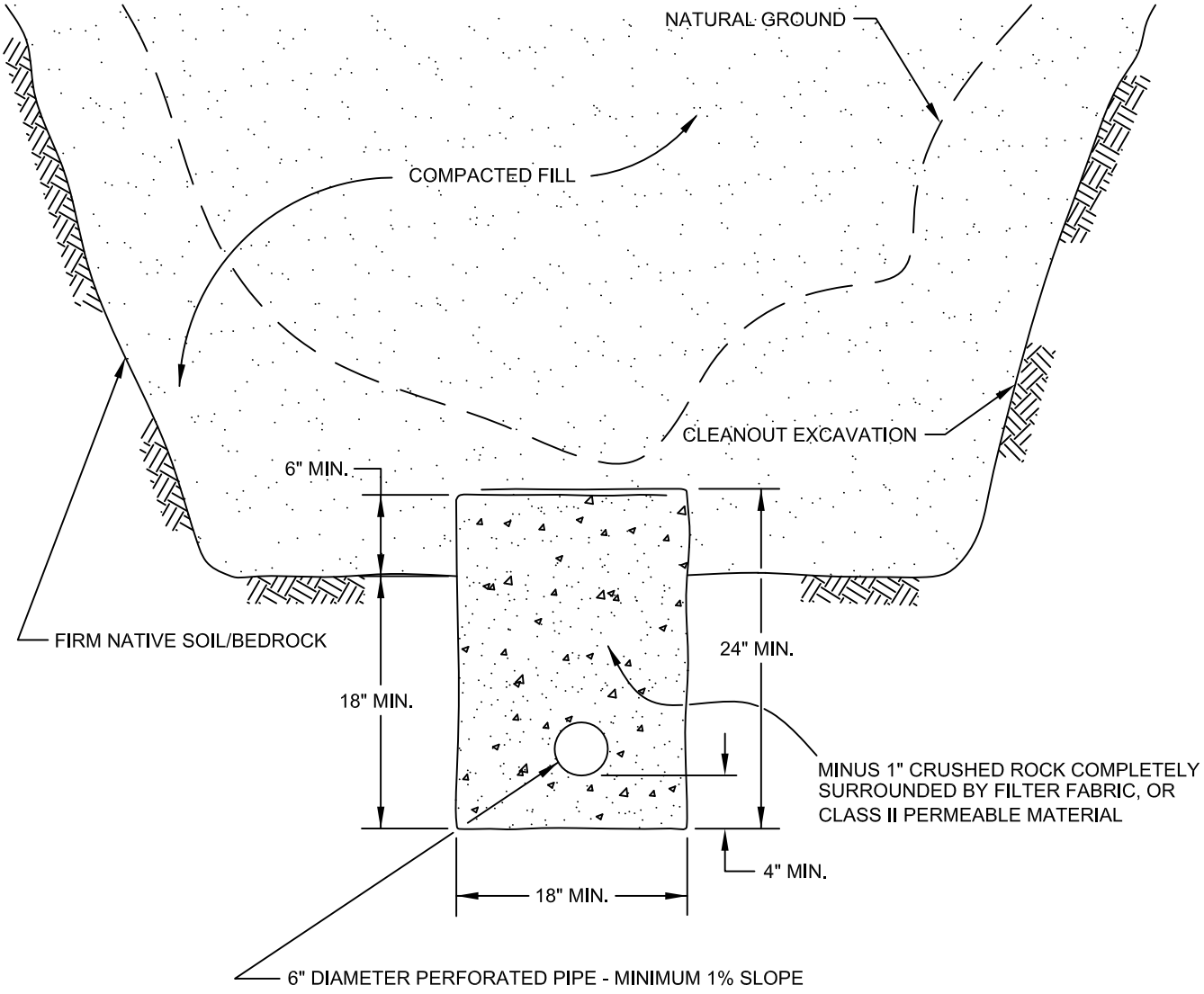
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

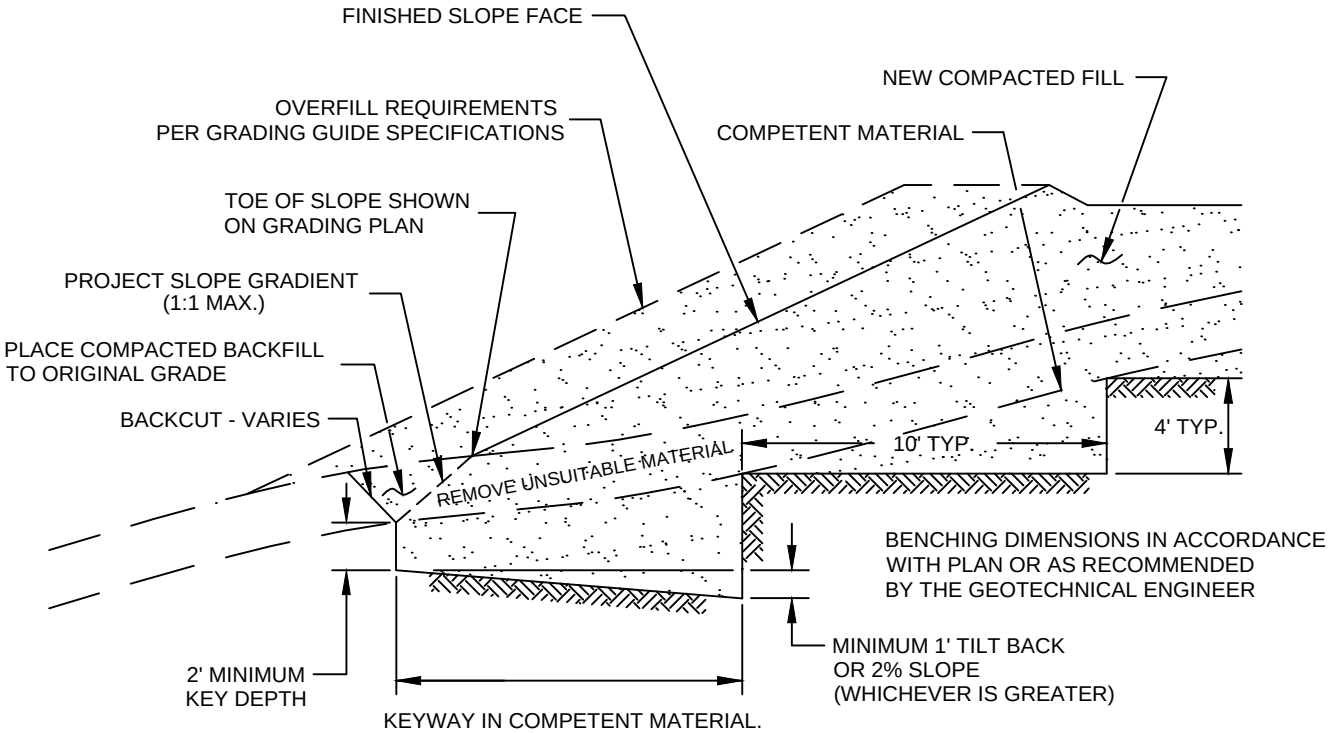
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED
WHEN NATURAL SLOPES ARE
EQUAL TO OR STEEPER THAN 5:1
OR WHEN RECOMMENDED BY
THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

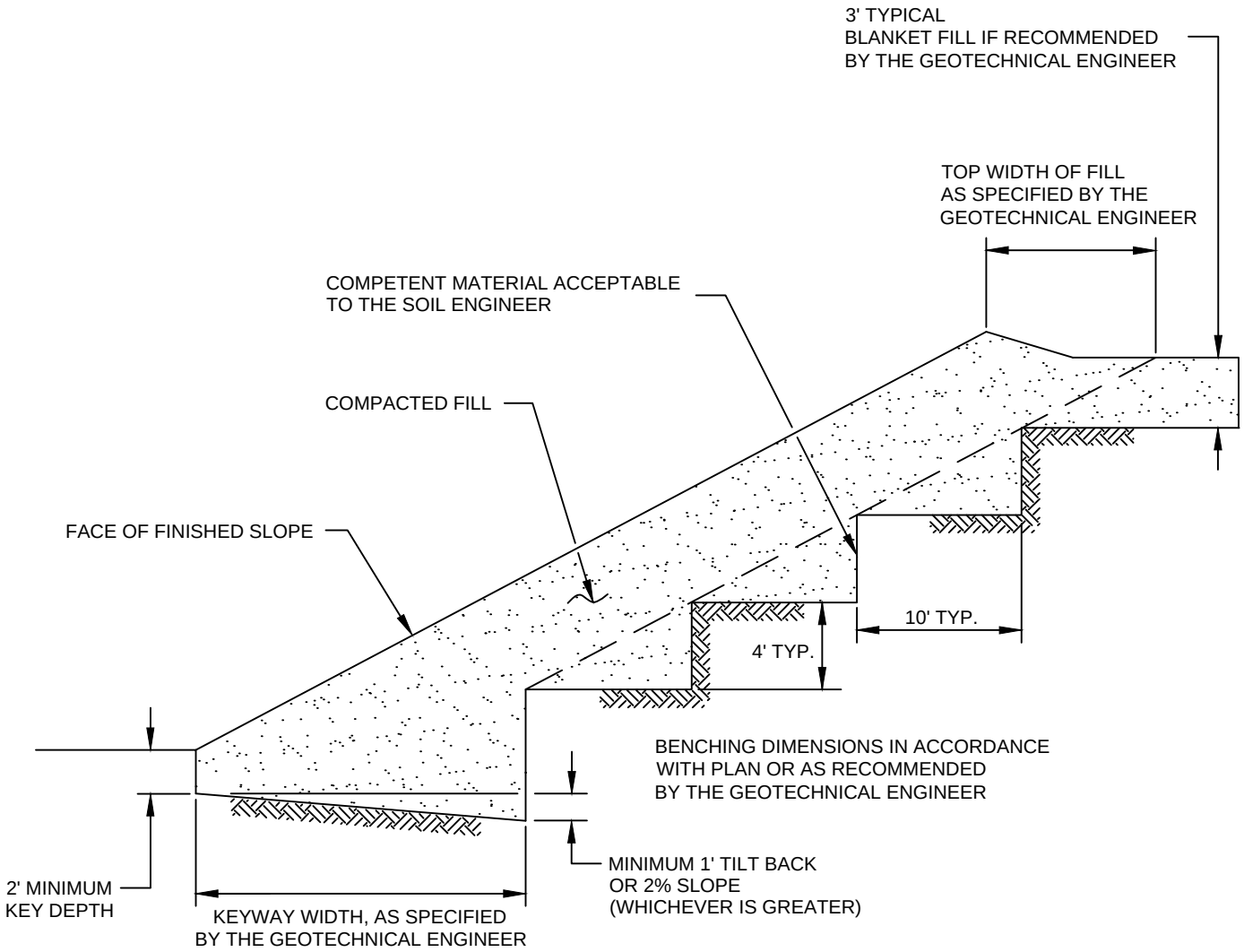
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN
CALIFORNIA
GEOTECHNICAL



STABILIZATION FILL DETAIL

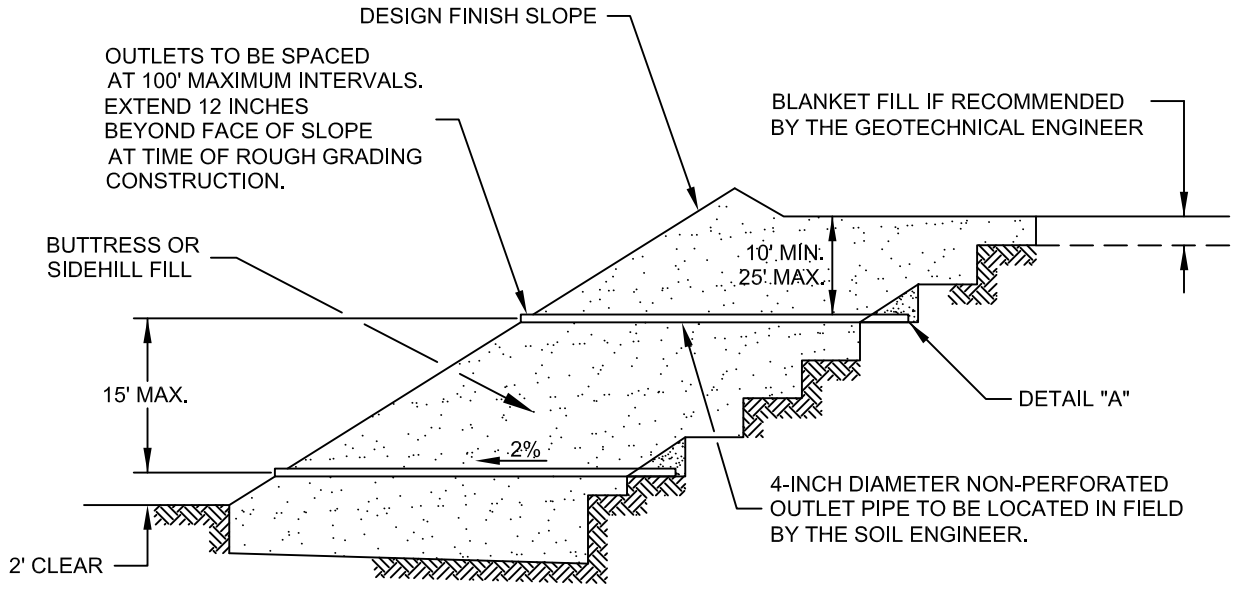
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



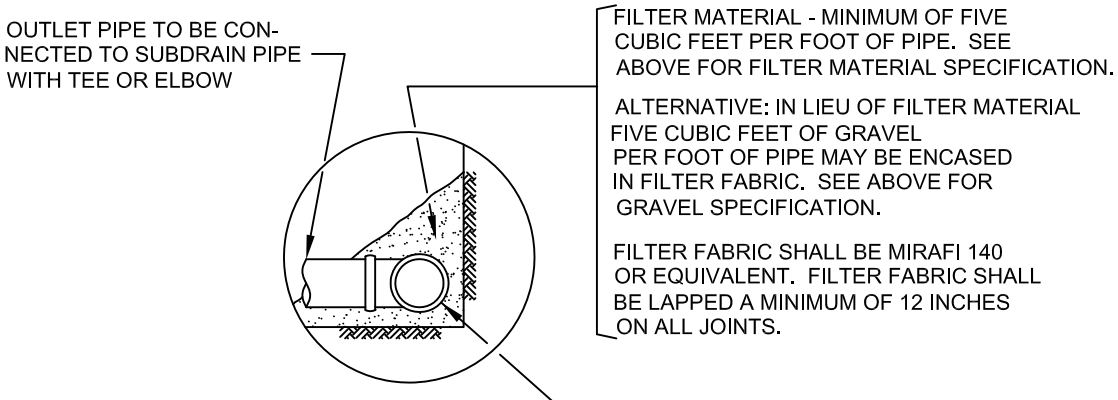
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

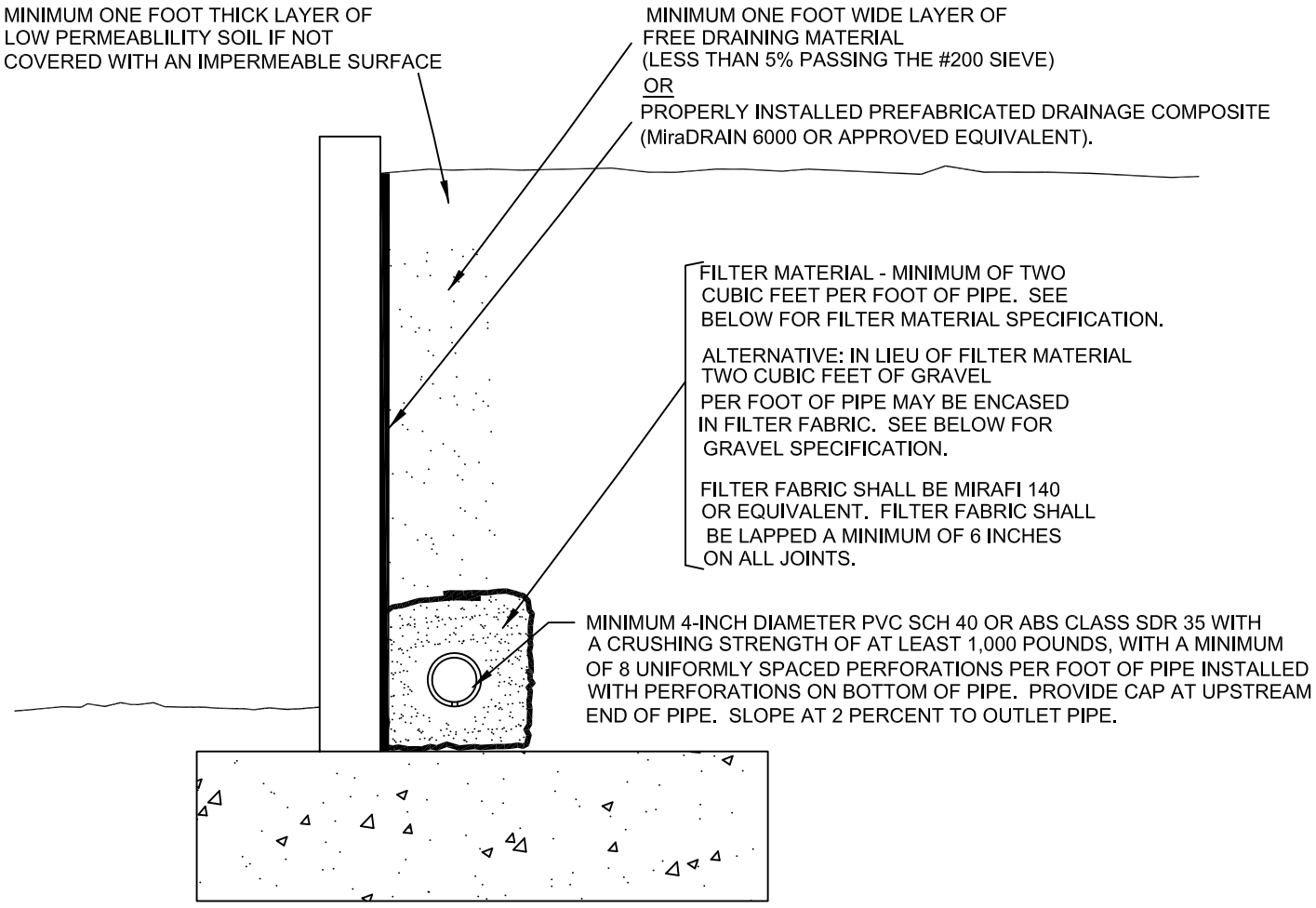
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

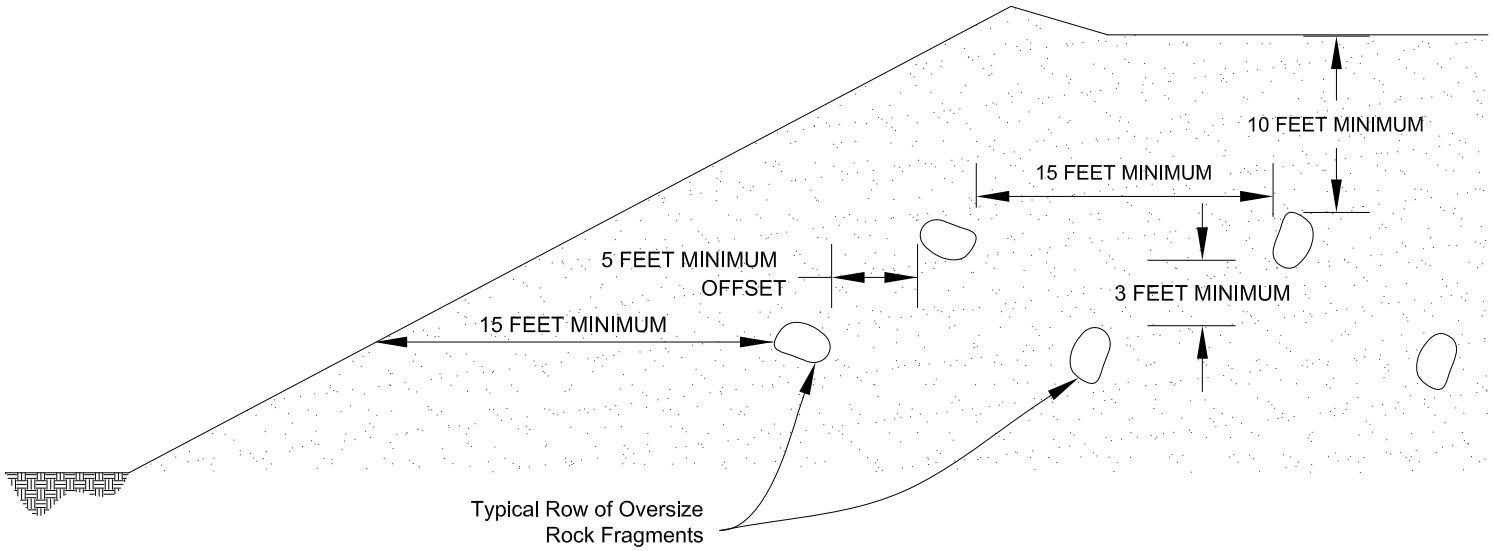
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

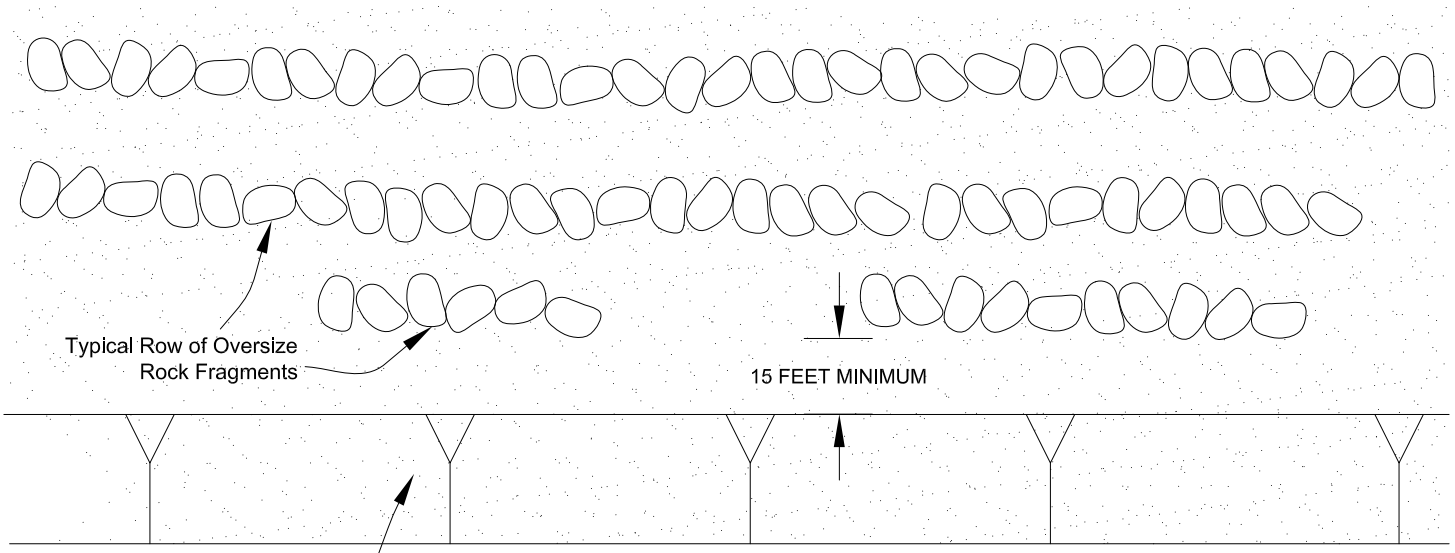
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

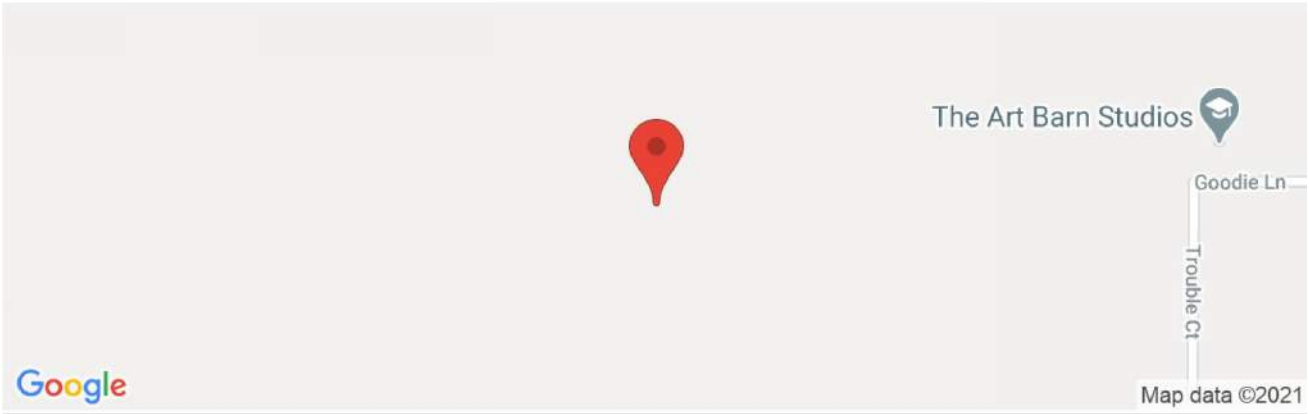
PLATE D-8

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

Latitude, Longitude: 33.966227, -117.018379



Date	4/5/2021, 2:24:01 PM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	D - Default (See Section 11.4.3)

Type	Value	Description
S_S	2.091	MCE_R ground motion. (for 0.2 second period)
S_1	0.718	MCE_R ground motion. (for 1.0s period)
S_{MS}	2.509	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.673	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.853	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	1.024	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	2.212	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.411	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.091	Factored deterministic acceleration value. (0.2 second)
S1RT	0.852	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.956	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.718	Factored deterministic acceleration value. (1.0 second)
PGAd	0.853	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.917	Mapped value of the risk coefficient at short periods
C_{R1}	0.891	Mapped value of the risk coefficient at a period of 1 s

SOURCE: SEAOC/OSHPD Seismic Design Maps Tool
<https://seismicmaps.org/>

SEISMIC DESIGN PARAMETERS - 2019 CBC

PROPOSED E-COMMERCE DEVELOPMENT

BEAUMONT, CALIFORNIA

DRAWN: JAH
CHKD: RGT

SCG PROJECT
21G133-1

PLATE E-1

SOUTHERN CALIFORNIA GEOTECHNICAL

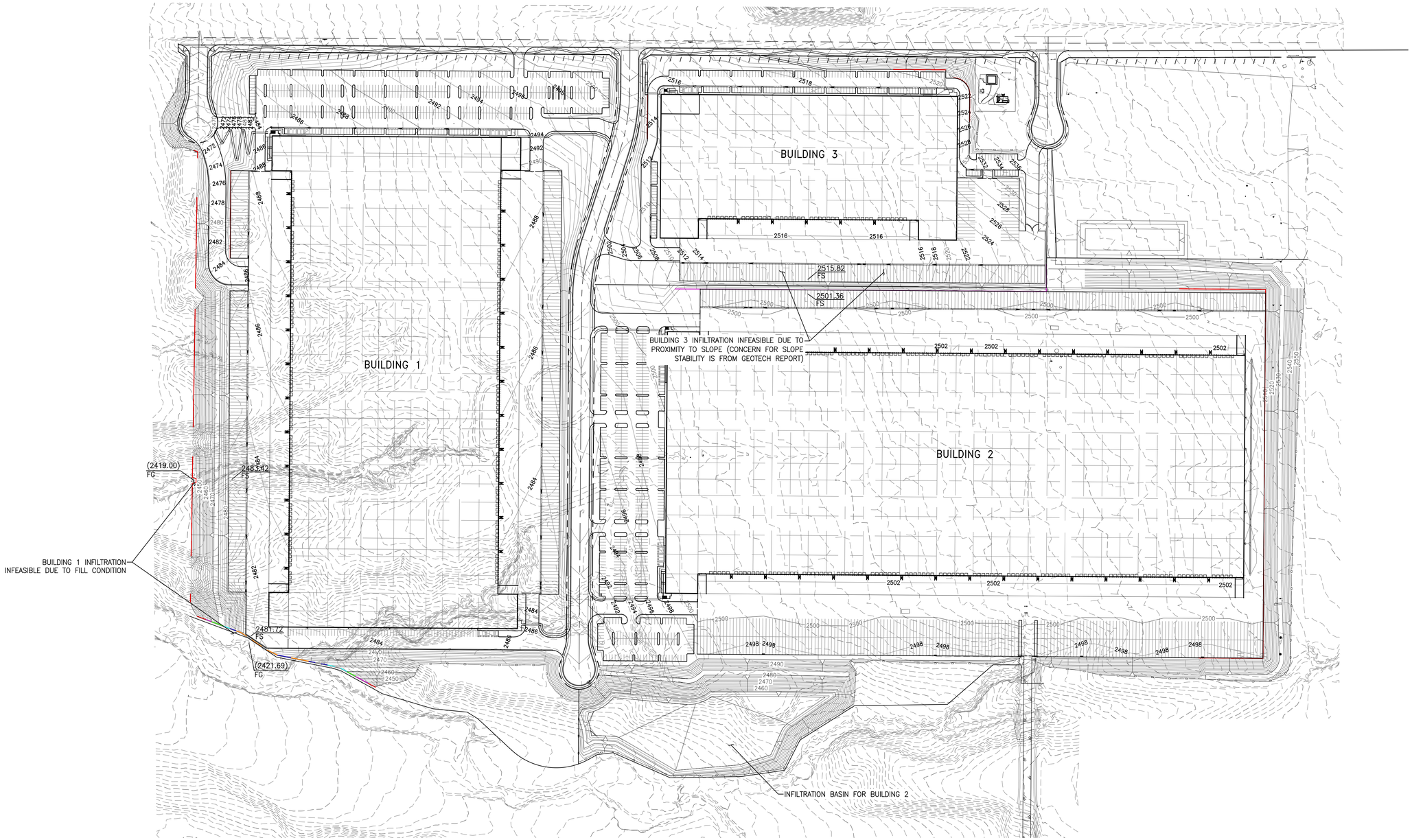
Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

N/A

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis



N
W WEBB E
S

1" = 150'

150 0 150 300 450

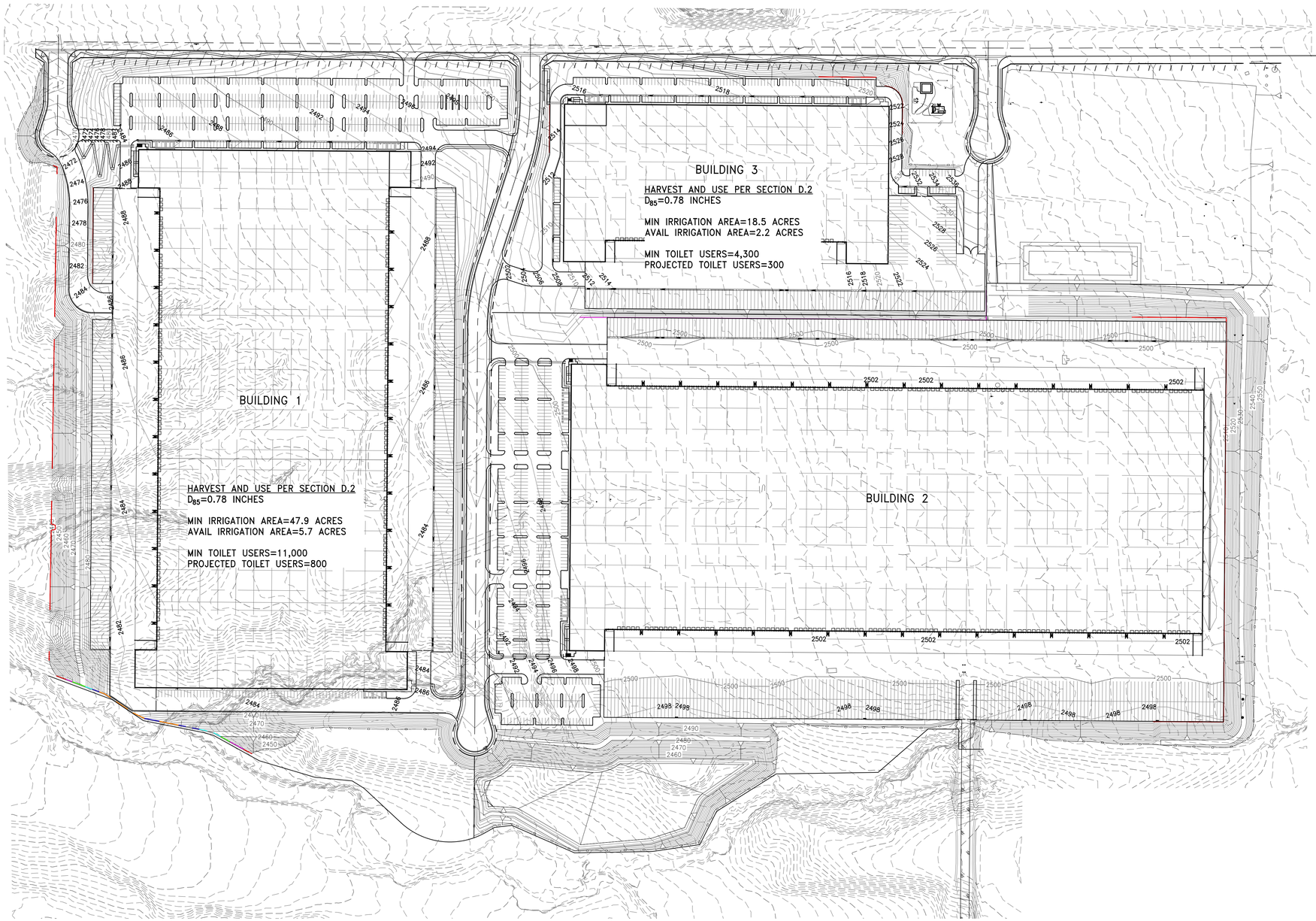
PRELIMINARY

WQMP HIERARCHY FEASIBILITY: INFILTRATION

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O. 21-0044
SHEET 1 OF 3 SHEETS

H:\2021\21-0044\DRAWINGS\EXHIBITS\21-0044-XB-WQ HIERARCHY.DWG 2/1/2022 12:37:39 PM



1" = 150'

150 0 150 300 450

PRELIMINARY

WQMP HIERARCHY FEASIBILITY: HARVEST AND USE

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

W.O. 21-0044
SHEET 2 OF 3 SHEETS

H:\2021\21-0044\DRAWINGS\EXHIBITS\21-0044-XB-WQ HIERARCHY.DWG 2/1/2022 12:37:39 PM

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Albert A. Webb Associates	Date	4/12/2022
Designed by	EP	Case No	
Company Project Number/Name	21-0044 Beaumont Summit Station		

BMP Identification

BMP NAME / ID: Building 3

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.79 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
L-A	*78,946*	*Ornamental Landscaping*	*0.1*	*0.11*	*8720.2*			
R-A	*358,370*	*Roofs*	*1*	*0.89*	*319666*			
H-A	*363,254*	*Concrete or Asphalt*	*1*	*0.89*	*324022.6*			
BMP-A	*18006*	*Ornamental Landscaping*	*0.1*	*0.11*	*1988.9*			

Basin V_{BMP} Calculation

Designer:	EP
Date:	4/11/2022
Project:	Beaumont Summit Station Builidng 3
Location:	South of Cherry Valley Blvd and North of Brookside Ave
Area:	DMA 3

(1)	Drawdown Time =	24	hrs
(2)	Basin Bottom Area=	18000	ft^2
(3)	Infiltration Rate (i)=	1.6	in/hr

$$V_{BMP}(ft^3) = Drawdown(hr) \times i\left(\frac{in}{hr}\right) \times \left(\frac{1ft}{12in}\right) \times Bottom\ Area(ft^2)$$

V_{BMP} = 57600 ft^3

***A minimum infiltration rate of 1.6 in/hr was assumed for the engineered media.The entire basin will drain within the maximum drawdown time of 48 hours.

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Existing Unit Hydrographs

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/19/21 File: EX2YRA242.out

++

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA A EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-19-2021 EP

Drainage Area = 106.40(Ac.) = 0.166 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 106.40(Ac.) = 0.166 Sq. Mi.
Length along longest watercourse = 3950.00(Ft.)
Length along longest watercourse measured to centroid = 1805.00(Ft.)
Length along longest watercourse = 0.748 Mi.
Length along longest watercourse measured to centroid = 0.342 Mi.
Difference in elevation = 162.00(Ft.)
Slope along watercourse = 216.5468 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.154 Hr.
Lag time = 9.26 Min.
25% of lag time = 2.32 Min.
40% of lag time = 3.70 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	1.50	159.60

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
106.40	6.50	691.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 1.500(In)
Areal adjustment factor = 99.98 %
Adjusted average point rain = 1.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
106.400	77.30	0.120

Total Area Entered = 106.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

77.3	59.8	0.472	0.120	0.421	1.000	0.421
					Sum (F) =	0.421

Area averaged mean soil loss (F) (In/Hr) = 0.421
Minimum soil loss rate ((In/Hr)) = 0.211
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.800

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	53.985	4.779	5.124
2	0.167	107.970	24.937	26.740
3	0.250	161.956	36.901	39.569
4	0.333	215.941	13.574	14.556
5	0.417	269.926	7.855	8.423
6	0.500	323.911	5.019	5.382
7	0.583	377.896	3.120	3.345
8	0.667	431.882	1.702	1.825
9	0.750	485.867	0.696	0.747
10	0.833	539.852	0.487	0.522
11	0.917	593.837	0.367	0.393
12	1.000	647.822	0.345	0.370
13	1.083	701.808	0.218	0.234
			Sum = 100.000	Sum= 107.231

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.012	(0.747)	0.010	0.002
2	0.17	0.07	0.012	(0.744)	0.010	0.002
3	0.25	0.07	0.012	(0.741)	0.010	0.002
4	0.33	0.10	0.018	(0.738)	0.014	0.004
5	0.42	0.10	0.018	(0.736)	0.014	0.004
6	0.50	0.10	0.018	(0.733)	0.014	0.004
7	0.58	0.10	0.018	(0.730)	0.014	0.004
8	0.67	0.10	0.018	(0.727)	0.014	0.004
9	0.75	0.10	0.018	(0.724)	0.014	0.004
10	0.83	0.13	0.024	(0.721)	0.019	0.005
11	0.92	0.13	0.024	(0.718)	0.019	0.005
12	1.00	0.13	0.024	(0.716)	0.019	0.005
13	1.08	0.10	0.018	(0.713)	0.014	0.004
14	1.17	0.10	0.018	(0.710)	0.014	0.004
15	1.25	0.10	0.018	(0.707)	0.014	0.004
16	1.33	0.10	0.018	(0.704)	0.014	0.004
17	1.42	0.10	0.018	(0.702)	0.014	0.004
18	1.50	0.10	0.018	(0.699)	0.014	0.004
19	1.58	0.10	0.018	(0.696)	0.014	0.004
20	1.67	0.10	0.018	(0.693)	0.014	0.004
21	1.75	0.10	0.018	(0.690)	0.014	0.004
22	1.83	0.13	0.024	(0.688)	0.019	0.005
23	1.92	0.13	0.024	(0.685)	0.019	0.005
24	2.00	0.13	0.024	(0.682)	0.019	0.005
25	2.08	0.13	0.024	(0.679)	0.019	0.005
26	2.17	0.13	0.024	(0.677)	0.019	0.005
27	2.25	0.13	0.024	(0.674)	0.019	0.005
28	2.33	0.13	0.024	(0.671)	0.019	0.005
29	2.42	0.13	0.024	(0.668)	0.019	0.005
30	2.50	0.13	0.024	(0.666)	0.019	0.005
31	2.58	0.17	0.030	(0.663)	0.024	0.006
32	2.67	0.17	0.030	(0.660)	0.024	0.006
33	2.75	0.17	0.030	(0.657)	0.024	0.006
34	2.83	0.17	0.030	(0.655)	0.024	0.006
35	2.92	0.17	0.030	(0.652)	0.024	0.006
36	3.00	0.17	0.030	(0.649)	0.024	0.006
37	3.08	0.17	0.030	(0.647)	0.024	0.006

38	3.17	0.17	0.030	(0.644)	0.024	0.006
39	3.25	0.17	0.030	(0.641)	0.024	0.006
40	3.33	0.17	0.030	(0.639)	0.024	0.006
41	3.42	0.17	0.030	(0.636)	0.024	0.006
42	3.50	0.17	0.030	(0.633)	0.024	0.006
43	3.58	0.17	0.030	(0.631)	0.024	0.006
44	3.67	0.17	0.030	(0.628)	0.024	0.006
45	3.75	0.17	0.030	(0.625)	0.024	0.006
46	3.83	0.20	0.036	(0.623)	0.029	0.007
47	3.92	0.20	0.036	(0.620)	0.029	0.007
48	4.00	0.20	0.036	(0.617)	0.029	0.007
49	4.08	0.20	0.036	(0.615)	0.029	0.007
50	4.17	0.20	0.036	(0.612)	0.029	0.007
51	4.25	0.20	0.036	(0.610)	0.029	0.007
52	4.33	0.23	0.042	(0.607)	0.034	0.008
53	4.42	0.23	0.042	(0.604)	0.034	0.008
54	4.50	0.23	0.042	(0.602)	0.034	0.008
55	4.58	0.23	0.042	(0.599)	0.034	0.008
56	4.67	0.23	0.042	(0.597)	0.034	0.008
57	4.75	0.23	0.042	(0.594)	0.034	0.008
58	4.83	0.27	0.048	(0.592)	0.038	0.010
59	4.92	0.27	0.048	(0.589)	0.038	0.010
60	5.00	0.27	0.048	(0.586)	0.038	0.010
61	5.08	0.20	0.036	(0.584)	0.029	0.007
62	5.17	0.20	0.036	(0.581)	0.029	0.007
63	5.25	0.20	0.036	(0.579)	0.029	0.007
64	5.33	0.23	0.042	(0.576)	0.034	0.008
65	5.42	0.23	0.042	(0.574)	0.034	0.008
66	5.50	0.23	0.042	(0.571)	0.034	0.008
67	5.58	0.27	0.048	(0.569)	0.038	0.010
68	5.67	0.27	0.048	(0.566)	0.038	0.010
69	5.75	0.27	0.048	(0.564)	0.038	0.010
70	5.83	0.27	0.048	(0.561)	0.038	0.010
71	5.92	0.27	0.048	(0.559)	0.038	0.010
72	6.00	0.27	0.048	(0.556)	0.038	0.010
73	6.08	0.30	0.054	(0.554)	0.043	0.011
74	6.17	0.30	0.054	(0.551)	0.043	0.011
75	6.25	0.30	0.054	(0.549)	0.043	0.011
76	6.33	0.30	0.054	(0.546)	0.043	0.011
77	6.42	0.30	0.054	(0.544)	0.043	0.011
78	6.50	0.30	0.054	(0.542)	0.043	0.011
79	6.58	0.33	0.060	(0.539)	0.048	0.012
80	6.67	0.33	0.060	(0.537)	0.048	0.012
81	6.75	0.33	0.060	(0.534)	0.048	0.012
82	6.83	0.33	0.060	(0.532)	0.048	0.012
83	6.92	0.33	0.060	(0.529)	0.048	0.012
84	7.00	0.33	0.060	(0.527)	0.048	0.012
85	7.08	0.33	0.060	(0.525)	0.048	0.012
86	7.17	0.33	0.060	(0.522)	0.048	0.012
87	7.25	0.33	0.060	(0.520)	0.048	0.012
88	7.33	0.37	0.066	(0.518)	0.053	0.013
89	7.42	0.37	0.066	(0.515)	0.053	0.013
90	7.50	0.37	0.066	(0.513)	0.053	0.013
91	7.58	0.40	0.072	(0.510)	0.058	0.014
92	7.67	0.40	0.072	(0.508)	0.058	0.014
93	7.75	0.40	0.072	(0.506)	0.058	0.014
94	7.83	0.43	0.078	(0.503)	0.062	0.016
95	7.92	0.43	0.078	(0.501)	0.062	0.016
96	8.00	0.43	0.078	(0.499)	0.062	0.016
97	8.08	0.50	0.090	(0.496)	0.072	0.018
98	8.17	0.50	0.090	(0.494)	0.072	0.018
99	8.25	0.50	0.090	(0.492)	0.072	0.018
100	8.33	0.50	0.090	(0.490)	0.072	0.018
101	8.42	0.50	0.090	(0.487)	0.072	0.018
102	8.50	0.50	0.090	(0.485)	0.072	0.018
103	8.58	0.53	0.096	(0.483)	0.077	0.019
104	8.67	0.53	0.096	(0.480)	0.077	0.019
105	8.75	0.53	0.096	(0.478)	0.077	0.019
106	8.83	0.57	0.102	(0.476)	0.082	0.020
107	8.92	0.57	0.102	(0.474)	0.082	0.020
108	9.00	0.57	0.102	(0.471)	0.082	0.020
109	9.08	0.63	0.114	(0.469)	0.091	0.023
110	9.17	0.63	0.114	(0.467)	0.091	0.023
111	9.25	0.63	0.114	(0.465)	0.091	0.023
112	9.33	0.67	0.120	(0.462)	0.096	0.024

113	9.42	0.67	0.120	(0.460)	0.096	0.024
114	9.50	0.67	0.120	(0.458)	0.096	0.024
115	9.58	0.70	0.126	(0.456)	0.101	0.025
116	9.67	0.70	0.126	(0.454)	0.101	0.025
117	9.75	0.70	0.126	(0.452)	0.101	0.025
118	9.83	0.73	0.132	(0.449)	0.106	0.026
119	9.92	0.73	0.132	(0.447)	0.106	0.026
120	10.00	0.73	0.132	(0.445)	0.106	0.026
121	10.08	0.50	0.090	(0.443)	0.072	0.018
122	10.17	0.50	0.090	(0.441)	0.072	0.018
123	10.25	0.50	0.090	(0.439)	0.072	0.018
124	10.33	0.50	0.090	(0.436)	0.072	0.018
125	10.42	0.50	0.090	(0.434)	0.072	0.018
126	10.50	0.50	0.090	(0.432)	0.072	0.018
127	10.58	0.67	0.120	(0.430)	0.096	0.024
128	10.67	0.67	0.120	(0.428)	0.096	0.024
129	10.75	0.67	0.120	(0.426)	0.096	0.024
130	10.83	0.67	0.120	(0.424)	0.096	0.024
131	10.92	0.67	0.120	(0.422)	0.096	0.024
132	11.00	0.67	0.120	(0.420)	0.096	0.024
133	11.08	0.63	0.114	(0.418)	0.091	0.023
134	11.17	0.63	0.114	(0.416)	0.091	0.023
135	11.25	0.63	0.114	(0.413)	0.091	0.023
136	11.33	0.63	0.114	(0.411)	0.091	0.023
137	11.42	0.63	0.114	(0.409)	0.091	0.023
138	11.50	0.63	0.114	(0.407)	0.091	0.023
139	11.58	0.57	0.102	(0.405)	0.082	0.020
140	11.67	0.57	0.102	(0.403)	0.082	0.020
141	11.75	0.57	0.102	(0.401)	0.082	0.020
142	11.83	0.60	0.108	(0.399)	0.086	0.022
143	11.92	0.60	0.108	(0.397)	0.086	0.022
144	12.00	0.60	0.108	(0.395)	0.086	0.022
145	12.08	0.83	0.150	(0.393)	0.120	0.030
146	12.17	0.83	0.150	(0.391)	0.120	0.030
147	12.25	0.83	0.150	(0.389)	0.120	0.030
148	12.33	0.87	0.156	(0.388)	0.125	0.031
149	12.42	0.87	0.156	(0.386)	0.125	0.031
150	12.50	0.87	0.156	(0.384)	0.125	0.031
151	12.58	0.93	0.168	(0.382)	0.134	0.034
152	12.67	0.93	0.168	(0.380)	0.134	0.034
153	12.75	0.93	0.168	(0.378)	0.134	0.034
154	12.83	0.97	0.174	(0.376)	0.139	0.035
155	12.92	0.97	0.174	(0.374)	0.139	0.035
156	13.00	0.97	0.174	(0.372)	0.139	0.035
157	13.08	1.13	0.204	(0.370)	0.163	0.041
158	13.17	1.13	0.204	(0.368)	0.163	0.041
159	13.25	1.13	0.204	(0.367)	0.163	0.041
160	13.33	1.13	0.204	(0.365)	0.163	0.041
161	13.42	1.13	0.204	(0.363)	0.163	0.041
162	13.50	1.13	0.204	(0.361)	0.163	0.041
163	13.58	0.77	0.138	(0.359)	0.110	0.028
164	13.67	0.77	0.138	(0.357)	0.110	0.028
165	13.75	0.77	0.138	(0.355)	0.110	0.028
166	13.83	0.77	0.138	(0.354)	0.110	0.028
167	13.92	0.77	0.138	(0.352)	0.110	0.028
168	14.00	0.77	0.138	(0.350)	0.110	0.028
169	14.08	0.90	0.162	(0.348)	0.130	0.032
170	14.17	0.90	0.162	(0.346)	0.130	0.032
171	14.25	0.90	0.162	(0.345)	0.130	0.032
172	14.33	0.87	0.156	(0.343)	0.125	0.031
173	14.42	0.87	0.156	(0.341)	0.125	0.031
174	14.50	0.87	0.156	(0.339)	0.125	0.031
175	14.58	0.87	0.156	(0.338)	0.125	0.031
176	14.67	0.87	0.156	(0.336)	0.125	0.031
177	14.75	0.87	0.156	(0.334)	0.125	0.031
178	14.83	0.83	0.150	(0.333)	0.120	0.030
179	14.92	0.83	0.150	(0.331)	0.120	0.030
180	15.00	0.83	0.150	(0.329)	0.120	0.030
181	15.08	0.80	0.144	(0.327)	0.115	0.029
182	15.17	0.80	0.144	(0.326)	0.115	0.029
183	15.25	0.80	0.144	(0.324)	0.115	0.029
184	15.33	0.77	0.138	(0.322)	0.110	0.028
185	15.42	0.77	0.138	(0.321)	0.110	0.028
186	15.50	0.77	0.138	(0.319)	0.110	0.028
187	15.58	0.63	0.114	(0.318)	0.091	0.023

188	15.67	0.63	0.114	(0.316)	0.091	0.023
189	15.75	0.63	0.114	(0.314)	0.091	0.023
190	15.83	0.63	0.114	(0.313)	0.091	0.023
191	15.92	0.63	0.114	(0.311)	0.091	0.023
192	16.00	0.63	0.114	(0.309)	0.091	0.023
193	16.08	0.13	0.024	(0.308)	0.019	0.005
194	16.17	0.13	0.024	(0.306)	0.019	0.005
195	16.25	0.13	0.024	(0.305)	0.019	0.005
196	16.33	0.13	0.024	(0.303)	0.019	0.005
197	16.42	0.13	0.024	(0.302)	0.019	0.005
198	16.50	0.13	0.024	(0.300)	0.019	0.005
199	16.58	0.10	0.018	(0.299)	0.014	0.004
200	16.67	0.10	0.018	(0.297)	0.014	0.004
201	16.75	0.10	0.018	(0.296)	0.014	0.004
202	16.83	0.10	0.018	(0.294)	0.014	0.004
203	16.92	0.10	0.018	(0.293)	0.014	0.004
204	17.00	0.10	0.018	(0.291)	0.014	0.004
205	17.08	0.17	0.030	(0.290)	0.024	0.006
206	17.17	0.17	0.030	(0.288)	0.024	0.006
207	17.25	0.17	0.030	(0.287)	0.024	0.006
208	17.33	0.17	0.030	(0.285)	0.024	0.006
209	17.42	0.17	0.030	(0.284)	0.024	0.006
210	17.50	0.17	0.030	(0.282)	0.024	0.006
211	17.58	0.17	0.030	(0.281)	0.024	0.006
212	17.67	0.17	0.030	(0.280)	0.024	0.006
213	17.75	0.17	0.030	(0.278)	0.024	0.006
214	17.83	0.13	0.024	(0.277)	0.019	0.005
215	17.92	0.13	0.024	(0.275)	0.019	0.005
216	18.00	0.13	0.024	(0.274)	0.019	0.005
217	18.08	0.13	0.024	(0.273)	0.019	0.005
218	18.17	0.13	0.024	(0.271)	0.019	0.005
219	18.25	0.13	0.024	(0.270)	0.019	0.005
220	18.33	0.13	0.024	(0.269)	0.019	0.005
221	18.42	0.13	0.024	(0.267)	0.019	0.005
222	18.50	0.13	0.024	(0.266)	0.019	0.005
223	18.58	0.10	0.018	(0.265)	0.014	0.004
224	18.67	0.10	0.018	(0.264)	0.014	0.004
225	18.75	0.10	0.018	(0.262)	0.014	0.004
226	18.83	0.07	0.012	(0.261)	0.010	0.002
227	18.92	0.07	0.012	(0.260)	0.010	0.002
228	19.00	0.07	0.012	(0.259)	0.010	0.002
229	19.08	0.10	0.018	(0.257)	0.014	0.004
230	19.17	0.10	0.018	(0.256)	0.014	0.004
231	19.25	0.10	0.018	(0.255)	0.014	0.004
232	19.33	0.13	0.024	(0.254)	0.019	0.005
233	19.42	0.13	0.024	(0.253)	0.019	0.005
234	19.50	0.13	0.024	(0.251)	0.019	0.005
235	19.58	0.10	0.018	(0.250)	0.014	0.004
236	19.67	0.10	0.018	(0.249)	0.014	0.004
237	19.75	0.10	0.018	(0.248)	0.014	0.004
238	19.83	0.07	0.012	(0.247)	0.010	0.002
239	19.92	0.07	0.012	(0.246)	0.010	0.002
240	20.00	0.07	0.012	(0.245)	0.010	0.002
241	20.08	0.10	0.018	(0.244)	0.014	0.004
242	20.17	0.10	0.018	(0.243)	0.014	0.004
243	20.25	0.10	0.018	(0.242)	0.014	0.004
244	20.33	0.10	0.018	(0.240)	0.014	0.004
245	20.42	0.10	0.018	(0.239)	0.014	0.004
246	20.50	0.10	0.018	(0.238)	0.014	0.004
247	20.58	0.10	0.018	(0.237)	0.014	0.004
248	20.67	0.10	0.018	(0.236)	0.014	0.004
249	20.75	0.10	0.018	(0.235)	0.014	0.004
250	20.83	0.07	0.012	(0.234)	0.010	0.002
251	20.92	0.07	0.012	(0.234)	0.010	0.002
252	21.00	0.07	0.012	(0.233)	0.010	0.002
253	21.08	0.10	0.018	(0.232)	0.014	0.004
254	21.17	0.10	0.018	(0.231)	0.014	0.004
255	21.25	0.10	0.018	(0.230)	0.014	0.004
256	21.33	0.07	0.012	(0.229)	0.010	0.002
257	21.42	0.07	0.012	(0.228)	0.010	0.002
258	21.50	0.07	0.012	(0.227)	0.010	0.002
259	21.58	0.10	0.018	(0.226)	0.014	0.004
260	21.67	0.10	0.018	(0.226)	0.014	0.004
261	21.75	0.10	0.018	(0.225)	0.014	0.004
262	21.83	0.07	0.012	(0.224)	0.010	0.002

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263  21.92     0.07      0.012       (  0.223)       0.010        0.002
264  22.00     0.07      0.012       (  0.223)       0.010        0.002
265  22.08     0.10      0.018       (  0.222)       0.014        0.004
266  22.17     0.10      0.018       (  0.221)       0.014        0.004
267  22.25     0.10      0.018       (  0.220)       0.014        0.004
268  22.33     0.07      0.012       (  0.220)       0.010        0.002
269  22.42     0.07      0.012       (  0.219)       0.010        0.002
270  22.50     0.07      0.012       (  0.218)       0.010        0.002
271  22.58     0.07      0.012       (  0.218)       0.010        0.002
272  22.67     0.07      0.012       (  0.217)       0.010        0.002
273  22.75     0.07      0.012       (  0.217)       0.010        0.002
274  22.83     0.07      0.012       (  0.216)       0.010        0.002
275  22.92     0.07      0.012       (  0.215)       0.010        0.002
276  23.00     0.07      0.012       (  0.215)       0.010        0.002
277  23.08     0.07      0.012       (  0.214)       0.010        0.002
278  23.17     0.07      0.012       (  0.214)       0.010        0.002
279  23.25     0.07      0.012       (  0.213)       0.010        0.002
280  23.33     0.07      0.012       (  0.213)       0.010        0.002
281  23.42     0.07      0.012       (  0.213)       0.010        0.002
282  23.50     0.07      0.012       (  0.212)       0.010        0.002
283  23.58     0.07      0.012       (  0.212)       0.010        0.002
284  23.67     0.07      0.012       (  0.212)       0.010        0.002
285  23.75     0.07      0.012       (  0.211)       0.010        0.002
286  23.83     0.07      0.012       (  0.211)       0.010        0.002
287  23.92     0.07      0.012       (  0.211)       0.010        0.002
288  24.00     0.07      0.012       (  0.211)       0.010        0.002
               (Loss Rate Not Used)
    Sum =     100.0                                  Sum =     3.6
      Flood volume = Effective rainfall      0.30(In)
       times area     106.4(Ac.)/[(In)/(Ft.)] =       2.7(Ac.Ft)
      Total soil loss =      1.20(In)
      Total soil loss =    10.638(Ac.Ft)
      Total rainfall =      1.50(In)
      Flood volume =      115845.5 Cubic Feet
      Total soil loss =      463382.1 Cubic Feet
      ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      4.329(CFS)  AREA A
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q          |         |         |         |
  0+10       0.0006      0.08  Q          |         |         |         |
  0+15       0.0018      0.17  Q          |         |         |         |
  0+20       0.0033      0.21  Q          |         |         |         |
  0+25       0.0051      0.26  VQ         |         |         |         |
  0+30       0.0073      0.33  VQ         |         |         |         |
  0+35       0.0097      0.35  VQ         |         |         |         |
  0+40       0.0123      0.37  VQ         |         |         |         |
  0+45       0.0148      0.37  VQ         |         |         |         |
  0+50       0.0175      0.38  VQ         |         |         |         |
  0+55       0.0204      0.42  VQ         |         |         |         |
  1+ 0       0.0236      0.47  VQ         |         |         |         |
  1+ 5       0.0269      0.48  VQ         |         |         |         |
  1+10       0.0301      0.46  VQ         |         |         |         |
  1+15       0.0330      0.42  VQ         |         |         |         |
  1+20       0.0358      0.41  VQ         |         |         |         |
  1+25       0.0385      0.40  VQ         |         |         |         |
  1+30       0.0412      0.39  VQ         |         |         |         |
  1+35       0.0439      0.39  VQ         |         |         |         |
  1+40       0.0466      0.39  VQ         |         |         |         |
  1+45       0.0493      0.39  VQ         |         |         |         |
  1+50       0.0520      0.39  VQ         |         |         |         |
  1+55       0.0549      0.43  VQ         |         |         |         |
  2+ 0       0.0582      0.47  VQ         |         |         |         |
  2+ 5       0.0615      0.49  VQ         |         |         |         |
  2+10       0.0650      0.50  VQ         |         |         |         |
  2+15       0.0685      0.51  |VQ        |         |         |         |
  2+20       0.0720      0.51  |VQ        |         |         |         |
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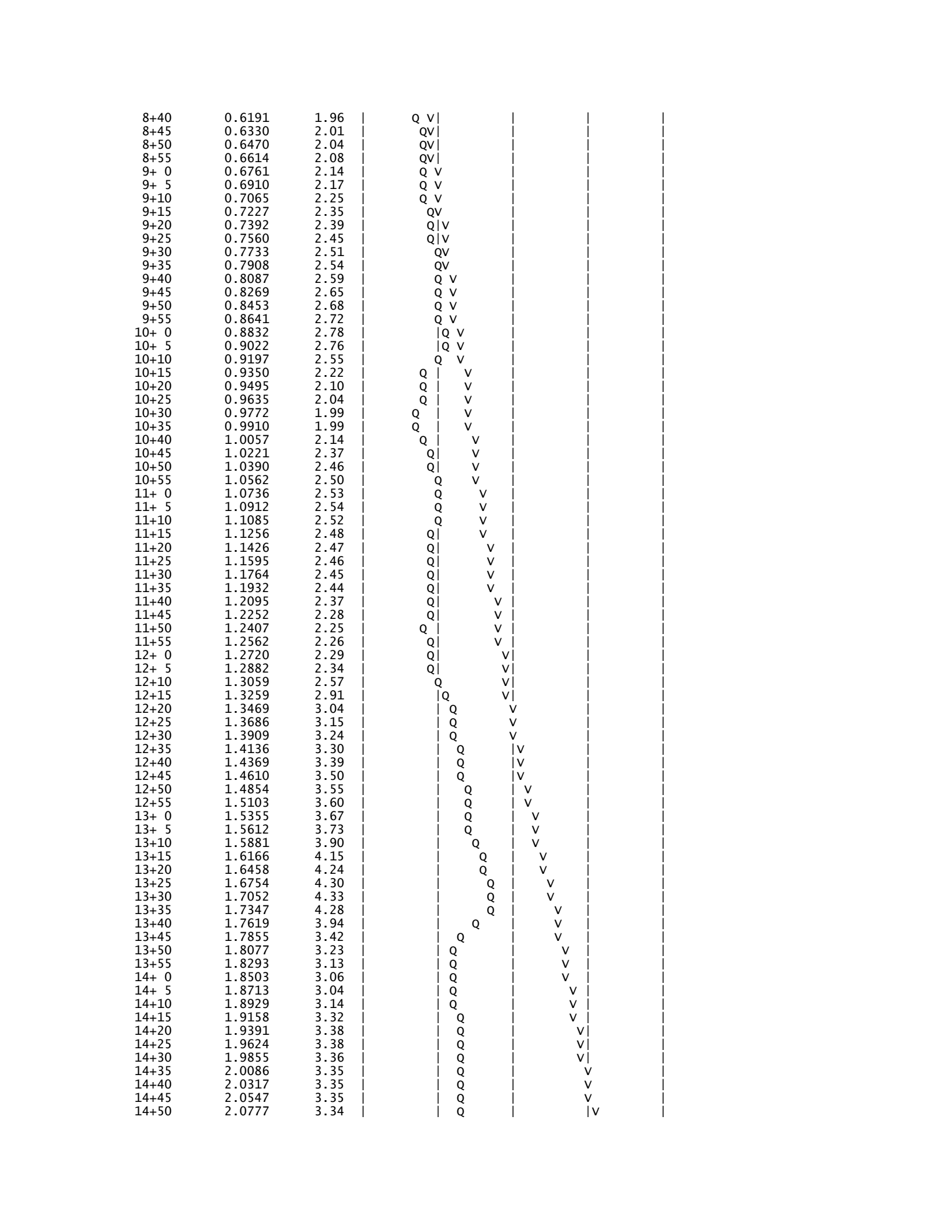
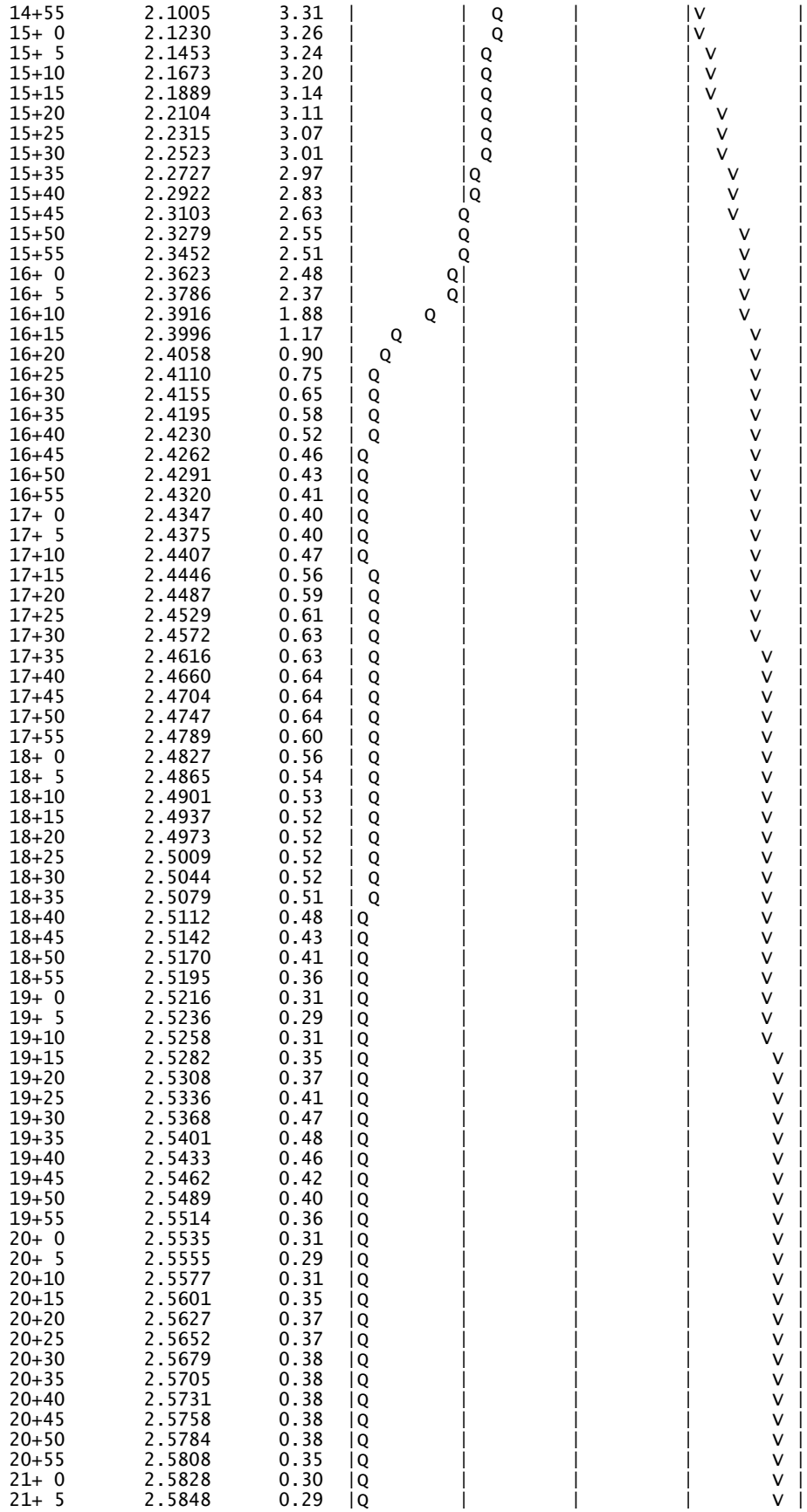
2+25	0.0755	0.51	VQ			
2+30	0.0790	0.51	VQ			
2+35	0.0826	0.52	VQ			
2+40	0.0864	0.55	VQ			
2+45	0.0905	0.60	VQ			
2+50	0.0948	0.62	VQ			
2+55	0.0991	0.63	VQ			
3+ 0	0.1035	0.63	VQ			
3+ 5	0.1079	0.64	VQ			
3+10	0.1123	0.64	VQ			
3+15	0.1167	0.64	VQ			
3+20	0.1212	0.64	VQ			
3+25	0.1256	0.64	VQ			
3+30	0.1300	0.64	VQ			
3+35	0.1345	0.64	Q			
3+40	0.1389	0.64	Q			
3+45	0.1433	0.64	Q			
3+50	0.1478	0.65	Q			
3+55	0.1525	0.68	Q			
4+ 0	0.1575	0.73	Q			
4+ 5	0.1627	0.75	Q			
4+10	0.1679	0.76	VQ			
4+15	0.1731	0.76	VQ			
4+20	0.1785	0.77	VQ			
4+25	0.1840	0.81	VQ			
4+30	0.1899	0.86	VQ			
4+35	0.1959	0.87	VQ			
4+40	0.2020	0.88	Q			
4+45	0.2082	0.89	Q			
4+50	0.2144	0.90	Q			
4+55	0.2208	0.94	Q			
5+ 0	0.2276	0.98	Q			
5+ 5	0.2344	0.99	Q			
5+10	0.2409	0.94	Q			
5+15	0.2467	0.85	Q			
5+20	0.2524	0.82	Q			
5+25	0.2582	0.84	Q			
5+30	0.2642	0.87	Q			
5+35	0.2703	0.89	QV			
5+40	0.2767	0.93	QV			
5+45	0.2835	0.98	QV			
5+50	0.2904	1.00	Q			
5+55	0.2974	1.01	Q			
6+ 0	0.3044	1.02	Q			
6+ 5	0.3115	1.03	Q			
6+10	0.3188	1.06	Q			
6+15	0.3265	1.11	Q			
6+20	0.3343	1.13	QV			
6+25	0.3422	1.14	QV			
6+30	0.3501	1.15	QV			
6+35	0.3581	1.16	QV			
6+40	0.3663	1.19	QV			
6+45	0.3748	1.24	QV			
6+50	0.3835	1.26	Q			
6+55	0.3923	1.27	Q			
7+ 0	0.4011	1.28	QV			
7+ 5	0.4099	1.28	QV			
7+10	0.4187	1.28	QV			
7+15	0.4276	1.29	QV			
7+20	0.4365	1.29	QV			
7+25	0.4456	1.32	QV			
7+30	0.4551	1.37	QV			
7+35	0.4647	1.40	QV			
7+40	0.4746	1.44	Q V			
7+45	0.4849	1.49	Q V			
7+50	0.4954	1.52	QV			
7+55	0.5061	1.56	QV			
8+ 0	0.5173	1.62	QV			
8+ 5	0.5287	1.65	QV			
8+10	0.5406	1.73	Q V			
8+15	0.5532	1.83	QV			
8+20	0.5661	1.87	QV			
8+25	0.5792	1.90	QV			
8+30	0.5923	1.91	QV			
8+35	0.6056	1.93	Q V			





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   21+10       2.5870      0.31  |Q        |         |         |       V |
   21+15       2.5894      0.35  |Q        |         |         |       V |
   21+20       2.5919      0.36  |Q        |         |         |       V |
   21+25       2.5942      0.34  |Q        |         |         |        V|
   21+30       2.5962      0.29  |Q        |         |         |        V|
   21+35       2.5982      0.29  |Q        |         |         |        V|
   21+40       2.6003      0.31  |Q        |         |         |        V|
   21+45       2.6027      0.35  |Q        |         |         |        V|
   21+50       2.6052      0.36  |Q        |         |         |        V|
   21+55       2.6075      0.33  |Q        |         |         |        V|
   22+ 0       2.6095      0.29  |Q        |         |         |        V|
   22+ 5       2.6115      0.29  |Q        |         |         |        V|
   22+10       2.6136      0.31  |Q        |         |         |        V|
   22+15       2.6160      0.35  |Q        |         |         |        V|
   22+20       2.6185      0.36  |Q        |         |         |        V|
   22+25       2.6208      0.33  |Q        |         |         |        V|
   22+30       2.6228      0.29  |Q        |         |         |        V|
   22+35       2.6247      0.28  |Q        |         |         |        V|
   22+40       2.6266      0.27  |Q        |         |         |        V|
   22+45       2.6284      0.26  |Q        |         |         |        V|
   22+50       2.6302      0.26  |Q        |         |         |        V|
   22+55       2.6320      0.26  |Q        |         |         |        V|
   23+ 0       2.6338      0.26  |Q        |         |         |        V|
   23+ 5       2.6356      0.26  |Q        |         |         |        V|
   23+10       2.6373      0.26  |Q        |         |         |        V|
   23+15       2.6391      0.26  |Q        |         |         |        V|
   23+20       2.6409      0.26  |Q        |         |         |        V|
   23+25       2.6427      0.26  |Q        |         |         |        V|
   23+30       2.6444      0.26  |Q        |         |         |        V|
   23+35       2.6462      0.26  |Q        |         |         |        V|
   23+40       2.6480      0.26  |Q        |         |         |        V|
   23+45       2.6498      0.26  |Q        |         |         |        V|
   23+50       2.6515      0.26  |Q        |         |         |        V|
   23+55       2.6533      0.26  |Q        |         |         |        V|
   24+ 0       2.6551      0.26  |Q        |         |         |        V|
   24+ 5       2.6568      0.25  Q         |         |         |        V|
   24+10       2.6580      0.18  Q         |         |         |        V|
   24+15       2.6586      0.09  Q         |         |         |        V|
   24+20       2.6590      0.05  Q         |         |         |        V|
   24+25       2.6592      0.03  Q         |         |         |        V|
   24+30       2.6593      0.02  Q         |         |         |        V|
   24+35       2.6594      0.01  Q         |         |         |        V|
   24+40       2.6594      0.01  Q         |         |         |        V|
   24+45       2.6594      0.00  Q         |         |         |        V|
   24+50       2.6594      0.00  Q         |         |         |        V|
   24+55       2.6594      0.00  Q         |         |         |        V|
   25+ 0       2.6594      0.00  Q         |         |         |         V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 07/20/21 File: EX2YRB242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER AREA B EXISTING CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
07-20-2021 EP

Drainage Area = 50.40(Ac.) = 0.079 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 50.40(Ac.) = 0.079 Sq. Mi.
Length along longest watercourse = 2255.00(Ft.)
Length along longest watercourse measured to centroid = 615.00(Ft.)
Length along longest watercourse = 0.427 Mi.
Length along longest watercourse measured to centroid = 0.116 Mi.
Difference in elevation = 86.00(Ft.)
Slope along watercourse = 201.3659 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.084 Hr.
Lag time = 5.04 Min.
25% of lag time = 1.26 Min.
40% of lag time = 2.02 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	2.50	126.00

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
50.40	6.50	327.60

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
50.400	72.10	0.330

Total Area Entered = 50.40(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

72.1	53.5	0.536	0.330	0.377	1.000	0.377
					Sum (F) =	0.377

Area averaged mean soil loss (F) (In/Hr) = 0.377
Minimum soil loss rate ((In/Hr)) = 0.188
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.630

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	99.192	14.132	7.178
2	0.167	198.384	55.642	28.263
3	0.250	297.576	18.582	9.439
4	0.333	396.768	7.530	3.825
5	0.417	495.961	2.548	1.294
6	0.500	595.153	0.859	0.436
7	0.583	694.345	0.565	0.287
8	0.667	793.537	0.141	0.072
			Sum = 100.000	Sum= 50.794

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit	Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.668)	0.013	0.007
2	0.17	0.07	0.020	(0.666)	0.013	0.007
3	0.25	0.07	0.020	(0.663)	0.013	0.007
4	0.33	0.10	0.030	(0.660)	0.019	0.011
5	0.42	0.10	0.030	(0.658)	0.019	0.011
6	0.50	0.10	0.030	(0.655)	0.019	0.011
7	0.58	0.10	0.030	(0.653)	0.019	0.011
8	0.67	0.10	0.030	(0.650)	0.019	0.011
9	0.75	0.10	0.030	(0.648)	0.019	0.011
10	0.83	0.13	0.040	(0.645)	0.025	0.015
11	0.92	0.13	0.040	(0.642)	0.025	0.015
12	1.00	0.13	0.040	(0.640)	0.025	0.015
13	1.08	0.10	0.030	(0.637)	0.019	0.011
14	1.17	0.10	0.030	(0.635)	0.019	0.011
15	1.25	0.10	0.030	(0.632)	0.019	0.011
16	1.33	0.10	0.030	(0.630)	0.019	0.011
17	1.42	0.10	0.030	(0.627)	0.019	0.011
18	1.50	0.10	0.030	(0.625)	0.019	0.011
19	1.58	0.10	0.030	(0.622)	0.019	0.011
20	1.67	0.10	0.030	(0.620)	0.019	0.011
21	1.75	0.10	0.030	(0.617)	0.019	0.011
22	1.83	0.13	0.040	(0.615)	0.025	0.015
23	1.92	0.13	0.040	(0.612)	0.025	0.015
24	2.00	0.13	0.040	(0.610)	0.025	0.015
25	2.08	0.13	0.040	(0.607)	0.025	0.015
26	2.17	0.13	0.040	(0.605)	0.025	0.015
27	2.25	0.13	0.040	(0.603)	0.025	0.015
28	2.33	0.13	0.040	(0.600)	0.025	0.015
29	2.42	0.13	0.040	(0.598)	0.025	0.015
30	2.50	0.13	0.040	(0.595)	0.025	0.015
31	2.58	0.17	0.050	(0.593)	0.031	0.018
32	2.67	0.17	0.050	(0.590)	0.031	0.018
33	2.75	0.17	0.050	(0.588)	0.031	0.018
34	2.83	0.17	0.050	(0.586)	0.031	0.018
35	2.92	0.17	0.050	(0.583)	0.031	0.018
36	3.00	0.17	0.050	(0.581)	0.031	0.018
37	3.08	0.17	0.050	(0.578)	0.031	0.018
38	3.17	0.17	0.050	(0.576)	0.031	0.018
39	3.25	0.17	0.050	(0.573)	0.031	0.018
40	3.33	0.17	0.050	(0.571)	0.031	0.018
41	3.42	0.17	0.050	(0.569)	0.031	0.018
42	3.50	0.17	0.050	(0.566)	0.031	0.018

43	3.58	0.17	0.050	(0.564)	0.031	0.018
44	3.67	0.17	0.050	(0.562)	0.031	0.018
45	3.75	0.17	0.050	(0.559)	0.031	0.018
46	3.83	0.20	0.060	(0.557)	0.038	0.022
47	3.92	0.20	0.060	(0.555)	0.038	0.022
48	4.00	0.20	0.060	(0.552)	0.038	0.022
49	4.08	0.20	0.060	(0.550)	0.038	0.022
50	4.17	0.20	0.060	(0.547)	0.038	0.022
51	4.25	0.20	0.060	(0.545)	0.038	0.022
52	4.33	0.23	0.070	(0.543)	0.044	0.026
53	4.42	0.23	0.070	(0.541)	0.044	0.026
54	4.50	0.23	0.070	(0.538)	0.044	0.026
55	4.58	0.23	0.070	(0.536)	0.044	0.026
56	4.67	0.23	0.070	(0.534)	0.044	0.026
57	4.75	0.23	0.070	(0.531)	0.044	0.026
58	4.83	0.27	0.080	(0.529)	0.050	0.030
59	4.92	0.27	0.080	(0.527)	0.050	0.030
60	5.00	0.27	0.080	(0.524)	0.050	0.030
61	5.08	0.20	0.060	(0.522)	0.038	0.022
62	5.17	0.20	0.060	(0.520)	0.038	0.022
63	5.25	0.20	0.060	(0.518)	0.038	0.022
64	5.33	0.23	0.070	(0.515)	0.044	0.026
65	5.42	0.23	0.070	(0.513)	0.044	0.026
66	5.50	0.23	0.070	(0.511)	0.044	0.026
67	5.58	0.27	0.080	(0.509)	0.050	0.030
68	5.67	0.27	0.080	(0.506)	0.050	0.030
69	5.75	0.27	0.080	(0.504)	0.050	0.030
70	5.83	0.27	0.080	(0.502)	0.050	0.030
71	5.92	0.27	0.080	(0.500)	0.050	0.030
72	6.00	0.27	0.080	(0.497)	0.050	0.030
73	6.08	0.30	0.090	(0.495)	0.057	0.033
74	6.17	0.30	0.090	(0.493)	0.057	0.033
75	6.25	0.30	0.090	(0.491)	0.057	0.033
76	6.33	0.30	0.090	(0.489)	0.057	0.033
77	6.42	0.30	0.090	(0.486)	0.057	0.033
78	6.50	0.30	0.090	(0.484)	0.057	0.033
79	6.58	0.33	0.100	(0.482)	0.063	0.037
80	6.67	0.33	0.100	(0.480)	0.063	0.037
81	6.75	0.33	0.100	(0.478)	0.063	0.037
82	6.83	0.33	0.100	(0.476)	0.063	0.037
83	6.92	0.33	0.100	(0.473)	0.063	0.037
84	7.00	0.33	0.100	(0.471)	0.063	0.037
85	7.08	0.33	0.100	(0.469)	0.063	0.037
86	7.17	0.33	0.100	(0.467)	0.063	0.037
87	7.25	0.33	0.100	(0.465)	0.063	0.037
88	7.33	0.37	0.110	(0.463)	0.069	0.041
89	7.42	0.37	0.110	(0.461)	0.069	0.041
90	7.50	0.37	0.110	(0.459)	0.069	0.041
91	7.58	0.40	0.120	(0.456)	0.076	0.044
92	7.67	0.40	0.120	(0.454)	0.076	0.044
93	7.75	0.40	0.120	(0.452)	0.076	0.044
94	7.83	0.43	0.130	(0.450)	0.082	0.048
95	7.92	0.43	0.130	(0.448)	0.082	0.048
96	8.00	0.43	0.130	(0.446)	0.082	0.048
97	8.08	0.50	0.150	(0.444)	0.094	0.055
98	8.17	0.50	0.150	(0.442)	0.094	0.055
99	8.25	0.50	0.150	(0.440)	0.094	0.055
100	8.33	0.50	0.150	(0.438)	0.094	0.055
101	8.42	0.50	0.150	(0.436)	0.094	0.055
102	8.50	0.50	0.150	(0.434)	0.094	0.055
103	8.58	0.53	0.160	(0.432)	0.101	0.059
104	8.67	0.53	0.160	(0.430)	0.101	0.059
105	8.75	0.53	0.160	(0.428)	0.101	0.059
106	8.83	0.57	0.170	(0.426)	0.107	0.063
107	8.92	0.57	0.170	(0.424)	0.107	0.063
108	9.00	0.57	0.170	(0.422)	0.107	0.063
109	9.08	0.63	0.190	(0.420)	0.120	0.070
110	9.17	0.63	0.190	(0.418)	0.120	0.070
111	9.25	0.63	0.190	(0.416)	0.120	0.070
112	9.33	0.67	0.200	(0.414)	0.126	0.074
113	9.42	0.67	0.200	(0.412)	0.126	0.074
114	9.50	0.67	0.200	(0.410)	0.126	0.074
115	9.58	0.70	0.210	(0.408)	0.132	0.078
116	9.67	0.70	0.210	(0.406)	0.132	0.078
117	9.75	0.70	0.210	(0.404)	0.132	0.078

118	9.83	0.73	0.220	(0.402)	0.139	0.081
119	9.92	0.73	0.220	(0.400)	0.139	0.081
120	10.00	0.73	0.220	(0.398)	0.139	0.081
121	10.08	0.50	0.150	(0.396)	0.094	0.055
122	10.17	0.50	0.150	(0.394)	0.094	0.055
123	10.25	0.50	0.150	(0.392)	0.094	0.055
124	10.33	0.50	0.150	(0.390)	0.094	0.055
125	10.42	0.50	0.150	(0.388)	0.094	0.055
126	10.50	0.50	0.150	(0.387)	0.094	0.055
127	10.58	0.67	0.200	(0.385)	0.126	0.074
128	10.67	0.67	0.200	(0.383)	0.126	0.074
129	10.75	0.67	0.200	(0.381)	0.126	0.074
130	10.83	0.67	0.200	(0.379)	0.126	0.074
131	10.92	0.67	0.200	(0.377)	0.126	0.074
132	11.00	0.67	0.200	(0.375)	0.126	0.074
133	11.08	0.63	0.190	(0.373)	0.120	0.070
134	11.17	0.63	0.190	(0.372)	0.120	0.070
135	11.25	0.63	0.190	(0.370)	0.120	0.070
136	11.33	0.63	0.190	(0.368)	0.120	0.070
137	11.42	0.63	0.190	(0.366)	0.120	0.070
138	11.50	0.63	0.190	(0.364)	0.120	0.070
139	11.58	0.57	0.170	(0.363)	0.107	0.063
140	11.67	0.57	0.170	(0.361)	0.107	0.063
141	11.75	0.57	0.170	(0.359)	0.107	0.063
142	11.83	0.60	0.180	(0.357)	0.113	0.067
143	11.92	0.60	0.180	(0.355)	0.113	0.067
144	12.00	0.60	0.180	(0.354)	0.113	0.067
145	12.08	0.83	0.250	(0.352)	0.157	0.092
146	12.17	0.83	0.250	(0.350)	0.157	0.092
147	12.25	0.83	0.250	(0.348)	0.157	0.092
148	12.33	0.87	0.260	(0.347)	0.164	0.096
149	12.42	0.87	0.260	(0.345)	0.164	0.096
150	12.50	0.87	0.260	(0.343)	0.164	0.096
151	12.58	0.93	0.280	(0.341)	0.176	0.104
152	12.67	0.93	0.280	(0.340)	0.176	0.104
153	12.75	0.93	0.280	(0.338)	0.176	0.104
154	12.83	0.97	0.290	(0.336)	0.183	0.107
155	12.92	0.97	0.290	(0.335)	0.183	0.107
156	13.00	0.97	0.290	(0.333)	0.183	0.107
157	13.08	1.13	0.340	(0.331)	0.214	0.126
158	13.17	1.13	0.340	(0.329)	0.214	0.126
159	13.25	1.13	0.340	(0.328)	0.214	0.126
160	13.33	1.13	0.340	(0.326)	0.214	0.126
161	13.42	1.13	0.340	(0.324)	0.214	0.126
162	13.50	1.13	0.340	(0.323)	0.214	0.126
163	13.58	0.77	0.230	(0.321)	0.145	0.085
164	13.67	0.77	0.230	(0.320)	0.145	0.085
165	13.75	0.77	0.230	(0.318)	0.145	0.085
166	13.83	0.77	0.230	(0.316)	0.145	0.085
167	13.92	0.77	0.230	(0.315)	0.145	0.085
168	14.00	0.77	0.230	(0.313)	0.145	0.085
169	14.08	0.90	0.270	(0.311)	0.170	0.100
170	14.17	0.90	0.270	(0.310)	0.170	0.100
171	14.25	0.90	0.270	(0.308)	0.170	0.100
172	14.33	0.87	0.260	(0.307)	0.164	0.096
173	14.42	0.87	0.260	(0.305)	0.164	0.096
174	14.50	0.87	0.260	(0.304)	0.164	0.096
175	14.58	0.87	0.260	(0.302)	0.164	0.096
176	14.67	0.87	0.260	(0.300)	0.164	0.096
177	14.75	0.87	0.260	(0.299)	0.164	0.096
178	14.83	0.83	0.250	(0.297)	0.157	0.092
179	14.92	0.83	0.250	(0.296)	0.157	0.092
180	15.00	0.83	0.250	(0.294)	0.157	0.092
181	15.08	0.80	0.240	(0.293)	0.151	0.089
182	15.17	0.80	0.240	(0.291)	0.151	0.089
183	15.25	0.80	0.240	(0.290)	0.151	0.089
184	15.33	0.77	0.230	(0.288)	0.145	0.085
185	15.42	0.77	0.230	(0.287)	0.145	0.085
186	15.50	0.77	0.230	(0.285)	0.145	0.085
187	15.58	0.63	0.190	(0.284)	0.120	0.070
188	15.67	0.63	0.190	(0.282)	0.120	0.070
189	15.75	0.63	0.190	(0.281)	0.120	0.070
190	15.83	0.63	0.190	(0.280)	0.120	0.070
191	15.92	0.63	0.190	(0.278)	0.120	0.070
192	16.00	0.63	0.190	(0.277)	0.120	0.070

193	16.08	0.13	0.040	(0.275)	0.025	0.015
194	16.17	0.13	0.040	(0.274)	0.025	0.015
195	16.25	0.13	0.040	(0.273)	0.025	0.015
196	16.33	0.13	0.040	(0.271)	0.025	0.015
197	16.42	0.13	0.040	(0.270)	0.025	0.015
198	16.50	0.13	0.040	(0.268)	0.025	0.015
199	16.58	0.10	0.030	(0.267)	0.019	0.011
200	16.67	0.10	0.030	(0.266)	0.019	0.011
201	16.75	0.10	0.030	(0.264)	0.019	0.011
202	16.83	0.10	0.030	(0.263)	0.019	0.011
203	16.92	0.10	0.030	(0.262)	0.019	0.011
204	17.00	0.10	0.030	(0.260)	0.019	0.011
205	17.08	0.17	0.050	(0.259)	0.031	0.018
206	17.17	0.17	0.050	(0.258)	0.031	0.018
207	17.25	0.17	0.050	(0.256)	0.031	0.018
208	17.33	0.17	0.050	(0.255)	0.031	0.018
209	17.42	0.17	0.050	(0.254)	0.031	0.018
210	17.50	0.17	0.050	(0.253)	0.031	0.018
211	17.58	0.17	0.050	(0.251)	0.031	0.018
212	17.67	0.17	0.050	(0.250)	0.031	0.018
213	17.75	0.17	0.050	(0.249)	0.031	0.018
214	17.83	0.13	0.040	(0.248)	0.025	0.015
215	17.92	0.13	0.040	(0.246)	0.025	0.015
216	18.00	0.13	0.040	(0.245)	0.025	0.015
217	18.08	0.13	0.040	(0.244)	0.025	0.015
218	18.17	0.13	0.040	(0.243)	0.025	0.015
219	18.25	0.13	0.040	(0.242)	0.025	0.015
220	18.33	0.13	0.040	(0.240)	0.025	0.015
221	18.42	0.13	0.040	(0.239)	0.025	0.015
222	18.50	0.13	0.040	(0.238)	0.025	0.015
223	18.58	0.10	0.030	(0.237)	0.019	0.011
224	18.67	0.10	0.030	(0.236)	0.019	0.011
225	18.75	0.10	0.030	(0.235)	0.019	0.011
226	18.83	0.07	0.020	(0.233)	0.013	0.007
227	18.92	0.07	0.020	(0.232)	0.013	0.007
228	19.00	0.07	0.020	(0.231)	0.013	0.007
229	19.08	0.10	0.030	(0.230)	0.019	0.011
230	19.17	0.10	0.030	(0.229)	0.019	0.011
231	19.25	0.10	0.030	(0.228)	0.019	0.011
232	19.33	0.13	0.040	(0.227)	0.025	0.015
233	19.42	0.13	0.040	(0.226)	0.025	0.015
234	19.50	0.13	0.040	(0.225)	0.025	0.015
235	19.58	0.10	0.030	(0.224)	0.019	0.011
236	19.67	0.10	0.030	(0.223)	0.019	0.011
237	19.75	0.10	0.030	(0.222)	0.019	0.011
238	19.83	0.07	0.020	(0.221)	0.013	0.007
239	19.92	0.07	0.020	(0.220)	0.013	0.007
240	20.00	0.07	0.020	(0.219)	0.013	0.007
241	20.08	0.10	0.030	(0.218)	0.019	0.011
242	20.17	0.10	0.030	(0.217)	0.019	0.011
243	20.25	0.10	0.030	(0.216)	0.019	0.011
244	20.33	0.10	0.030	(0.215)	0.019	0.011
245	20.42	0.10	0.030	(0.214)	0.019	0.011
246	20.50	0.10	0.030	(0.213)	0.019	0.011
247	20.58	0.10	0.030	(0.212)	0.019	0.011
248	20.67	0.10	0.030	(0.211)	0.019	0.011
249	20.75	0.10	0.030	(0.211)	0.019	0.011
250	20.83	0.07	0.020	(0.210)	0.013	0.007
251	20.92	0.07	0.020	(0.209)	0.013	0.007
252	21.00	0.07	0.020	(0.208)	0.013	0.007
253	21.08	0.10	0.030	(0.207)	0.019	0.011
254	21.17	0.10	0.030	(0.206)	0.019	0.011
255	21.25	0.10	0.030	(0.206)	0.019	0.011
256	21.33	0.07	0.020	(0.205)	0.013	0.007
257	21.42	0.07	0.020	(0.204)	0.013	0.007
258	21.50	0.07	0.020	(0.203)	0.013	0.007
259	21.58	0.10	0.030	(0.203)	0.019	0.011
260	21.67	0.10	0.030	(0.202)	0.019	0.011
261	21.75	0.10	0.030	(0.201)	0.019	0.011
262	21.83	0.07	0.020	(0.200)	0.013	0.007
263	21.92	0.07	0.020	(0.200)	0.013	0.007
264	22.00	0.07	0.020	(0.199)	0.013	0.007
265	22.08	0.10	0.030	(0.198)	0.019	0.011
266	22.17	0.10	0.030	(0.198)	0.019	0.011
267	22.25	0.10	0.030	(0.197)	0.019	0.011

268	22.33	0.07	0.020	(0.196)	0.013	0.007
269	22.42	0.07	0.020	(0.196)	0.013	0.007
270	22.50	0.07	0.020	(0.195)	0.013	0.007
271	22.58	0.07	0.020	(0.195)	0.013	0.007
272	22.67	0.07	0.020	(0.194)	0.013	0.007
273	22.75	0.07	0.020	(0.194)	0.013	0.007
274	22.83	0.07	0.020	(0.193)	0.013	0.007
275	22.92	0.07	0.020	(0.193)	0.013	0.007
276	23.00	0.07	0.020	(0.192)	0.013	0.007
277	23.08	0.07	0.020	(0.192)	0.013	0.007
278	23.17	0.07	0.020	(0.191)	0.013	0.007
279	23.25	0.07	0.020	(0.191)	0.013	0.007
280	23.33	0.07	0.020	(0.190)	0.013	0.007
281	23.42	0.07	0.020	(0.190)	0.013	0.007
282	23.50	0.07	0.020	(0.190)	0.013	0.007
283	23.58	0.07	0.020	(0.189)	0.013	0.007
284	23.67	0.07	0.020	(0.189)	0.013	0.007
285	23.75	0.07	0.020	(0.189)	0.013	0.007
286	23.83	0.07	0.020	(0.189)	0.013	0.007
287	23.92	0.07	0.020	(0.189)	0.013	0.007
288	24.00	0.07	0.020	(0.188)	0.013	0.007

(Loss Rate Not Used)

Sum = 100.0 Sum = 11.1

Flood volume = Effective rainfall 0.92(In)
times area 50.4(Ac.)/[(In)/(Ft.)] = 3.9(Ac.Ft)
Total soil loss = 1.57(In)
Total soil loss = 6.614(Ac.Ft)
Total rainfall = 2.50(In)
Flood volume = 169213.9 Cubic Feet
Total soil loss = 288121.0 Cubic Feet

Peak flow rate of this hydrograph = 6.386(CFS) AREA B

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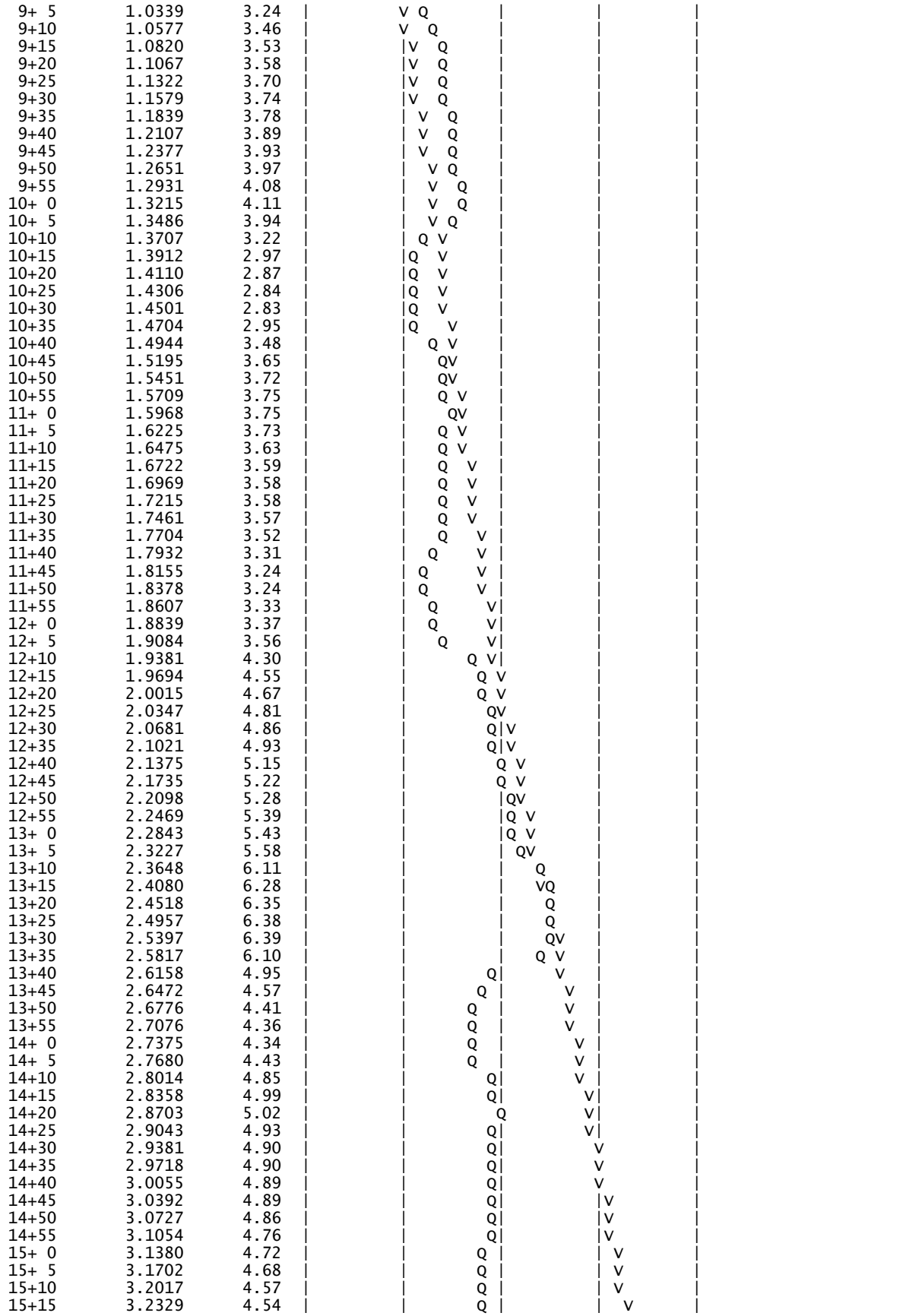
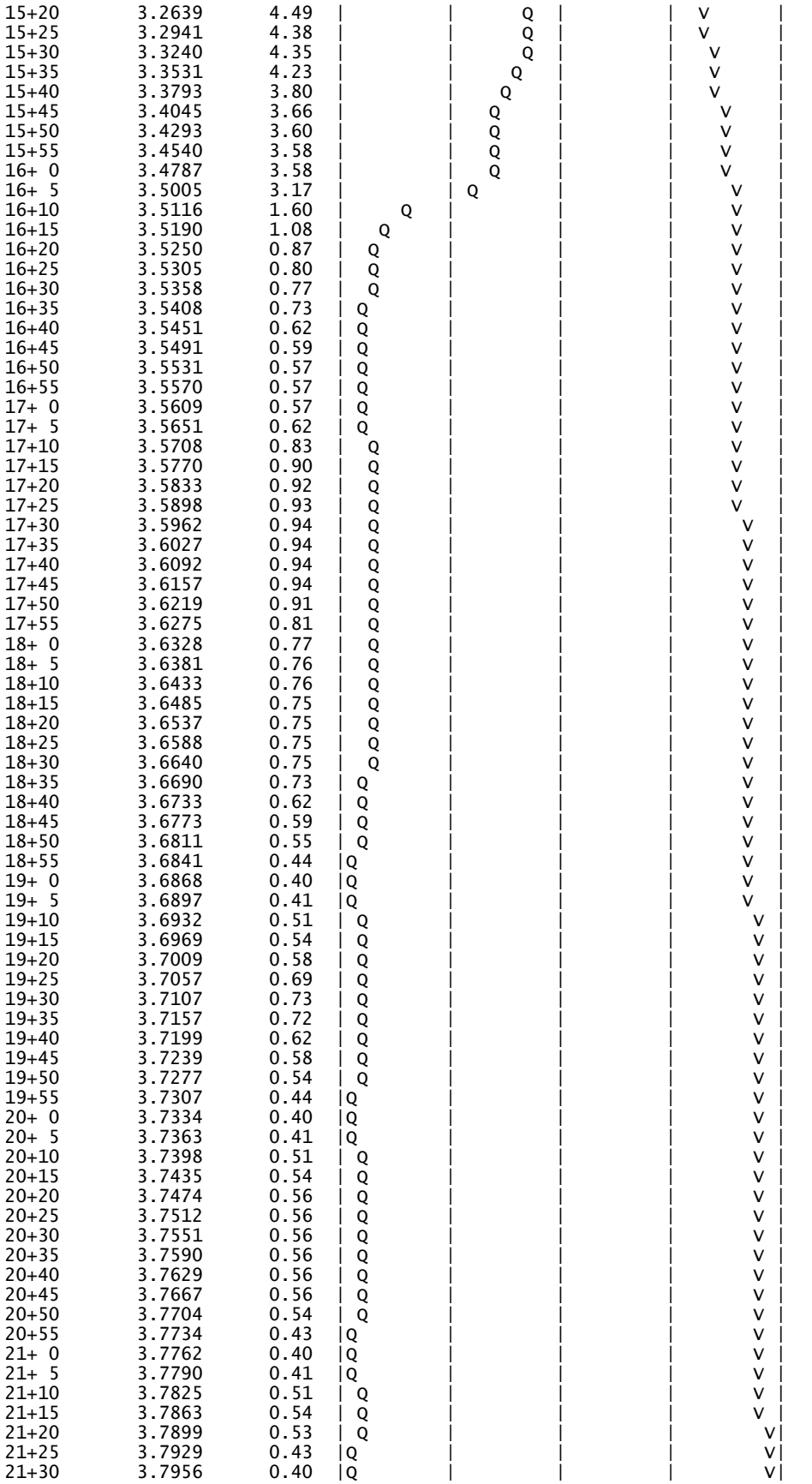
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.05	Q	|	|	|	|
0+10	0.0022	0.26	VQ	|	|	|	|
0+15	0.0045	0.33	VQ	|	|	|	|
0+20	0.0071	0.39	VQ	|	|	|	|
0+25	0.0106	0.50	V Q	|	|	|	|
0+30	0.0143	0.54	V Q	|	|	|	|
0+35	0.0181	0.56	V Q	|	|	|	|
0+40	0.0220	0.56	V Q	|	|	|	|
0+45	0.0259	0.56	V Q	|	|	|	|
0+50	0.0299	0.59	V Q	|	|	|	|
0+55	0.0347	0.70	V Q	|	|	|	|
1+ 0	0.0397	0.73	V Q	|	|	|	|
1+ 5	0.0447	0.72	V Q	|	|	|	|
1+10	0.0489	0.62	V Q	|	|	|	|
1+15	0.0530	0.58	V Q	|	|	|	|
1+20	0.0569	0.57	V Q	|	|	|	|
1+25	0.0608	0.57	V Q	|	|	|	|
1+30	0.0647	0.57	V Q	|	|	|	|
1+35	0.0686	0.56	V Q	|	|	|	|
1+40	0.0725	0.56	V Q	|	|	|	|
1+45	0.0764	0.56	V Q	|	|	|	|
1+50	0.0804	0.59	V Q	|	|	|	|
1+55	0.0852	0.70	V Q	|	|	|	|
2+ 0	0.0902	0.73	V Q	|	|	|	|
2+ 5	0.0954	0.74	V Q	|	|	|	|
2+10	0.1005	0.75	|VQ	|	|	|	|
2+15	0.1057	0.75	|V Q	|	|	|	|
2+20	0.1109	0.75	|V Q	|	|	|	|
2+25	0.1161	0.75	|V Q	|	|	|	|
2+30	0.1212	0.75	|V Q	|	|	|	|
2+35	0.1266	0.78	|V Q	|	|	|	|
2+40	0.1327	0.88	|V Q	|	|	|	|
2+45	0.1390	0.92	|V Q	|	|	|	|

```
2+50       0.1454      0.93  |V Q      |         |         |         |
2+55       0.1519      0.94  |V Q      |         |         |         |
3+ 0       0.1583      0.94  |V Q      |         |         |         |
3+ 5       0.1648      0.94  |V Q      |         |         |         |
3+10       0.1713      0.94  |V Q      |         |         |         |
3+15       0.1778      0.94  |V Q      |         |         |         |
3+20       0.1842      0.94  |V Q      |         |         |         |
3+25       0.1907      0.94  |V Q      |         |         |         |
3+30       0.1972      0.94  | VQ      |         |         |         |
3+35       0.2037      0.94  | VQ      |         |         |         |
3+40       0.2101      0.94  | VQ      |         |         |         |
3+45       0.2166      0.94  | VQ      |         |         |         |
3+50       0.2233      0.97  | VQ      |         |         |         |
3+55       0.2307      1.07  | V Q     |         |         |         |
4+ 0       0.2383      1.11  | V Q     |         |         |         |
4+ 5       0.2460      1.12  | V Q     |         |         |         |
4+10       0.2537      1.13  | V Q     |         |         |         |
4+15       0.2615      1.13  | V Q     |         |         |         |
4+20       0.2694      1.15  | V Q     |         |         |         |
4+25       0.2781      1.26  | V  Q    |         |         |         |
4+30       0.2870      1.29  | V  Q    |         |         |         |
4+35       0.2960      1.31  |  V Q    |         |         |         |
4+40       0.3051      1.31  |  V Q    |         |         |         |
4+45       0.3141      1.31  |  V Q    |         |         |         |
4+50       0.3234      1.34  |  V Q    |         |         |         |
4+55       0.3334      1.45  |  V Q    |         |         |         |
5+ 0       0.3436      1.48  |  V Q    |         |         |         |
5+ 5       0.3535      1.44  |  V Q    |         |         |         |
5+10       0.3620      1.24  |  VQ     |         |         |         |
5+15       0.3701      1.17  |  VQ     |         |         |         |
5+20       0.3782      1.17  |  VQ     |         |         |         |
5+25       0.3869      1.27  |  V Q    |         |         |         |
5+30       0.3958      1.30  |   VQ    |         |         |         |
5+35       0.4050      1.34  |   VQ    |         |         |         |
5+40       0.4149      1.44  |   VQ    |         |         |         |
5+45       0.4251      1.48  |   VQ    |         |         |         |
5+50       0.4354      1.50  |   VQ    |         |         |         |
5+55       0.4458      1.50  |   V Q   |         |         |         |
6+ 0       0.4561      1.50  |   V Q   |         |         |         |
6+ 5       0.4667      1.53  |   V Q   |         |         |         |
6+10       0.4779      1.64  |   V Q   |         |         |         |
6+15       0.4894      1.67  |    VQ   |         |         |         |
6+20       0.5010      1.68  |    VQ   |         |         |         |
6+25       0.5127      1.69  |    VQ   |         |         |         |
6+30       0.5243      1.69  |    VQ   |         |         |         |
6+35       0.5362      1.72  |    VQ   |         |         |         |
6+40       0.5487      1.82  |    V Q  |         |         |         |
6+45       0.5615      1.86  |    V Q  |         |         |         |
6+50       0.5744      1.87  |    V Q  |         |         |         |
6+55       0.5873      1.88  |     VQ  |         |         |         |
7+ 0       0.6003      1.88  |     VQ  |         |         |         |
7+ 5       0.6132      1.88  |     VQ  |         |         |         |
7+10       0.6262      1.88  |     VQ  |         |         |         |
7+15       0.6391      1.88  |     VQ  |         |         |         |
7+20       0.6522      1.91  |     VQ  |         |         |         |
7+25       0.6661      2.01  |     V Q |         |         |         |
7+30       0.6802      2.05  |      VQ |         |         |         |
7+35       0.6946      2.09  |      VQ |         |         |         |
7+40       0.7097      2.20  |      VQ |         |         |         |
7+45       0.7251      2.23  |      VQ |         |         |         |
7+50       0.7407      2.27  |      V Q|         |         |         |
7+55       0.7572      2.38  |      V Q|         |         |         |
8+ 0       0.7738      2.42  |      V Q|         |         |         |
8+ 5       0.7910      2.49  |       VQ|         |         |         |
8+10       0.8096      2.70  |       V Q         |         |         |
8+15       0.8287      2.78  |       V  |Q       |         |         |
8+20       0.8480      2.80  |       V  |Q       |         |         |
8+25       0.8674      2.81  |       V  |Q       |         |         |
8+30       0.8868      2.82  |        V |Q       |         |         |
8+35       0.9064      2.85  |        V |Q       |         |         |
8+40       0.9267      2.95  |        V |Q       |         |         |
8+45       0.9473      2.99  |        V |Q       |         |         |
8+50       0.9682      3.03  |        V|  Q      |         |         |
8+55       0.9898      3.14  |         V Q       |         |         |
9+ 0       1.0116      3.17  |         V Q       |         |         |
```





```
   21+35       3.7984      0.41  |Q        |         |         |        v|
   21+40       3.8019      0.51  | Q       |         |         |        v|
   21+45       3.8057      0.54  | Q       |         |         |        v|
   21+50       3.8093      0.53  | Q       |         |         |        v|
   21+55       3.8123      0.43  |Q        |         |         |        v|
   22+ 0       3.8150      0.40  |Q        |         |         |        v|
   22+ 5       3.8178      0.41  |Q        |         |         |        v|
   22+10       3.8214      0.51  | Q       |         |         |        v|
   22+15       3.8251      0.54  | Q       |         |         |        v|
   22+20       3.8288      0.53  | Q       |         |         |        v|
   22+25       3.8317      0.43  |Q        |         |         |        v|
   22+30       3.8344      0.40  |Q        |         |         |        v|
   22+35       3.8371      0.38  |Q        |         |         |        v|
   22+40       3.8397      0.38  |Q        |         |         |        v|
   22+45       3.8423      0.38  |Q        |         |         |        v|
   22+50       3.8449      0.38  |Q        |         |         |        v|
   22+55       3.8475      0.38  |Q        |         |         |        v|
   23+ 0       3.8501      0.38  |Q        |         |         |        v|
   23+ 5       3.8527      0.38  |Q        |         |         |        v|
   23+10       3.8552      0.38  |Q        |         |         |        v|
   23+15       3.8578      0.38  |Q        |         |         |        v|
   23+20       3.8604      0.38  |Q        |         |         |        v|
   23+25       3.8630      0.38  |Q        |         |         |        v|
   23+30       3.8656      0.38  |Q        |         |         |        v|
   23+35       3.8682      0.38  |Q        |         |         |        v|
   23+40       3.8708      0.38  |Q        |         |         |        v|
   23+45       3.8734      0.38  |Q        |         |         |        v|
   23+50       3.8760      0.38  |Q        |         |         |        v|
   23+55       3.8786      0.38  |Q        |         |         |        v|
   24+ 0       3.8811      0.38  |Q        |         |         |        v|
   24+ 5       3.8834      0.32  |Q        |         |         |        v|
   24+10       3.8841      0.11  Q         |         |         |        v|
   24+15       3.8844      0.04  Q         |         |         |        v|
   24+20       3.8846      0.02  Q         |         |         |        v|
   24+25       3.8846      0.01  Q         |         |         |        v|
   24+30       3.8846      0.00  Q         |         |         |        v|
   24+35       3.8846      0.00  Q         |         |         |        v|
-------------------------------------------------------------------------
```

Proposed Unit Hydrographs

U n i t H y d r o g r a p h A n a l y s i s

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
Study date 07/20/21 File: NORTH2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 4010

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

EXETER NORTH DEVELOPED CONDITION
2-YEAR STORM EVENT
21-0044 EXETER INDUSTRIAL
2021-07-20 EP

Drainage Area = 33.80(Ac.) = 0.053 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 33.80(Ac.) = 0.053 Sq. Mi.
Length along longest watercourse = 3290.00(Ft.)
Length along longest watercourse measured to centroid = 2480.00(Ft.)
Length along longest watercourse = 0.623 Mi.
Length along longest watercourse measured to centroid = 0.470 Mi.
Difference in elevation = 86.20(Ft.)
Slope along watercourse = 138.3392 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.088 Hr.
Lag time = 5.31 Min.
25% of lag time = 1.33 Min.
40% of lag time = 2.12 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	2.50	84.50

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
33.80	6.50	219.70

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.500(In)
Area Averaged 100-Year Rainfall = 6.500(In)

Point rain (area averaged) = 2.500(In)
Areal adjustment factor = 99.99 %
Adjusted average point rain = 2.500(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
33.800	56.00	0.760

Total Area Entered = 33.80(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)

56.0	36.0	0.706	0.760	0.223	1.000	0.223
					Sum (F) =	0.223

Area averaged mean soil loss (F) (In/Hr) = 0.223
Minimum soil loss rate ((In/Hr)) = 0.112
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.290

U n i t H y d r o g r a p h
FOOTHILL S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	94.204	12.469	4.247
2	0.167	188.409	54.814	18.672
3	0.250	282.613	19.639	6.690
4	0.333	376.818	8.096	2.758
5	0.417	471.022	3.119	1.063
6	0.500	565.227	0.957	0.326
7	0.583	659.431	0.629	0.214
8	0.667	753.636	0.277	0.094
			Sum = 100.000	Sum= 34.064

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.020	(0.395)	0.006	0.014
2	0.17	0.07	0.020	(0.394)	0.006	0.014
3	0.25	0.07	0.020	(0.392)	0.006	0.014
4	0.33	0.10	0.030	(0.391)	0.009	0.021
5	0.42	0.10	0.030	(0.389)	0.009	0.021
6	0.50	0.10	0.030	(0.388)	0.009	0.021
7	0.58	0.10	0.030	(0.386)	0.009	0.021
8	0.67	0.10	0.030	(0.385)	0.009	0.021
9	0.75	0.10	0.030	(0.383)	0.009	0.021
10	0.83	0.13	0.040	(0.382)	0.012	0.028
11	0.92	0.13	0.040	(0.380)	0.012	0.028
12	1.00	0.13	0.040	(0.379)	0.012	0.028
13	1.08	0.10	0.030	(0.377)	0.009	0.021
14	1.17	0.10	0.030	(0.376)	0.009	0.021
15	1.25	0.10	0.030	(0.374)	0.009	0.021
16	1.33	0.10	0.030	(0.373)	0.009	0.021
17	1.42	0.10	0.030	(0.371)	0.009	0.021
18	1.50	0.10	0.030	(0.370)	0.009	0.021
19	1.58	0.10	0.030	(0.368)	0.009	0.021
20	1.67	0.10	0.030	(0.367)	0.009	0.021
21	1.75	0.10	0.030	(0.365)	0.009	0.021
22	1.83	0.13	0.040	(0.364)	0.012	0.028
23	1.92	0.13	0.040	(0.363)	0.012	0.028
24	2.00	0.13	0.040	(0.361)	0.012	0.028
25	2.08	0.13	0.040	(0.360)	0.012	0.028
26	2.17	0.13	0.040	(0.358)	0.012	0.028
27	2.25	0.13	0.040	(0.357)	0.012	0.028
28	2.33	0.13	0.040	(0.355)	0.012	0.028
29	2.42	0.13	0.040	(0.354)	0.012	0.028
30	2.50	0.13	0.040	(0.352)	0.012	0.028
31	2.58	0.17	0.050	(0.351)	0.014	0.035
32	2.67	0.17	0.050	(0.349)	0.014	0.035
33	2.75	0.17	0.050	(0.348)	0.014	0.035
34	2.83	0.17	0.050	(0.347)	0.014	0.035
35	2.92	0.17	0.050	(0.345)	0.014	0.035
36	3.00	0.17	0.050	(0.344)	0.014	0.035
37	3.08	0.17	0.050	(0.342)	0.014	0.035
38	3.17	0.17	0.050	(0.341)	0.014	0.035
39	3.25	0.17	0.050	(0.339)	0.014	0.035
40	3.33	0.17	0.050	(0.338)	0.014	0.035
41	3.42	0.17	0.050	(0.337)	0.014	0.035
42	3.50	0.17	0.050	(0.335)	0.014	0.035

43	3.58	0.17	0.050	(0.334)	0.014	0.035
44	3.67	0.17	0.050	(0.332)	0.014	0.035
45	3.75	0.17	0.050	(0.331)	0.014	0.035
46	3.83	0.20	0.060	(0.330)	0.017	0.043
47	3.92	0.20	0.060	(0.328)	0.017	0.043
48	4.00	0.20	0.060	(0.327)	0.017	0.043
49	4.08	0.20	0.060	(0.325)	0.017	0.043
50	4.17	0.20	0.060	(0.324)	0.017	0.043
51	4.25	0.20	0.060	(0.323)	0.017	0.043
52	4.33	0.23	0.070	(0.321)	0.020	0.050
53	4.42	0.23	0.070	(0.320)	0.020	0.050
54	4.50	0.23	0.070	(0.319)	0.020	0.050
55	4.58	0.23	0.070	(0.317)	0.020	0.050
56	4.67	0.23	0.070	(0.316)	0.020	0.050
57	4.75	0.23	0.070	(0.314)	0.020	0.050
58	4.83	0.27	0.080	(0.313)	0.023	0.057
59	4.92	0.27	0.080	(0.312)	0.023	0.057
60	5.00	0.27	0.080	(0.310)	0.023	0.057
61	5.08	0.20	0.060	(0.309)	0.017	0.043
62	5.17	0.20	0.060	(0.308)	0.017	0.043
63	5.25	0.20	0.060	(0.306)	0.017	0.043
64	5.33	0.23	0.070	(0.305)	0.020	0.050
65	5.42	0.23	0.070	(0.304)	0.020	0.050
66	5.50	0.23	0.070	(0.302)	0.020	0.050
67	5.58	0.27	0.080	(0.301)	0.023	0.057
68	5.67	0.27	0.080	(0.300)	0.023	0.057
69	5.75	0.27	0.080	(0.298)	0.023	0.057
70	5.83	0.27	0.080	(0.297)	0.023	0.057
71	5.92	0.27	0.080	(0.296)	0.023	0.057
72	6.00	0.27	0.080	(0.294)	0.023	0.057
73	6.08	0.30	0.090	(0.293)	0.026	0.064
74	6.17	0.30	0.090	(0.292)	0.026	0.064
75	6.25	0.30	0.090	(0.291)	0.026	0.064
76	6.33	0.30	0.090	(0.289)	0.026	0.064
77	6.42	0.30	0.090	(0.288)	0.026	0.064
78	6.50	0.30	0.090	(0.287)	0.026	0.064
79	6.58	0.33	0.100	(0.285)	0.029	0.071
80	6.67	0.33	0.100	(0.284)	0.029	0.071
81	6.75	0.33	0.100	(0.283)	0.029	0.071
82	6.83	0.33	0.100	(0.282)	0.029	0.071
83	6.92	0.33	0.100	(0.280)	0.029	0.071
84	7.00	0.33	0.100	(0.279)	0.029	0.071
85	7.08	0.33	0.100	(0.278)	0.029	0.071
86	7.17	0.33	0.100	(0.276)	0.029	0.071
87	7.25	0.33	0.100	(0.275)	0.029	0.071
88	7.33	0.37	0.110	(0.274)	0.032	0.078
89	7.42	0.37	0.110	(0.273)	0.032	0.078
90	7.50	0.37	0.110	(0.271)	0.032	0.078
91	7.58	0.40	0.120	(0.270)	0.035	0.085
92	7.67	0.40	0.120	(0.269)	0.035	0.085
93	7.75	0.40	0.120	(0.268)	0.035	0.085
94	7.83	0.43	0.130	(0.266)	0.038	0.092
95	7.92	0.43	0.130	(0.265)	0.038	0.092
96	8.00	0.43	0.130	(0.264)	0.038	0.092
97	8.08	0.50	0.150	(0.263)	0.043	0.106
98	8.17	0.50	0.150	(0.262)	0.043	0.106
99	8.25	0.50	0.150	(0.260)	0.043	0.106
100	8.33	0.50	0.150	(0.259)	0.043	0.106
101	8.42	0.50	0.150	(0.258)	0.043	0.106
102	8.50	0.50	0.150	(0.257)	0.043	0.106
103	8.58	0.53	0.160	(0.256)	0.046	0.114
104	8.67	0.53	0.160	(0.254)	0.046	0.114
105	8.75	0.53	0.160	(0.253)	0.046	0.114
106	8.83	0.57	0.170	(0.252)	0.049	0.121
107	8.92	0.57	0.170	(0.251)	0.049	0.121
108	9.00	0.57	0.170	(0.250)	0.049	0.121
109	9.08	0.63	0.190	(0.248)	0.055	0.135
110	9.17	0.63	0.190	(0.247)	0.055	0.135
111	9.25	0.63	0.190	(0.246)	0.055	0.135
112	9.33	0.67	0.200	(0.245)	0.058	0.142
113	9.42	0.67	0.200	(0.244)	0.058	0.142
114	9.50	0.67	0.200	(0.243)	0.058	0.142
115	9.58	0.70	0.210	(0.241)	0.061	0.149
116	9.67	0.70	0.210	(0.240)	0.061	0.149
117	9.75	0.70	0.210	(0.239)	0.061	0.149

118	9.83	0.73	0.220	(0.238)	0.064	0.156
119	9.92	0.73	0.220	(0.237)	0.064	0.156
120	10.00	0.73	0.220	(0.236)	0.064	0.156
121	10.08	0.50	0.150	(0.234)	0.043	0.106
122	10.17	0.50	0.150	(0.233)	0.043	0.106
123	10.25	0.50	0.150	(0.232)	0.043	0.106
124	10.33	0.50	0.150	(0.231)	0.043	0.106
125	10.42	0.50	0.150	(0.230)	0.043	0.106
126	10.50	0.50	0.150	(0.229)	0.043	0.106
127	10.58	0.67	0.200	(0.228)	0.058	0.142
128	10.67	0.67	0.200	(0.227)	0.058	0.142
129	10.75	0.67	0.200	(0.225)	0.058	0.142
130	10.83	0.67	0.200	(0.224)	0.058	0.142
131	10.92	0.67	0.200	(0.223)	0.058	0.142
132	11.00	0.67	0.200	(0.222)	0.058	0.142
133	11.08	0.63	0.190	(0.221)	0.055	0.135
134	11.17	0.63	0.190	(0.220)	0.055	0.135
135	11.25	0.63	0.190	(0.219)	0.055	0.135
136	11.33	0.63	0.190	(0.218)	0.055	0.135
137	11.42	0.63	0.190	(0.217)	0.055	0.135
138	11.50	0.63	0.190	(0.216)	0.055	0.135
139	11.58	0.57	0.170	(0.215)	0.049	0.121
140	11.67	0.57	0.170	(0.214)	0.049	0.121
141	11.75	0.57	0.170	(0.212)	0.049	0.121
142	11.83	0.60	0.180	(0.211)	0.052	0.128
143	11.92	0.60	0.180	(0.210)	0.052	0.128
144	12.00	0.60	0.180	(0.209)	0.052	0.128
145	12.08	0.83	0.250	(0.208)	0.072	0.177
146	12.17	0.83	0.250	(0.207)	0.072	0.177
147	12.25	0.83	0.250	(0.206)	0.072	0.177
148	12.33	0.87	0.260	(0.205)	0.075	0.185
149	12.42	0.87	0.260	(0.204)	0.075	0.185
150	12.50	0.87	0.260	(0.203)	0.075	0.185
151	12.58	0.93	0.280	(0.202)	0.081	0.199
152	12.67	0.93	0.280	(0.201)	0.081	0.199
153	12.75	0.93	0.280	(0.200)	0.081	0.199
154	12.83	0.97	0.290	(0.199)	0.084	0.206
155	12.92	0.97	0.290	(0.198)	0.084	0.206
156	13.00	0.97	0.290	(0.197)	0.084	0.206
157	13.08	1.13	0.340	(0.196)	0.099	0.241
158	13.17	1.13	0.340	(0.195)	0.099	0.241
159	13.25	1.13	0.340	(0.194)	0.099	0.241
160	13.33	1.13	0.340	(0.193)	0.099	0.241
161	13.42	1.13	0.340	(0.192)	0.099	0.241
162	13.50	1.13	0.340	(0.191)	0.099	0.241
163	13.58	0.77	0.230	(0.190)	0.067	0.163
164	13.67	0.77	0.230	(0.189)	0.067	0.163
165	13.75	0.77	0.230	(0.188)	0.067	0.163
166	13.83	0.77	0.230	(0.187)	0.067	0.163
167	13.92	0.77	0.230	(0.186)	0.067	0.163
168	14.00	0.77	0.230	(0.185)	0.067	0.163
169	14.08	0.90	0.270	(0.184)	0.078	0.192
170	14.17	0.90	0.270	(0.183)	0.078	0.192
171	14.25	0.90	0.270	(0.182)	0.078	0.192
172	14.33	0.87	0.260	(0.182)	0.075	0.185
173	14.42	0.87	0.260	(0.181)	0.075	0.185
174	14.50	0.87	0.260	(0.180)	0.075	0.185
175	14.58	0.87	0.260	(0.179)	0.075	0.185
176	14.67	0.87	0.260	(0.178)	0.075	0.185
177	14.75	0.87	0.260	(0.177)	0.075	0.185
178	14.83	0.83	0.250	(0.176)	0.072	0.177
179	14.92	0.83	0.250	(0.175)	0.072	0.177
180	15.00	0.83	0.250	(0.174)	0.072	0.177
181	15.08	0.80	0.240	(0.173)	0.070	0.170
182	15.17	0.80	0.240	(0.172)	0.070	0.170
183	15.25	0.80	0.240	(0.172)	0.070	0.170
184	15.33	0.77	0.230	(0.171)	0.067	0.163
185	15.42	0.77	0.230	(0.170)	0.067	0.163
186	15.50	0.77	0.230	(0.169)	0.067	0.163
187	15.58	0.63	0.190	(0.168)	0.055	0.135
188	15.67	0.63	0.190	(0.167)	0.055	0.135
189	15.75	0.63	0.190	(0.166)	0.055	0.135
190	15.83	0.63	0.190	(0.166)	0.055	0.135
191	15.92	0.63	0.190	(0.165)	0.055	0.135
192	16.00	0.63	0.190	(0.164)	0.055	0.135

193	16.08	0.13	0.040	(0.163)	0.012	0.028
194	16.17	0.13	0.040	(0.162)	0.012	0.028
195	16.25	0.13	0.040	(0.161)	0.012	0.028
196	16.33	0.13	0.040	(0.161)	0.012	0.028
197	16.42	0.13	0.040	(0.160)	0.012	0.028
198	16.50	0.13	0.040	(0.159)	0.012	0.028
199	16.58	0.10	0.030	(0.158)	0.009	0.021
200	16.67	0.10	0.030	(0.157)	0.009	0.021
201	16.75	0.10	0.030	(0.156)	0.009	0.021
202	16.83	0.10	0.030	(0.156)	0.009	0.021
203	16.92	0.10	0.030	(0.155)	0.009	0.021
204	17.00	0.10	0.030	(0.154)	0.009	0.021
205	17.08	0.17	0.050	(0.153)	0.014	0.035
206	17.17	0.17	0.050	(0.153)	0.014	0.035
207	17.25	0.17	0.050	(0.152)	0.014	0.035
208	17.33	0.17	0.050	(0.151)	0.014	0.035
209	17.42	0.17	0.050	(0.150)	0.014	0.035
210	17.50	0.17	0.050	(0.150)	0.014	0.035
211	17.58	0.17	0.050	(0.149)	0.014	0.035
212	17.67	0.17	0.050	(0.148)	0.014	0.035
213	17.75	0.17	0.050	(0.147)	0.014	0.035
214	17.83	0.13	0.040	(0.147)	0.012	0.028
215	17.92	0.13	0.040	(0.146)	0.012	0.028
216	18.00	0.13	0.040	(0.145)	0.012	0.028
217	18.08	0.13	0.040	(0.144)	0.012	0.028
218	18.17	0.13	0.040	(0.144)	0.012	0.028
219	18.25	0.13	0.040	(0.143)	0.012	0.028
220	18.33	0.13	0.040	(0.142)	0.012	0.028
221	18.42	0.13	0.040	(0.142)	0.012	0.028
222	18.50	0.13	0.040	(0.141)	0.012	0.028
223	18.58	0.10	0.030	(0.140)	0.009	0.021
224	18.67	0.10	0.030	(0.140)	0.009	0.021
225	18.75	0.10	0.030	(0.139)	0.009	0.021
226	18.83	0.07	0.020	(0.138)	0.006	0.014
227	18.92	0.07	0.020	(0.138)	0.006	0.014
228	19.00	0.07	0.020	(0.137)	0.006	0.014
229	19.08	0.10	0.030	(0.136)	0.009	0.021
230	19.17	0.10	0.030	(0.136)	0.009	0.021
231	19.25	0.10	0.030	(0.135)	0.009	0.021
232	19.33	0.13	0.040	(0.134)	0.012	0.028
233	19.42	0.13	0.040	(0.134)	0.012	0.028
234	19.50	0.13	0.040	(0.133)	0.012	0.028
235	19.58	0.10	0.030	(0.133)	0.009	0.021
236	19.67	0.10	0.030	(0.132)	0.009	0.021
237	19.75	0.10	0.030	(0.131)	0.009	0.021
238	19.83	0.07	0.020	(0.131)	0.006	0.014
239	19.92	0.07	0.020	(0.130)	0.006	0.014
240	20.00	0.07	0.020	(0.130)	0.006	0.014
241	20.08	0.10	0.030	(0.129)	0.009	0.021
242	20.17	0.10	0.030	(0.128)	0.009	0.021
243	20.25	0.10	0.030	(0.128)	0.009	0.021
244	20.33	0.10	0.030	(0.127)	0.009	0.021
245	20.42	0.10	0.030	(0.127)	0.009	0.021
246	20.50	0.10	0.030	(0.126)	0.009	0.021
247	20.58	0.10	0.030	(0.126)	0.009	0.021
248	20.67	0.10	0.030	(0.125)	0.009	0.021
249	20.75	0.10	0.030	(0.125)	0.009	0.021
250	20.83	0.07	0.020	(0.124)	0.006	0.014
251	20.92	0.07	0.020	(0.124)	0.006	0.014
252	21.00	0.07	0.020	(0.123)	0.006	0.014
253	21.08	0.10	0.030	(0.123)	0.009	0.021
254	21.17	0.10	0.030	(0.122)	0.009	0.021
255	21.25	0.10	0.030	(0.122)	0.009	0.021
256	21.33	0.07	0.020	(0.121)	0.006	0.014
257	21.42	0.07	0.020	(0.121)	0.006	0.014
258	21.50	0.07	0.020	(0.120)	0.006	0.014
259	21.58	0.10	0.030	(0.120)	0.009	0.021
260	21.67	0.10	0.030	(0.119)	0.009	0.021
261	21.75	0.10	0.030	(0.119)	0.009	0.021
262	21.83	0.07	0.020	(0.119)	0.006	0.014
263	21.92	0.07	0.020	(0.118)	0.006	0.014
264	22.00	0.07	0.020	(0.118)	0.006	0.014
265	22.08	0.10	0.030	(0.117)	0.009	0.021
266	22.17	0.10	0.030	(0.117)	0.009	0.021
267	22.25	0.10	0.030	(0.117)	0.009	0.021

268	22.33	0.07	0.020	(0.116)	0.006	0.014
269	22.42	0.07	0.020	(0.116)	0.006	0.014
270	22.50	0.07	0.020	(0.116)	0.006	0.014
271	22.58	0.07	0.020	(0.115)	0.006	0.014
272	22.67	0.07	0.020	(0.115)	0.006	0.014
273	22.75	0.07	0.020	(0.115)	0.006	0.014
274	22.83	0.07	0.020	(0.114)	0.006	0.014
275	22.92	0.07	0.020	(0.114)	0.006	0.014
276	23.00	0.07	0.020	(0.114)	0.006	0.014
277	23.08	0.07	0.020	(0.113)	0.006	0.014
278	23.17	0.07	0.020	(0.113)	0.006	0.014
279	23.25	0.07	0.020	(0.113)	0.006	0.014
280	23.33	0.07	0.020	(0.113)	0.006	0.014
281	23.42	0.07	0.020	(0.113)	0.006	0.014
282	23.50	0.07	0.020	(0.112)	0.006	0.014
283	23.58	0.07	0.020	(0.112)	0.006	0.014
284	23.67	0.07	0.020	(0.112)	0.006	0.014
285	23.75	0.07	0.020	(0.112)	0.006	0.014
286	23.83	0.07	0.020	(0.112)	0.006	0.014
287	23.92	0.07	0.020	(0.112)	0.006	0.014
288	24.00	0.07	0.020	(0.112)	0.006	0.014

(Loss Rate Not Used)

Sum = 100.0 Sum = 21.3

Flood volume = Effective rainfall 1.77(In)
times area 33.8(Ac.)/[(In)/(Ft.)] = 5.0(Ac.Ft)
Total soil loss = 0.72(In)
Total soil loss = 2.042(Ac.Ft)
Total rainfall = 2.50(In)
Flood volume = 217767.5 Cubic Feet
Total soil loss = 88947.3 Cubic Feet

Peak flow rate of this hydrograph = 8.216(CFS) NORTH AREA

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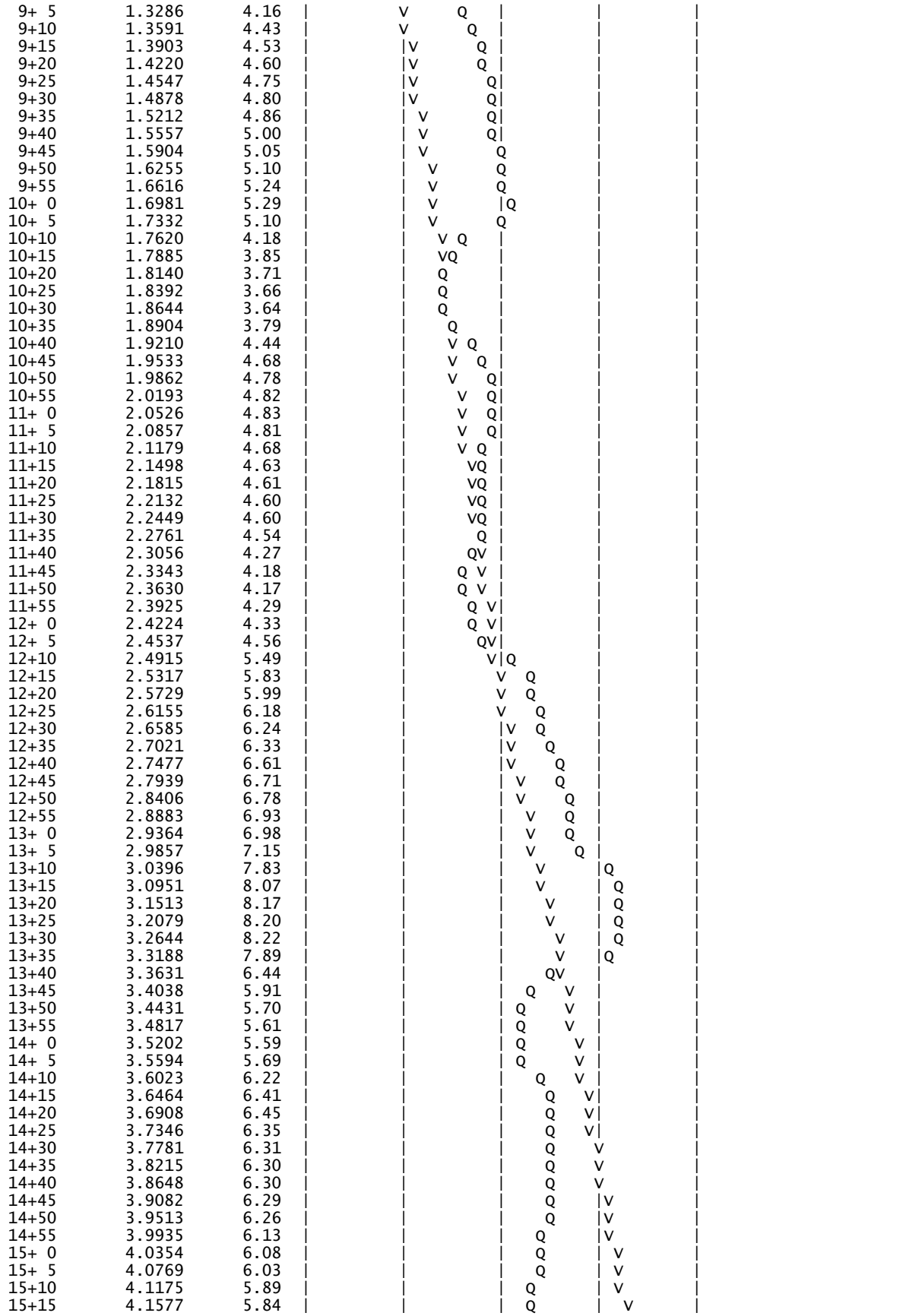
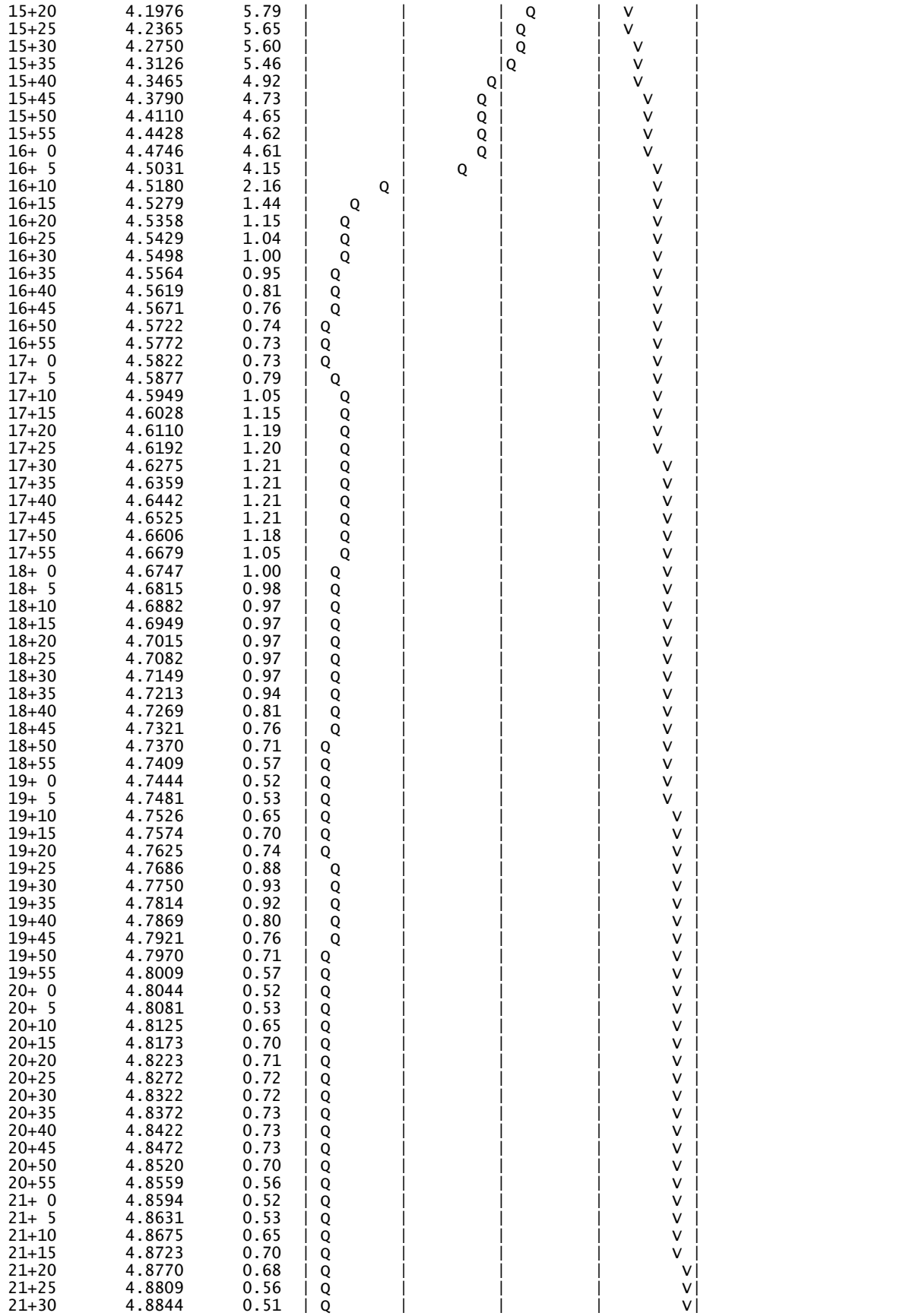
24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.06	Q	|	|	|	|
0+10	0.0027	0.33	VQ	|	|	|	|
0+15	0.0056	0.42	VQ	|	|	|	|
0+20	0.0089	0.49	VQ	|	|	|	|
0+25	0.0133	0.64	V Q	|	|	|	|
0+30	0.0181	0.69	V Q	|	|	|	|
0+35	0.0230	0.71	V Q	|	|	|	|
0+40	0.0279	0.72	V Q	|	|	|	|
0+45	0.0329	0.72	V Q	|	|	|	|
0+50	0.0381	0.76	V Q	|	|	|	|
0+55	0.0443	0.89	V Q	|	|	|	|
1+ 0	0.0507	0.94	V Q	|	|	|	|
1+ 5	0.0571	0.93	V Q	|	|	|	|
1+10	0.0626	0.80	V Q	|	|	|	|
1+15	0.0678	0.76	V Q	|	|	|	|
1+20	0.0729	0.74	V Q	|	|	|	|
1+25	0.0779	0.73	V Q	|	|	|	|
1+30	0.0829	0.73	V Q	|	|	|	|
1+35	0.0879	0.73	V Q	|	|	|	|
1+40	0.0929	0.73	V Q	|	|	|	|
1+45	0.0979	0.73	V Q	|	|	|	|
1+50	0.1031	0.76	V Q	|	|	|	|
1+55	0.1092	0.89	V Q	|	|	|	|
2+ 0	0.1157	0.94	V Q	|	|	|	|
2+ 5	0.1223	0.96	V Q	|	|	|	|
2+10	0.1289	0.96	|V Q	|	|	|	|
2+15	0.1356	0.97	|V Q	|	|	|	|
2+20	0.1422	0.97	|V Q	|	|	|	|
2+25	0.1489	0.97	|V Q	|	|	|	|
2+30	0.1556	0.97	|V Q	|	|	|	|
2+35	0.1624	1.00	|V Q	|	|	|	|
2+40	0.1702	1.13	|V Q	|	|	|	|
2+45	0.1783	1.18	|V Q	|	|	|	|

```
2+50       0.1866      1.20  |V  Q     |         |         |         |
2+55       0.1949      1.21  |V  Q     |         |         |         |
3+ 0       0.2032      1.21  |V  Q     |         |         |         |
3+ 5       0.2115      1.21  |V  Q     |         |         |         |
3+10       0.2199      1.21  |V  Q     |         |         |         |
3+15       0.2282      1.21  |V  Q     |         |         |         |
3+20       0.2365      1.21  |V  Q     |         |         |         |
3+25       0.2449      1.21  |V  Q     |         |         |         |
3+30       0.2532      1.21  | V Q     |         |         |         |
3+35       0.2615      1.21  | V Q     |         |         |         |
3+40       0.2698      1.21  | V Q     |         |         |         |
3+45       0.2782      1.21  | V Q     |         |         |         |
3+50       0.2867      1.24  | V Q     |         |         |         |
3+55       0.2962      1.37  | V  Q    |         |         |         |
4+ 0       0.3060      1.42  | V  Q    |         |         |         |
4+ 5       0.3159      1.44  | V  Q    |         |         |         |
4+10       0.3258      1.45  | V  Q    |         |         |         |
4+15       0.3358      1.45  | V  Q    |         |         |         |
4+20       0.3460      1.48  | V  Q    |         |         |         |
4+25       0.3571      1.61  | V   Q   |         |         |         |
4+30       0.3686      1.66  | V   Q   |         |         |         |
4+35       0.3802      1.68  |  V  Q   |         |         |         |
4+40       0.3918      1.69  |  V  Q   |         |         |         |
4+45       0.4035      1.69  |  V  Q   |         |         |         |
4+50       0.4153      1.72  |  V  Q   |         |         |         |
4+55       0.4281      1.86  |  V   Q  |         |         |         |
5+ 0       0.4412      1.90  |  V   Q  |         |         |         |
5+ 5       0.4541      1.86  |  V   Q  |         |         |         |
5+10       0.4651      1.61  |  V  Q   |         |         |         |
5+15       0.4755      1.51  |  V  Q   |         |         |         |
5+20       0.4859      1.51  |  V  Q   |         |         |         |
5+25       0.4971      1.62  |  V  Q   |         |         |         |
5+30       0.5086      1.67  |   V Q   |         |         |         |
5+35       0.5204      1.71  |   V Q   |         |         |         |
5+40       0.5331      1.85  |   V  Q  |         |         |         |
5+45       0.5462      1.90  |   V  Q  |         |         |         |
5+50       0.5595      1.92  |   V  Q  |         |         |         |
5+55       0.5728      1.93  |   V  Q  |         |         |         |
6+ 0       0.5861      1.93  |   V  Q  |         |         |         |
6+ 5       0.5996      1.97  |   V  Q  |         |         |         |
6+10       0.6141      2.10  |   V   Q |         |         |         |
6+15       0.6288      2.15  |    V  Q |         |         |         |
6+20       0.6438      2.17  |    V  Q |         |         |         |
6+25       0.6587      2.17  |    V  Q |         |         |         |
6+30       0.6737      2.18  |    V  Q |         |         |         |
6+35       0.6889      2.21  |    V  Q |         |         |         |
6+40       0.7050      2.34  |    V   Q|         |         |         |
6+45       0.7215      2.39  |    V   Q|         |         |         |
6+50       0.7380      2.41  |    V   Q|         |         |         |
6+55       0.7547      2.42  |     V  Q|         |         |         |
7+ 0       0.7713      2.42  |     V  Q|         |         |         |
7+ 5       0.7880      2.42  |     V  Q|         |         |         |
7+10       0.8047      2.42  |     V  Q|         |         |         |
7+15       0.8213      2.42  |     V  Q|         |         |         |
7+20       0.8382      2.45  |     V  Q|         |         |         |
7+25       0.8560      2.58  |     V   Q         |         |         |
7+30       0.8741      2.63  |     V   Q         |         |         |
7+35       0.8925      2.68  |      V  Q         |         |         |
7+40       0.9120      2.82  |      V  |Q        |         |         |
7+45       0.9317      2.87  |      V  |Q        |         |         |
7+50       0.9518      2.92  |      V  |Q        |         |         |
7+55       0.9729      3.06  |      V  | Q       |         |         |
8+ 0       0.9944      3.11  |      V  | Q       |         |         |
8+ 5       1.0164      3.19  |       V | Q       |         |         |
8+10       1.0402      3.47  |       V |  Q      |         |         |
8+15       1.0648      3.56  |       V |   Q     |         |         |
8+20       1.0896      3.60  |       V |   Q     |         |         |
8+25       1.1145      3.62  |       V |   Q     |         |         |
8+30       1.1395      3.63  |        V|   Q     |         |         |
8+35       1.1647      3.66  |        V|   Q     |         |         |
8+40       1.1908      3.79  |        V|    Q    |         |         |
8+45       1.2173      3.84  |        V|    Q    |         |         |
8+50       1.2440      3.89  |        V|    Q    |         |         |
8+55       1.2718      4.03  |         V     Q   |         |         |
9+ 0       1.2999      4.08  |         V     Q   |         |         |
```





```
  21+35       4.8880      0.53  | Q       |         |         |        V|
  21+40       4.8925      0.65  | Q       |         |         |        V|
  21+45       4.8973      0.70  | Q       |         |         |        V|
  21+50       4.9020      0.68  | Q       |         |         |        V|
  21+55       4.9059      0.56  | Q       |         |         |        V|
  22+ 0       4.9094      0.51  | Q       |         |         |        V|
  22+ 5       4.9130      0.53  | Q       |         |         |        V|
  22+10       4.9175      0.65  | Q       |         |         |        V|
  22+15       4.9223      0.70  | Q       |         |         |        V|
  22+20       4.9270      0.68  | Q       |         |         |        V|
  22+25       4.9309      0.56  | Q       |         |         |        V|
  22+30       4.9344      0.51  | Q       |         |         |        V|
  22+35       4.9378      0.50  |Q        |         |         |        V|
  22+40       4.9412      0.49  |Q        |         |         |        V|
  22+45       4.9445      0.49  |Q        |         |         |        V|
  22+50       4.9479      0.48  |Q        |         |         |        V|
  22+55       4.9512      0.48  |Q        |         |         |        V|
  23+ 0       4.9545      0.48  |Q        |         |         |        V|
  23+ 5       4.9579      0.48  |Q        |         |         |        V|
  23+10       4.9612      0.48  |Q        |         |         |        V|
  23+15       4.9645      0.48  |Q        |         |         |        V|
  23+20       4.9679      0.48  |Q        |         |         |        V|
  23+25       4.9712      0.48  |Q        |         |         |        V|
  23+30       4.9745      0.48  |Q        |         |         |        V|
  23+35       4.9779      0.48  |Q        |         |         |        V|
  23+40       4.9812      0.48  |Q        |         |         |        V|
  23+45       4.9845      0.48  |Q        |         |         |        V|
  23+50       4.9879      0.48  |Q        |         |         |        V|
  23+55       4.9912      0.48  |Q        |         |         |        V|
  24+ 0       4.9945      0.48  |Q        |         |         |        V|
  24+ 5       4.9975      0.42  |Q        |         |         |        V|
  24+10       4.9985      0.16  Q         |         |         |        V|
  24+15       4.9990      0.06  Q         |         |         |        V|
  24+20       4.9992      0.02  Q         |         |         |        V|
  24+25       4.9992      0.01  Q         |         |         |        V|
  24+30       4.9992      0.00  Q         |         |         |        V|
  24+35       4.9993      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

Stage/Storage Tables

Building 3 CMP Chambers - Stage/Storage/Outflow Table
W.O.# 21-0044

Basin Information: Infiltration Basin		2-Year	ORIFICE	5-YEAR	ORIFICE	10/100-Year	WEIR
Tributary Area:	30.10 AC	Q EXISTING	0.72	Q EXISTING	1.8	Q EXISTING	6.1/11.8
Bottom Elevation:	2501.50 FT	Opening (in)	3.5	Opening (in)	5	L(ft)	0.8
		# of Orifices	1	# of Orifices	1	C	3
Bottom Chamber Area:	77638 SF	Orifice Area (sf)	0.0668	Orifice Area (sf)	0.1364		
Bottom Slope:	0 %	Orifice Diameter (ft)	0.2917	Orifice Diameter (ft)	0.4167		
Constant Infiltration:	0.0 cfs	Total Area (sf)	0.0668	Total Area (sf)	0.1364		
$Q_{ORIFICE}$= Cd*Area*(2*G*H)$^{0.5}$		G (ft/s^2)	32.2	G (ft/s^2)	32.2		
Q_{WEIR}= C*L*H$^{3/2}$		Cd	0.66	Cd	0.66		
		Invert H (ft)	0	Invert H (ft)	4.24	Invert H (ft)	5.48

#	Elevation (ft)	Depth (ft)	Storage (cf)	Storage (ac-ft)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	H (ft)	Q (cfs)	Total Q (cfs) 2 Year	Total Q (cfs) 5 Year	Total Q (cfs) 10/100 Year	Comments
1	2501.5	0	0.00	0.000							0.00	0.00	0.00	**Bottom of Chambers/Inv of 2 Yr**
2	2501.6458	0.14583	4528.88	0.104	0.00						0.00	0.00	0.00	**Middle of 2 Yr Orifice**
3	**2502**	**0.5**	**15527.60**	0.356	0.35	0.21					0.21	0.21	0.21	
4	2502.5	1	**36636.90**	0.841	0.85	0.33					0.33	0.33	0.33	
5	**2503**	1.5	**62057.78**	1.425	1.35	0.41					0.41	0.41	0.41	
6	2503.5	2	**89951.27**	2.065	1.85	0.48					0.48	0.48	0.48	
7	**2504**	2.5	**119571.59**	2.745	2.35	0.54					0.54	0.54	0.54	
8	2504.5	3	**150432.47**	3.453	2.85	0.60					0.60	0.60	0.60	
9	**2504.99**	3.49	**181526.47**	4.167	3.34	0.65	0				0.65	0.65	0.65	**Top of 2 Yr Ponding/Inv of 5 Yr**
10	2505	**3.5**	**182161.04**	4.182	3.35	0.65	**0.01**	**0.07**			0.65	0.72	0.72	
	2505.5	**4**	**214442.99**	4.923	3.85	0.69	**0.51**	**0.52**				1.21	1.21	
11	**2505.96**	**4.46**	**244390.69**	5.610	4.31	0.74	**0.97**	**0.71**	**0.00**		0.74	1.45	1.45	**Top of 5 Yr Ponding/Inv of 10/100 Yr**
12	2506	**4.5**	**246994.83**	5.670	4.35	0.74	**1.01**	**0.73**	**0.04**	**0.02**	0.74	1.46	1.48	
13	2506.5	5	**279546.68**	6.418	4.85	0.78	**1.51**	**0.89**	**0.54**	**0.95**	0.78	1.67	2.62	
14	**2506.66**	**5.16**	**289876.90**	6.655	5.01	0.79	**1.67**	**0.93**	**0.70**	**1.41**	0.79	1.73	3.13	**Top of 10 Yr Ponding**
15	2507	**5.5**	**311828.62**	7.159	5.35	0.82	**2.01**	**1.02**	**1.04**	**2.55**	0.82	1.84	4.39	
16	**2507.5**	**6**	**343557.20**	7.887	5.85	0.86	**2.51**	**1.14**	**1.54**	**4.59**	0.86	2.00	6.59	
17	2508	**6.5**	**374418.07**	8.595	6.35	0.89	**3.01**	**1.25**	**2.04**	**6.99**	0.89	2.14	9.14	
18	**2508.5**	**7**	**404038.39**	9.275	6.85	0.93	**3.51**	**1.35**	**2.54**	**9.72**	0.93	2.28	11.99	
	2508.53	**7.03**	**405712.00**	9.314	6.88	0.93	**3.54**	**1.36**	**2.57**	**9.89**	0.93	2.29	12.18	**Top of 100 Yr Ponding**
19	2509	**7.5**	**431931.89**	9.916	7.35	0.96	**4.01**	**1.45**	**3.04**	**12.72**	0.96	2.41	15.13	
20	2509.5	**8**	**457352.77**	10.499	7.85	0.99	**4.51**	**1.53**	**3.54**	**15.99**	0.99	2.53	18.51	**Top of Chambers**
21	**2510**	**8.5**	**478462.07**	10.984	8.35	1.02	**5.01**	**1.62**	**4.04**	**19.49**	1.02	2.64	22.13	
22	2510.5	**9**	**493989.67**	11.340	8.85	1.05	**5.51**	**1.70**	**4.54**	**23.22**	1.05	2.75	25.96	**Top of Gravel**

DYODS™
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CONTECH CMP DETENTION SYSTEMS

CONTECH CONSTRUCTION PRODUCTS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
dyods@contech-cpi.com

Project Summary

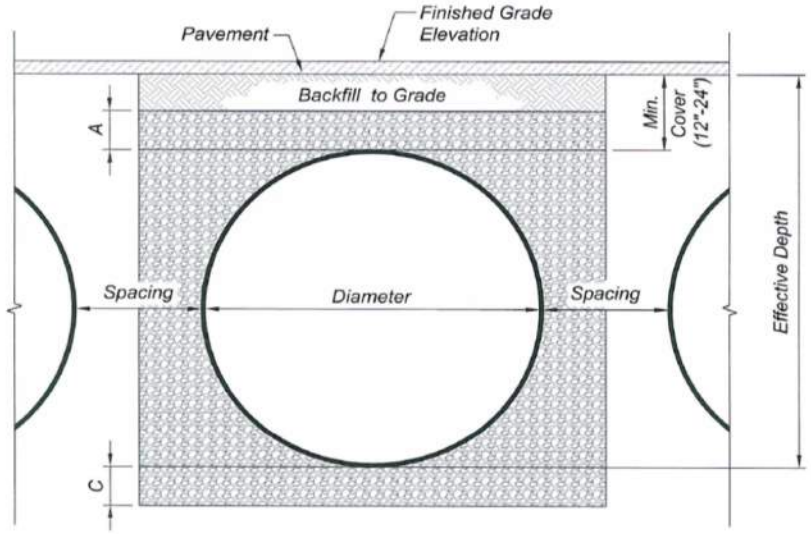
Date:	2/17/2022
Project Name:	Exeter - Building 3
City / County:	Calimesa
State:	CA
Designed By:	EP
Company:	Albert A. Webb Associates
Telephone:	

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	280,000
Limiting Width (ft):	50.00
Invert Depth Below Asphalt (ft):	10.00
Solid or Perforated Pipe:	Perforated
Shape Or Diameter (in):	96
Number Of Headers:	2
Spacing between Barrels (ft):	3.00
Stone Width Around Perimeter of System (ft):	1.5
Depth A: Porous Stone Above Pipe (in):	6
Depth C: Porous Stone Below Pipe (in):	6
Stone Porosity (0 to 40%):	40

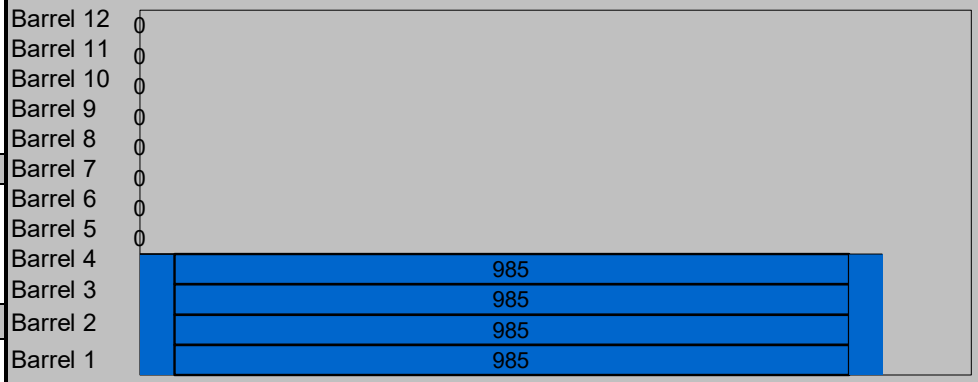
50.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	202,168	cf	
Porous Stone Storage:	78,166	cf	
Total Storage Provided:	280,334	cf	100.1% Of Required Storage
Number of Barrels:	4	barrels	
Length per Barrel:	985.0	ft	
Length Per Header:	41.0	ft	
Rectangular Footprint (W x L):	44. ft x 1004. ft		

System Layout



CONTECH Materials

Total CMP Footage:	4,022	ft
Approximate Total Pieces:	172	pcs
Approximate Coupling Bands:	174	bands
Approximate Truckloads:	86	trucks

Construction Quantities**

Total Excavation:	16362	cy
Porous Stone Backfill For Storage:	7238	cy stone
Backfill to Grade Excluding Stone:	1637	cy fill

***Construction quantities are approximate and should be verified upon final design*

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Project Summary

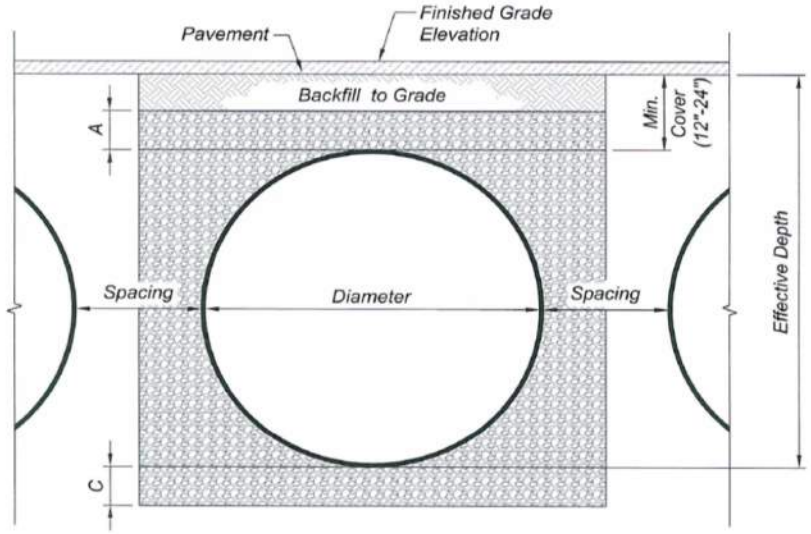
Date:	2/17/2022
Project Name:	Exeter - Building 3
City / County:	Calimesa
State:	CA
Designed By:	EP
Company:	Albert A. Webb Associates
Telephone:	

Enter Information in Blue Cells

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	200,000
Limiting Width (ft):	200.00
Invert Depth Below Asphalt (ft):	10.00
Solid or Perforated Pipe:	Perforated
Shape Or Diameter (in):	96
Number Of Headers:	2
Spacing between Barrels (ft):	3.00
Stone Width Around Perimeter of System (ft):	1.5
Depth A: Porous Stone Above Pipe (in):	1
Depth C: Porous Stone Below Pipe (in):	0
Stone Porosity (0 to 40%):	40

50.27 ft^2 Pipe Area



System Sizing

Pipe Storage:	155,320	cf	
Porous Stone Storage:	46,155	cf	
Total Storage Provided:	201,475	cf	100.7% Of Required Storage
Number of Barrels:	18	barrels	
Length per Barrel:	150.0	ft	
Length Per Header:	195.0	ft	
Rectangular Footprint (W x L):	198. ft x 169. ft		

CONTECH Materials

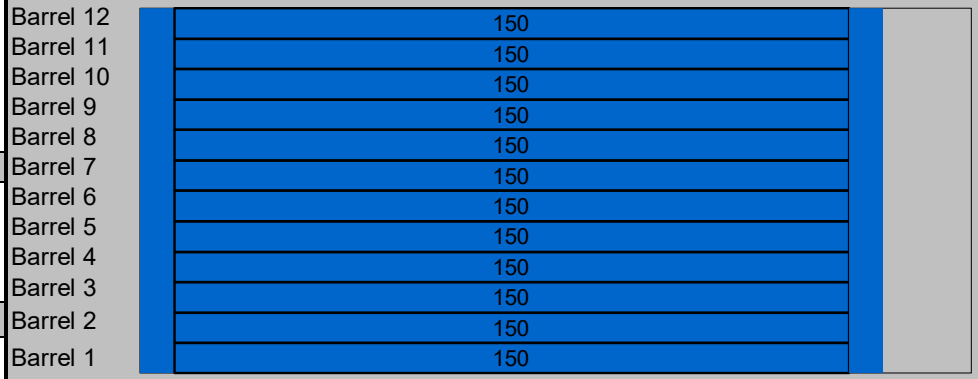
Total CMP Footage:	3,090	ft
Approximate Total Pieces:	144	pcs
Approximate Coupling Bands:	160	bands
Approximate Truckloads:	72	trucks

Construction Quantities**

Total Excavation:	12394	cy
Porous Stone Backfill For Storage:	4274	cy stone
Backfill to Grade Excluding Stone:	2368	cy fill

***Construction quantities are approximate and should be verified upon final design*

System Layout



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Routing Analysis

FLOOD HYDROGRAPH ROUTING PROGRAM
Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2005
Study date: 02/17/22

EXETER BSS BUILDING 3
2-YEAR 24-HOUR STORM EVENT
21-0044
2022-02-17 EP

Program License Serial Number 4010

********** HYDROGRAPH INFORMATION **********

From study/file name: NORTH2YR242.rte
**********HYDROGRAPH DATA**********
Number of intervals = 295
Time interval = 5.0 (Min.)
Maximum/Peak flow rate = 8.216 (CFS)
Total volume = 4.999 (Ac.Ft)
Status of hydrographs being held in storage

	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5
Peak (CFS)	0.000	0.000	0.000	0.000	0.000
Vol (Ac.Ft)	0.000	0.000	0.000	0.000	0.000

****

++
Process from Point/Station 100.000 to Point/Station 101.000
**** RETARDING BASIN ROUTING ****
_____

User entry of depth-outflow-storage data

Total number of inflow hydrograph intervals = 295
Hydrograph time unit = 5.000 (Min.)
Initial depth in storage basin = 0.00(Ft.)

Initial basin depth = 0.00 (Ft.)
Initial basin storage = 0.00 (Ac.Ft)
Initial basin outflow = 0.00 (CFS)

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.146	0.104	0.001	0.104	0.104
0.500	0.356	0.211	0.355	0.357
1.000	0.841	0.327	0.840	0.842
1.500	1.425	0.412	1.424	1.426
2.000	2.065	0.482	2.063	2.067
2.500	2.745	0.543	2.743	2.747
3.000	3.453	0.598	3.451	3.455
3.500	4.182	0.648	4.180	4.184
4.000	4.923	0.695	4.921	4.925
4.500	5.670	0.738	5.667	5.673
5.000	6.418	0.780	6.415	6.421
5.500	7.159	0.819	7.156	7.162
6.000	7.887	0.856	7.884	7.890
6.500	8.595	0.892	8.592	8.598
7.000	9.275	0.926	9.272	9.278
7.500	9.916	0.960	9.913	9.919
8.000	10.499	0.992	10.496	10.502
8.500	10.984	1.023	10.980	10.988

9.000 11.340 1.053 11.336 11.344

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	2.1	4.11	6.16	8.22	Depth (Ft.)
0.083	0.06	0.00	0.000	O					0.00
0.167	0.33	0.00	0.002	OI					0.00
0.250	0.42	0.00	0.004	OI					0.01
0.333	0.49	0.00	0.007	OI					0.01
0.417	0.64	0.00	0.011	O I					0.02
0.500	0.69	0.00	0.016	O I					0.02
0.583	0.71	0.00	0.021	O I					0.03
0.667	0.72	0.00	0.025	O I					0.04
0.750	0.72	0.00	0.030	O I					0.04
0.833	0.76	0.00	0.036	O I					0.05
0.917	0.89	0.00	0.041	O I					0.06
1.000	0.94	0.00	0.047	O I					0.07
1.083	0.93	0.00	0.054	O I					0.08
1.167	0.80	0.00	0.060	O I					0.08
1.250	0.76	0.00	0.065	O I					0.09
1.333	0.74	0.00	0.070	O I					0.10
1.417	0.73	0.00	0.075	O I					0.11
1.500	0.73	0.00	0.080	O I					0.11
1.583	0.73	0.00	0.085	O I					0.12
1.667	0.73	0.00	0.090	O I					0.13
1.750	0.73	0.00	0.095	O I					0.13
1.833	0.76	0.00	0.100	O I					0.14
1.917	0.89	0.00	0.106	O I					0.15
2.000	0.94	0.01	0.112	O I					0.16
2.083	0.96	0.01	0.119	O I					0.17
2.167	0.96	0.02	0.125	O I					0.18
2.250	0.97	0.02	0.132	O I					0.19
2.333	0.97	0.03	0.138	O I					0.19
2.417	0.97	0.03	0.145	O I					0.20
2.500	0.97	0.04	0.151	O I					0.21
2.583	1.00	0.05	0.158	O I					0.22
2.667	1.13	0.05	0.165	O I					0.23
2.750	1.18	0.06	0.172	O I					0.24
2.833	1.20	0.06	0.180	O I					0.25
2.917	1.21	0.07	0.188	O I					0.26
3.000	1.21	0.08	0.196	O I					0.27
3.083	1.21	0.08	0.203	O I					0.29
3.167	1.21	0.09	0.211	O I					0.30
3.250	1.21	0.10	0.219	O I					0.31
3.333	1.21	0.10	0.226	O I					0.32
3.417	1.21	0.11	0.234	O I					0.33
3.500	1.21	0.12	0.242	O I					0.34
3.583	1.21	0.12	0.249	O I					0.35
3.667	1.21	0.13	0.257	O I					0.36
3.750	1.21	0.13	0.264	O I					0.37
3.833	1.24	0.14	0.271	O I					0.38
3.917	1.37	0.15	0.279	O I					0.39
4.000	1.42	0.15	0.288	O I					0.40
4.083	1.44	0.16	0.297	O I					0.42
4.167	1.45	0.17	0.306	O I					0.43
4.250	1.45	0.18	0.314	O I					0.44
4.333	1.48	0.18	0.323	O I					0.45
4.417	1.61	0.19	0.333	O I					0.47
4.500	1.66	0.20	0.343	O I					0.48
4.583	1.68	0.21	0.353	O I					0.50
4.667	1.69	0.21	0.363	O I					0.51
4.750	1.69	0.22	0.373	O I					0.52
4.833	1.72	0.22	0.383	O I					0.53
4.917	1.86	0.22	0.394	O I					0.54
5.000	1.90	0.22	0.405	O I					0.55
5.083	1.86	0.23	0.417	O I					0.56
5.167	1.61	0.23	0.427	O I					0.57
5.250	1.51	0.23	0.436	O I					0.58
5.333	1.51	0.23	0.445	O I					0.59
5.417	1.62	0.23	0.454	O I					0.60
5.500	1.67	0.24	0.464	O I					0.61

5.583	1.71	0.24	0.474	o	I	|	|	|	0.62
5.667	1.85	0.24	0.485	o	I	|	|	|	0.63
5.750	1.90	0.24	0.496	o	I	|	|	|	0.64
5.833	1.92	0.25	0.507	o	I	|	|	|	0.66
5.917	1.93	0.25	0.519	o	I	|	|	|	0.67
6.000	1.93	0.25	0.531	o	I	|	|	|	0.68
6.083	1.97	0.26	0.542	o	I	|	|	|	0.69
6.167	2.10	0.26	0.554	|o	I	|	|	|	0.70
6.250	2.15	0.26	0.567	|o	I	|	|	|	0.72
6.333	2.17	0.26	0.580	|o	I	|	|	|	0.73
6.417	2.17	0.27	0.593	|o	I	|	|	|	0.74
6.500	2.18	0.27	0.607	|o	I	|	|	|	0.76
6.583	2.21	0.27	0.620	|o	I	|	|	|	0.77
6.667	2.34	0.28	0.634	|o	|I	|	|	|	0.79
6.750	2.39	0.28	0.648	|o	|I	|	|	|	0.80
6.833	2.41	0.28	0.662	|o	|I	|	|	|	0.82
6.917	2.42	0.29	0.677	|o	|I	|	|	|	0.83
7.000	2.42	0.29	0.692	|o	|I	|	|	|	0.85
7.083	2.42	0.29	0.706	|o	|I	|	|	|	0.86
7.167	2.42	0.30	0.721	|o	|I	|	|	|	0.88
7.250	2.42	0.30	0.736	|o	|I	|	|	|	0.89
7.333	2.45	0.31	0.750	|o	|I	|	|	|	0.91
7.417	2.58	0.31	0.766	|o	| I	|	|	|	0.92
7.500	2.63	0.31	0.781	|o	| I	|	|	|	0.94
7.583	2.68	0.32	0.797	|o	| I	|	|	|	0.96
7.667	2.82	0.32	0.814	|o	| I	|	|	|	0.97
7.750	2.87	0.32	0.832	|o	| I	|	|	|	0.99
7.833	2.92	0.33	0.849	|o	| I	|	|	|	1.01
7.917	3.06	0.33	0.868	|o	| I	|	|	|	1.02
8.000	3.11	0.33	0.887	|o	| I	|	|	|	1.04
8.083	3.19	0.34	0.906	|o	| I	|	|	|	1.06
8.167	3.47	0.34	0.927	|o	| I	|	|	|	1.07
8.250	3.56	0.34	0.948	|o	| I	|	|	|	1.09
8.333	3.60	0.35	0.971	|o	| I	|	|	|	1.11
8.417	3.62	0.35	0.993	|o	| I	|	|	|	1.13
8.500	3.63	0.35	1.016	|o	| I	|	|	|	1.15
8.583	3.66	0.36	1.038	|o	| I	|	|	|	1.17
8.667	3.79	0.36	1.062	|o	| I	|	|	|	1.19
8.750	3.84	0.36	1.085	|o	| I	|	|	|	1.21
8.833	3.89	0.37	1.109	|o	| I	|	|	|	1.23
8.917	4.03	0.37	1.134	|o	| I	|	|	|	1.25
9.000	4.08	0.37	1.160	|o	| I	|	|	|	1.27
9.083	4.16	0.38	1.185	|o	| I	|	|	|	1.29
9.167	4.43	0.38	1.212	|o	| |I	|	|	|	1.32
9.250	4.53	0.39	1.241	|o	| |I	|	|	|	1.34
9.333	4.60	0.39	1.269	|o	| |I	|	|	|	1.37
9.417	4.75	0.39	1.299	|o	| | I	|	|	|	1.39
9.500	4.80	0.40	1.329	|o	| | I	|	|	|	1.42
9.583	4.86	0.40	1.360	|o	| | I	|	|	|	1.44
9.667	5.00	0.41	1.391	|o	| | I	|	|	|	1.47
9.750	5.05	0.41	1.423	|o	| | I	|	|	|	1.50
9.833	5.10	0.42	1.455	|o	| | I	|	|	|	1.52
9.917	5.24	0.42	1.487	|o	| | I	|	|	|	1.55
10.000	5.29	0.42	1.521	|o	| | I	|	|	|	1.57
10.083	5.10	0.43	1.554	|o	| | I	|	|	|	1.60
10.167	4.18	0.43	1.583	|o	| I	|	|	|	1.62
10.250	3.85	0.43	1.607	|o	| I	|	|	|	1.64
10.333	3.71	0.43	1.630	|o	| I	|	|	|	1.66
10.417	3.66	0.44	1.653	|o	| I	|	|	|	1.68
10.500	3.64	0.44	1.675	|o	| I	|	|	|	1.70
10.583	3.79	0.44	1.697	|o	| I	|	|	|	1.71
10.667	4.44	0.44	1.723	|o	| |I	|	|	|	1.73
10.750	4.68	0.45	1.751	|o	| | I	|	|	|	1.75
10.833	4.78	0.45	1.780	|o	| | I	|	|	|	1.78
10.917	4.82	0.45	1.810	|o	| | I	|	|	|	1.80
11.000	4.83	0.46	1.840	|o	| | I	|	|	|	1.82
11.083	4.81	0.46	1.870	|o	| | I	|	|	|	1.85
11.167	4.68	0.46	1.900	|o	| | I	|	|	|	1.87
11.250	4.63	0.47	1.929	|o	| | I	|	|	|	1.89
11.333	4.61	0.47	1.957	|o	| |I	|	|	|	1.92
11.417	4.60	0.47	1.986	|o	| |I	|	|	|	1.94
11.500	4.60	0.48	2.014	|o	| |I	|	|	|	1.96
11.583	4.54	0.48	2.042	|o	| |I	|	|	|	1.98
11.667	4.27	0.48	2.069	|o	| I	|	|	|	2.00
11.750	4.18	0.48	2.095	|o	| I	|	|	|	2.02

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11.833    4.17    0.49      2.121  |O      |       I       |       |     2.04
11.917    4.29    0.49      2.146  |O      |       I       |       |     2.06
12.000    4.33    0.49      2.173  |O      |       I       |       |     2.08
12.083    4.56    0.49      2.200  |O      |       |I      |       |     2.10
12.167    5.49    0.50      2.231  |O      |       |    I  |       |     2.12
12.250    5.83    0.50      2.267  |O      |       |     I |       |     2.15
12.333    5.99    0.50      2.304  |O      |       |      I|       |     2.18
12.417    6.18    0.51      2.342  |O      |       |       I       |     2.20
12.500    6.24    0.51      2.382  |O      |       |       I       |     2.23
12.583    6.33    0.51      2.421  | O     |       |       I       |     2.26
12.667    6.61    0.52      2.462  | O     |       |       |I      |     2.29
12.750    6.71    0.52      2.505  | O     |       |       | I     |     2.32
12.833    6.78    0.53      2.547  | O     |       |       | I     |     2.35
12.917    6.93    0.53      2.591  | O     |       |       | I     |     2.39
13.000    6.98    0.53      2.635  | O     |       |       |  I    |     2.42
13.083    7.15    0.54      2.680  | O     |       |       |  I    |     2.45
13.167    7.83    0.54      2.728  | O     |       |       |     I |     2.49
13.250    8.07    0.55      2.779  | O     |       |       |      I|     2.52
13.333    8.17    0.55      2.831  | O     |       |       |      I|     2.56
13.417    8.20    0.55      2.884  | O     |       |       |      I|     2.60
13.500    8.22    0.56      2.937  | O     |       |       |       I     2.64
13.583    7.89    0.56      2.988  | O     |       |       |     I |     2.67
13.667    6.44    0.57      3.034  | O     |       |       |I      |     2.70
13.750    5.91    0.57      3.072  | O     |       |      I|       |     2.73
13.833    5.70    0.57      3.108  | O     |       |     I |       |     2.76
13.917    5.61    0.57      3.143  | O     |       |    I  |       |     2.78
14.000    5.59    0.58      3.178  | O     |       |    I  |       |     2.81
14.083    5.69    0.58      3.213  | O     |       |     I |       |     2.83
14.167    6.22    0.58      3.250  | O     |       |       I       |     2.86
14.250    6.41    0.59      3.289  | O     |       |       I       |     2.88
14.333    6.45    0.59      3.330  | O     |       |       |I      |     2.91
14.417    6.35    0.59      3.370  | O     |       |       I       |     2.94
14.500    6.31    0.59      3.409  | O     |       |       I       |     2.97
14.583    6.30    0.60      3.448  | O     |       |       I       |     3.00
14.667    6.30    0.60      3.488  | O     |       |       I       |     3.02
14.750    6.29    0.60      3.527  | O     |       |       I       |     3.05
14.833    6.26    0.61      3.566  | O     |       |       I       |     3.08
14.917    6.13    0.61      3.604  | O     |       |      I|       |     3.10
15.000    6.08    0.61      3.642  | O     |       |      I|       |     3.13
15.083    6.03    0.61      3.680  | O     |       |      I|       |     3.16
15.167    5.89    0.62      3.717  | O     |       |     I |       |     3.18
15.250    5.84    0.62      3.753  | O     |       |     I |       |     3.21
15.333    5.79    0.62      3.788  | O     |       |     I |       |     3.23
15.417    5.65    0.62      3.824  | O     |       |     I |       |     3.25
15.500    5.60    0.63      3.858  | O     |       |    I  |       |     3.28
15.583    5.46    0.63      3.892  | O     |       |    I  |       |     3.30
15.667    4.92    0.63      3.923  | O     |       |  I    |       |     3.32
15.750    4.73    0.63      3.952  | O     |       | I     |       |     3.34
15.833    4.65    0.63      3.980  | O     |       | I     |       |     3.36
15.917    4.62    0.64      4.007  | O     |       |I      |       |     3.38
16.000    4.61    0.64      4.035  | O     |       |I      |       |     3.40
16.083    4.15    0.64      4.061  | O     |       I       |       |     3.42
16.167    2.16    0.64      4.078  | O     I       |       |       |     3.43
16.250    1.44    0.64      4.086  | O  I  |       |       |       |     3.43
16.333    1.15    0.64      4.090  | O I   |       |       |       |     3.44
16.417    1.04    0.64      4.093  | O I   |       |       |       |     3.44
16.500    1.00    0.64      4.096  | OI    |       |       |       |     3.44
16.583    0.95    0.64      4.098  | OI    |       |       |       |     3.44
16.667    0.81    0.64      4.100  | OI    |       |       |       |     3.44
16.750    0.76    0.64      4.101  | O     |       |       |       |     3.44
16.833    0.74    0.64      4.102  | O     |       |       |       |     3.44
16.917    0.73    0.64      4.102  | O     |       |       |       |     3.45
17.000    0.73    0.64      4.103  | O     |       |       |       |     3.45
17.083    0.79    0.64      4.104  | OI    |       |       |       |     3.45
17.167    1.05    0.64      4.106  | O I   |       |       |       |     3.45
17.250    1.15    0.64      4.109  | O I   |       |       |       |     3.45
17.333    1.19    0.64      4.112  | O I   |       |       |       |     3.45
17.417    1.20    0.64      4.116  | O I   |       |       |       |     3.45
17.500    1.21    0.64      4.120  | O I   |       |       |       |     3.46
17.583    1.21    0.64      4.124  | O I   |       |       |       |     3.46
17.667    1.21    0.64      4.128  | O I   |       |       |       |     3.46
17.750    1.21    0.64      4.132  | O I   |       |       |       |     3.47
17.833    1.18    0.64      4.135  | O I   |       |       |       |     3.47
17.917    1.05    0.65      4.139  | O I   |       |       |       |     3.47
18.000    1.00    0.65      4.141  | OI    |       |       |       |     3.47
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18.083	0.98	0.65	4.144	OI				3.47
18.167	0.97	0.65	4.146	OI				3.48
18.250	0.97	0.65	4.148	OI				3.48
18.333	0.97	0.65	4.150	OI				3.48
18.417	0.97	0.65	4.153	OI				3.48
18.500	0.97	0.65	4.155	OI				3.48
18.583	0.94	0.65	4.157	OI				3.48
18.667	0.81	0.65	4.158	OI				3.48
18.750	0.76	0.65	4.159	O				3.48
18.833	0.71	0.65	4.160	O				3.48
18.917	0.57	0.65	4.160	O				3.48
19.000	0.52	0.65	4.159	O				3.48
19.083	0.53	0.65	4.158	O				3.48
19.167	0.65	0.65	4.158	O				3.48
19.250	0.70	0.65	4.158	O				3.48
19.333	0.74	0.65	4.159	O				3.48
19.417	0.88	0.65	4.160	OI				3.48
19.500	0.93	0.65	4.162	OI				3.49
19.583	0.92	0.65	4.164	OI				3.49
19.667	0.80	0.65	4.165	OI				3.49
19.750	0.76	0.65	4.166	O				3.49
19.833	0.71	0.65	4.167	O				3.49
19.917	0.57	0.65	4.166	O				3.49
20.000	0.52	0.65	4.166	O				3.49
20.083	0.53	0.65	4.165	O				3.49
20.167	0.65	0.65	4.164	O				3.49
20.250	0.70	0.65	4.165	O				3.49
20.333	0.71	0.65	4.165	O				3.49
20.417	0.72	0.65	4.166	O				3.49
20.500	0.72	0.65	4.166	O				3.49
20.583	0.73	0.65	4.167	O				3.49
20.667	0.73	0.65	4.167	O				3.49
20.750	0.73	0.65	4.168	O				3.49
20.833	0.70	0.65	4.168	O				3.49
20.917	0.56	0.65	4.168	O				3.49
21.000	0.52	0.65	4.167	O				3.49
21.083	0.53	0.65	4.166	O				3.49
21.167	0.65	0.65	4.166	O				3.49
21.250	0.70	0.65	4.166	O				3.49
21.333	0.68	0.65	4.166	O				3.49
21.417	0.56	0.65	4.166	O				3.49
21.500	0.51	0.65	4.166	IO				3.49
21.583	0.53	0.65	4.165	O				3.49
21.667	0.65	0.65	4.164	O				3.49
21.750	0.70	0.65	4.164	O				3.49
21.833	0.68	0.65	4.165	O				3.49
21.917	0.56	0.65	4.165	O				3.49
22.000	0.51	0.65	4.164	IO				3.49
22.083	0.53	0.65	4.163	O				3.49
22.167	0.65	0.65	4.163	O				3.49
22.250	0.70	0.65	4.163	O				3.49
22.333	0.68	0.65	4.163	O				3.49
22.417	0.56	0.65	4.163	O				3.49
22.500	0.51	0.65	4.162	IO				3.49
22.583	0.50	0.65	4.161	IO				3.49
22.667	0.49	0.65	4.160	IO				3.48
22.750	0.49	0.65	4.159	IO				3.48
22.833	0.48	0.65	4.158	IO				3.48
22.917	0.48	0.65	4.157	IO				3.48
23.000	0.48	0.65	4.156	IO				3.48
23.083	0.48	0.65	4.154	IO				3.48
23.167	0.48	0.65	4.153	IO				3.48
23.250	0.48	0.65	4.152	IO				3.48
23.333	0.48	0.65	4.151	IO				3.48
23.417	0.48	0.65	4.150	IO				3.48
23.500	0.48	0.65	4.149	IO				3.48
23.583	0.48	0.65	4.148	IO				3.48
23.667	0.48	0.65	4.147	IO				3.48
23.750	0.48	0.65	4.146	IO				3.48
23.833	0.48	0.65	4.144	IO				3.47
23.917	0.48	0.65	4.143	IO				3.47
24.000	0.48	0.65	4.142	IO				3.47
24.083	0.42	0.65	4.141	IO				3.47
24.167	0.16	0.65	4.138	I O				3.47
24.250	0.06	0.64	4.135	I O				3.47

24.333	0.02	0.64	4.131	I	O	|	|	|	3.46
24.417	0.01	0.64	4.126	I	O	|	|	|	3.46
24.500	0.00	0.64	4.122	I	O	|	|	|	3.46
24.583	0.00	0.64	4.118	I	O	|	|	|	3.46
24.667	0.00	0.64	4.113	I	O	|	|	|	3.45
24.750	0.00	0.64	4.109	I	O	|	|	|	3.45
24.833	0.00	0.64	4.104	I	O	|	|	|	3.45
24.917	0.00	0.64	4.100	I	O	|	|	|	3.44
25.000	0.00	0.64	4.095	I	O	|	|	|	3.44
25.083	0.00	0.64	4.091	I	O	|	|	|	3.44
25.167	0.00	0.64	4.087	I	O	|	|	|	3.43
25.250	0.00	0.64	4.082	I	O	|	|	|	3.43
25.333	0.00	0.64	4.078	I	O	|	|	|	3.43
25.417	0.00	0.64	4.073	I	O	|	|	|	3.43
25.500	0.00	0.64	4.069	I	O	|	|	|	3.42
25.583	0.00	0.64	4.065	I	O	|	|	|	3.42
25.667	0.00	0.64	4.060	I	O	|	|	|	3.42
25.750	0.00	0.64	4.056	I	O	|	|	|	3.41
25.833	0.00	0.64	4.051	I	O	|	|	|	3.41
25.917	0.00	0.64	4.047	I	O	|	|	|	3.41
26.000	0.00	0.64	4.042	I	O	|	|	|	3.40
26.083	0.00	0.64	4.038	I	O	|	|	|	3.40
26.167	0.00	0.64	4.034	I	O	|	|	|	3.40
26.250	0.00	0.64	4.029	I	O	|	|	|	3.40
26.333	0.00	0.64	4.025	I	O	|	|	|	3.39
26.417	0.00	0.64	4.021	I	O	|	|	|	3.39
26.500	0.00	0.64	4.016	I	O	|	|	|	3.39
26.583	0.00	0.64	4.012	I	O	|	|	|	3.38
26.667	0.00	0.64	4.007	I	O	|	|	|	3.38
26.750	0.00	0.64	4.003	I	O	|	|	|	3.38
26.833	0.00	0.64	3.999	I	O	|	|	|	3.37
26.917	0.00	0.64	3.994	I	O	|	|	|	3.37
27.000	0.00	0.63	3.990	I	O	|	|	|	3.37
27.083	0.00	0.63	3.986	I	O	|	|	|	3.37
27.167	0.00	0.63	3.981	I	O	|	|	|	3.36
27.250	0.00	0.63	3.977	I	O	|	|	|	3.36
27.333	0.00	0.63	3.972	I	O	|	|	|	3.36
27.417	0.00	0.63	3.968	I	O	|	|	|	3.35
27.500	0.00	0.63	3.964	I	O	|	|	|	3.35
27.583	0.00	0.63	3.959	I	O	|	|	|	3.35
27.667	0.00	0.63	3.955	I	O	|	|	|	3.34
27.750	0.00	0.63	3.951	I	O	|	|	|	3.34
27.833	0.00	0.63	3.946	I	O	|	|	|	3.34
27.917	0.00	0.63	3.942	I	O	|	|	|	3.34
28.000	0.00	0.63	3.938	I	O	|	|	|	3.33
28.083	0.00	0.63	3.933	I	O	|	|	|	3.33
28.167	0.00	0.63	3.929	I	O	|	|	|	3.33
28.250	0.00	0.63	3.925	I	O	|	|	|	3.32
28.333	0.00	0.63	3.920	I	O	|	|	|	3.32
28.417	0.00	0.63	3.916	I	O	|	|	|	3.32
28.500	0.00	0.63	3.912	I	O	|	|	|	3.31
28.583	0.00	0.63	3.907	I	O	|	|	|	3.31
28.667	0.00	0.63	3.903	I	O	|	|	|	3.31
28.750	0.00	0.63	3.899	I	O	|	|	|	3.31
28.833	0.00	0.63	3.894	I	O	|	|	|	3.30
28.917	0.00	0.63	3.890	I	O	|	|	|	3.30
29.000	0.00	0.63	3.886	I	O	|	|	|	3.30
29.083	0.00	0.63	3.881	I	O	|	|	|	3.29
29.167	0.00	0.63	3.877	I	O	|	|	|	3.29
29.250	0.00	0.63	3.873	I	O	|	|	|	3.29
29.333	0.00	0.63	3.868	I	O	|	|	|	3.28
29.417	0.00	0.63	3.864	I	O	|	|	|	3.28
29.500	0.00	0.63	3.860	I	O	|	|	|	3.28
29.583	0.00	0.63	3.855	I	O	|	|	|	3.28
29.667	0.00	0.63	3.851	I	O	|	|	|	3.27
29.750	0.00	0.63	3.847	I	O	|	|	|	3.27
29.833	0.00	0.62	3.842	I	O	|	|	|	3.27
29.917	0.00	0.62	3.838	I	O	|	|	|	3.26
30.000	0.00	0.62	3.834	I	O	|	|	|	3.26
30.083	0.00	0.62	3.830	I	O	|	|	|	3.26
30.167	0.00	0.62	3.825	I	O	|	|	|	3.26
30.250	0.00	0.62	3.821	I	O	|	|	|	3.25
30.333	0.00	0.62	3.817	I	O	|	|	|	3.25
30.417	0.00	0.62	3.812	I	O	|	|	|	3.25
30.500	0.00	0.62	3.808	I	O	|	|	|	3.24

30.583	0.00	0.62	3.804	I	O	|	|	|	3.24
30.667	0.00	0.62	3.799	I	O	|	|	|	3.24
30.750	0.00	0.62	3.795	I	O	|	|	|	3.23
30.833	0.00	0.62	3.791	I	O	|	|	|	3.23
30.917	0.00	0.62	3.787	I	O	|	|	|	3.23
31.000	0.00	0.62	3.782	I	O	|	|	|	3.23
31.083	0.00	0.62	3.778	I	O	|	|	|	3.22
31.167	0.00	0.62	3.774	I	O	|	|	|	3.22
31.250	0.00	0.62	3.770	I	O	|	|	|	3.22
31.333	0.00	0.62	3.765	I	O	|	|	|	3.21
31.417	0.00	0.62	3.761	I	O	|	|	|	3.21
31.500	0.00	0.62	3.757	I	O	|	|	|	3.21
31.583	0.00	0.62	3.753	I	O	|	|	|	3.21
31.667	0.00	0.62	3.748	I	O	|	|	|	3.20
31.750	0.00	0.62	3.744	I	O	|	|	|	3.20
31.833	0.00	0.62	3.740	I	O	|	|	|	3.20
31.917	0.00	0.62	3.735	I	O	|	|	|	3.19
32.000	0.00	0.62	3.731	I	O	|	|	|	3.19
32.083	0.00	0.62	3.727	I	O	|	|	|	3.19
32.167	0.00	0.62	3.723	I	O	|	|	|	3.19
32.250	0.00	0.62	3.718	I	O	|	|	|	3.18
32.333	0.00	0.62	3.714	I	O	|	|	|	3.18
32.417	0.00	0.62	3.710	I	O	|	|	|	3.18
32.500	0.00	0.62	3.706	I	O	|	|	|	3.17
32.583	0.00	0.62	3.702	I	O	|	|	|	3.17
32.667	0.00	0.61	3.697	I	O	|	|	|	3.17
32.750	0.00	0.61	3.693	I	O	|	|	|	3.16
32.833	0.00	0.61	3.689	I	O	|	|	|	3.16
32.917	0.00	0.61	3.685	I	O	|	|	|	3.16
33.000	0.00	0.61	3.680	I	O	|	|	|	3.16
33.083	0.00	0.61	3.676	I	O	|	|	|	3.15
33.167	0.00	0.61	3.672	I	O	|	|	|	3.15
33.250	0.00	0.61	3.668	I	O	|	|	|	3.15
33.333	0.00	0.61	3.663	I	O	|	|	|	3.14
33.417	0.00	0.61	3.659	I	O	|	|	|	3.14
33.500	0.00	0.61	3.655	I	O	|	|	|	3.14
33.583	0.00	0.61	3.651	I	O	|	|	|	3.14
33.667	0.00	0.61	3.647	I	O	|	|	|	3.13
33.750	0.00	0.61	3.642	I	O	|	|	|	3.13
33.833	0.00	0.61	3.638	I	O	|	|	|	3.13
33.917	0.00	0.61	3.634	I	O	|	|	|	3.12
34.000	0.00	0.61	3.630	I	O	|	|	|	3.12
34.083	0.00	0.61	3.626	I	O	|	|	|	3.12
34.167	0.00	0.61	3.621	I	O	|	|	|	3.12
34.250	0.00	0.61	3.617	I	O	|	|	|	3.11
34.333	0.00	0.61	3.613	I	O	|	|	|	3.11
34.417	0.00	0.61	3.609	I	O	|	|	|	3.11
34.500	0.00	0.61	3.605	I	O	|	|	|	3.10
34.583	0.00	0.61	3.600	I	O	|	|	|	3.10
34.667	0.00	0.61	3.596	I	O	|	|	|	3.10
34.750	0.00	0.61	3.592	I	O	|	|	|	3.10
34.833	0.00	0.61	3.588	I	O	|	|	|	3.09
34.917	0.00	0.61	3.584	I	O	|	|	|	3.09
35.000	0.00	0.61	3.580	I	O	|	|	|	3.09
35.083	0.00	0.61	3.575	I	O	|	|	|	3.08
35.167	0.00	0.61	3.571	I	O	|	|	|	3.08
35.250	0.00	0.61	3.567	I	O	|	|	|	3.08
35.333	0.00	0.61	3.563	I	O	|	|	|	3.08
35.417	0.00	0.61	3.559	I	O	|	|	|	3.07
35.500	0.00	0.60	3.555	I	O	|	|	|	3.07
35.583	0.00	0.60	3.550	I	O	|	|	|	3.07
35.667	0.00	0.60	3.546	I	O	|	|	|	3.06
35.750	0.00	0.60	3.542	I	O	|	|	|	3.06
35.833	0.00	0.60	3.538	I	O	|	|	|	3.06
35.917	0.00	0.60	3.534	I	O	|	|	|	3.06
36.000	0.00	0.60	3.530	I	O	|	|	|	3.05
36.083	0.00	0.60	3.525	I	O	|	|	|	3.05
36.167	0.00	0.60	3.521	I	O	|	|	|	3.05
36.250	0.00	0.60	3.517	I	O	|	|	|	3.04
36.333	0.00	0.60	3.513	I	O	|	|	|	3.04
36.417	0.00	0.60	3.509	I	O	|	|	|	3.04
36.500	0.00	0.60	3.505	I	O	|	|	|	3.04
36.583	0.00	0.60	3.501	I	O	|	|	|	3.03
36.667	0.00	0.60	3.496	I	O	|	|	|	3.03
36.750	0.00	0.60	3.492	I	O	|	|	|	3.03

36.833	0.00	0.60	3.488	I O	|	|	|	3.02
36.917	0.00	0.60	3.484	I O	|	|	|	3.02
37.000	0.00	0.60	3.480	I O	|	|	|	3.02
37.083	0.00	0.60	3.476	I O	|	|	|	3.02
37.167	0.00	0.60	3.472	I O	|	|	|	3.01
37.250	0.00	0.60	3.467	I O	|	|	|	3.01
37.333	0.00	0.60	3.463	I O	|	|	|	3.01
37.417	0.00	0.60	3.459	I O	|	|	|	3.00
37.500	0.00	0.60	3.455	I O	|	|	|	3.00
37.583	0.00	0.60	3.451	I O	|	|	|	3.00
37.667	0.00	0.60	3.447	I O	|	|	|	3.00
37.750	0.00	0.60	3.443	I O	|	|	|	2.99
37.833	0.00	0.60	3.439	I O	|	|	|	2.99
37.917	0.00	0.60	3.435	I O	|	|	|	2.99
38.000	0.00	0.60	3.430	I O	|	|	|	2.98
38.083	0.00	0.60	3.426	I O	|	|	|	2.98
38.167	0.00	0.60	3.422	I O	|	|	|	2.98
38.250	0.00	0.60	3.418	I O	|	|	|	2.98
38.333	0.00	0.59	3.414	I O	|	|	|	2.97
38.417	0.00	0.59	3.410	I O	|	|	|	2.97
38.500	0.00	0.59	3.406	I O	|	|	|	2.97
38.583	0.00	0.59	3.402	I O	|	|	|	2.96
38.667	0.00	0.59	3.398	I O	|	|	|	2.96
38.750	0.00	0.59	3.394	I O	|	|	|	2.96
38.833	0.00	0.59	3.389	I O	|	|	|	2.96
38.917	0.00	0.59	3.385	I O	|	|	|	2.95
39.000	0.00	0.59	3.381	I O	|	|	|	2.95
39.083	0.00	0.59	3.377	I O	|	|	|	2.95
39.167	0.00	0.59	3.373	I O	|	|	|	2.94
39.250	0.00	0.59	3.369	I O	|	|	|	2.94
39.333	0.00	0.59	3.365	I O	|	|	|	2.94
39.417	0.00	0.59	3.361	I O	|	|	|	2.93
39.500	0.00	0.59	3.357	I O	|	|	|	2.93
39.583	0.00	0.59	3.353	I O	|	|	|	2.93
39.667	0.00	0.59	3.349	I O	|	|	|	2.93
39.750	0.00	0.59	3.345	I O	|	|	|	2.92
39.833	0.00	0.59	3.341	I O	|	|	|	2.92
39.917	0.00	0.59	3.337	I O	|	|	|	2.92
40.000	0.00	0.59	3.332	I O	|	|	|	2.91
40.083	0.00	0.59	3.328	I O	|	|	|	2.91
40.167	0.00	0.59	3.324	I O	|	|	|	2.91
40.250	0.00	0.59	3.320	I O	|	|	|	2.91
40.333	0.00	0.59	3.316	I O	|	|	|	2.90
40.417	0.00	0.59	3.312	I O	|	|	|	2.90
40.500	0.00	0.59	3.308	I O	|	|	|	2.90
40.583	0.00	0.59	3.304	I O	|	|	|	2.89
40.667	0.00	0.59	3.300	I O	|	|	|	2.89
40.750	0.00	0.59	3.296	I O	|	|	|	2.89
40.833	0.00	0.59	3.292	I O	|	|	|	2.89
40.917	0.00	0.59	3.288	I O	|	|	|	2.88
41.000	0.00	0.58	3.284	I O	|	|	|	2.88
41.083	0.00	0.58	3.280	I O	|	|	|	2.88
41.167	0.00	0.58	3.276	I O	|	|	|	2.87
41.250	0.00	0.58	3.272	I O	|	|	|	2.87
41.333	0.00	0.58	3.268	I O	|	|	|	2.87
41.417	0.00	0.58	3.264	I O	|	|	|	2.87
41.500	0.00	0.58	3.260	I O	|	|	|	2.86
41.583	0.00	0.58	3.256	I O	|	|	|	2.86
41.667	0.00	0.58	3.252	I O	|	|	|	2.86
41.750	0.00	0.58	3.248	I O	|	|	|	2.86
41.833	0.00	0.58	3.244	I O	|	|	|	2.85
41.917	0.00	0.58	3.240	I O	|	|	|	2.85
42.000	0.00	0.58	3.236	I O	|	|	|	2.85
42.083	0.00	0.58	3.232	I O	|	|	|	2.84
42.167	0.00	0.58	3.228	I O	|	|	|	2.84
42.250	0.00	0.58	3.224	I O	|	|	|	2.84
42.333	0.00	0.58	3.220	I O	|	|	|	2.84
42.417	0.00	0.58	3.216	I O	|	|	|	2.83
42.500	0.00	0.58	3.212	I O	|	|	|	2.83
42.583	0.00	0.58	3.208	I O	|	|	|	2.83
42.667	0.00	0.58	3.204	I O	|	|	|	2.82
42.750	0.00	0.58	3.200	I O	|	|	|	2.82
42.833	0.00	0.58	3.196	I O	|	|	|	2.82
42.917	0.00	0.58	3.192	I O	|	|	|	2.82
43.000	0.00	0.58	3.188	I O	|	|	|	2.81

43.083	0.00	0.58	3.184	I O	|	|	|	2.81
43.167	0.00	0.58	3.180	I O	|	|	|	2.81
43.250	0.00	0.58	3.176	I O	|	|	|	2.80
43.333	0.00	0.58	3.172	I O	|	|	|	2.80
43.417	0.00	0.58	3.168	I O	|	|	|	2.80
43.500	0.00	0.58	3.164	I O	|	|	|	2.80
43.583	0.00	0.58	3.160	I O	|	|	|	2.79
43.667	0.00	0.57	3.156	I O	|	|	|	2.79
43.750	0.00	0.57	3.152	I O	|	|	|	2.79
43.833	0.00	0.57	3.148	I O	|	|	|	2.78
43.917	0.00	0.57	3.144	I O	|	|	|	2.78
44.000	0.00	0.57	3.140	I O	|	|	|	2.78
44.083	0.00	0.57	3.136	I O	|	|	|	2.78
44.167	0.00	0.57	3.132	I O	|	|	|	2.77
44.250	0.00	0.57	3.129	I O	|	|	|	2.77
44.333	0.00	0.57	3.125	I O	|	|	|	2.77
44.417	0.00	0.57	3.121	I O	|	|	|	2.77
44.500	0.00	0.57	3.117	I O	|	|	|	2.76
44.583	0.00	0.57	3.113	I O	|	|	|	2.76
44.667	0.00	0.57	3.109	I O	|	|	|	2.76
44.750	0.00	0.57	3.105	I O	|	|	|	2.75
44.833	0.00	0.57	3.101	I O	|	|	|	2.75
44.917	0.00	0.57	3.097	I O	|	|	|	2.75
45.000	0.00	0.57	3.093	I O	|	|	|	2.75
45.083	0.00	0.57	3.089	I O	|	|	|	2.74
45.167	0.00	0.57	3.085	I O	|	|	|	2.74
45.250	0.00	0.57	3.081	I O	|	|	|	2.74
45.333	0.00	0.57	3.077	I O	|	|	|	2.73
45.417	0.00	0.57	3.073	I O	|	|	|	2.73
45.500	0.00	0.57	3.070	I O	|	|	|	2.73
45.583	0.00	0.57	3.066	I O	|	|	|	2.73
45.667	0.00	0.57	3.062	I O	|	|	|	2.72
45.750	0.00	0.57	3.058	I O	|	|	|	2.72
45.833	0.00	0.57	3.054	I O	|	|	|	2.72
45.917	0.00	0.57	3.050	I O	|	|	|	2.72
46.000	0.00	0.57	3.046	I O	|	|	|	2.71
46.083	0.00	0.57	3.042	I O	|	|	|	2.71
46.167	0.00	0.57	3.038	I O	|	|	|	2.71
46.250	0.00	0.57	3.034	I O	|	|	|	2.70
46.333	0.00	0.57	3.031	I O	|	|	|	2.70
46.417	0.00	0.56	3.027	I O	|	|	|	2.70
46.500	0.00	0.56	3.023	I O	|	|	|	2.70
46.583	0.00	0.56	3.019	I O	|	|	|	2.69
46.667	0.00	0.56	3.015	I O	|	|	|	2.69
46.750	0.00	0.56	3.011	I O	|	|	|	2.69
46.833	0.00	0.56	3.007	I O	|	|	|	2.69
46.917	0.00	0.56	3.003	I O	|	|	|	2.68
47.000	0.00	0.56	2.999	I O	|	|	|	2.68
47.083	0.00	0.56	2.996	I O	|	|	|	2.68
47.167	0.00	0.56	2.992	I O	|	|	|	2.67
47.250	0.00	0.56	2.988	I O	|	|	|	2.67
47.333	0.00	0.56	2.984	I O	|	|	|	2.67
47.417	0.00	0.56	2.980	I O	|	|	|	2.67
47.500	0.00	0.56	2.976	I O	|	|	|	2.66
47.583	0.00	0.56	2.972	I O	|	|	|	2.66
47.667	0.00	0.56	2.969	I O	|	|	|	2.66
47.750	0.00	0.56	2.965	I O	|	|	|	2.66
47.833	0.00	0.56	2.961	I O	|	|	|	2.65
47.917	0.00	0.56	2.957	I O	|	|	|	2.65
48.000	0.00	0.56	2.953	I O	|	|	|	2.65
48.083	0.00	0.56	2.949	I O	|	|	|	2.64
48.167	0.00	0.56	2.945	I O	|	|	|	2.64
48.250	0.00	0.56	2.942	I O	|	|	|	2.64
48.333	0.00	0.56	2.938	I O	|	|	|	2.64
48.417	0.00	0.56	2.934	I O	|	|	|	2.63
48.500	0.00	0.56	2.930	I O	|	|	|	2.63
48.583	0.00	0.56	2.926	I O	|	|	|	2.63
48.667	0.00	0.56	2.922	I O	|	|	|	2.63
48.750	0.00	0.56	2.919	I O	|	|	|	2.62
48.833	0.00	0.56	2.915	I O	|	|	|	2.62
48.917	0.00	0.56	2.911	I O	|	|	|	2.62
49.000	0.00	0.56	2.907	I O	|	|	|	2.61
49.083	0.00	0.56	2.903	I O	|	|	|	2.61
49.167	0.00	0.55	2.899	I O	|	|	|	2.61
49.250	0.00	0.55	2.896	I O	|	|	|	2.61

49.333	0.00	0.55	2.892	I O	|	|	|	2.60
49.417	0.00	0.55	2.888	I O	|	|	|	2.60
49.500	0.00	0.55	2.884	I O	|	|	|	2.60
49.583	0.00	0.55	2.880	I O	|	|	|	2.60
49.667	0.00	0.55	2.877	I O	|	|	|	2.59
49.750	0.00	0.55	2.873	I O	|	|	|	2.59
49.833	0.00	0.55	2.869	I O	|	|	|	2.59
49.917	0.00	0.55	2.865	I O	|	|	|	2.58
50.000	0.00	0.55	2.861	I O	|	|	|	2.58
50.083	0.00	0.55	2.857	I O	|	|	|	2.58
50.167	0.00	0.55	2.854	I O	|	|	|	2.58
50.250	0.00	0.55	2.850	I O	|	|	|	2.57
50.333	0.00	0.55	2.846	I O	|	|	|	2.57
50.417	0.00	0.55	2.842	I O	|	|	|	2.57
50.500	0.00	0.55	2.839	I O	|	|	|	2.57
50.583	0.00	0.55	2.835	I O	|	|	|	2.56
50.667	0.00	0.55	2.831	I O	|	|	|	2.56
50.750	0.00	0.55	2.827	I O	|	|	|	2.56
50.833	0.00	0.55	2.823	I O	|	|	|	2.56
50.917	0.00	0.55	2.820	I O	|	|	|	2.55
51.000	0.00	0.55	2.816	I O	|	|	|	2.55
51.083	0.00	0.55	2.812	I O	|	|	|	2.55
51.167	0.00	0.55	2.808	I O	|	|	|	2.54
51.250	0.00	0.55	2.804	I O	|	|	|	2.54
51.333	0.00	0.55	2.801	I O	|	|	|	2.54
51.417	0.00	0.55	2.797	I O	|	|	|	2.54
51.500	0.00	0.55	2.793	I O	|	|	|	2.53
51.583	0.00	0.55	2.789	I O	|	|	|	2.53
51.667	0.00	0.55	2.786	I O	|	|	|	2.53
51.750	0.00	0.55	2.782	I O	|	|	|	2.53
51.833	0.00	0.55	2.778	I O	|	|	|	2.52
51.917	0.00	0.55	2.774	I O	|	|	|	2.52
52.000	0.00	0.54	2.771	I O	|	|	|	2.52
52.083	0.00	0.54	2.767	I O	|	|	|	2.52
52.167	0.00	0.54	2.763	I O	|	|	|	2.51
52.250	0.00	0.54	2.759	I O	|	|	|	2.51
52.333	0.00	0.54	2.756	I O	|	|	|	2.51
52.417	0.00	0.54	2.752	I O	|	|	|	2.50
52.500	0.00	0.54	2.748	I O	|	|	|	2.50
52.583	0.00	0.54	2.744	I O	|	|	|	2.50
52.667	0.00	0.54	2.741	I O	|	|	|	2.50
52.750	0.00	0.54	2.737	I O	|	|	|	2.49
52.833	0.00	0.54	2.733	I O	|	|	|	2.49
52.917	0.00	0.54	2.729	I O	|	|	|	2.49
53.000	0.00	0.54	2.726	I O	|	|	|	2.49
53.083	0.00	0.54	2.722	I O	|	|	|	2.48
53.167	0.00	0.54	2.718	I O	|	|	|	2.48
53.250	0.00	0.54	2.715	I O	|	|	|	2.48
53.333	0.00	0.54	2.711	I O	|	|	|	2.47
53.417	0.00	0.54	2.707	I O	|	|	|	2.47
53.500	0.00	0.54	2.703	I O	|	|	|	2.47
53.583	0.00	0.54	2.700	I O	|	|	|	2.47
53.667	0.00	0.54	2.696	I O	|	|	|	2.46
53.750	0.00	0.54	2.692	I O	|	|	|	2.46
53.833	0.00	0.54	2.689	I O	|	|	|	2.46
53.917	0.00	0.54	2.685	I O	|	|	|	2.46
54.000	0.00	0.54	2.681	I O	|	|	|	2.45
54.083	0.00	0.54	2.677	I O	|	|	|	2.45
54.167	0.00	0.54	2.674	I O	|	|	|	2.45
54.250	0.00	0.54	2.670	I O	|	|	|	2.44
54.333	0.00	0.54	2.666	I O	|	|	|	2.44
54.417	0.00	0.54	2.663	I O	|	|	|	2.44
54.500	0.00	0.54	2.659	I O	|	|	|	2.44
54.583	0.00	0.53	2.655	I O	|	|	|	2.43
54.667	0.00	0.53	2.652	I O	|	|	|	2.43
54.750	0.00	0.53	2.648	I O	|	|	|	2.43
54.833	0.00	0.53	2.644	I O	|	|	|	2.43
54.917	0.00	0.53	2.641	I O	|	|	|	2.42
55.000	0.00	0.53	2.637	I O	|	|	|	2.42
55.083	0.00	0.53	2.633	I O	|	|	|	2.42
55.167	0.00	0.53	2.630	I O	|	|	|	2.42
55.250	0.00	0.53	2.626	I O	|	|	|	2.41
55.333	0.00	0.53	2.622	I O	|	|	|	2.41
55.417	0.00	0.53	2.619	I O	|	|	|	2.41
55.500	0.00	0.53	2.615	I O	|	|	|	2.40

55.583	0.00	0.53	2.611	I O	|	|	|	2.40
55.667	0.00	0.53	2.608	I O	|	|	|	2.40
55.750	0.00	0.53	2.604	I O	|	|	|	2.40
55.833	0.00	0.53	2.600	I O	|	|	|	2.39
55.917	0.00	0.53	2.597	I O	|	|	|	2.39
56.000	0.00	0.53	2.593	I O	|	|	|	2.39
56.083	0.00	0.53	2.589	I O	|	|	|	2.39
56.167	0.00	0.53	2.586	I O	|	|	|	2.38
56.250	0.00	0.53	2.582	I O	|	|	|	2.38
56.333	0.00	0.53	2.578	I O	|	|	|	2.38
56.417	0.00	0.53	2.575	I O	|	|	|	2.37
56.500	0.00	0.53	2.571	I O	|	|	|	2.37
56.583	0.00	0.53	2.568	I O	|	|	|	2.37
56.667	0.00	0.53	2.564	I O	|	|	|	2.37
56.750	0.00	0.53	2.560	I O	|	|	|	2.36
56.833	0.00	0.53	2.557	I O	|	|	|	2.36
56.917	0.00	0.53	2.553	I O	|	|	|	2.36
57.000	0.00	0.53	2.549	I O	|	|	|	2.36
57.083	0.00	0.53	2.546	I O	|	|	|	2.35
57.167	0.00	0.52	2.542	I O	|	|	|	2.35
57.250	0.00	0.52	2.539	I O	|	|	|	2.35
57.333	0.00	0.52	2.535	I O	|	|	|	2.35
57.417	0.00	0.52	2.531	I O	|	|	|	2.34
57.500	0.00	0.52	2.528	I O	|	|	|	2.34
57.583	0.00	0.52	2.524	I O	|	|	|	2.34
57.667	0.00	0.52	2.521	I O	|	|	|	2.33
57.750	0.00	0.52	2.517	I O	|	|	|	2.33
57.833	0.00	0.52	2.513	I O	|	|	|	2.33
57.917	0.00	0.52	2.510	I O	|	|	|	2.33
58.000	0.00	0.52	2.506	I O	|	|	|	2.32
58.083	0.00	0.52	2.503	I O	|	|	|	2.32
58.167	0.00	0.52	2.499	I O	|	|	|	2.32
58.250	0.00	0.52	2.495	I O	|	|	|	2.32
58.333	0.00	0.52	2.492	I O	|	|	|	2.31
58.417	0.00	0.52	2.488	I O	|	|	|	2.31
58.500	0.00	0.52	2.485	I O	|	|	|	2.31
58.583	0.00	0.52	2.481	I O	|	|	|	2.31
58.667	0.00	0.52	2.477	I O	|	|	|	2.30
58.750	0.00	0.52	2.474	I O	|	|	|	2.30
58.833	0.00	0.52	2.470	I O	|	|	|	2.30
58.917	0.00	0.52	2.467	I O	|	|	|	2.30
59.000	0.00	0.52	2.463	I O	|	|	|	2.29
59.083	0.00	0.52	2.460	I O	|	|	|	2.29
59.167	0.00	0.52	2.456	I O	|	|	|	2.29
59.250	0.00	0.52	2.453	I O	|	|	|	2.28
59.333	0.00	0.52	2.449	I O	|	|	|	2.28
59.417	0.00	0.52	2.445	I O	|	|	|	2.28
59.500	0.00	0.52	2.442	I O	|	|	|	2.28
59.583	0.00	0.52	2.438	I O	|	|	|	2.27
59.667	0.00	0.52	2.435	I O	|	|	|	2.27
59.750	0.00	0.51	2.431	I O	|	|	|	2.27
59.833	0.00	0.51	2.428	I O	|	|	|	2.27
59.917	0.00	0.51	2.424	I O	|	|	|	2.26
60.000	0.00	0.51	2.421	I O	|	|	|	2.26
60.083	0.00	0.51	2.417	I O	|	|	|	2.26
60.167	0.00	0.51	2.414	IO	|	|	|	2.26
60.250	0.00	0.51	2.410	IO	|	|	|	2.25
60.333	0.00	0.51	2.406	IO	|	|	|	2.25
60.417	0.00	0.51	2.403	IO	|	|	|	2.25
60.500	0.00	0.51	2.399	IO	|	|	|	2.25
60.583	0.00	0.51	2.396	IO	|	|	|	2.24
60.667	0.00	0.51	2.392	IO	|	|	|	2.24
60.750	0.00	0.51	2.389	IO	|	|	|	2.24
60.833	0.00	0.51	2.385	IO	|	|	|	2.24
60.917	0.00	0.51	2.382	IO	|	|	|	2.23
61.000	0.00	0.51	2.378	IO	|	|	|	2.23
61.083	0.00	0.51	2.375	IO	|	|	|	2.23
61.167	0.00	0.51	2.371	IO	|	|	|	2.23
61.250	0.00	0.51	2.368	IO	|	|	|	2.22
61.333	0.00	0.51	2.364	IO	|	|	|	2.22
61.417	0.00	0.51	2.361	IO	|	|	|	2.22
61.500	0.00	0.51	2.357	IO	|	|	|	2.21
61.583	0.00	0.51	2.354	IO	|	|	|	2.21
61.667	0.00	0.51	2.350	IO	|	|	|	2.21
61.750	0.00	0.51	2.347	IO	|	|	|	2.21

61.833	0.00	0.51	2.343	IO					2.20
61.917	0.00	0.51	2.340	IO					2.20
62.000	0.00	0.51	2.336	IO					2.20
62.083	0.00	0.51	2.333	IO					2.20
62.167	0.00	0.51	2.329	IO					2.19
62.250	0.00	0.51	2.326	IO					2.19
62.333	0.00	0.51	2.322	IO					2.19
62.417	0.00	0.50	2.319	IO					2.19
62.500	0.00	0.50	2.315	IO					2.18
62.583	0.00	0.50	2.312	IO					2.18
62.667	0.00	0.50	2.308	IO					2.18
62.750	0.00	0.50	2.305	IO					2.18
62.833	0.00	0.50	2.302	IO					2.17
62.917	0.00	0.50	2.298	IO					2.17
63.000	0.00	0.50	2.295	IO					2.17
63.083	0.00	0.50	2.291	IO					2.17
63.167	0.00	0.50	2.288	IO					2.16
63.250	0.00	0.50	2.284	IO					2.16
63.333	0.00	0.50	2.281	IO					2.16
63.417	0.00	0.50	2.277	IO					2.16
63.500	0.00	0.50	2.274	IO					2.15
63.583	0.00	0.50	2.270	IO					2.15
63.667	0.00	0.50	2.267	IO					2.15
63.750	0.00	0.50	2.264	IO					2.15
63.833	0.00	0.50	2.260	IO					2.14
63.917	0.00	0.50	2.257	IO					2.14
64.000	0.00	0.50	2.253	IO					2.14
64.083	0.00	0.50	2.250	IO					2.14
64.167	0.00	0.50	2.246	IO					2.13
64.250	0.00	0.50	2.243	IO					2.13
64.333	0.00	0.50	2.239	IO					2.13
64.417	0.00	0.50	2.236	IO					2.13
64.500	0.00	0.50	2.233	IO					2.12
64.583	0.00	0.50	2.229	IO					2.12
64.667	0.00	0.50	2.226	IO					2.12
64.750	0.00	0.50	2.222	IO					2.12
64.833	0.00	0.50	2.219	IO					2.11
64.917	0.00	0.50	2.216	IO					2.11
65.000	0.00	0.50	2.212	IO					2.11
65.083	0.00	0.49	2.209	IO					2.11
65.167	0.00	0.49	2.205	IO					2.10
65.250	0.00	0.49	2.202	IO					2.10
65.333	0.00	0.49	2.198	IO					2.10
65.417	0.00	0.49	2.195	IO					2.10
65.500	0.00	0.49	2.192	IO					2.09
65.583	0.00	0.49	2.188	IO					2.09
65.667	0.00	0.49	2.185	IO					2.09
65.750	0.00	0.49	2.182	IO					2.09
65.833	0.00	0.49	2.178	IO					2.08
65.917	0.00	0.49	2.175	IO					2.08
66.000	0.00	0.49	2.171	IO					2.08
66.083	0.00	0.49	2.168	IO					2.08
66.167	0.00	0.49	2.165	IO					2.07
66.250	0.00	0.49	2.161	IO					2.07
66.333	0.00	0.49	2.158	IO					2.07
66.417	0.00	0.49	2.154	IO					2.07
66.500	0.00	0.49	2.151	IO					2.06
66.583	0.00	0.49	2.148	IO					2.06
66.667	0.00	0.49	2.144	IO					2.06
66.750	0.00	0.49	2.141	IO					2.06
66.833	0.00	0.49	2.138	IO					2.05
66.917	0.00	0.49	2.134	IO					2.05
67.000	0.00	0.49	2.131	IO					2.05
67.083	0.00	0.49	2.128	IO					2.05
67.167	0.00	0.49	2.124	IO					2.04
67.250	0.00	0.49	2.121	IO					2.04
67.333	0.00	0.49	2.117	IO					2.04
67.417	0.00	0.49	2.114	IO					2.04
67.500	0.00	0.49	2.111	IO					2.03
67.583	0.00	0.49	2.107	IO					2.03
67.667	0.00	0.49	2.104	IO					2.03
67.750	0.00	0.49	2.101	IO					2.03
67.833	0.00	0.48	2.097	IO					2.02
67.917	0.00	0.48	2.094	IO					2.02
68.000	0.00	0.48	2.091	IO					2.02

68.083	0.00	0.48	2.087	IO					2.02
68.167	0.00	0.48	2.084	IO					2.01
68.250	0.00	0.48	2.081	IO					2.01
68.333	0.00	0.48	2.077	IO					2.01
68.417	0.00	0.48	2.074	IO					2.01
68.500	0.00	0.48	2.071	IO					2.00
68.583	0.00	0.48	2.067	IO					2.00
68.667	0.00	0.48	2.064	IO					2.00
68.750	0.00	0.48	2.061	IO					2.00
68.833	0.00	0.48	2.057	IO					1.99
68.917	0.00	0.48	2.054	IO					1.99
69.000	0.00	0.48	2.051	IO					1.99
69.083	0.00	0.48	2.048	IO					1.99
69.167	0.00	0.48	2.044	IO					1.98
69.250	0.00	0.48	2.041	IO					1.98
69.333	0.00	0.48	2.038	IO					1.98
69.417	0.00	0.48	2.034	IO					1.98
69.500	0.00	0.48	2.031	IO					1.97
69.583	0.00	0.48	2.028	IO					1.97
69.667	0.00	0.48	2.024	IO					1.97
69.750	0.00	0.48	2.021	IO					1.97
69.833	0.00	0.48	2.018	IO					1.96
69.917	0.00	0.48	2.015	IO					1.96
70.000	0.00	0.48	2.011	IO					1.96
70.083	0.00	0.48	2.008	IO					1.96
70.167	0.00	0.48	2.005	IO					1.95
70.250	0.00	0.48	2.001	IO					1.95
70.333	0.00	0.47	1.998	IO					1.95
70.417	0.00	0.47	1.995	IO					1.95
70.500	0.00	0.47	1.992	IO					1.94
70.583	0.00	0.47	1.988	IO					1.94
70.667	0.00	0.47	1.985	IO					1.94
70.750	0.00	0.47	1.982	IO					1.94
70.833	0.00	0.47	1.979	IO					1.93
70.917	0.00	0.47	1.975	IO					1.93
71.000	0.00	0.47	1.972	IO					1.93
71.083	0.00	0.47	1.969	IO					1.92
71.167	0.00	0.47	1.966	IO					1.92
71.250	0.00	0.47	1.962	IO					1.92
71.333	0.00	0.47	1.959	IO					1.92
71.417	0.00	0.47	1.956	IO					1.91
71.500	0.00	0.47	1.953	IO					1.91
71.583	0.00	0.47	1.949	IO					1.91
71.667	0.00	0.47	1.946	IO					1.91
71.750	0.00	0.47	1.943	IO					1.90
71.833	0.00	0.47	1.940	IO					1.90
71.917	0.00	0.47	1.937	IO					1.90
72.000	0.00	0.47	1.933	IO					1.90
72.083	0.00	0.47	1.930	IO					1.89
72.167	0.00	0.47	1.927	IO					1.89
72.250	0.00	0.47	1.924	IO					1.89
72.333	0.00	0.47	1.920	IO					1.89
72.417	0.00	0.47	1.917	IO					1.88
72.500	0.00	0.47	1.914	IO					1.88
72.583	0.00	0.47	1.911	IO					1.88
72.667	0.00	0.46	1.908	IO					1.88
72.750	0.00	0.46	1.904	IO					1.87
72.833	0.00	0.46	1.901	IO					1.87
72.917	0.00	0.46	1.898	IO					1.87
73.000	0.00	0.46	1.895	IO					1.87
73.083	0.00	0.46	1.892	IO					1.86
73.167	0.00	0.46	1.888	IO					1.86
73.250	0.00	0.46	1.885	IO					1.86
73.333	0.00	0.46	1.882	IO					1.86
73.417	0.00	0.46	1.879	IO					1.85
73.500	0.00	0.46	1.876	IO					1.85
73.583	0.00	0.46	1.873	IO					1.85
73.667	0.00	0.46	1.869	IO					1.85
73.750	0.00	0.46	1.866	IO					1.84
73.833	0.00	0.46	1.863	IO					1.84
73.917	0.00	0.46	1.860	IO					1.84
74.000	0.00	0.46	1.857	IO					1.84
74.083	0.00	0.46	1.854	IO					1.83
74.167	0.00	0.46	1.850	IO					1.83
74.250	0.00	0.46	1.847	IO					1.83

74.333	0.00	0.46	1.844	IO				1.83
74.417	0.00	0.46	1.841	IO				1.82
74.500	0.00	0.46	1.838	IO				1.82
74.583	0.00	0.46	1.835	IO				1.82
74.667	0.00	0.46	1.831	IO				1.82
74.750	0.00	0.46	1.828	IO				1.82
74.833	0.00	0.46	1.825	IO				1.81
74.917	0.00	0.46	1.822	IO				1.81
75.000	0.00	0.46	1.819	IO				1.81
75.083	0.00	0.45	1.816	IO				1.81
75.167	0.00	0.45	1.813	IO				1.80
75.250	0.00	0.45	1.810	IO				1.80
75.333	0.00	0.45	1.806	IO				1.80
75.417	0.00	0.45	1.803	IO				1.80
75.500	0.00	0.45	1.800	IO				1.79
75.583	0.00	0.45	1.797	IO				1.79
75.667	0.00	0.45	1.794	IO				1.79
75.750	0.00	0.45	1.791	IO				1.79
75.833	0.00	0.45	1.788	IO				1.78
75.917	0.00	0.45	1.785	IO				1.78
76.000	0.00	0.45	1.781	IO				1.78
76.083	0.00	0.45	1.778	IO				1.78
76.167	0.00	0.45	1.775	IO				1.77
76.250	0.00	0.45	1.772	IO				1.77
76.333	0.00	0.45	1.769	IO				1.77
76.417	0.00	0.45	1.766	IO				1.77
76.500	0.00	0.45	1.763	IO				1.76
76.583	0.00	0.45	1.760	IO				1.76
76.667	0.00	0.45	1.757	IO				1.76
76.750	0.00	0.45	1.754	IO				1.76
76.833	0.00	0.45	1.751	IO				1.75
76.917	0.00	0.45	1.747	IO				1.75
77.000	0.00	0.45	1.744	IO				1.75
77.083	0.00	0.45	1.741	IO				1.75
77.167	0.00	0.45	1.738	IO				1.74
77.250	0.00	0.45	1.735	IO				1.74
77.333	0.00	0.45	1.732	IO				1.74
77.417	0.00	0.45	1.729	IO				1.74
77.500	0.00	0.44	1.726	IO				1.74
77.583	0.00	0.44	1.723	IO				1.73
77.667	0.00	0.44	1.720	IO				1.73
77.750	0.00	0.44	1.717	IO				1.73
77.833	0.00	0.44	1.714	IO				1.73
77.917	0.00	0.44	1.711	IO				1.72
78.000	0.00	0.44	1.708	IO				1.72
78.083	0.00	0.44	1.705	IO				1.72
78.167	0.00	0.44	1.702	IO				1.72
78.250	0.00	0.44	1.698	IO				1.71
78.333	0.00	0.44	1.695	IO				1.71
78.417	0.00	0.44	1.692	IO				1.71
78.500	0.00	0.44	1.689	IO				1.71
78.583	0.00	0.44	1.686	IO				1.70
78.667	0.00	0.44	1.683	IO				1.70
78.750	0.00	0.44	1.680	IO				1.70
78.833	0.00	0.44	1.677	IO				1.70
78.917	0.00	0.44	1.674	IO				1.69
79.000	0.00	0.44	1.671	IO				1.69
79.083	0.00	0.44	1.668	IO				1.69
79.167	0.00	0.44	1.665	IO				1.69
79.250	0.00	0.44	1.662	IO				1.69
79.333	0.00	0.44	1.659	IO				1.68
79.417	0.00	0.44	1.656	IO				1.68
79.500	0.00	0.44	1.653	IO				1.68
79.583	0.00	0.44	1.650	IO				1.68
79.667	0.00	0.44	1.647	IO				1.67
79.750	0.00	0.44	1.644	IO				1.67
79.833	0.00	0.44	1.641	IO				1.67
79.917	0.00	0.44	1.638	IO				1.67
80.000	0.00	0.43	1.635	IO				1.66
80.083	0.00	0.43	1.632	IO				1.66
80.167	0.00	0.43	1.629	IO				1.66
80.250	0.00	0.43	1.626	IO				1.66
80.333	0.00	0.43	1.623	IO				1.65
80.417	0.00	0.43	1.620	IO				1.65
80.500	0.00	0.43	1.617	IO				1.65

80.583	0.00	0.43	1.614	IO					1.65
80.667	0.00	0.43	1.611	IO					1.65
80.750	0.00	0.43	1.608	IO					1.64
80.833	0.00	0.43	1.605	IO					1.64
80.917	0.00	0.43	1.602	IO					1.64
81.000	0.00	0.43	1.599	IO					1.64
81.083	0.00	0.43	1.596	IO					1.63
81.167	0.00	0.43	1.593	IO					1.63
81.250	0.00	0.43	1.590	IO					1.63
81.333	0.00	0.43	1.587	IO					1.63
81.417	0.00	0.43	1.584	IO					1.62
81.500	0.00	0.43	1.582	IO					1.62
81.583	0.00	0.43	1.579	IO					1.62
81.667	0.00	0.43	1.576	IO					1.62
81.750	0.00	0.43	1.573	IO					1.62
81.833	0.00	0.43	1.570	IO					1.61
81.917	0.00	0.43	1.567	IO					1.61
82.000	0.00	0.43	1.564	IO					1.61
82.083	0.00	0.43	1.561	IO					1.61
82.167	0.00	0.43	1.558	IO					1.60
82.250	0.00	0.43	1.555	IO					1.60
82.333	0.00	0.43	1.552	IO					1.60
82.417	0.00	0.43	1.549	IO					1.60
82.500	0.00	0.43	1.546	IO					1.59
82.583	0.00	0.42	1.543	IO					1.59
82.667	0.00	0.42	1.540	IO					1.59
82.750	0.00	0.42	1.537	IO					1.59
82.833	0.00	0.42	1.535	IO					1.59
82.917	0.00	0.42	1.532	IO					1.58
83.000	0.00	0.42	1.529	IO					1.58
83.083	0.00	0.42	1.526	IO					1.58
83.167	0.00	0.42	1.523	IO					1.58
83.250	0.00	0.42	1.520	IO					1.57
83.333	0.00	0.42	1.517	IO					1.57
83.417	0.00	0.42	1.514	IO					1.57
83.500	0.00	0.42	1.511	IO					1.57
83.583	0.00	0.42	1.508	IO					1.57
83.667	0.00	0.42	1.505	IO					1.56
83.750	0.00	0.42	1.503	IO					1.56
83.833	0.00	0.42	1.500	IO					1.56
83.917	0.00	0.42	1.497	IO					1.56
84.000	0.00	0.42	1.494	IO					1.55
84.083	0.00	0.42	1.491	IO					1.55
84.167	0.00	0.42	1.488	IO					1.55
84.250	0.00	0.42	1.485	IO					1.55
84.333	0.00	0.42	1.482	IO					1.54
84.417	0.00	0.42	1.479	IO					1.54
84.500	0.00	0.42	1.477	IO					1.54
84.583	0.00	0.42	1.474	IO					1.54
84.667	0.00	0.42	1.471	IO					1.54
84.750	0.00	0.42	1.468	IO					1.53
84.833	0.00	0.42	1.465	IO					1.53
84.917	0.00	0.42	1.462	IO					1.53
85.000	0.00	0.42	1.459	IO					1.53
85.083	0.00	0.42	1.456	IO					1.52
85.167	0.00	0.42	1.454	IO					1.52
85.250	0.00	0.41	1.451	IO					1.52
85.333	0.00	0.41	1.448	IO					1.52
85.417	0.00	0.41	1.445	IO					1.52
85.500	0.00	0.41	1.442	IO					1.51
85.583	0.00	0.41	1.439	IO					1.51
85.667	0.00	0.41	1.436	IO					1.51
85.750	0.00	0.41	1.434	IO					1.51
85.833	0.00	0.41	1.431	IO					1.50
85.917	0.00	0.41	1.428	IO					1.50
86.000	0.00	0.41	1.425	IO					1.50
86.083	0.00	0.41	1.422	IO					1.50
86.167	0.00	0.41	1.419	IO					1.50
86.250	0.00	0.41	1.417	IO					1.49
86.333	0.00	0.41	1.414	IO					1.49
86.417	0.00	0.41	1.411	IO					1.49
86.500	0.00	0.41	1.408	IO					1.49
86.583	0.00	0.41	1.405	IO					1.48
86.667	0.00	0.41	1.403	IO					1.48
86.750	0.00	0.41	1.400	IO					1.48

86.833	0.00	0.41	1.397	IO	|	|	|	1.48
86.917	0.00	0.41	1.394	IO	|	|	|	1.47
87.000	0.00	0.41	1.391	IO	|	|	|	1.47
87.083	0.00	0.41	1.388	IO	|	|	|	1.47
87.167	0.00	0.41	1.386	IO	|	|	|	1.47
87.250	0.00	0.41	1.383	IO	|	|	|	1.46
87.333	0.00	0.41	1.380	IO	|	|	|	1.46
87.417	0.00	0.41	1.377	IO	|	|	|	1.46
87.500	0.00	0.40	1.374	IO	|	|	|	1.46
87.583	0.00	0.40	1.372	IO	|	|	|	1.45
87.667	0.00	0.40	1.369	IO	|	|	|	1.45
87.750	0.00	0.40	1.366	IO	|	|	|	1.45
87.833	0.00	0.40	1.363	IO	|	|	|	1.45
87.917	0.00	0.40	1.361	IO	|	|	|	1.44
88.000	0.00	0.40	1.358	IO	|	|	|	1.44
88.083	0.00	0.40	1.355	IO	|	|	|	1.44
88.167	0.00	0.40	1.352	IO	|	|	|	1.44
88.250	0.00	0.40	1.350	IO	|	|	|	1.44
88.333	0.00	0.40	1.347	IO	|	|	|	1.43
88.417	0.00	0.40	1.344	IO	|	|	|	1.43
88.500	0.00	0.40	1.341	IO	|	|	|	1.43
88.583	0.00	0.40	1.339	IO	|	|	|	1.43
88.667	0.00	0.40	1.336	IO	|	|	|	1.42
88.750	0.00	0.40	1.333	IO	|	|	|	1.42
88.833	0.00	0.40	1.330	IO	|	|	|	1.42
88.917	0.00	0.40	1.328	IO	|	|	|	1.42
89.000	0.00	0.40	1.325	IO	|	|	|	1.41
89.083	0.00	0.40	1.322	IO	|	|	|	1.41
89.167	0.00	0.40	1.319	IO	|	|	|	1.41
89.250	0.00	0.40	1.317	IO	|	|	|	1.41
89.333	0.00	0.40	1.314	IO	|	|	|	1.40
89.417	0.00	0.40	1.311	IO	|	|	|	1.40
89.500	0.00	0.40	1.308	IO	|	|	|	1.40
89.583	0.00	0.39	1.306	IO	|	|	|	1.40
89.667	0.00	0.39	1.303	IO	|	|	|	1.40
89.750	0.00	0.39	1.300	IO	|	|	|	1.39
89.833	0.00	0.39	1.298	IO	|	|	|	1.39
89.917	0.00	0.39	1.295	IO	|	|	|	1.39
90.000	0.00	0.39	1.292	IO	|	|	|	1.39
90.083	0.00	0.39	1.289	IO	|	|	|	1.38
90.167	0.00	0.39	1.287	IO	|	|	|	1.38
90.250	0.00	0.39	1.284	IO	|	|	|	1.38
90.333	0.00	0.39	1.281	IO	|	|	|	1.38
90.417	0.00	0.39	1.279	IO	|	|	|	1.37
90.500	0.00	0.39	1.276	IO	|	|	|	1.37
90.583	0.00	0.39	1.273	IO	|	|	|	1.37
90.667	0.00	0.39	1.271	IO	|	|	|	1.37
90.750	0.00	0.39	1.268	IO	|	|	|	1.37
90.833	0.00	0.39	1.265	IO	|	|	|	1.36
90.917	0.00	0.39	1.263	IO	|	|	|	1.36
91.000	0.00	0.39	1.260	IO	|	|	|	1.36
91.083	0.00	0.39	1.257	IO	|	|	|	1.36
91.167	0.00	0.39	1.255	IO	|	|	|	1.35
91.250	0.00	0.39	1.252	IO	|	|	|	1.35
91.333	0.00	0.39	1.249	IO	|	|	|	1.35
91.417	0.00	0.39	1.247	IO	|	|	|	1.35
91.500	0.00	0.39	1.244	IO	|	|	|	1.34
91.583	0.00	0.39	1.241	IO	|	|	|	1.34
91.667	0.00	0.38	1.239	IO	|	|	|	1.34
91.750	0.00	0.38	1.236	IO	|	|	|	1.34
91.833	0.00	0.38	1.233	IO	|	|	|	1.34
91.917	0.00	0.38	1.231	IO	|	|	|	1.33
92.000	0.00	0.38	1.228	IO	|	|	|	1.33
92.083	0.00	0.38	1.225	IO	|	|	|	1.33
92.167	0.00	0.38	1.223	IO	|	|	|	1.33
92.250	0.00	0.38	1.220	IO	|	|	|	1.32
92.333	0.00	0.38	1.217	IO	|	|	|	1.32
92.417	0.00	0.38	1.215	IO	|	|	|	1.32
92.500	0.00	0.38	1.212	IO	|	|	|	1.32
92.583	0.00	0.38	1.210	IO	|	|	|	1.32
92.667	0.00	0.38	1.207	IO	|	|	|	1.31
92.750	0.00	0.38	1.204	IO	|	|	|	1.31
92.833	0.00	0.38	1.202	IO	|	|	|	1.31
92.917	0.00	0.38	1.199	IO	|	|	|	1.31
93.000	0.00	0.38	1.197	IO	|	|	|	1.30

93.083	0.00	0.38	1.194	IO				1.30
93.167	0.00	0.38	1.191	IO				1.30
93.250	0.00	0.38	1.189	IO				1.30
93.333	0.00	0.38	1.186	IO				1.30
93.417	0.00	0.38	1.184	IO				1.29
93.500	0.00	0.38	1.181	IO				1.29
93.583	0.00	0.38	1.178	IO				1.29
93.667	0.00	0.38	1.176	IO				1.29
93.750	0.00	0.38	1.173	IO				1.28
93.833	0.00	0.37	1.171	IO				1.28
93.917	0.00	0.37	1.168	IO				1.28
94.000	0.00	0.37	1.165	IO				1.28
94.083	0.00	0.37	1.163	IO				1.28
94.167	0.00	0.37	1.160	IO				1.27
94.250	0.00	0.37	1.158	IO				1.27
94.333	0.00	0.37	1.155	IO				1.27
94.417	0.00	0.37	1.153	IO				1.27
94.500	0.00	0.37	1.150	IO				1.26
94.583	0.00	0.37	1.147	IO				1.26
94.667	0.00	0.37	1.145	IO				1.26
94.750	0.00	0.37	1.142	IO				1.26
94.833	0.00	0.37	1.140	IO				1.26
94.917	0.00	0.37	1.137	IO				1.25
95.000	0.00	0.37	1.135	IO				1.25
95.083	0.00	0.37	1.132	IO				1.25
95.167	0.00	0.37	1.130	IO				1.25
95.250	0.00	0.37	1.127	IO				1.24
95.333	0.00	0.37	1.124	IO				1.24
95.417	0.00	0.37	1.122	IO				1.24
95.500	0.00	0.37	1.119	IO				1.24
95.583	0.00	0.37	1.117	IO				1.24
95.667	0.00	0.37	1.114	IO				1.23
95.750	0.00	0.37	1.112	IO				1.23
95.833	0.00	0.37	1.109	IO				1.23
95.917	0.00	0.37	1.107	IO				1.23
96.000	0.00	0.37	1.104	IO				1.23
96.083	0.00	0.36	1.102	IO				1.22
96.167	0.00	0.36	1.099	IO				1.22
96.250	0.00	0.36	1.097	IO				1.22
96.333	0.00	0.36	1.094	IO				1.22
96.417	0.00	0.36	1.092	IO				1.21
96.500	0.00	0.36	1.089	IO				1.21
96.583	0.00	0.36	1.087	IO				1.21
96.667	0.00	0.36	1.084	IO				1.21
96.750	0.00	0.36	1.082	IO				1.21
96.833	0.00	0.36	1.079	IO				1.20
96.917	0.00	0.36	1.077	IO				1.20
97.000	0.00	0.36	1.074	IO				1.20
97.083	0.00	0.36	1.072	IO				1.20
97.167	0.00	0.36	1.069	IO				1.20
97.250	0.00	0.36	1.067	IO				1.19
97.333	0.00	0.36	1.064	IO				1.19
97.417	0.00	0.36	1.062	IO				1.19
97.500	0.00	0.36	1.059	IO				1.19
97.583	0.00	0.36	1.057	IO				1.18
97.667	0.00	0.36	1.054	IO				1.18
97.750	0.00	0.36	1.052	IO				1.18
97.833	0.00	0.36	1.050	IO				1.18
97.917	0.00	0.36	1.047	IO				1.18
98.000	0.00	0.36	1.045	IO				1.17
98.083	0.00	0.36	1.042	IO				1.17
98.167	0.00	0.36	1.040	IO				1.17
98.250	0.00	0.36	1.037	IO				1.17
98.333	0.00	0.36	1.035	IO				1.17
98.417	0.00	0.35	1.032	IO				1.16
98.500	0.00	0.35	1.030	IO				1.16
98.583	0.00	0.35	1.027	IO				1.16
98.667	0.00	0.35	1.025	IO				1.16
98.750	0.00	0.35	1.023	IO				1.16
98.833	0.00	0.35	1.020	IO				1.15
98.917	0.00	0.35	1.018	IO				1.15
99.000	0.00	0.35	1.015	IO				1.15
99.083	0.00	0.35	1.013	IO				1.15
99.167	0.00	0.35	1.010	IO				1.15
99.250	0.00	0.35	1.008	IO				1.14

99.333	0.00	0.35	1.006	IO					1.14
99.417	0.00	0.35	1.003	IO					1.14
99.500	0.00	0.35	1.001	IO					1.14
99.583	0.00	0.35	0.998	IO					1.13
99.667	0.00	0.35	0.996	IO					1.13
99.750	0.00	0.35	0.994	IO					1.13
99.833	0.00	0.35	0.991	IO					1.13
99.917	0.00	0.35	0.989	IO					1.13
100.000	0.00	0.35	0.986	IO					1.12
100.083	0.00	0.35	0.984	IO					1.12
100.167	0.00	0.35	0.982	IO					1.12
100.250	0.00	0.35	0.979	IO					1.12
100.333	0.00	0.35	0.977	IO					1.12
100.417	0.00	0.35	0.974	IO					1.11
100.500	0.00	0.35	0.972	IO					1.11
100.583	0.00	0.35	0.970	IO					1.11
100.667	0.00	0.35	0.967	IO					1.11
100.750	0.00	0.35	0.965	IO					1.11
100.833	0.00	0.34	0.963	IO					1.10
100.917	0.00	0.34	0.960	IO					1.10
101.000	0.00	0.34	0.958	IO					1.10
101.083	0.00	0.34	0.955	IO					1.10
101.167	0.00	0.34	0.953	IO					1.10
101.250	0.00	0.34	0.951	IO					1.09
101.333	0.00	0.34	0.948	IO					1.09
101.417	0.00	0.34	0.946	IO					1.09
101.500	0.00	0.34	0.944	IO					1.09
101.583	0.00	0.34	0.941	IO					1.09
101.667	0.00	0.34	0.939	IO					1.08
101.750	0.00	0.34	0.937	IO					1.08
101.833	0.00	0.34	0.934	IO					1.08
101.917	0.00	0.34	0.932	IO					1.08
102.000	0.00	0.34	0.930	IO					1.08
102.083	0.00	0.34	0.927	IO					1.07
102.167	0.00	0.34	0.925	IO					1.07
102.250	0.00	0.34	0.923	IO					1.07
102.333	0.00	0.34	0.920	IO					1.07
102.417	0.00	0.34	0.918	IO					1.07
102.500	0.00	0.34	0.916	IO					1.06
102.583	0.00	0.34	0.913	IO					1.06
102.667	0.00	0.34	0.911	IO					1.06
102.750	0.00	0.34	0.909	IO					1.06
102.833	0.00	0.34	0.906	IO					1.06
102.917	0.00	0.34	0.904	IO					1.05
103.000	0.00	0.34	0.902	IO					1.05
103.083	0.00	0.34	0.899	IO					1.05
103.167	0.00	0.34	0.897	IO					1.05
103.250	0.00	0.33	0.895	IO					1.05
103.333	0.00	0.33	0.892	IO					1.04
103.417	0.00	0.33	0.890	IO					1.04
103.500	0.00	0.33	0.888	IO					1.04
103.583	0.00	0.33	0.885	IO					1.04
103.667	0.00	0.33	0.883	IO					1.04
103.750	0.00	0.33	0.881	IO					1.03
103.833	0.00	0.33	0.879	IO					1.03
103.917	0.00	0.33	0.876	IO					1.03
104.000	0.00	0.33	0.874	IO					1.03
104.083	0.00	0.33	0.872	IO					1.03
104.167	0.00	0.33	0.869	IO					1.02
104.250	0.00	0.33	0.867	IO					1.02
104.333	0.00	0.33	0.865	IO					1.02
104.417	0.00	0.33	0.863	IO					1.02
104.500	0.00	0.33	0.860	IO					1.02
104.583	0.00	0.33	0.858	IO					1.01
104.667	0.00	0.33	0.856	IO					1.01
104.750	0.00	0.33	0.854	IO					1.01
104.833	0.00	0.33	0.851	IO					1.01
104.917	0.00	0.33	0.849	IO					1.01
105.000	0.00	0.33	0.847	IO					1.00
105.083	0.00	0.33	0.844	IO					1.00
105.167	0.00	0.33	0.842	IO					1.00
105.250	0.00	0.33	0.840	IO					1.00
105.333	0.00	0.33	0.838	IO					1.00
105.417	0.00	0.33	0.835	IO					0.99
105.500	0.00	0.33	0.833	IO					0.99

105.583	0.00	0.32	0.831	IO					0.99
105.667	0.00	0.32	0.829	IO					0.99
105.750	0.00	0.32	0.827	IO					0.99
105.833	0.00	0.32	0.824	IO					0.98
105.917	0.00	0.32	0.822	IO					0.98
106.000	0.00	0.32	0.820	IO					0.98
106.083	0.00	0.32	0.818	IO					0.98
106.167	0.00	0.32	0.815	IO					0.97
106.250	0.00	0.32	0.813	IO					0.97
106.333	0.00	0.32	0.811	IO					0.97
106.417	0.00	0.32	0.809	IO					0.97
106.500	0.00	0.32	0.807	IO					0.96
106.583	0.00	0.32	0.804	IO					0.96
106.667	0.00	0.32	0.802	IO					0.96
106.750	0.00	0.32	0.800	IO					0.96
106.833	0.00	0.32	0.798	IO					0.96
106.917	0.00	0.32	0.796	IO					0.95
107.000	0.00	0.32	0.794	IO					0.95
107.083	0.00	0.32	0.791	IO					0.95
107.167	0.00	0.31	0.789	IO					0.95
107.250	0.00	0.31	0.787	IO					0.94
107.333	0.00	0.31	0.785	IO					0.94
107.417	0.00	0.31	0.783	IO					0.94
107.500	0.00	0.31	0.781	IO					0.94
107.583	0.00	0.31	0.778	IO					0.94
107.667	0.00	0.31	0.776	IO					0.93
107.750	0.00	0.31	0.774	IO					0.93
107.833	0.00	0.31	0.772	IO					0.93
107.917	0.00	0.31	0.770	IO					0.93
108.000	0.00	0.31	0.768	IO					0.92
108.083	0.00	0.31	0.766	IO					0.92
108.167	0.00	0.31	0.763	IO					0.92
108.250	0.00	0.31	0.761	IO					0.92
108.333	0.00	0.31	0.759	IO					0.92
108.417	0.00	0.31	0.757	IO					0.91
108.500	0.00	0.31	0.755	IO					0.91
108.583	0.00	0.31	0.753	IO					0.91
108.667	0.00	0.31	0.751	IO					0.91
108.750	0.00	0.30	0.749	IO					0.90
108.833	0.00	0.30	0.747	IO					0.90
108.917	0.00	0.30	0.744	IO					0.90
109.000	0.00	0.30	0.742	IO					0.90
109.083	0.00	0.30	0.740	IO					0.90
109.167	0.00	0.30	0.738	IO					0.89
109.250	0.00	0.30	0.736	IO					0.89
109.333	0.00	0.30	0.734	IO					0.89
109.417	0.00	0.30	0.732	IO					0.89
109.500	0.00	0.30	0.730	IO					0.89
109.583	0.00	0.30	0.728	IO					0.88
109.667	0.00	0.30	0.726	IO					0.88
109.750	0.00	0.30	0.724	IO					0.88
109.833	0.00	0.30	0.722	IO					0.88
109.917	0.00	0.30	0.720	IO					0.87
110.000	0.00	0.30	0.718	IO					0.87
110.083	0.00	0.30	0.716	IO					0.87
110.167	0.00	0.30	0.713	IO					0.87
110.250	0.00	0.30	0.711	IO					0.87
110.333	0.00	0.30	0.709	IO					0.86
110.417	0.00	0.30	0.707	IO					0.86
110.500	0.00	0.29	0.705	IO					0.86
110.583	0.00	0.29	0.703	IO					0.86
110.667	0.00	0.29	0.701	IO					0.86
110.750	0.00	0.29	0.699	IO					0.85
110.833	0.00	0.29	0.697	IO					0.85
110.917	0.00	0.29	0.695	IO					0.85
111.000	0.00	0.29	0.693	IO					0.85
111.083	0.00	0.29	0.691	IO					0.85
111.167	0.00	0.29	0.689	IO					0.84
111.250	0.00	0.29	0.687	IO					0.84
111.333	0.00	0.29	0.685	IO					0.84
111.417	0.00	0.29	0.683	IO					0.84
111.500	0.00	0.29	0.681	IO					0.84
111.583	0.00	0.29	0.679	IO					0.83
111.667	0.00	0.29	0.677	IO					0.83
111.750	0.00	0.29	0.675	IO					0.83

111.833	0.00	0.29	0.673	IO				0.83
111.917	0.00	0.29	0.671	IO				0.83
112.000	0.00	0.29	0.669	IO				0.82
112.083	0.00	0.29	0.667	IO				0.82
112.167	0.00	0.29	0.665	IO				0.82
112.250	0.00	0.28	0.663	IO				0.82
112.333	0.00	0.28	0.661	IO				0.81
112.417	0.00	0.28	0.660	IO				0.81
112.500	0.00	0.28	0.658	IO				0.81
112.583	0.00	0.28	0.656	IO				0.81
112.667	0.00	0.28	0.654	IO				0.81
112.750	0.00	0.28	0.652	IO				0.80
112.833	0.00	0.28	0.650	IO				0.80
112.917	0.00	0.28	0.648	IO				0.80
113.000	0.00	0.28	0.646	IO				0.80
113.083	0.00	0.28	0.644	IO				0.80
113.167	0.00	0.28	0.642	IO				0.79
113.250	0.00	0.28	0.640	IO				0.79
113.333	0.00	0.28	0.638	IO				0.79
113.417	0.00	0.28	0.636	IO				0.79
113.500	0.00	0.28	0.634	IO				0.79
113.583	0.00	0.28	0.633	IO				0.79
113.667	0.00	0.28	0.631	IO				0.78
113.750	0.00	0.28	0.629	IO				0.78
113.833	0.00	0.28	0.627	IO				0.78
113.917	0.00	0.28	0.625	IO				0.78
114.000	0.00	0.27	0.623	IO				0.78
114.083	0.00	0.27	0.621	IO				0.77
114.167	0.00	0.27	0.619	IO				0.77
114.250	0.00	0.27	0.617	IO				0.77
114.333	0.00	0.27	0.615	IO				0.77
114.417	0.00	0.27	0.614	IO				0.77
114.500	0.00	0.27	0.612	IO				0.76
114.583	0.00	0.27	0.610	IO				0.76
114.667	0.00	0.27	0.608	IO				0.76
114.750	0.00	0.27	0.606	IO				0.76
114.833	0.00	0.27	0.604	IO				0.76
114.917	0.00	0.27	0.602	IO				0.75
115.000	0.00	0.27	0.601	IO				0.75
115.083	0.00	0.27	0.599	IO				0.75
115.167	0.00	0.27	0.597	IO				0.75
115.250	0.00	0.27	0.595	IO				0.75
115.333	0.00	0.27	0.593	IO				0.74
115.417	0.00	0.27	0.591	IO				0.74
115.500	0.00	0.27	0.589	IO				0.74
115.583	0.00	0.27	0.588	IO				0.74
115.667	0.00	0.27	0.586	IO				0.74
115.750	0.00	0.27	0.584	IO				0.73
115.833	0.00	0.27	0.582	IO				0.73
115.917	0.00	0.26	0.580	IO				0.73
116.000	0.00	0.26	0.578	IO				0.73
116.083	0.00	0.26	0.577	IO				0.73
116.167	0.00	0.26	0.575	IO				0.73
116.250	0.00	0.26	0.573	IO				0.72
116.333	0.00	0.26	0.571	IO				0.72
116.417	0.00	0.26	0.569	IO				0.72
116.500	0.00	0.26	0.568	IO				0.72
116.583	0.00	0.26	0.566	IO				0.72
116.667	0.00	0.26	0.564	IO				0.71
116.750	0.00	0.26	0.562	IO				0.71
116.833	0.00	0.26	0.560	IO				0.71
116.917	0.00	0.26	0.559	IO				0.71
117.000	0.00	0.26	0.557	IO				0.71
117.083	0.00	0.26	0.555	IO				0.71
117.167	0.00	0.26	0.553	IO				0.70
117.250	0.00	0.26	0.552	IO				0.70
117.333	0.00	0.26	0.550	IO				0.70
117.417	0.00	0.26	0.548	IO				0.70
117.500	0.00	0.26	0.546	O				0.70
117.583	0.00	0.26	0.544	O				0.69
117.667	0.00	0.26	0.543	O				0.69
117.750	0.00	0.26	0.541	O				0.69
117.833	0.00	0.25	0.539	O				0.69
117.917	0.00	0.25	0.537	O				0.69
118.000	0.00	0.25	0.536	O				0.69

118.083	0.00	0.25	0.534	o	|	|	|	|	0.68
118.167	0.00	0.25	0.532	o	|	|	|	|	0.68
118.250	0.00	0.25	0.530	o	|	|	|	|	0.68
118.333	0.00	0.25	0.529	o	|	|	|	|	0.68
118.417	0.00	0.25	0.527	o	|	|	|	|	0.68
118.500	0.00	0.25	0.525	o	|	|	|	|	0.67
118.583	0.00	0.25	0.523	o	|	|	|	|	0.67
118.667	0.00	0.25	0.522	o	|	|	|	|	0.67
118.750	0.00	0.25	0.520	o	|	|	|	|	0.67
118.833	0.00	0.25	0.518	o	|	|	|	|	0.67
118.917	0.00	0.25	0.517	o	|	|	|	|	0.67
119.000	0.00	0.25	0.515	o	|	|	|	|	0.66
119.083	0.00	0.25	0.513	o	|	|	|	|	0.66
119.167	0.00	0.25	0.511	o	|	|	|	|	0.66
119.250	0.00	0.25	0.510	o	|	|	|	|	0.66
119.333	0.00	0.25	0.508	o	|	|	|	|	0.66
119.417	0.00	0.25	0.506	o	|	|	|	|	0.65
119.500	0.00	0.25	0.505	o	|	|	|	|	0.65
119.583	0.00	0.25	0.503	o	|	|	|	|	0.65
119.667	0.00	0.25	0.501	o	|	|	|	|	0.65
119.750	0.00	0.25	0.500	o	|	|	|	|	0.65
119.833	0.00	0.24	0.498	o	|	|	|	|	0.65
119.917	0.00	0.24	0.496	o	|	|	|	|	0.64
120.000	0.00	0.24	0.494	o	|	|	|	|	0.64
120.083	0.00	0.24	0.493	o	|	|	|	|	0.64
120.167	0.00	0.24	0.491	o	|	|	|	|	0.64
120.250	0.00	0.24	0.489	o	|	|	|	|	0.64
120.333	0.00	0.24	0.488	o	|	|	|	|	0.64
120.417	0.00	0.24	0.486	o	|	|	|	|	0.63
120.500	0.00	0.24	0.484	o	|	|	|	|	0.63
120.583	0.00	0.24	0.483	o	|	|	|	|	0.63
120.667	0.00	0.24	0.481	o	|	|	|	|	0.63
120.750	0.00	0.24	0.479	o	|	|	|	|	0.63
120.833	0.00	0.24	0.478	o	|	|	|	|	0.63
120.917	0.00	0.24	0.476	o	|	|	|	|	0.62
121.000	0.00	0.24	0.475	o	|	|	|	|	0.62
121.083	0.00	0.24	0.473	o	|	|	|	|	0.62
121.167	0.00	0.24	0.471	o	|	|	|	|	0.62
121.250	0.00	0.24	0.470	o	|	|	|	|	0.62
121.333	0.00	0.24	0.468	o	|	|	|	|	0.62
121.417	0.00	0.24	0.466	o	|	|	|	|	0.61
121.500	0.00	0.24	0.465	o	|	|	|	|	0.61
121.583	0.00	0.24	0.463	o	|	|	|	|	0.61
121.667	0.00	0.24	0.461	o	|	|	|	|	0.61
121.750	0.00	0.24	0.460	o	|	|	|	|	0.61
121.833	0.00	0.24	0.458	o	|	|	|	|	0.61
121.917	0.00	0.24	0.457	o	|	|	|	|	0.60
122.000	0.00	0.23	0.455	o	|	|	|	|	0.60
122.083	0.00	0.23	0.453	o	|	|	|	|	0.60
122.167	0.00	0.23	0.452	o	|	|	|	|	0.60
122.250	0.00	0.23	0.450	o	|	|	|	|	0.60
122.333	0.00	0.23	0.448	o	|	|	|	|	0.60
122.417	0.00	0.23	0.447	o	|	|	|	|	0.59
122.500	0.00	0.23	0.445	o	|	|	|	|	0.59
122.583	0.00	0.23	0.444	o	|	|	|	|	0.59
122.667	0.00	0.23	0.442	o	|	|	|	|	0.59
122.750	0.00	0.23	0.440	o	|	|	|	|	0.59
122.833	0.00	0.23	0.439	o	|	|	|	|	0.59
122.917	0.00	0.23	0.437	o	|	|	|	|	0.58
123.000	0.00	0.23	0.436	o	|	|	|	|	0.58
123.083	0.00	0.23	0.434	o	|	|	|	|	0.58
123.167	0.00	0.23	0.433	o	|	|	|	|	0.58
123.250	0.00	0.23	0.431	o	|	|	|	|	0.58
123.333	0.00	0.23	0.429	o	|	|	|	|	0.58
123.417	0.00	0.23	0.428	o	|	|	|	|	0.57
123.500	0.00	0.23	0.426	o	|	|	|	|	0.57
123.583	0.00	0.23	0.425	o	|	|	|	|	0.57
123.667	0.00	0.23	0.423	o	|	|	|	|	0.57
123.750	0.00	0.23	0.422	o	|	|	|	|	0.57
123.833	0.00	0.23	0.420	o	|	|	|	|	0.57
123.917	0.00	0.23	0.418	o	|	|	|	|	0.56
124.000	0.00	0.23	0.417	o	|	|	|	|	0.56
124.083	0.00	0.23	0.415	o	|	|	|	|	0.56
124.167	0.00	0.22	0.414	o	|	|	|	|	0.56
124.250	0.00	0.22	0.412	o	|	|	|	|	0.56

124.333	0.00	0.22	0.411	o	|	|	|	0.56
124.417	0.00	0.22	0.409	o	|	|	|	0.55
124.500	0.00	0.22	0.408	o	|	|	|	0.55
124.583	0.00	0.22	0.406	o	|	|	|	0.55
124.667	0.00	0.22	0.405	o	|	|	|	0.55
124.750	0.00	0.22	0.403	o	|	|	|	0.55
124.833	0.00	0.22	0.401	o	|	|	|	0.55
124.917	0.00	0.22	0.400	o	|	|	|	0.55
125.000	0.00	0.22	0.398	o	|	|	|	0.54
125.083	0.00	0.22	0.397	o	|	|	|	0.54
125.167	0.00	0.22	0.395	o	|	|	|	0.54
125.250	0.00	0.22	0.394	o	|	|	|	0.54
125.333	0.00	0.22	0.392	o	|	|	|	0.54
125.417	0.00	0.22	0.391	o	|	|	|	0.54
125.500	0.00	0.22	0.389	o	|	|	|	0.53
125.583	0.00	0.22	0.388	o	|	|	|	0.53
125.667	0.00	0.22	0.386	o	|	|	|	0.53
125.750	0.00	0.22	0.385	o	|	|	|	0.53
125.833	0.00	0.22	0.383	o	|	|	|	0.53
125.917	0.00	0.22	0.382	o	|	|	|	0.53
126.000	0.00	0.22	0.380	o	|	|	|	0.53
126.083	0.00	0.22	0.379	o	|	|	|	0.52
126.167	0.00	0.22	0.377	o	|	|	|	0.52
126.250	0.00	0.22	0.376	o	|	|	|	0.52
126.333	0.00	0.22	0.374	o	|	|	|	0.52
126.417	0.00	0.22	0.373	o	|	|	|	0.52
126.500	0.00	0.21	0.371	o	|	|	|	0.52
126.583	0.00	0.21	0.370	o	|	|	|	0.51
126.667	0.00	0.21	0.368	o	|	|	|	0.51
126.750	0.00	0.21	0.367	o	|	|	|	0.51
126.833	0.00	0.21	0.366	o	|	|	|	0.51
126.917	0.00	0.21	0.364	o	|	|	|	0.51
127.000	0.00	0.21	0.363	o	|	|	|	0.51
127.083	0.00	0.21	0.361	o	|	|	|	0.51
127.167	0.00	0.21	0.360	o	|	|	|	0.50
127.250	0.00	0.21	0.358	o	|	|	|	0.50
127.333	0.00	0.21	0.357	o	|	|	|	0.50
127.417	0.00	0.21	0.355	o	|	|	|	0.50
127.500	0.00	0.21	0.354	o	|	|	|	0.50
127.583	0.00	0.21	0.352	o	|	|	|	0.49
127.667	0.00	0.21	0.351	o	|	|	|	0.49
127.750	0.00	0.21	0.350	o	|	|	|	0.49
127.833	0.00	0.20	0.348	o	|	|	|	0.49
127.917	0.00	0.20	0.347	o	|	|	|	0.49
128.000	0.00	0.20	0.345	o	|	|	|	0.49
128.083	0.00	0.20	0.344	o	|	|	|	0.48
128.167	0.00	0.20	0.343	o	|	|	|	0.48
128.250	0.00	0.20	0.341	o	|	|	|	0.48
128.333	0.00	0.20	0.340	o	|	|	|	0.48
128.417	0.00	0.20	0.338	o	|	|	|	0.48
128.500	0.00	0.20	0.337	o	|	|	|	0.47
128.583	0.00	0.19	0.336	o	|	|	|	0.47
128.667	0.00	0.19	0.334	o	|	|	|	0.47
128.750	0.00	0.19	0.333	o	|	|	|	0.47
128.833	0.00	0.19	0.332	o	|	|	|	0.47
128.917	0.00	0.19	0.331	o	|	|	|	0.46
129.000	0.00	0.19	0.329	o	|	|	|	0.46
129.083	0.00	0.19	0.328	o	|	|	|	0.46
129.167	0.00	0.19	0.327	o	|	|	|	0.46
129.250	0.00	0.19	0.325	o	|	|	|	0.46
129.333	0.00	0.18	0.324	o	|	|	|	0.46
129.417	0.00	0.18	0.323	o	|	|	|	0.45
129.500	0.00	0.18	0.322	o	|	|	|	0.45
129.583	0.00	0.18	0.320	o	|	|	|	0.45
129.667	0.00	0.18	0.319	o	|	|	|	0.45
129.750	0.00	0.18	0.318	o	|	|	|	0.45
129.833	0.00	0.18	0.317	o	|	|	|	0.44
129.917	0.00	0.18	0.315	o	|	|	|	0.44
130.000	0.00	0.18	0.314	o	|	|	|	0.44
130.083	0.00	0.18	0.313	o	|	|	|	0.44
130.167	0.00	0.17	0.312	o	|	|	|	0.44
130.250	0.00	0.17	0.311	o	|	|	|	0.44
130.333	0.00	0.17	0.309	o	|	|	|	0.43
130.417	0.00	0.17	0.308	o	|	|	|	0.43
130.500	0.00	0.17	0.307	o	|	|	|	0.43

130.583	0.00	0.17	0.306	o	|	|	|	|	0.43
130.667	0.00	0.17	0.305	o	|	|	|	|	0.43
130.750	0.00	0.17	0.304	o	|	|	|	|	0.43
130.833	0.00	0.17	0.302	o	|	|	|	|	0.42
130.917	0.00	0.17	0.301	o	|	|	|	|	0.42
131.000	0.00	0.16	0.300	o	|	|	|	|	0.42
131.083	0.00	0.16	0.299	o	|	|	|	|	0.42
131.167	0.00	0.16	0.298	o	|	|	|	|	0.42
131.250	0.00	0.16	0.297	o	|	|	|	|	0.42
131.333	0.00	0.16	0.296	o	|	|	|	|	0.42
131.417	0.00	0.16	0.295	o	|	|	|	|	0.41
131.500	0.00	0.16	0.293	o	|	|	|	|	0.41
131.583	0.00	0.16	0.292	o	|	|	|	|	0.41
131.667	0.00	0.16	0.291	o	|	|	|	|	0.41
131.750	0.00	0.16	0.290	o	|	|	|	|	0.41
131.833	0.00	0.16	0.289	o	|	|	|	|	0.41
131.917	0.00	0.15	0.288	o	|	|	|	|	0.40
132.000	0.00	0.15	0.287	o	|	|	|	|	0.40
132.083	0.00	0.15	0.286	o	|	|	|	|	0.40
132.167	0.00	0.15	0.285	o	|	|	|	|	0.40
132.250	0.00	0.15	0.284	o	|	|	|	|	0.40
132.333	0.00	0.15	0.283	o	|	|	|	|	0.40
132.417	0.00	0.15	0.282	o	|	|	|	|	0.40
132.500	0.00	0.15	0.281	o	|	|	|	|	0.39
132.583	0.00	0.15	0.280	o	|	|	|	|	0.39
132.667	0.00	0.15	0.279	o	|	|	|	|	0.39
132.750	0.00	0.15	0.278	o	|	|	|	|	0.39
132.833	0.00	0.14	0.277	o	|	|	|	|	0.39
132.917	0.00	0.14	0.276	o	|	|	|	|	0.39
133.000	0.00	0.14	0.275	o	|	|	|	|	0.39
133.083	0.00	0.14	0.274	o	|	|	|	|	0.38
133.167	0.00	0.14	0.273	o	|	|	|	|	0.38
133.250	0.00	0.14	0.272	o	|	|	|	|	0.38
133.333	0.00	0.14	0.271	o	|	|	|	|	0.38
133.417	0.00	0.14	0.270	o	|	|	|	|	0.38
133.500	0.00	0.14	0.269	o	|	|	|	|	0.38
133.583	0.00	0.14	0.268	o	|	|	|	|	0.38
133.667	0.00	0.14	0.267	o	|	|	|	|	0.37
133.750	0.00	0.14	0.266	o	|	|	|	|	0.37
133.833	0.00	0.14	0.265	o	|	|	|	|	0.37
133.917	0.00	0.13	0.264	o	|	|	|	|	0.37
134.000	0.00	0.13	0.263	o	|	|	|	|	0.37
134.083	0.00	0.13	0.262	o	|	|	|	|	0.37
134.167	0.00	0.13	0.261	o	|	|	|	|	0.37
134.250	0.00	0.13	0.261	o	|	|	|	|	0.37
134.333	0.00	0.13	0.260	o	|	|	|	|	0.36
134.417	0.00	0.13	0.259	o	|	|	|	|	0.36
134.500	0.00	0.13	0.258	o	|	|	|	|	0.36
134.583	0.00	0.13	0.257	o	|	|	|	|	0.36
134.667	0.00	0.13	0.256	o	|	|	|	|	0.36
134.750	0.00	0.13	0.255	o	|	|	|	|	0.36
134.833	0.00	0.13	0.254	o	|	|	|	|	0.36
134.917	0.00	0.13	0.253	o	|	|	|	|	0.36
135.000	0.00	0.12	0.253	o	|	|	|	|	0.35
135.083	0.00	0.12	0.252	o	|	|	|	|	0.35
135.167	0.00	0.12	0.251	o	|	|	|	|	0.35
135.250	0.00	0.12	0.250	o	|	|	|	|	0.35
135.333	0.00	0.12	0.249	o	|	|	|	|	0.35
135.417	0.00	0.12	0.248	o	|	|	|	|	0.35
135.500	0.00	0.12	0.248	o	|	|	|	|	0.35
135.583	0.00	0.12	0.247	o	|	|	|	|	0.35
135.667	0.00	0.12	0.246	o	|	|	|	|	0.35
135.750	0.00	0.12	0.245	o	|	|	|	|	0.34
135.833	0.00	0.12	0.244	o	|	|	|	|	0.34
135.917	0.00	0.12	0.243	o	|	|	|	|	0.34
136.000	0.00	0.12	0.243	o	|	|	|	|	0.34
136.083	0.00	0.12	0.242	o	|	|	|	|	0.34
136.167	0.00	0.12	0.241	o	|	|	|	|	0.34
136.250	0.00	0.11	0.240	o	|	|	|	|	0.34
136.333	0.00	0.11	0.239	o	|	|	|	|	0.34
136.417	0.00	0.11	0.239	o	|	|	|	|	0.34
136.500	0.00	0.11	0.238	o	|	|	|	|	0.33
136.583	0.00	0.11	0.237	o	|	|	|	|	0.33
136.667	0.00	0.11	0.236	o	|	|	|	|	0.33
136.750	0.00	0.11	0.236	o	|	|	|	|	0.33

136.833	0.00	0.11	0.235	o	|	|	|	|	0.33
136.917	0.00	0.11	0.234	o	|	|	|	|	0.33
137.000	0.00	0.11	0.233	o	|	|	|	|	0.33
137.083	0.00	0.11	0.233	o	|	|	|	|	0.33
137.167	0.00	0.11	0.232	o	|	|	|	|	0.33
137.250	0.00	0.11	0.231	o	|	|	|	|	0.32
137.333	0.00	0.11	0.230	o	|	|	|	|	0.32
137.417	0.00	0.11	0.230	o	|	|	|	|	0.32
137.500	0.00	0.11	0.229	o	|	|	|	|	0.32
137.583	0.00	0.10	0.228	o	|	|	|	|	0.32
137.667	0.00	0.10	0.227	o	|	|	|	|	0.32
137.750	0.00	0.10	0.227	o	|	|	|	|	0.32
137.833	0.00	0.10	0.226	o	|	|	|	|	0.32
137.917	0.00	0.10	0.225	o	|	|	|	|	0.32
138.000	0.00	0.10	0.225	o	|	|	|	|	0.32
138.083	0.00	0.10	0.224	o	|	|	|	|	0.31
138.167	0.00	0.10	0.223	o	|	|	|	|	0.31
138.250	0.00	0.10	0.223	o	|	|	|	|	0.31
138.333	0.00	0.10	0.222	o	|	|	|	|	0.31
138.417	0.00	0.10	0.221	o	|	|	|	|	0.31
138.500	0.00	0.10	0.220	o	|	|	|	|	0.31
138.583	0.00	0.10	0.220	o	|	|	|	|	0.31
138.667	0.00	0.10	0.219	o	|	|	|	|	0.31
138.750	0.00	0.10	0.218	o	|	|	|	|	0.31
138.833	0.00	0.10	0.218	o	|	|	|	|	0.31
138.917	0.00	0.10	0.217	o	|	|	|	|	0.30
139.000	0.00	0.09	0.217	o	|	|	|	|	0.30
139.083	0.00	0.09	0.216	o	|	|	|	|	0.30
139.167	0.00	0.09	0.215	o	|	|	|	|	0.30
139.250	0.00	0.09	0.215	o	|	|	|	|	0.30
139.333	0.00	0.09	0.214	o	|	|	|	|	0.30
139.417	0.00	0.09	0.213	o	|	|	|	|	0.30
139.500	0.00	0.09	0.213	o	|	|	|	|	0.30
139.583	0.00	0.09	0.212	o	|	|	|	|	0.30
139.667	0.00	0.09	0.211	o	|	|	|	|	0.30
139.750	0.00	0.09	0.211	o	|	|	|	|	0.30
139.833	0.00	0.09	0.210	o	|	|	|	|	0.30
139.917	0.00	0.09	0.210	o	|	|	|	|	0.29
140.000	0.00	0.09	0.209	o	|	|	|	|	0.29
140.083	0.00	0.09	0.208	o	|	|	|	|	0.29
140.167	0.00	0.09	0.208	o	|	|	|	|	0.29
140.250	0.00	0.09	0.207	o	|	|	|	|	0.29
140.333	0.00	0.09	0.207	o	|	|	|	|	0.29
140.417	0.00	0.09	0.206	o	|	|	|	|	0.29
140.500	0.00	0.09	0.205	o	|	|	|	|	0.29
140.583	0.00	0.08	0.205	o	|	|	|	|	0.29
140.667	0.00	0.08	0.204	o	|	|	|	|	0.29
140.750	0.00	0.08	0.204	o	|	|	|	|	0.29
140.833	0.00	0.08	0.203	o	|	|	|	|	0.29
140.917	0.00	0.08	0.202	o	|	|	|	|	0.28
141.000	0.00	0.08	0.202	o	|	|	|	|	0.28
141.083	0.00	0.08	0.201	o	|	|	|	|	0.28
141.167	0.00	0.08	0.201	o	|	|	|	|	0.28
141.250	0.00	0.08	0.200	o	|	|	|	|	0.28
141.333	0.00	0.08	0.200	o	|	|	|	|	0.28
141.417	0.00	0.08	0.199	o	|	|	|	|	0.28
141.500	0.00	0.08	0.199	o	|	|	|	|	0.28
141.583	0.00	0.08	0.198	o	|	|	|	|	0.28
141.667	0.00	0.08	0.197	o	|	|	|	|	0.28
141.750	0.00	0.08	0.197	o	|	|	|	|	0.28
141.833	0.00	0.08	0.196	o	|	|	|	|	0.28
141.917	0.00	0.08	0.196	o	|	|	|	|	0.27
142.000	0.00	0.08	0.195	o	|	|	|	|	0.27
142.083	0.00	0.08	0.195	o	|	|	|	|	0.27
142.167	0.00	0.08	0.194	o	|	|	|	|	0.27
142.250	0.00	0.08	0.194	o	|	|	|	|	0.27
142.333	0.00	0.08	0.193	o	|	|	|	|	0.27
142.417	0.00	0.07	0.193	o	|	|	|	|	0.27
142.500	0.00	0.07	0.192	o	|	|	|	|	0.27
142.583	0.00	0.07	0.192	o	|	|	|	|	0.27
142.667	0.00	0.07	0.191	o	|	|	|	|	0.27
142.750	0.00	0.07	0.191	o	|	|	|	|	0.27
142.833	0.00	0.07	0.190	o	|	|	|	|	0.27
142.917	0.00	0.07	0.190	o	|	|	|	|	0.27
143.000	0.00	0.07	0.189	o	|	|	|	|	0.27

143.083	0.00	0.07	0.189	o	|	|	|	|	0.26
143.167	0.00	0.07	0.188	o	|	|	|	|	0.26
143.250	0.00	0.07	0.188	o	|	|	|	|	0.26
143.333	0.00	0.07	0.187	o	|	|	|	|	0.26
143.417	0.00	0.07	0.187	o	|	|	|	|	0.26
143.500	0.00	0.07	0.186	o	|	|	|	|	0.26
143.583	0.00	0.07	0.186	o	|	|	|	|	0.26
143.667	0.00	0.07	0.185	o	|	|	|	|	0.26
143.750	0.00	0.07	0.185	o	|	|	|	|	0.26
143.833	0.00	0.07	0.184	o	|	|	|	|	0.26
143.917	0.00	0.07	0.184	o	|	|	|	|	0.26
144.000	0.00	0.07	0.183	o	|	|	|	|	0.26
144.083	0.00	0.07	0.183	o	|	|	|	|	0.26
144.167	0.00	0.07	0.182	o	|	|	|	|	0.26
144.250	0.00	0.07	0.182	o	|	|	|	|	0.26
144.333	0.00	0.07	0.182	o	|	|	|	|	0.25
144.417	0.00	0.07	0.181	o	|	|	|	|	0.25
144.500	0.00	0.06	0.181	o	|	|	|	|	0.25
144.583	0.00	0.06	0.180	o	|	|	|	|	0.25
144.667	0.00	0.06	0.180	o	|	|	|	|	0.25
144.750	0.00	0.06	0.179	o	|	|	|	|	0.25
144.833	0.00	0.06	0.179	o	|	|	|	|	0.25
144.917	0.00	0.06	0.178	o	|	|	|	|	0.25
145.000	0.00	0.06	0.178	o	|	|	|	|	0.25
145.083	0.00	0.06	0.178	o	|	|	|	|	0.25
145.167	0.00	0.06	0.177	o	|	|	|	|	0.25
145.250	0.00	0.06	0.177	o	|	|	|	|	0.25
145.333	0.00	0.06	0.176	o	|	|	|	|	0.25
145.417	0.00	0.06	0.176	o	|	|	|	|	0.25
145.500	0.00	0.06	0.175	o	|	|	|	|	0.25
145.583	0.00	0.06	0.175	o	|	|	|	|	0.25
145.667	0.00	0.06	0.175	o	|	|	|	|	0.25
145.750	0.00	0.06	0.174	o	|	|	|	|	0.24
145.833	0.00	0.06	0.174	o	|	|	|	|	0.24
145.917	0.00	0.06	0.173	o	|	|	|	|	0.24
146.000	0.00	0.06	0.173	o	|	|	|	|	0.24
146.083	0.00	0.06	0.173	o	|	|	|	|	0.24
146.167	0.00	0.06	0.172	o	|	|	|	|	0.24
146.250	0.00	0.06	0.172	o	|	|	|	|	0.24
146.333	0.00	0.06	0.171	o	|	|	|	|	0.24
146.417	0.00	0.06	0.171	o	|	|	|	|	0.24
146.500	0.00	0.06	0.171	o	|	|	|	|	0.24
146.583	0.00	0.06	0.170	o	|	|	|	|	0.24
146.667	0.00	0.06	0.170	o	|	|	|	|	0.24
146.750	0.00	0.06	0.169	o	|	|	|	|	0.24
146.833	0.00	0.06	0.169	o	|	|	|	|	0.24
146.917	0.00	0.05	0.169	o	|	|	|	|	0.24
147.000	0.00	0.05	0.168	o	|	|	|	|	0.24
147.083	0.00	0.05	0.168	o	|	|	|	|	0.24
147.167	0.00	0.05	0.168	o	|	|	|	|	0.24
147.250	0.00	0.05	0.167	o	|	|	|	|	0.23
147.333	0.00	0.05	0.167	o	|	|	|	|	0.23
147.417	0.00	0.05	0.166	o	|	|	|	|	0.23
147.500	0.00	0.05	0.166	o	|	|	|	|	0.23
147.583	0.00	0.05	0.166	o	|	|	|	|	0.23
147.667	0.00	0.05	0.165	o	|	|	|	|	0.23
147.750	0.00	0.05	0.165	o	|	|	|	|	0.23
147.833	0.00	0.05	0.165	o	|	|	|	|	0.23
147.917	0.00	0.05	0.164	o	|	|	|	|	0.23
148.000	0.00	0.05	0.164	o	|	|	|	|	0.23
148.083	0.00	0.05	0.164	o	|	|	|	|	0.23
148.167	0.00	0.05	0.163	o	|	|	|	|	0.23
148.250	0.00	0.05	0.163	o	|	|	|	|	0.23
148.333	0.00	0.05	0.163	o	|	|	|	|	0.23
148.417	0.00	0.05	0.162	o	|	|	|	|	0.23
148.500	0.00	0.05	0.162	o	|	|	|	|	0.23
148.583	0.00	0.05	0.162	o	|	|	|	|	0.23
148.667	0.00	0.05	0.161	o	|	|	|	|	0.23
148.750	0.00	0.05	0.161	o	|	|	|	|	0.23
148.833	0.00	0.05	0.161	o	|	|	|	|	0.23
148.917	0.00	0.05	0.160	o	|	|	|	|	0.23
149.000	0.00	0.05	0.160	o	|	|	|	|	0.22
149.083	0.00	0.05	0.160	o	|	|	|	|	0.22
149.167	0.00	0.05	0.159	o	|	|	|	|	0.22
149.250	0.00	0.05	0.159	o	|	|	|	|	0.22

149.333	0.00	0.05	0.159	o	|	|	|	|	0.22
149.417	0.00	0.05	0.158	o	|	|	|	|	0.22
149.500	0.00	0.05	0.158	o	|	|	|	|	0.22
149.583	0.00	0.05	0.158	o	|	|	|	|	0.22
149.667	0.00	0.05	0.157	o	|	|	|	|	0.22
149.750	0.00	0.05	0.157	o	|	|	|	|	0.22
149.833	0.00	0.04	0.157	o	|	|	|	|	0.22
149.917	0.00	0.04	0.156	o	|	|	|	|	0.22
150.000	0.00	0.04	0.156	o	|	|	|	|	0.22
150.083	0.00	0.04	0.156	o	|	|	|	|	0.22
150.167	0.00	0.04	0.155	o	|	|	|	|	0.22
150.250	0.00	0.04	0.155	o	|	|	|	|	0.22
150.333	0.00	0.04	0.155	o	|	|	|	|	0.22
150.417	0.00	0.04	0.155	o	|	|	|	|	0.22
150.500	0.00	0.04	0.154	o	|	|	|	|	0.22
150.583	0.00	0.04	0.154	o	|	|	|	|	0.22
150.667	0.00	0.04	0.154	o	|	|	|	|	0.22
150.750	0.00	0.04	0.153	o	|	|	|	|	0.22
150.833	0.00	0.04	0.153	o	|	|	|	|	0.22
150.917	0.00	0.04	0.153	o	|	|	|	|	0.21
151.000	0.00	0.04	0.153	o	|	|	|	|	0.21
151.083	0.00	0.04	0.152	o	|	|	|	|	0.21
151.167	0.00	0.04	0.152	o	|	|	|	|	0.21
151.250	0.00	0.04	0.152	o	|	|	|	|	0.21
151.333	0.00	0.04	0.151	o	|	|	|	|	0.21
151.417	0.00	0.04	0.151	o	|	|	|	|	0.21
151.500	0.00	0.04	0.151	o	|	|	|	|	0.21
151.583	0.00	0.04	0.151	o	|	|	|	|	0.21
151.667	0.00	0.04	0.150	o	|	|	|	|	0.21
151.750	0.00	0.04	0.150	o	|	|	|	|	0.21
151.833	0.00	0.04	0.150	o	|	|	|	|	0.21
151.917	0.00	0.04	0.150	o	|	|	|	|	0.21
152.000	0.00	0.04	0.149	o	|	|	|	|	0.21
152.083	0.00	0.04	0.149	o	|	|	|	|	0.21
152.167	0.00	0.04	0.149	o	|	|	|	|	0.21
152.250	0.00	0.04	0.148	o	|	|	|	|	0.21
152.333	0.00	0.04	0.148	o	|	|	|	|	0.21
152.417	0.00	0.04	0.148	o	|	|	|	|	0.21
152.500	0.00	0.04	0.148	o	|	|	|	|	0.21
152.583	0.00	0.04	0.147	o	|	|	|	|	0.21
152.667	0.00	0.04	0.147	o	|	|	|	|	0.21
152.750	0.00	0.04	0.147	o	|	|	|	|	0.21
152.833	0.00	0.04	0.147	o	|	|	|	|	0.21
152.917	0.00	0.04	0.146	o	|	|	|	|	0.21
153.000	0.00	0.04	0.146	o	|	|	|	|	0.21
153.083	0.00	0.04	0.146	o	|	|	|	|	0.20
153.167	0.00	0.04	0.146	o	|	|	|	|	0.20
153.250	0.00	0.04	0.145	o	|	|	|	|	0.20
153.333	0.00	0.04	0.145	o	|	|	|	|	0.20
153.417	0.00	0.04	0.145	o	|	|	|	|	0.20
153.500	0.00	0.03	0.145	o	|	|	|	|	0.20
153.583	0.00	0.03	0.144	o	|	|	|	|	0.20
153.667	0.00	0.03	0.144	o	|	|	|	|	0.20
153.750	0.00	0.03	0.144	o	|	|	|	|	0.20
153.833	0.00	0.03	0.144	o	|	|	|	|	0.20
153.917	0.00	0.03	0.144	o	|	|	|	|	0.20
154.000	0.00	0.03	0.143	o	|	|	|	|	0.20
154.083	0.00	0.03	0.143	o	|	|	|	|	0.20
154.167	0.00	0.03	0.143	o	|	|	|	|	0.20
154.250	0.00	0.03	0.143	o	|	|	|	|	0.20
154.333	0.00	0.03	0.142	o	|	|	|	|	0.20
154.417	0.00	0.03	0.142	o	|	|	|	|	0.20
154.500	0.00	0.03	0.142	o	|	|	|	|	0.20
154.583	0.00	0.03	0.142	o	|	|	|	|	0.20
154.667	0.00	0.03	0.141	o	|	|	|	|	0.20
154.750	0.00	0.03	0.141	o	|	|	|	|	0.20
154.833	0.00	0.03	0.141	o	|	|	|	|	0.20
154.917	0.00	0.03	0.141	o	|	|	|	|	0.20
155.000	0.00	0.03	0.141	o	|	|	|	|	0.20
155.083	0.00	0.03	0.140	o	|	|	|	|	0.20
155.167	0.00	0.03	0.140	o	|	|	|	|	0.20
155.250	0.00	0.03	0.140	o	|	|	|	|	0.20
155.333	0.00	0.03	0.140	o	|	|	|	|	0.20
155.417	0.00	0.03	0.140	o	|	|	|	|	0.20
155.500	0.00	0.03	0.139	o	|	|	|	|	0.20

155.583	0.00	0.03	0.139	o	|	|	|	|	0.20
155.667	0.00	0.03	0.139	o	|	|	|	|	0.20
155.750	0.00	0.03	0.139	o	|	|	|	|	0.19
155.833	0.00	0.03	0.138	o	|	|	|	|	0.19
155.917	0.00	0.03	0.138	o	|	|	|	|	0.19
156.000	0.00	0.03	0.138	o	|	|	|	|	0.19
156.083	0.00	0.03	0.138	o	|	|	|	|	0.19
156.167	0.00	0.03	0.138	o	|	|	|	|	0.19
156.250	0.00	0.03	0.137	o	|	|	|	|	0.19
156.333	0.00	0.03	0.137	o	|	|	|	|	0.19
156.417	0.00	0.03	0.137	o	|	|	|	|	0.19
156.500	0.00	0.03	0.137	o	|	|	|	|	0.19
156.583	0.00	0.03	0.137	o	|	|	|	|	0.19
156.667	0.00	0.03	0.136	o	|	|	|	|	0.19
156.750	0.00	0.03	0.136	o	|	|	|	|	0.19
156.833	0.00	0.03	0.136	o	|	|	|	|	0.19
156.917	0.00	0.03	0.136	o	|	|	|	|	0.19
157.000	0.00	0.03	0.136	o	|	|	|	|	0.19
157.083	0.00	0.03	0.136	o	|	|	|	|	0.19
157.167	0.00	0.03	0.135	o	|	|	|	|	0.19
157.250	0.00	0.03	0.135	o	|	|	|	|	0.19
157.333	0.00	0.03	0.135	o	|	|	|	|	0.19
157.417	0.00	0.03	0.135	o	|	|	|	|	0.19
157.500	0.00	0.03	0.135	o	|	|	|	|	0.19
157.583	0.00	0.03	0.134	o	|	|	|	|	0.19
157.667	0.00	0.03	0.134	o	|	|	|	|	0.19
157.750	0.00	0.03	0.134	o	|	|	|	|	0.19
157.833	0.00	0.03	0.134	o	|	|	|	|	0.19
157.917	0.00	0.03	0.134	o	|	|	|	|	0.19
158.000	0.00	0.03	0.134	o	|	|	|	|	0.19
158.083	0.00	0.03	0.133	o	|	|	|	|	0.19
158.167	0.00	0.03	0.133	o	|	|	|	|	0.19
158.250	0.00	0.03	0.133	o	|	|	|	|	0.19
158.333	0.00	0.03	0.133	o	|	|	|	|	0.19
158.417	0.00	0.02	0.133	o	|	|	|	|	0.19
158.500	0.00	0.02	0.132	o	|	|	|	|	0.19
158.583	0.00	0.02	0.132	o	|	|	|	|	0.19
158.667	0.00	0.02	0.132	o	|	|	|	|	0.19
158.750	0.00	0.02	0.132	o	|	|	|	|	0.19
158.833	0.00	0.02	0.132	o	|	|	|	|	0.19
158.917	0.00	0.02	0.132	o	|	|	|	|	0.18
159.000	0.00	0.02	0.131	o	|	|	|	|	0.18
159.083	0.00	0.02	0.131	o	|	|	|	|	0.18
159.167	0.00	0.02	0.131	o	|	|	|	|	0.18
159.250	0.00	0.02	0.131	o	|	|	|	|	0.18
159.333	0.00	0.02	0.131	o	|	|	|	|	0.18
159.417	0.00	0.02	0.131	o	|	|	|	|	0.18
159.500	0.00	0.02	0.131	o	|	|	|	|	0.18
159.583	0.00	0.02	0.130	o	|	|	|	|	0.18
159.667	0.00	0.02	0.130	o	|	|	|	|	0.18
159.750	0.00	0.02	0.130	o	|	|	|	|	0.18
159.833	0.00	0.02	0.130	o	|	|	|	|	0.18
159.917	0.00	0.02	0.130	o	|	|	|	|	0.18
160.000	0.00	0.02	0.130	o	|	|	|	|	0.18
160.083	0.00	0.02	0.129	o	|	|	|	|	0.18
160.167	0.00	0.02	0.129	o	|	|	|	|	0.18
160.250	0.00	0.02	0.129	o	|	|	|	|	0.18
160.333	0.00	0.02	0.129	o	|	|	|	|	0.18
160.417	0.00	0.02	0.129	o	|	|	|	|	0.18
160.500	0.00	0.02	0.129	o	|	|	|	|	0.18
160.583	0.00	0.02	0.129	o	|	|	|	|	0.18
160.667	0.00	0.02	0.128	o	|	|	|	|	0.18
160.750	0.00	0.02	0.128	o	|	|	|	|	0.18
160.833	0.00	0.02	0.128	o	|	|	|	|	0.18
160.917	0.00	0.02	0.128	o	|	|	|	|	0.18
161.000	0.00	0.02	0.128	o	|	|	|	|	0.18
161.083	0.00	0.02	0.128	o	|	|	|	|	0.18
161.167	0.00	0.02	0.128	o	|	|	|	|	0.18
161.250	0.00	0.02	0.127	o	|	|	|	|	0.18
161.333	0.00	0.02	0.127	o	|	|	|	|	0.18
161.417	0.00	0.02	0.127	o	|	|	|	|	0.18
161.500	0.00	0.02	0.127	o	|	|	|	|	0.18
161.583	0.00	0.02	0.127	o	|	|	|	|	0.18
161.667	0.00	0.02	0.127	o	|	|	|	|	0.18
161.750	0.00	0.02	0.127	o	|	|	|	|	0.18

161.833	0.00	0.02	0.126	o	|	|	|	|	0.18
161.917	0.00	0.02	0.126	o	|	|	|	|	0.18
162.000	0.00	0.02	0.126	o	|	|	|	|	0.18
162.083	0.00	0.02	0.126	o	|	|	|	|	0.18
162.167	0.00	0.02	0.126	o	|	|	|	|	0.18
162.250	0.00	0.02	0.126	o	|	|	|	|	0.18
162.333	0.00	0.02	0.126	o	|	|	|	|	0.18
162.417	0.00	0.02	0.125	o	|	|	|	|	0.18
162.500	0.00	0.02	0.125	o	|	|	|	|	0.18
162.583	0.00	0.02	0.125	o	|	|	|	|	0.18
162.667	0.00	0.02	0.125	o	|	|	|	|	0.18
162.750	0.00	0.02	0.125	o	|	|	|	|	0.18
162.833	0.00	0.02	0.125	o	|	|	|	|	0.18
162.917	0.00	0.02	0.125	o	|	|	|	|	0.18
163.000	0.00	0.02	0.125	o	|	|	|	|	0.17
163.083	0.00	0.02	0.124	o	|	|	|	|	0.17
163.167	0.00	0.02	0.124	o	|	|	|	|	0.17
163.250	0.00	0.02	0.124	o	|	|	|	|	0.17
163.333	0.00	0.02	0.124	o	|	|	|	|	0.17
163.417	0.00	0.02	0.124	o	|	|	|	|	0.17
163.500	0.00	0.02	0.124	o	|	|	|	|	0.17
163.583	0.00	0.02	0.124	o	|	|	|	|	0.17
163.667	0.00	0.02	0.124	o	|	|	|	|	0.17
163.750	0.00	0.02	0.123	o	|	|	|	|	0.17
163.833	0.00	0.02	0.123	o	|	|	|	|	0.17
163.917	0.00	0.02	0.123	o	|	|	|	|	0.17
164.000	0.00	0.02	0.123	o	|	|	|	|	0.17
164.083	0.00	0.02	0.123	o	|	|	|	|	0.17
164.167	0.00	0.02	0.123	o	|	|	|	|	0.17
164.250	0.00	0.02	0.123	o	|	|	|	|	0.17
164.333	0.00	0.02	0.123	o	|	|	|	|	0.17
164.417	0.00	0.02	0.123	o	|	|	|	|	0.17
164.500	0.00	0.02	0.122	o	|	|	|	|	0.17
164.583	0.00	0.02	0.122	o	|	|	|	|	0.17
164.667	0.00	0.02	0.122	o	|	|	|	|	0.17
164.750	0.00	0.02	0.122	o	|	|	|	|	0.17
164.833	0.00	0.02	0.122	o	|	|	|	|	0.17
164.917	0.00	0.02	0.122	o	|	|	|	|	0.17
165.000	0.00	0.02	0.122	o	|	|	|	|	0.17
165.083	0.00	0.02	0.122	o	|	|	|	|	0.17
165.167	0.00	0.02	0.122	o	|	|	|	|	0.17
165.250	0.00	0.02	0.121	o	|	|	|	|	0.17
165.333	0.00	0.02	0.121	o	|	|	|	|	0.17
165.417	0.00	0.02	0.121	o	|	|	|	|	0.17
165.500	0.00	0.02	0.121	o	|	|	|	|	0.17
165.583	0.00	0.02	0.121	o	|	|	|	|	0.17
165.667	0.00	0.02	0.121	o	|	|	|	|	0.17
165.750	0.00	0.02	0.121	o	|	|	|	|	0.17
165.833	0.00	0.01	0.121	o	|	|	|	|	0.17
165.917	0.00	0.01	0.121	o	|	|	|	|	0.17
166.000	0.00	0.01	0.121	o	|	|	|	|	0.17
166.083	0.00	0.01	0.120	o	|	|	|	|	0.17
166.167	0.00	0.01	0.120	o	|	|	|	|	0.17
166.250	0.00	0.01	0.120	o	|	|	|	|	0.17
166.333	0.00	0.01	0.120	o	|	|	|	|	0.17
166.417	0.00	0.01	0.120	o	|	|	|	|	0.17
166.500	0.00	0.01	0.120	o	|	|	|	|	0.17
166.583	0.00	0.01	0.120	o	|	|	|	|	0.17
166.667	0.00	0.01	0.120	o	|	|	|	|	0.17
166.750	0.00	0.01	0.120	o	|	|	|	|	0.17
166.833	0.00	0.01	0.120	o	|	|	|	|	0.17
166.917	0.00	0.01	0.119	o	|	|	|	|	0.17
167.000	0.00	0.01	0.119	o	|	|	|	|	0.17
167.083	0.00	0.01	0.119	o	|	|	|	|	0.17
167.167	0.00	0.01	0.119	o	|	|	|	|	0.17
167.250	0.00	0.01	0.119	o	|	|	|	|	0.17
167.333	0.00	0.01	0.119	o	|	|	|	|	0.17
167.417	0.00	0.01	0.119	o	|	|	|	|	0.17
167.500	0.00	0.01	0.119	o	|	|	|	|	0.17
167.583	0.00	0.01	0.119	o	|	|	|	|	0.17
167.667	0.00	0.01	0.119	o	|	|	|	|	0.17
167.750	0.00	0.01	0.118	o	|	|	|	|	0.17
167.833	0.00	0.01	0.118	o	|	|	|	|	0.17
167.917	0.00	0.01	0.118	o	|	|	|	|	0.17
168.000	0.00	0.01	0.118	o	|	|	|	|	0.17

168.083	0.00	0.01	0.118	o	|	|	|	|	0.17
168.167	0.00	0.01	0.118	o	|	|	|	|	0.17
168.250	0.00	0.01	0.118	o	|	|	|	|	0.17
168.333	0.00	0.01	0.118	o	|	|	|	|	0.17
168.417	0.00	0.01	0.118	o	|	|	|	|	0.17
168.500	0.00	0.01	0.118	o	|	|	|	|	0.17
168.583	0.00	0.01	0.118	o	|	|	|	|	0.17
168.667	0.00	0.01	0.118	o	|	|	|	|	0.17
168.750	0.00	0.01	0.117	o	|	|	|	|	0.16
168.833	0.00	0.01	0.117	o	|	|	|	|	0.16
168.917	0.00	0.01	0.117	o	|	|	|	|	0.16
169.000	0.00	0.01	0.117	o	|	|	|	|	0.16
169.083	0.00	0.01	0.117	o	|	|	|	|	0.16
169.167	0.00	0.01	0.117	o	|	|	|	|	0.16
169.250	0.00	0.01	0.117	o	|	|	|	|	0.16
169.333	0.00	0.01	0.117	o	|	|	|	|	0.16
169.417	0.00	0.01	0.117	o	|	|	|	|	0.16
169.500	0.00	0.01	0.117	o	|	|	|	|	0.16
169.583	0.00	0.01	0.117	o	|	|	|	|	0.16
169.667	0.00	0.01	0.117	o	|	|	|	|	0.16
169.750	0.00	0.01	0.116	o	|	|	|	|	0.16
169.833	0.00	0.01	0.116	o	|	|	|	|	0.16
169.917	0.00	0.01	0.116	o	|	|	|	|	0.16
170.000	0.00	0.01	0.116	o	|	|	|	|	0.16
170.083	0.00	0.01	0.116	o	|	|	|	|	0.16
170.167	0.00	0.01	0.116	o	|	|	|	|	0.16
170.250	0.00	0.01	0.116	o	|	|	|	|	0.16
170.333	0.00	0.01	0.116	o	|	|	|	|	0.16
170.417	0.00	0.01	0.116	o	|	|	|	|	0.16
170.500	0.00	0.01	0.116	o	|	|	|	|	0.16
170.583	0.00	0.01	0.116	o	|	|	|	|	0.16
170.667	0.00	0.01	0.116	o	|	|	|	|	0.16
170.750	0.00	0.01	0.116	o	|	|	|	|	0.16
170.833	0.00	0.01	0.115	o	|	|	|	|	0.16
170.917	0.00	0.01	0.115	o	|	|	|	|	0.16
171.000	0.00	0.01	0.115	o	|	|	|	|	0.16
171.083	0.00	0.01	0.115	o	|	|	|	|	0.16
171.167	0.00	0.01	0.115	o	|	|	|	|	0.16
171.250	0.00	0.01	0.115	o	|	|	|	|	0.16
171.333	0.00	0.01	0.115	o	|	|	|	|	0.16
171.417	0.00	0.01	0.115	o	|	|	|	|	0.16
171.500	0.00	0.01	0.115	o	|	|	|	|	0.16
171.583	0.00	0.01	0.115	o	|	|	|	|	0.16
171.667	0.00	0.01	0.115	o	|	|	|	|	0.16
171.750	0.00	0.01	0.115	o	|	|	|	|	0.16
171.833	0.00	0.01	0.115	o	|	|	|	|	0.16
171.917	0.00	0.01	0.115	o	|	|	|	|	0.16
172.000	0.00	0.01	0.115	o	|	|	|	|	0.16
172.083	0.00	0.01	0.114	o	|	|	|	|	0.16
172.167	0.00	0.01	0.114	o	|	|	|	|	0.16
172.250	0.00	0.01	0.114	o	|	|	|	|	0.16
172.333	0.00	0.01	0.114	o	|	|	|	|	0.16
172.417	0.00	0.01	0.114	o	|	|	|	|	0.16
172.500	0.00	0.01	0.114	o	|	|	|	|	0.16
172.583	0.00	0.01	0.114	o	|	|	|	|	0.16
172.667	0.00	0.01	0.114	o	|	|	|	|	0.16
172.750	0.00	0.01	0.114	o	|	|	|	|	0.16
172.833	0.00	0.01	0.114	o	|	|	|	|	0.16
172.917	0.00	0.01	0.114	o	|	|	|	|	0.16
173.000	0.00	0.01	0.114	o	|	|	|	|	0.16
173.083	0.00	0.01	0.114	o	|	|	|	|	0.16
173.167	0.00	0.01	0.114	o	|	|	|	|	0.16
173.250	0.00	0.01	0.114	o	|	|	|	|	0.16
173.333	0.00	0.01	0.113	o	|	|	|	|	0.16
173.417	0.00	0.01	0.113	o	|	|	|	|	0.16
173.500	0.00	0.01	0.113	o	|	|	|	|	0.16
173.583	0.00	0.01	0.113	o	|	|	|	|	0.16
173.667	0.00	0.01	0.113	o	|	|	|	|	0.16
173.750	0.00	0.01	0.113	o	|	|	|	|	0.16
173.833	0.00	0.01	0.113	o	|	|	|	|	0.16
173.917	0.00	0.01	0.113	o	|	|	|	|	0.16
174.000	0.00	0.01	0.113	o	|	|	|	|	0.16
174.083	0.00	0.01	0.113	o	|	|	|	|	0.16
174.167	0.00	0.01	0.113	o	|	|	|	|	0.16
174.250	0.00	0.01	0.113	o	|	|	|	|	0.16

174.333	0.00	0.01	0.113	o	|	|	|	|	0.16
174.417	0.00	0.01	0.113	o	|	|	|	|	0.16
174.500	0.00	0.01	0.113	o	|	|	|	|	0.16
174.583	0.00	0.01	0.113	o	|	|	|	|	0.16
174.667	0.00	0.01	0.113	o	|	|	|	|	0.16
174.750	0.00	0.01	0.112	o	|	|	|	|	0.16
174.833	0.00	0.01	0.112	o	|	|	|	|	0.16
174.917	0.00	0.01	0.112	o	|	|	|	|	0.16
175.000	0.00	0.01	0.112	o	|	|	|	|	0.16
175.083	0.00	0.01	0.112	o	|	|	|	|	0.16
175.167	0.00	0.01	0.112	o	|	|	|	|	0.16
175.250	0.00	0.01	0.112	o	|	|	|	|	0.16
175.333	0.00	0.01	0.112	o	|	|	|	|	0.16
175.417	0.00	0.01	0.112	o	|	|	|	|	0.16
175.500	0.00	0.01	0.112	o	|	|	|	|	0.16
175.583	0.00	0.01	0.112	o	|	|	|	|	0.16
175.667	0.00	0.01	0.112	o	|	|	|	|	0.16
175.750	0.00	0.01	0.112	o	|	|	|	|	0.16
175.833	0.00	0.01	0.112	o	|	|	|	|	0.16
175.917	0.00	0.01	0.112	o	|	|	|	|	0.16
176.000	0.00	0.01	0.112	o	|	|	|	|	0.16
176.083	0.00	0.01	0.112	o	|	|	|	|	0.16
176.167	0.00	0.01	0.112	o	|	|	|	|	0.16
176.250	0.00	0.01	0.112	o	|	|	|	|	0.16
176.333	0.00	0.01	0.111	o	|	|	|	|	0.16
176.417	0.00	0.01	0.111	o	|	|	|	|	0.16
176.500	0.00	0.01	0.111	o	|	|	|	|	0.16
176.583	0.00	0.01	0.111	o	|	|	|	|	0.16
176.667	0.00	0.01	0.111	o	|	|	|	|	0.16
176.750	0.00	0.01	0.111	o	|	|	|	|	0.16
176.833	0.00	0.01	0.111	o	|	|	|	|	0.16
176.917	0.00	0.01	0.111	o	|	|	|	|	0.16
177.000	0.00	0.01	0.111	o	|	|	|	|	0.16
177.083	0.00	0.01	0.111	o	|	|	|	|	0.16
177.167	0.00	0.01	0.111	o	|	|	|	|	0.16
177.250	0.00	0.01	0.111	o	|	|	|	|	0.16
177.333	0.00	0.01	0.111	o	|	|	|	|	0.16
177.417	0.00	0.01	0.111	o	|	|	|	|	0.16
177.500	0.00	0.01	0.111	o	|	|	|	|	0.16
177.583	0.00	0.01	0.111	o	|	|	|	|	0.16
177.667	0.00	0.01	0.111	o	|	|	|	|	0.16
177.750	0.00	0.01	0.111	o	|	|	|	|	0.16
177.833	0.00	0.01	0.111	o	|	|	|	|	0.16
177.917	0.00	0.01	0.111	o	|	|	|	|	0.16
178.000	0.00	0.01	0.111	o	|	|	|	|	0.16
178.083	0.00	0.01	0.111	o	|	|	|	|	0.16
178.167	0.00	0.01	0.110	o	|	|	|	|	0.16
178.250	0.00	0.01	0.110	o	|	|	|	|	0.16
178.333	0.00	0.01	0.110	o	|	|	|	|	0.15
178.417	0.00	0.01	0.110	o	|	|	|	|	0.15
178.500	0.00	0.01	0.110	o	|	|	|	|	0.15
178.583	0.00	0.01	0.110	o	|	|	|	|	0.15
178.667	0.00	0.01	0.110	o	|	|	|	|	0.15
178.750	0.00	0.01	0.110	o	|	|	|	|	0.15
178.833	0.00	0.01	0.110	o	|	|	|	|	0.15
178.917	0.00	0.01	0.110	o	|	|	|	|	0.15
179.000	0.00	0.01	0.110	o	|	|	|	|	0.15
179.083	0.00	0.01	0.110	o	|	|	|	|	0.15
179.167	0.00	0.01	0.110	o	|	|	|	|	0.15
179.250	0.00	0.01	0.110	o	|	|	|	|	0.15
179.333	0.00	0.01	0.110	o	|	|	|	|	0.15
179.417	0.00	0.01	0.110	o	|	|	|	|	0.15
179.500	0.00	0.01	0.110	o	|	|	|	|	0.15
179.583	0.00	0.01	0.110	o	|	|	|	|	0.15
179.667	0.00	0.01	0.110	o	|	|	|	|	0.15
179.750	0.00	0.01	0.110	o	|	|	|	|	0.15
179.833	0.00	0.01	0.110	o	|	|	|	|	0.15
179.917	0.00	0.01	0.110	o	|	|	|	|	0.15
180.000	0.00	0.01	0.110	o	|	|	|	|	0.15
180.083	0.00	0.01	0.110	o	|	|	|	|	0.15
180.167	0.00	0.01	0.109	o	|	|	|	|	0.15
180.250	0.00	0.01	0.109	o	|	|	|	|	0.15
180.333	0.00	0.01	0.109	o	|	|	|	|	0.15
180.417	0.00	0.01	0.109	o	|	|	|	|	0.15
180.500	0.00	0.01	0.109	o	|	|	|	|	0.15

180.583	0.00	0.01	0.109	o	|	|	|	|	0.15
180.667	0.00	0.01	0.109	o	|	|	|	|	0.15
180.750	0.00	0.01	0.109	o	|	|	|	|	0.15
180.833	0.00	0.01	0.109	o	|	|	|	|	0.15
180.917	0.00	0.01	0.109	o	|	|	|	|	0.15
181.000	0.00	0.01	0.109	o	|	|	|	|	0.15
181.083	0.00	0.01	0.109	o	|	|	|	|	0.15
181.167	0.00	0.01	0.109	o	|	|	|	|	0.15
181.250	0.00	0.01	0.109	o	|	|	|	|	0.15
181.333	0.00	0.01	0.109	o	|	|	|	|	0.15
181.417	0.00	0.01	0.109	o	|	|	|	|	0.15
181.500	0.00	0.01	0.109	o	|	|	|	|	0.15
181.583	0.00	0.01	0.109	o	|	|	|	|	0.15
181.667	0.00	0.01	0.109	o	|	|	|	|	0.15
181.750	0.00	0.00	0.109	o	|	|	|	|	0.15
181.833	0.00	0.00	0.109	o	|	|	|	|	0.15
181.917	0.00	0.00	0.109	o	|	|	|	|	0.15
182.000	0.00	0.00	0.109	o	|	|	|	|	0.15
182.083	0.00	0.00	0.109	o	|	|	|	|	0.15
182.167	0.00	0.00	0.109	o	|	|	|	|	0.15
182.250	0.00	0.00	0.109	o	|	|	|	|	0.15
182.333	0.00	0.00	0.109	o	|	|	|	|	0.15
182.417	0.00	0.00	0.109	o	|	|	|	|	0.15
182.500	0.00	0.00	0.108	o	|	|	|	|	0.15
182.583	0.00	0.00	0.108	o	|	|	|	|	0.15
182.667	0.00	0.00	0.108	o	|	|	|	|	0.15
182.750	0.00	0.00	0.108	o	|	|	|	|	0.15
182.833	0.00	0.00	0.108	o	|	|	|	|	0.15
182.917	0.00	0.00	0.108	o	|	|	|	|	0.15
183.000	0.00	0.00	0.108	o	|	|	|	|	0.15
183.083	0.00	0.00	0.108	o	|	|	|	|	0.15
183.167	0.00	0.00	0.108	o	|	|	|	|	0.15
183.250	0.00	0.00	0.108	o	|	|	|	|	0.15
183.333	0.00	0.00	0.108	o	|	|	|	|	0.15
183.417	0.00	0.00	0.108	o	|	|	|	|	0.15
183.500	0.00	0.00	0.108	o	|	|	|	|	0.15
183.583	0.00	0.00	0.108	o	|	|	|	|	0.15
183.667	0.00	0.00	0.108	o	|	|	|	|	0.15
183.750	0.00	0.00	0.108	o	|	|	|	|	0.15
183.833	0.00	0.00	0.108	o	|	|	|	|	0.15
183.917	0.00	0.00	0.108	o	|	|	|	|	0.15
184.000	0.00	0.00	0.108	o	|	|	|	|	0.15
184.083	0.00	0.00	0.108	o	|	|	|	|	0.15
184.167	0.00	0.00	0.108	o	|	|	|	|	0.15
184.250	0.00	0.00	0.108	o	|	|	|	|	0.15
184.333	0.00	0.00	0.108	o	|	|	|	|	0.15
184.417	0.00	0.00	0.108	o	|	|	|	|	0.15
184.500	0.00	0.00	0.108	o	|	|	|	|	0.15
184.583	0.00	0.00	0.108	o	|	|	|	|	0.15
184.667	0.00	0.00	0.108	o	|	|	|	|	0.15
184.750	0.00	0.00	0.108	o	|	|	|	|	0.15
184.833	0.00	0.00	0.108	o	|	|	|	|	0.15
184.917	0.00	0.00	0.108	o	|	|	|	|	0.15
185.000	0.00	0.00	0.108	o	|	|	|	|	0.15
185.083	0.00	0.00	0.108	o	|	|	|	|	0.15
185.167	0.00	0.00	0.108	o	|	|	|	|	0.15
185.250	0.00	0.00	0.108	o	|	|	|	|	0.15
185.333	0.00	0.00	0.107	o	|	|	|	|	0.15
185.417	0.00	0.00	0.107	o	|	|	|	|	0.15
185.500	0.00	0.00	0.107	o	|	|	|	|	0.15
185.583	0.00	0.00	0.107	o	|	|	|	|	0.15
185.667	0.00	0.00	0.107	o	|	|	|	|	0.15
185.750	0.00	0.00	0.107	o	|	|	|	|	0.15
185.833	0.00	0.00	0.107	o	|	|	|	|	0.15
185.917	0.00	0.00	0.107	o	|	|	|	|	0.15
186.000	0.00	0.00	0.107	o	|	|	|	|	0.15
186.083	0.00	0.00	0.107	o	|	|	|	|	0.15
186.167	0.00	0.00	0.107	o	|	|	|	|	0.15
186.250	0.00	0.00	0.107	o	|	|	|	|	0.15
186.333	0.00	0.00	0.107	o	|	|	|	|	0.15
186.417	0.00	0.00	0.107	o	|	|	|	|	0.15
186.500	0.00	0.00	0.107	o	|	|	|	|	0.15
186.583	0.00	0.00	0.107	o	|	|	|	|	0.15
186.667	0.00	0.00	0.107	o	|	|	|	|	0.15
186.750	0.00	0.00	0.107	o	|	|	|	|	0.15

186.833	0.00	0.00	0.107	o	|	|	|	|	0.15
186.917	0.00	0.00	0.107	o	|	|	|	|	0.15
187.000	0.00	0.00	0.107	o	|	|	|	|	0.15
187.083	0.00	0.00	0.107	o	|	|	|	|	0.15
187.167	0.00	0.00	0.107	o	|	|	|	|	0.15
187.250	0.00	0.00	0.107	o	|	|	|	|	0.15
187.333	0.00	0.00	0.107	o	|	|	|	|	0.15
187.417	0.00	0.00	0.107	o	|	|	|	|	0.15
187.500	0.00	0.00	0.107	o	|	|	|	|	0.15
187.583	0.00	0.00	0.107	o	|	|	|	|	0.15
187.667	0.00	0.00	0.107	o	|	|	|	|	0.15
187.750	0.00	0.00	0.107	o	|	|	|	|	0.15
187.833	0.00	0.00	0.107	o	|	|	|	|	0.15
187.917	0.00	0.00	0.107	o	|	|	|	|	0.15
188.000	0.00	0.00	0.107	o	|	|	|	|	0.15
188.083	0.00	0.00	0.107	o	|	|	|	|	0.15
188.167	0.00	0.00	0.107	o	|	|	|	|	0.15
188.250	0.00	0.00	0.107	o	|	|	|	|	0.15
188.333	0.00	0.00	0.107	o	|	|	|	|	0.15
188.417	0.00	0.00	0.107	o	|	|	|	|	0.15
188.500	0.00	0.00	0.107	o	|	|	|	|	0.15
188.583	0.00	0.00	0.107	o	|	|	|	|	0.15
188.667	0.00	0.00	0.107	o	|	|	|	|	0.15
188.750	0.00	0.00	0.106	o	|	|	|	|	0.15
188.833	0.00	0.00	0.106	o	|	|	|	|	0.15
188.917	0.00	0.00	0.106	o	|	|	|	|	0.15
189.000	0.00	0.00	0.106	o	|	|	|	|	0.15
189.083	0.00	0.00	0.106	o	|	|	|	|	0.15
189.167	0.00	0.00	0.106	o	|	|	|	|	0.15
189.250	0.00	0.00	0.106	o	|	|	|	|	0.15
189.333	0.00	0.00	0.106	o	|	|	|	|	0.15
189.417	0.00	0.00	0.106	o	|	|	|	|	0.15
189.500	0.00	0.00	0.106	o	|	|	|	|	0.15
189.583	0.00	0.00	0.106	o	|	|	|	|	0.15
189.667	0.00	0.00	0.106	o	|	|	|	|	0.15
189.750	0.00	0.00	0.106	o	|	|	|	|	0.15
189.833	0.00	0.00	0.106	o	|	|	|	|	0.15
189.917	0.00	0.00	0.106	o	|	|	|	|	0.15
190.000	0.00	0.00	0.106	o	|	|	|	|	0.15
190.083	0.00	0.00	0.106	o	|	|	|	|	0.15
190.167	0.00	0.00	0.106	o	|	|	|	|	0.15
190.250	0.00	0.00	0.106	o	|	|	|	|	0.15
190.333	0.00	0.00	0.106	o	|	|	|	|	0.15
190.417	0.00	0.00	0.106	o	|	|	|	|	0.15
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190.667	0.00	0.00	0.106	o	|	|	|	|	0.15
190.750	0.00	0.00	0.106	o	|	|	|	|	0.15
190.833	0.00	0.00	0.106	o	|	|	|	|	0.15
190.917	0.00	0.00	0.106	o	|	|	|	|	0.15
191.000	0.00	0.00	0.106	o	|	|	|	|	0.15
191.083	0.00	0.00	0.106	o	|	|	|	|	0.15
191.167	0.00	0.00	0.106	o	|	|	|	|	0.15
191.250	0.00	0.00	0.106	o	|	|	|	|	0.15
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191.417	0.00	0.00	0.106	o	|	|	|	|	0.15
191.500	0.00	0.00	0.106	o	|	|	|	|	0.15
191.583	0.00	0.00	0.106	o	|	|	|	|	0.15
191.667	0.00	0.00	0.106	o	|	|	|	|	0.15
191.750	0.00	0.00	0.106	o	|	|	|	|	0.15
191.833	0.00	0.00	0.106	o	|	|	|	|	0.15
191.917	0.00	0.00	0.106	o	|	|	|	|	0.15
192.000	0.00	0.00	0.106	o	|	|	|	|	0.15
192.083	0.00	0.00	0.106	o	|	|	|	|	0.15
192.167	0.00	0.00	0.106	o	|	|	|	|	0.15
192.250	0.00	0.00	0.106	o	|	|	|	|	0.15
192.333	0.00	0.00	0.106	o	|	|	|	|	0.15
192.417	0.00	0.00	0.106	o	|	|	|	|	0.15
192.500	0.00	0.00	0.106	o	|	|	|	|	0.15
192.583	0.00	0.00	0.106	o	|	|	|	|	0.15
192.667	0.00	0.00	0.106	o	|	|	|	|	0.15
192.750	0.00	0.00	0.106	o	|	|	|	|	0.15
192.833	0.00	0.00	0.106	o	|	|	|	|	0.15
192.917	0.00	0.00	0.106	o	|	|	|	|	0.15
193.000	0.00	0.00	0.106	o	|	|	|	|	0.15

193.083	0.00	0.00	0.106	o	|	|	|	|	0.15
193.167	0.00	0.00	0.106	o	|	|	|	|	0.15
193.250	0.00	0.00	0.106	o	|	|	|	|	0.15
193.333	0.00	0.00	0.105	o	|	|	|	|	0.15
193.417	0.00	0.00	0.105	o	|	|	|	|	0.15
193.500	0.00	0.00	0.105	o	|	|	|	|	0.15
193.583	0.00	0.00	0.105	o	|	|	|	|	0.15
193.667	0.00	0.00	0.105	o	|	|	|	|	0.15
193.750	0.00	0.00	0.105	o	|	|	|	|	0.15
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193.917	0.00	0.00	0.105	o	|	|	|	|	0.15
194.000	0.00	0.00	0.105	o	|	|	|	|	0.15
194.083	0.00	0.00	0.105	o	|	|	|	|	0.15
194.167	0.00	0.00	0.105	o	|	|	|	|	0.15
194.250	0.00	0.00	0.105	o	|	|	|	|	0.15
194.333	0.00	0.00	0.105	o	|	|	|	|	0.15
194.417	0.00	0.00	0.105	o	|	|	|	|	0.15
194.500	0.00	0.00	0.105	o	|	|	|	|	0.15
194.583	0.00	0.00	0.105	o	|	|	|	|	0.15
194.667	0.00	0.00	0.105	o	|	|	|	|	0.15
194.750	0.00	0.00	0.105	o	|	|	|	|	0.15
194.833	0.00	0.00	0.105	o	|	|	|	|	0.15
194.917	0.00	0.00	0.105	o	|	|	|	|	0.15
195.000	0.00	0.00	0.105	o	|	|	|	|	0.15
195.083	0.00	0.00	0.105	o	|	|	|	|	0.15
195.167	0.00	0.00	0.105	o	|	|	|	|	0.15
195.250	0.00	0.00	0.105	o	|	|	|	|	0.15
195.333	0.00	0.00	0.105	o	|	|	|	|	0.15
195.417	0.00	0.00	0.105	o	|	|	|	|	0.15
195.500	0.00	0.00	0.105	o	|	|	|	|	0.15
195.583	0.00	0.00	0.105	o	|	|	|	|	0.15
195.667	0.00	0.00	0.105	o	|	|	|	|	0.15
195.750	0.00	0.00	0.105	o	|	|	|	|	0.15
195.833	0.00	0.00	0.105	o	|	|	|	|	0.15
195.917	0.00	0.00	0.105	o	|	|	|	|	0.15
196.000	0.00	0.00	0.105	o	|	|	|	|	0.15
196.083	0.00	0.00	0.105	o	|	|	|	|	0.15
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196.250	0.00	0.00	0.105	o	|	|	|	|	0.15
196.333	0.00	0.00	0.105	o	|	|	|	|	0.15
196.417	0.00	0.00	0.105	o	|	|	|	|	0.15
196.500	0.00	0.00	0.105	o	|	|	|	|	0.15
196.583	0.00	0.00	0.105	o	|	|	|	|	0.15
196.667	0.00	0.00	0.105	o	|	|	|	|	0.15
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196.833	0.00	0.00	0.105	o	|	|	|	|	0.15
196.917	0.00	0.00	0.105	o	|	|	|	|	0.15
197.000	0.00	0.00	0.105	o	|	|	|	|	0.15
197.083	0.00	0.00	0.105	o	|	|	|	|	0.15
197.167	0.00	0.00	0.105	o	|	|	|	|	0.15
197.250	0.00	0.00	0.105	o	|	|	|	|	0.15
197.333	0.00	0.00	0.105	o	|	|	|	|	0.15
197.417	0.00	0.00	0.105	o	|	|	|	|	0.15
197.500	0.00	0.00	0.105	o	|	|	|	|	0.15
197.583	0.00	0.00	0.105	o	|	|	|	|	0.15
197.667	0.00	0.00	0.105	o	|	|	|	|	0.15
197.750	0.00	0.00	0.105	o	|	|	|	|	0.15
197.833	0.00	0.00	0.105	o	|	|	|	|	0.15
197.917	0.00	0.00	0.105	o	|	|	|	|	0.15
198.000	0.00	0.00	0.105	o	|	|	|	|	0.15
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198.167	0.00	0.00	0.105	o	|	|	|	|	0.15
198.250	0.00	0.00	0.105	o	|	|	|	|	0.15
198.333	0.00	0.00	0.105	o	|	|	|	|	0.15
198.417	0.00	0.00	0.105	o	|	|	|	|	0.15
198.500	0.00	0.00	0.105	o	|	|	|	|	0.15
198.583	0.00	0.00	0.105	o	|	|	|	|	0.15
198.667	0.00	0.00	0.105	o	|	|	|	|	0.15
198.750	0.00	0.00	0.105	o	|	|	|	|	0.15
198.833	0.00	0.00	0.105	o	|	|	|	|	0.15
198.917	0.00	0.00	0.105	o	|	|	|	|	0.15
199.000	0.00	0.00	0.105	o	|	|	|	|	0.15
199.083	0.00	0.00	0.105	o	|	|	|	|	0.15
199.167	0.00	0.00	0.105	o	|	|	|	|	0.15
199.250	0.00	0.00	0.105	o	|	|	|	|	0.15

199.333	0.00	0.00	0.105	o	|	|	|	|	0.15
199.417	0.00	0.00	0.105	o	|	|	|	|	0.15
199.500	0.00	0.00	0.105	o	|	|	|	|	0.15
199.583	0.00	0.00	0.105	o	|	|	|	|	0.15
199.667	0.00	0.00	0.105	o	|	|	|	|	0.15
199.750	0.00	0.00	0.105	o	|	|	|	|	0.15
199.833	0.00	0.00	0.105	o	|	|	|	|	0.15
199.917	0.00	0.00	0.105	o	|	|	|	|	0.15
200.000	0.00	0.00	0.105	o	|	|	|	|	0.15
200.083	0.00	0.00	0.104	o	|	|	|	|	0.15
200.167	0.00	0.00	0.104	o	|	|	|	|	0.15
200.250	0.00	0.00	0.104	o	|	|	|	|	0.15
200.333	0.00	0.00	0.104	o	|	|	|	|	0.15
200.417	0.00	0.00	0.104	o	|	|	|	|	0.15
200.500	0.00	0.00	0.104	o	|	|	|	|	0.15
200.583	0.00	0.00	0.104	o	|	|	|	|	0.15
200.667	0.00	0.00	0.104	o	|	|	|	|	0.15
200.750	0.00	0.00	0.104	o	|	|	|	|	0.15
200.833	0.00	0.00	0.104	o	|	|	|	|	0.15
200.917	0.00	0.00	0.104	o	|	|	|	|	0.15
201.000	0.00	0.00	0.104	o	|	|	|	|	0.15
201.083	0.00	0.00	0.104	o	|	|	|	|	0.15
201.167	0.00	0.00	0.104	o	|	|	|	|	0.15
201.250	0.00	0.00	0.104	o	|	|	|	|	0.15
201.333	0.00	0.00	0.104	o	|	|	|	|	0.15
201.417	0.00	0.00	0.104	o	|	|	|	|	0.15
201.500	0.00	0.00	0.104	o	|	|	|	|	0.15
201.583	0.00	0.00	0.104	o	|	|	|	|	0.15
201.667	0.00	0.00	0.104	o	|	|	|	|	0.15
201.750	0.00	0.00	0.104	o	|	|	|	|	0.15
201.833	0.00	0.00	0.104	o	|	|	|	|	0.15
201.917	0.00	0.00	0.104	o	|	|	|	|	0.15
202.000	0.00	0.00	0.104	o	|	|	|	|	0.15
202.083	0.00	0.00	0.104	o	|	|	|	|	0.15
202.167	0.00	0.00	0.104	o	|	|	|	|	0.15
202.250	0.00	0.00	0.104	o	|	|	|	|	0.15
202.333	0.00	0.00	0.104	o	|	|	|	|	0.15
202.417	0.00	0.00	0.104	o	|	|	|	|	0.15
202.500	0.00	0.00	0.104	o	|	|	|	|	0.15
202.583	0.00	0.00	0.104	o	|	|	|	|	0.15
202.667	0.00	0.00	0.104	o	|	|	|	|	0.15
202.750	0.00	0.00	0.104	o	|	|	|	|	0.15
202.833	0.00	0.00	0.104	o	|	|	|	|	0.15
202.917	0.00	0.00	0.104	o	|	|	|	|	0.15
203.000	0.00	0.00	0.104	o	|	|	|	|	0.15
203.083	0.00	0.00	0.104	o	|	|	|	|	0.15
203.167	0.00	0.00	0.104	o	|	|	|	|	0.15
203.250	0.00	0.00	0.104	o	|	|	|	|	0.15
203.333	0.00	0.00	0.104	o	|	|	|	|	0.15
203.417	0.00	0.00	0.104	o	|	|	|	|	0.15
203.500	0.00	0.00	0.104	o	|	|	|	|	0.15
203.583	0.00	0.00	0.104	o	|	|	|	|	0.15
203.667	0.00	0.00	0.104	o	|	|	|	|	0.15
203.750	0.00	0.00	0.104	o	|	|	|	|	0.15
203.833	0.00	0.00	0.104	o	|	|	|	|	0.15
203.917	0.00	0.00	0.104	o	|	|	|	|	0.15
204.000	0.00	0.00	0.104	o	|	|	|	|	0.15
204.083	0.00	0.00	0.104	o	|	|	|	|	0.15
204.167	0.00	0.00	0.104	o	|	|	|	|	0.15
204.250	0.00	0.00	0.104	o	|	|	|	|	0.15
204.333	0.00	0.00	0.104	o	|	|	|	|	0.15
204.417	0.00	0.00	0.104	o	|	|	|	|	0.15
204.500	0.00	0.00	0.104	o	|	|	|	|	0.15
204.583	0.00	0.00	0.104	o	|	|	|	|	0.15
204.667	0.00	0.00	0.104	o	|	|	|	|	0.15
204.750	0.00	0.00	0.104	o	|	|	|	|	0.15
204.833	0.00	0.00	0.104	o	|	|	|	|	0.15
204.917	0.00	0.00	0.104	o	|	|	|	|	0.15
205.000	0.00	0.00	0.104	o	|	|	|	|	0.15
205.083	0.00	0.00	0.104	o	|	|	|	|	0.15
205.167	0.00	0.00	0.104	o	|	|	|	|	0.15

Remaining water in basin = 0.10 (Ac.Ft)

```
**************************HYDROGRAPH DATA**************************
               Number of intervals =  2462
               Time interval =    5.0 (Min.)
               Maximum/Peak flow rate =        0.647 (CFS)
               Total volume =       4.895 (Ac.Ft)
       Status of hydrographs being held in storage
                   Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
       Peak (CFS)      0.000     0.000     0.000     0.000     0.000
       Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
*******************************************************************************

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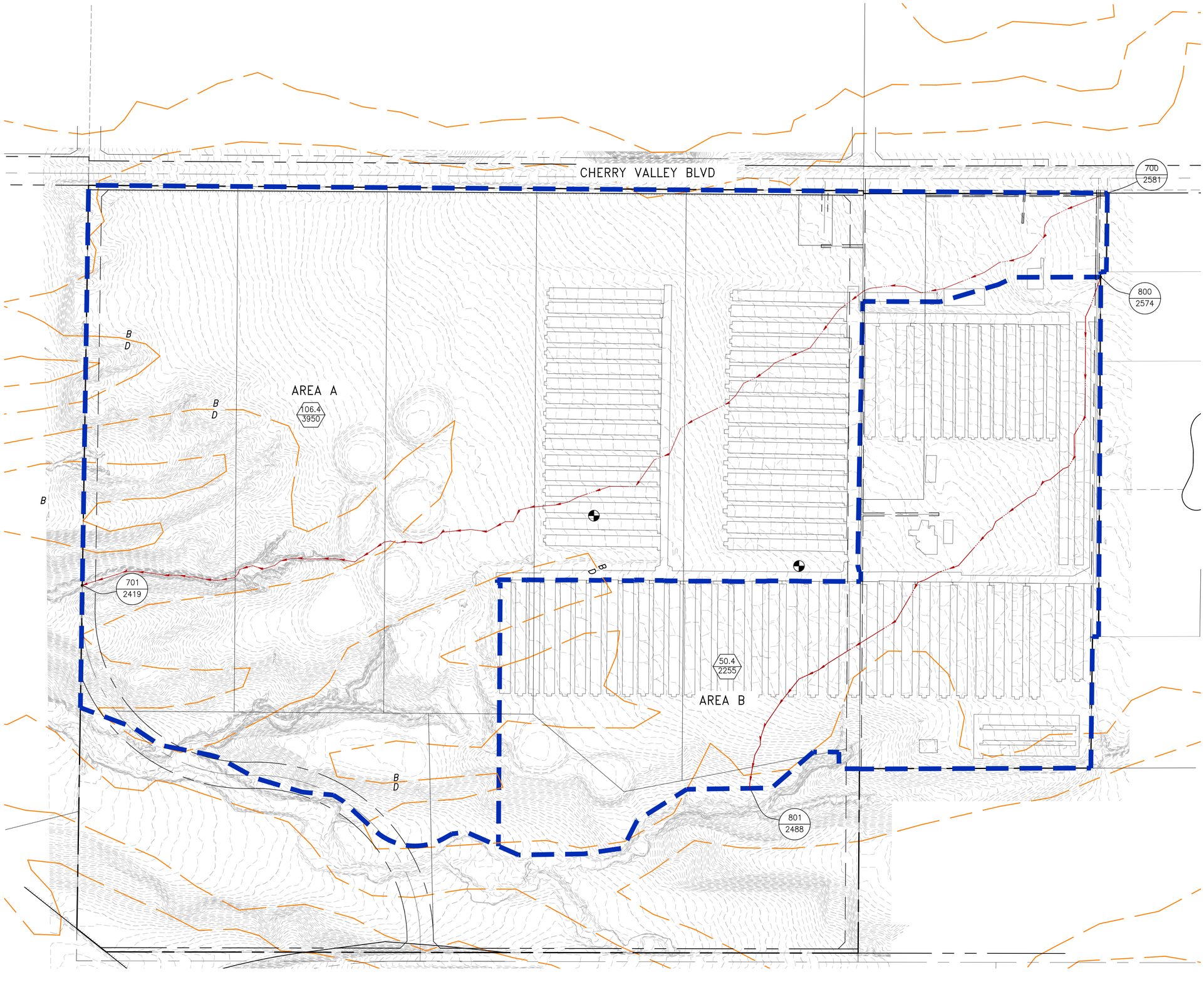
NORTH AREA

Hydrology Maps



EXISTING AREA A	
TOTAL AREA	106.4 AC
L_T	3950 Ft
L_{CA}	1805 Ft
ΔH	162.0 Ft

EXISTING AREA B	
TOTAL AREA	50.4 AC
L_T	2255 Ft
L_{CA}	615 Ft
ΔH	86.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER – ELEVATION (FT)

AC / FT – AREA (AC) – LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W WEBB E S

1" = 150'

150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 6
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE:	1"=X'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE:	8/10/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 1
DESIGNED:	EP		OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

H:\2021\21-0044\DRAINAGE\HYD\DWG FOLDER\21-0044-UH MAPS 2021-06-17.DWG 2/23/2022 3:27:49 PM

CHERRY VALLEY BLVD

AREA A

88.8 ACRES

AREA B

17.7 ACRES

B
D

LEGEND

- DRAINAGE AREA BOUNDARY (PROPOSED)
- FLOWLINE (PROPOSED)
- NRCS SOIL BOUNDARY

PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED WEST AREA (83.4% AREA A)

PORTION OF EXISTING AREA A CORRESPONDING TO DEVELOPED NORTH AREA (16.6% AREA A)

N
W WEBB E
S

1" = 150'

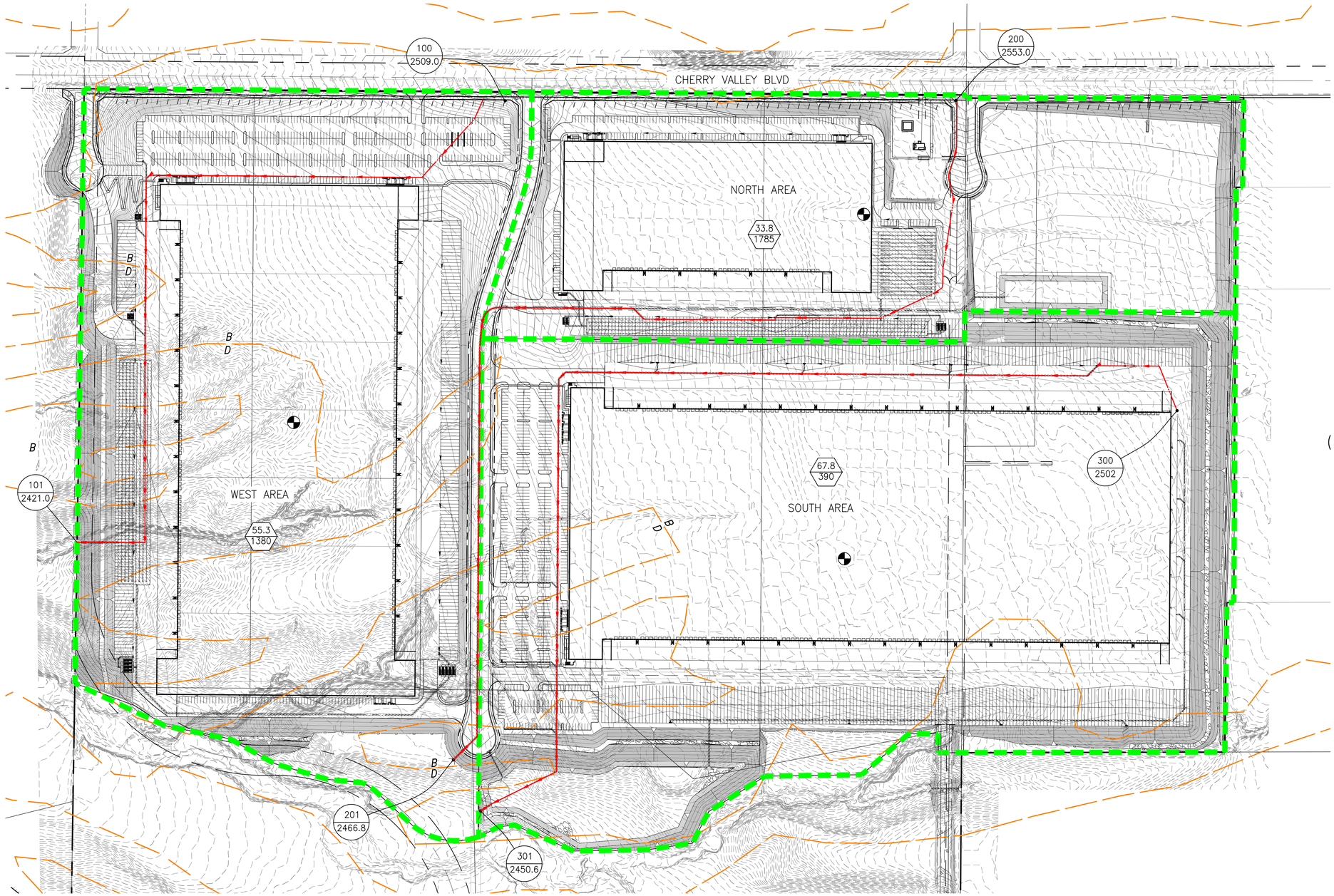
150 0 150 300 450

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 7
INDUSTRIAL DEVELOPMENT
EXISTING CONDITION AREA A PORTIONS
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	W.O. 21-0044
DATE: 8/10/2021	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	SHEET 2
DESIGNED: EP		OF 3 SHEETS
CHECKED:		DWG. NO.
PLN CK REF:		
F.B.		

H:\2021\21-0044\DRAINAGE\HYD\DWG FOLDER\21-0044-UH MAPS 2021-06-17.DWG 2/23/2022 3:27:49 PM



PROPOSED WEST AREA	
TOTAL AREA	55.3 AC
L_T	1380 Ft
L_{CA}	695 Ft
ΔH	12.0 Ft

PROPOSED NORTH AREA	
TOTAL AREA	33.8 AC
L_T	1785 Ft
L_{CA}	1340 Ft
ΔH	27.0 Ft

PROPOSED SOUTH AREA	
TOTAL AREA	67.8 AC
L_T	390 Ft
L_{CA}	360 Ft
ΔH	9.0 Ft

LEGEND

NODE / ELEV – NODE NUMBER / ELEVATION (FT)

AC / FT – AREA (AC) / LENGTH (FT)

– DRAINAGE AREA BOUNDARY (PROPOSED)

– FLOWLINE (PROPOSED)

– NRCS SOIL BOUNDARY

N W E S WEBB

1" = 150'

150 0 150 300 450

PRELIMINARY

H:\2021\21-0044\DRAINAGE\HYD\DWG FOLDER\21-0044-UH MAPS.DWG 2/23/2022 4:32:51 PM

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

EXHIBIT 8
INDUSTRIAL DEVELOPMENT
DEVELOPED CONDITION
UNIT HYDROGRAPH EXHIBIT

SCALE: 1" = 150'	ALBERT A. WEBB ASSOCIATES	ENGINEERING CONSULTANTS 3788 McCRAY STREET RIVERSIDE, CA. 92506 PH. (951) 686-1070 FAX (951) 788-1256	W.O. 21-0044
DATE: 7/20/2021			SHEET 3
DESIGNED: EP			OF 3 SHEETS
CHECKED:			DWG. NO.
PLN CK REF:			
F.B.			

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ A. **On-site storm drain inlets**	☒ **Locations of inlets.**	☒ **Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.**	☒ **Maintain and periodically repaint or replace inlet markings.** ☒ **Provide stormwater pollution prevention information to new site owners, lessees, or operators.** ☒ **See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** ☒ **Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."**
☒ B. **Interior floor drains and elevator shaft sump pumps**		☒ **State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.**	☒ **Inspect and maintain drains to prevent blockages and overflow.**
☐ C. **Interior parking garages**		☐ **State that parking garage floor drains will be plumbed to the sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ D1. **Need for future indoor & structural pest control**		☒ **Note building design features that discourage entry of pests.**	☒ **Provide Integrated Pest Management information to owners, lessees, and operators.**
☒ D2. **Landscape/ Outdoor Pesticide Use**	☐ **Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.** ☐ **Show self-retaining landscape areas, if any.** ☒ **Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)**	**State that final landscape plans will accomplish all of the following.** ☒ **Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.** ☒ **Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.** ☒ **Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.** ☒ **Consider using pest-resistant plants, especially adjacent to hardscape.** **To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.**	☒ **Maintain landscaping using minimum or no pesticides.** ☒ **See applicable operational BMPs in "What you should know for…..Landscape and Gardening"** at http://rcflood.org/stormwater/**Error! Hyperlink reference not valid.** ☒ **Provide IPM information to new owners, lessees and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☐ E. **Pools, spas, ponds, decorative fountains, and other water features.**	☐ **Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)**	**If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.**	☐ **See applicable operational BMPs in** "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/
☐ F. **Food service**	☐ **For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.** ☐ **On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.**	☐ **Describe the location and features of the designated cleaning area.** ☐ **Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.**	☐ **See the brochure, "**The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ **Provide this brochure to new site owners, lessees, and operators.**
☒ G. **Refuse areas**	☒ **Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.** ☒ **If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.** ☒ **Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.**	☒ **State how site refuse will be handled and provide supporting detail to what is shown on plans.** ☒ **State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.**	☒ **State how the following will be implemented:** **Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at** www.cabmphandbooks.com

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ H. **Industrial processes.**	☒ **Show process area.**	☒ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	☒ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ I. **Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)**	❑ **Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area.** ❑ **Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults.** ❑ **Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.**	**Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.** **Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:** ▪ **Hazardous Waste Generation** ▪ **Hazardous Materials Release Response and Inventory** ▪ **California Accidental Release (CalARP)** ▪ **Aboveground Storage Tank** ▪ **Uniform Fire Code Article 80 Section 103(b) & (c) 1991** ▪ **Underground Storage Tank** **www.cchealth.org/groups/hazmat/**	❑ **See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ J. **Vehicle and Equipment Cleaning**	❑ **Show on drawings as appropriate:** **(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.** **(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).** **(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.** **(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.**	❑ **If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.**	**Describe operational measures to implement the following (if applicable):** ❑ **Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.** Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ ❑ **Car dealerships and similar may rinse cars with water only.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ K. **Vehicle/Equipment Repair and Maintenance**	❑ **Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.** ❑ **Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.** ❑ **Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.**	❑ **State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.** ❑ **State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.** ❑ **State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.**	**In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:** ❑ **No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.** ❑ **No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.** ❑ **No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.** Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ L. **Fuel Dispensing Areas**	❑ **Fueling areas[6] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable.** ❑ **Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.**		❑ **The property owner shall dry sweep the fueling area routinely.** ❑ **See the Fact Sheet SD-30 , "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

[6] **The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ M. **Loading Docks**	☒ **Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.** ☒ **Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation.** ☒ **Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.**		☒ **Move loaded and unloaded items indoors as soon as possible.** ☒ **See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ N. **Fire Sprinkler Test Water**		☒ **Provide a means to drain fire sprinkler test water to the sanitary sewer.**	☒ **See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com**
☒ O. **Miscellaneous Drain or Wash Water or Other Sources** ☐ **Boiler drain lines** ☐ **Condensate drain lines** ☐ **Rooftop equipment** ☐ **Drainage sumps** ☐ **Roofing, gutters, and trim.** ☐ **Other sources**		☒ **Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.** ☒ **Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.** ☒ **Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment.** ☒ **Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.** ☒ **Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.** **Include controls for other sources as specified by local reviewer.**	

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ P. **Plazas, sidewalks, and parking lots.**			☒ **Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.**

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Recorded at the request of:
COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT

THIS INSTRUMENT IS FOR THE BENEFIT
OF THE COUNTY OF RIVERSIDE AND
ENTITLED TO BE RECORDED WITHOUT
FEE.(GOV. CODE 6103)

RETURN TO:
RIVERSIDE COUNTY TRANSPORTATION
DEPARTMENT. **STOP NO. 1080**

COVENANT AND AGREEMENT REGARDING WATER QUALITY MANAGEMENT PLAN BMP, CONSENT TO INSPECT, MAINTENANCE AND INDEMNIFICATION

APN:_____PROJECT No._____IP No._____

OWNER(S):_____

PROPERTY ADDRESS:_____

LEGAL DESCRIPTION: See attached Exhibit A; File No.: NCS-xxxx_____
_____
_____

THIS AGREEMENT is made and entered into in Riverside County, California, this day of_____Year 2022, by and between_____, (hereinafter referred to as "Covenantor" or "Owner") and the COUNTY OF RIVERSIDE via its Department of Transportation, a political subdivision of the State of California (hereinafter referred to as "County").

RECITALS

WHEREAS, the Covenantor owns real property ("Property") in the County of Riverside, State of California, more specifically described in Exhibit "A" and depicted in Exhibit "B", each of these exhibits is attached, and incorporated herein by this reference;

WHEREAS, the County is the owner of interests in that certain real property within the unincorporated area of the County of Riverside, State of California, containing storm drains, pipelines, and related appurtenances constituting the County's municipal separate storm sewer system (the County's "MS4");

WHEREAS, Covenantor intends to develop, improve, and/or use the Property is such a way that approval by the County for such development, improvement, and/or use is required pursuant to applicable laws;

WHEREAS, As a condition for said approval by the County, County required Covenantor, and Covenantor desires to, restrict the use of the Property according to the conditions, covenants, equitable servitudes, and restrictions contained herein for the express benefit of the County's MS4, which include requirements that the Property incorporate post construction on-site stormwater quality control measures;

WHEREAS, the Covenantor/Owner has chosen to install one or more bioretention basin and underground chambers, hereinafter referred to as "Device", as the on-site control measure to minimize pollutants in urban runoff;

WHEREAS, said Device has been installed in accordance with plans and specifications accepted by the County;

WHEREAS, said Device, with installation on private property and draining only private property, is a private facility with all maintenance or replacement, therefore, the sole responsibility of the Covenantor/Owner in accordance with the terms of this Agreement;

WHEREAS, the Covenantor/Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of Device and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining; to confined space and waste disposal methods, in effect at the time such maintenance occurs;

NOW THEREFORE, incorporating the foregoing Recitals and in consideration of the covenants and conditions contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and expressly for the benefit of, and to bind, their successors in interest, the parties hereto agree as follows:

1. Covenantor/Owner hereby provides the County or County's designee complete access to the Device and its immediate vicinity and such access onto the property to permit access to the devise at any time, upon twenty-four *(24)* hour advance notice in writing, of any duration for the purpose of inspection, sampling and testing of the Device. County shall make every effort at all times to minimize or avoid interference with Owner's use of the Property.

2. Covenantor/Owner shall use its best efforts diligently to maintain the Device in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of material(s) from the Device and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested

from time to time by the County / Regional Water Quality Control Board (RWQCB), the Owner shall provide the RWQCB with documentation identifying the material(s) removed, the quantity, and disposal destination.

3. In the event Covenantor/Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) days of being given written notice by the County, the County is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense to the Owner or Owner's successors or assigns, including administrative costs and interest thereon at the maximum rate authorized by the Civil Code from the date of notice of expense until paid in full.

4. The County may require the Covenantor/Owner to post security in a form and for a time period satisfactory to the County to guarantee the performance of the obligations stated herein. Should the Owner fail to perform the obligations under this Agreement, the County may, in the case of a cash deposit, certificate of deposit or letter of credit, act for the Owner using the proceeds from it, or in the case of a surety bond, require the sureties to perform the obligations of the Agreement.

5. The County may, but shall not be obligated to, enforce this Agreement by a proceeding at law or in equity against any person or persons violating or attempting to violate any condition, covenant, equitable servitude, or restriction provided for herein, either to restrain such violation or to recover damages.

6. This Agreement constitutes the entire agreement and understanding between the parties with respect to the subject matter of this Agreement and supersedes all prior or contemporaneous agreements and understandings with respect to the subject matter hereof, whether oral or written.

7. If any part of this Agreement is declared by a final decision of a court of competent jurisdiction to be invalid for any reason, such shall not affect the validity of the rest of the Agreement. The other parts of this Agreement shall remain in effect as if this Agreement had been executed without the invalid parts(s). The parties declare that they intend and desire that the remaining parts of this Agreement continue to be effective without any part(s) that have been declared invalid.

8. This Agreement may be executed in counterparts, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an original, and all such counterparts together shall constitute one and the same instrument.

9. This Agreement shall be recorded in the Office of the Recorder of Riverside County, California and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth.

10. In the event of legal action occasioned by any default or action of the Covenantor/Owner, or its successors or assigns, then the Covenantor/Owner and its

successors or assigns agree(s) to pay all costs incurred by the County in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

11. Covenantor/Owner agrees to indemnify, defend, and hold harmless the County, its elected officers, employees, agents, and contractors from and against any and all liability, expense, including costs and reasonable legal fees, and claims of damage of any nature whatsoever including, but not limited to, death, bodily injury, personal injury, or property damage arising from or connected with the County inspection of the Property except where such liability, expense, or claim for damage results from the sole negligence or willful misconduct of the County.

12. It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien thereon against.

13. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto and any other present or future interest holders or estate holders in the property. The term "Owner" shall include not only the present Owner, but also its heirs, successors in interest and in title to the property, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of this Agreement. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the County at the same time such notice is provided to the successor.

14. Time is of the essence in the performance of this Agreement.

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15. Any notice to a party required or called for in this Agreement shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two *(72)* hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

COVENANTOR/OWNER:

COUNTY:

Riverside County Department of Transportation
Attn: Transportation Director
4080 Lemon Street
Riverside, CA

COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT

_____ _____
Patricia Romo, P.E. Date
Director of Transportation

_____ _____
(Attest) Date

COVENANTOR/OWNER

_____
Company/Corporation/Partnership

_____
(Print Name)

_____
(Print Title)

Attach Notary

Maintenance Plan for
Summit Station – Building 3

Date:_____

Project Address and Cross Streets_____

Assessor's Parcel No.: _____

Property Owner: _____ Phone No.:_____

Designated Contact: _____ Phone No.:_____

Mailing Address:_____

The property contains key drainage facilities located as described below and as shown in the attached site plan. It also contains many small, but critical, drainage source controls.

DMA 3

- **Bioretention Basin** is located in the northeast corner of the site.
- **Underground Chambers** are in the southern truck court.

I. Routine Maintenance Activities

Primary maintenance activities include vegetation management and sediment removal, although mosquito abatement is a concern if the basin is designed to include permanent pools of standing water. Routine maintenance activities, and the frequency at which they will be conducted, are shown in Table 1.

Table 1
Routine Maintenance Activities for Drainage Facilities

No.	Maintenance Task	Frequency of Task
1	Inspect the storm drain outlet. Look for obstructions, vegetation, debris, litter, sediment, etc. blocking the outlet. Check for bushes, trees, or other dense vegetation growing immediately in front of the outlet. Inspect and maintain source controls found in Appendix 8.	Before each rainy season
2	Inspect the entire storm drain system from the upstream end to the outfall including both underground chamber systems. Observe the flow of water. Any evidence of ponding in the bioretention area indicates a blockage.	Before each rainy season and after the first heavy rain.
3	Inspect all subdrain cleanouts. Ensure that all cleanout caps are present. Look for obstructions, debris, trash, leaves, vegetation, etc. growing inside the subdrain or covering the cleanout.	Before each rainy season
4	Evaluate health of vegetation and remove and replace any dead or dying plants. Remove all green waste and dispose of properly.	Twice a year
5	Inspect slope between flow inlets and treatment facility. Look for gullies, washouts, evidence of uncontrolled surface water flow or any other evidence of distress to the slope.	Before each rainy season
6	Remove sediment from lift station and underground chambers.	Check twice a year before each rainy season and after the first heavy rain. Maintain as needed
7	Remove accumulated sediment in storage basin and regrade when the accumulated sediment volume exceeds 20% of basin volume and dispose of sediment properly.	Every 15 years, or as needed

8	Inspect for growth of trees or invasive plants in grassy bioretention area.	Each month
9	Test the irrigation system. Observe whether all grassy areas in the bioretention and storage areas are receiving the correct amount of water. Observe whether excessive irrigation is creating flow in the subdrains (irrigation should not cause any flow in subdrain).	Before each dry season and each month throughout the dry season.
10	Inspect drainage facilities using the attached inspection checklist.	Quarterly, or as needed
11	Maintain vegetation landscaping and the irrigation system. Prune and weed to keep self-retaining and self-treating areas neat and orderly in appearance.	Before wet season begins, or as needed

II. Prohibitions

The use of pesticides and quick release fertilizers shall be minimized, and the principles of integrated pest management (IPM) followed:

1. Employ non-chemical controls (biological, physical and cultural controls) before using chemicals to treat a pest problem.
2. Prune plants properly and at the appropriate time of year.
3. Provide adequate irrigation for landscape plants. Do not over water.
4. Limit fertilizer use unless soil testing indicates a deficiency. Slow-release or organic fertilizer is preferable. Check with municipality for specific requirements.
5. Pest control should avoid harming non-target organisms, or negatively affecting air and water quality and public health. Apply chemical controls only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, apply the least toxic and the least persistent pesticide that will provide adequate pest control. Do not apply pesticides on a prescheduled basis.
6. Sweep up spilled fertilizer and pesticides. Do not wash away or bury such spills.
7. Do not over apply pesticide. Spray only where the infestation exists. Follow the manufacturer's instructions for mixing and applying materials.
8. Only licensed, trained pesticide applicators shall apply pesticides.
9. Apply pesticides at the appropriate time to maximize their effectiveness and minimize the likelihood of discharging pesticides into runoff. With the exception of pre-emergent pesticides, avoid application if rain is expected.
10. Unwanted/unused pesticides shall be disposed as hazardous waste.

Standing water shall not remain in the treatment and/or hydromodification management measures for more than 3 days, to prevent mosquito generation.

III. Vector Control Contacts

Riverside County Environmental Health
951.766.9454 Vector Control at County Environmental Health

IV. Inspections

The attached Inspection and Maintenance Checklist shall be used to conduct inspections monthly (or as needed), identify needed maintenance, and record maintenance that is conducted.

Drainage Facilities
Inspection and Maintenance Checklist

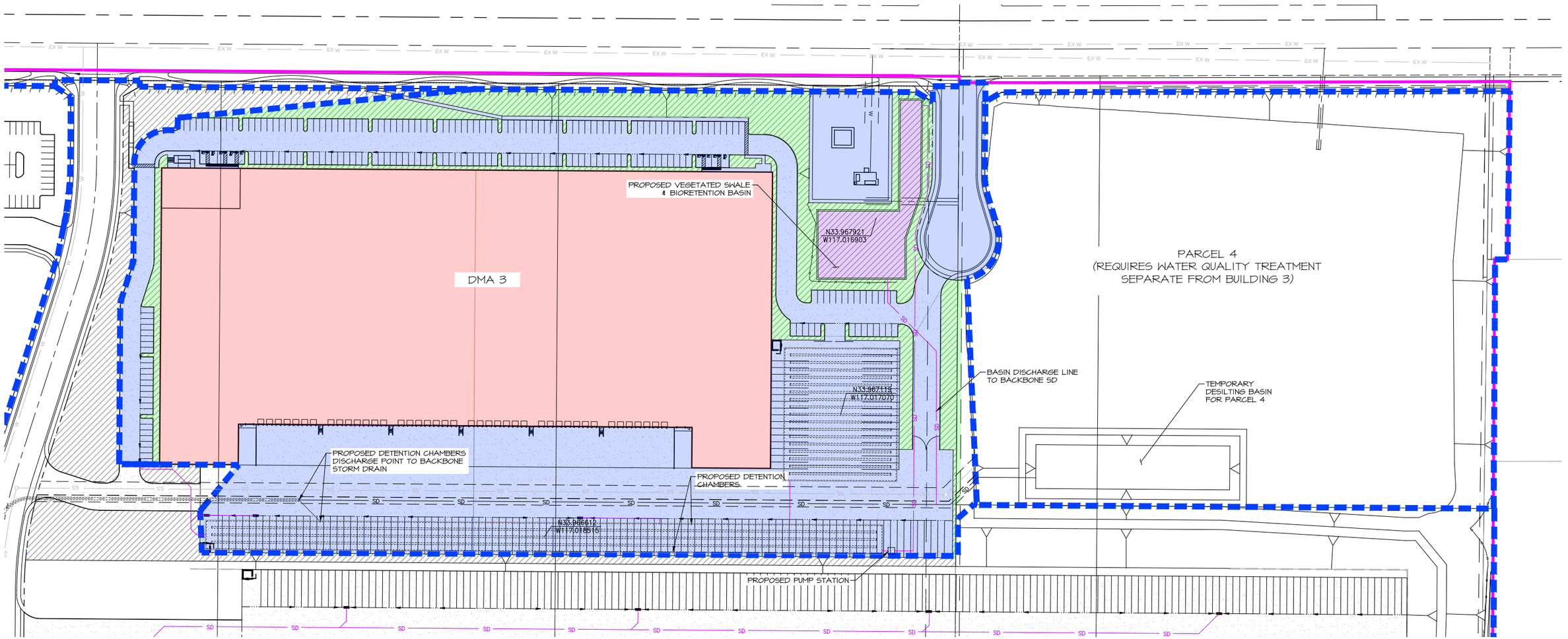
Property Address: _____ Property Owner: _____

Treatment Measure No.: _____ Date of Inspection: _____ Type of Inspection: □ Monthly □ Pre-Wet Season
□ After heavy runoff □ End of Wet Season
Inspector(s): _____ □ Other:_____

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
General				
Standing Water	• When water stands in the modular wetland and underground chamber systems between storms and does not drain within 48 hours after rainfall.			There should be no areas of standing water once inflow has ceased. Any of the following may apply: sediment or trash blockages removed.
Poisonous Vegetation and noxious weeds	Poisonous or nuisance vegetation or noxious weeds, e.g., morning glory, English ivy, reed canary grass, Japanese knotweed, purple loosestrife, blackberry, Scotch broom, poison oak, stinging nettles, or devil's club.			Use Integrated Pest Management techniques to control noxious weeds or invasive species.
Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants.			No contaminants or pollutants present.
Rodent Holes	If facility acts as a dam or berm, any evidence of rodent holes, or any evidence of water piping through dam or berm via rodent holes.			The design specifications are not compromised by holes. Any rodent control activities are in accordance with applicable laws and do not affect any protected species.
Insects	Insects such as wasps and hornets interfere with maintenance activities.			Insects do not interfere with maintenance activities.

Defect	Conditions When Maintenance Is Needed	Maintenance Needed? (Y/N)	Comments (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	Results Expected When Maintenance Is Performed
Tree/Brush Growth and Hazard Trees	• Growth does not allow maintenance access or interferes with maintenance activity. • Dead, diseased, or dying trees.			• Trees do not hinder maintenance activities. • Remove hazard trees as approved by the City. (Use a certified Arborist to determine health of tree or removal requirements).
Drainage time	Standing water remains in chambers or modular wetlands more than five days.			Correct any circumstances that restrict the flow of water from the system. Restore drainage to design condition; may need to maintain chambers and modular wetlands. If the problem cannot be corrected and problems with standing water recur, then mosquitoes should be controlled with larvicides, applied by a licensed pesticide applicator.
Outfall structure	Debris or silt build-up obstructs an outfall structure.			Remove debris and/or silt build-up and dispose of properly.
Storage Area				
Sediment	Accumulated sediment >15% of designed basin depths or affects inletting or outletting condition of the facilities.			Sediment cleaned out to designed basin shapes and depths; basin reseeded if necessary to control erosion. Sediment disposed of properly.
Debris Barriers (e.g., Trash Racks)				
Trash and Debris	Trash and debris accumulated in the chambers and modular wetlands.			Trash and debris removed and disposed of properly.
Damaged/ Missing Bars	Bars are missing, loose, bent out of shape, or deteriorating due to excessive rust.			Bars are repaired or replaced to allow proper functioning of trash rack.
Inlet/Outlet Pipe	Debris barrier is missing or not attached to pipe.			Debris barrier is repaired or replaced to allow proper functioning of trash rack.

Defect	**Conditions When Maintenance Is Needed**	**Maintenance Needed? (Y/N)**	**Comments** (Describe maintenance completed and if any needed maintenance was not conducted, note when it will be done.)	**Results Expected When Maintenance Is Performed**
Risers, orifices and screens	Any debris or clogging			Restore unobstructed flow through discharge structure; to meet original design; dispose of debris properly.
Miscellaneous				
Miscellan-ous	Any condition not covered above that needs attention to restore drainage facilities to design conditions.			Meets the design specifications.



LEGEND

- ROOF
- CONCRETE/ASPHALT
- LANDSCAPE
- BIORETENTION BASIN
- DMA BOUNDARY
- PROJECT BOUNDARY
- PROPOSED ONSITE STORM DRAIN
- NRCS SOIL BOUNDARY

1"=70'

0 70 140 210

N W WEBB E S

DMA 3 AREA TABLE	
ROOFS (SF)	358,370
CONCRETE (SF)	363,254
LANDSCAPE (SF)	78,946
BASIN (SF)	18,006
VBMP (CF)	43085

PERVIOUS AREA= 96,952 SF
PERVIOUS = 11.8%

IMPERVIOUS AREA= 721,624 SF
IMPERVIOUS = 88.2%

PRELIMINARY

CITY OF BEAUMONT, COUNTY OF RIVERSIDE
BEAUMONT SUMMIT STATION

BUILDING 3
INDUSTRIAL DEVELOPMENT
POST CONSTRUCTION BMP SITE PLAN
O&M EXHIBIT

SCALE:	1" = 70'
DATE:	8/3/2021
DESIGNED:	EP
CHECKED:	BJV
PLN CK REF:	
F.B.	

ALBERT A. WEBB ASSOCIATES
ENGINEERING CONSULTANTS
3788 McCRAY STREET
RIVERSIDE CA. 92506
PH. (951) 686-1070
FAX (951) 788-1256

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Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

BMP TRAINING ACKNOWLEDGEMENT FORM

By signing this form, the undersigned certifies that he/she has received the listed materials and training for the BMP's that he or she is responsible for operation and maintenance or responsible to meet the requirements. The undersigned also acknowledged that punitive actions may be imposed if he or she fails to comply. The punitive actions can be in terms of monetary fine or termination of the contract or the rights that is transferred to the undersigned through contracts. If necessary, the owner or public agencies may complete the corrective actions and billed the undersigned.

Name (Print): _____
Business Name:_____
Title/Position: _____
Signature: _____ Date: _____

Item	Training Description	Related BMP(s)	Handout Materials	Initials	Comments

For Information:

Local Sewering Agencies in Riverside County:

City of Beaumont	(909) 769-8520
Belair Homeowners Association	(909) 277-1414
City of Banning	(909) 922-3130
City of Blythe	(760) 922-6161
City of Coachella	(760) 391-5008
Coachella Valley Water District	(760) 398-2651
City of Corona	(909) 736-2259
Desert Center, CSA #51	(760) 227-3203
Eastern Municipal Water District	(909) 928-3777
Elsinore Valley MWD	(909) 674-3146
Farm Mutual Water Company	(909) 244-4198
Idyllwild Water District	(909) 659-2143
Jurupa Community Services Dist.	(909) 685-7434
Lake Hemet MWD	(909) 658-3241
Lee Lake Water District	(909) 277-1414
March Air Force Base	(909) 656-7000
Mission Springs Water District	(760) 329-6448
City of Palm Springs	(760) 323-8242
Rancho Caballero	(909) 780-9272
Rancho California Water Dist.	(909) 676-4101
Ripley, CSA #62	(760) 922-4909
Rubidoux Community Services Dist.	(909) 684-7580
City of Riverside	(909) 782-5341
Silent Valley Club, Inc	(909) 849-4501
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(909) 780-4170

Spill Response Agency:
Haz-Mat: (909) 358-5055
Hazardous Waste Disposal: (909) 358-5055
To Report Illegal Dumping or a Clogged Storm Drain: 1-800-506-2555

StormWater CleanWater
PROTECTION PROGRAM

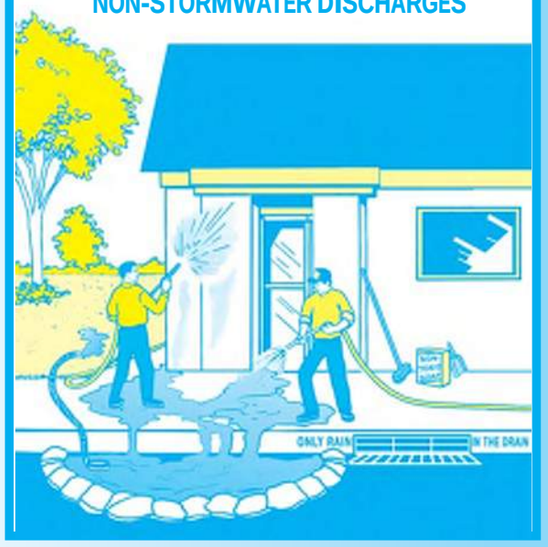
Riverside County gratefully acknowledges the Bay Area Stormwater Management Agencies Association and the Cleaning Equipment Trade Association for information provided in this brochure.

StormWater Pollution

What you should know for...

OUTDOOR CLEANING ACTIVITIES

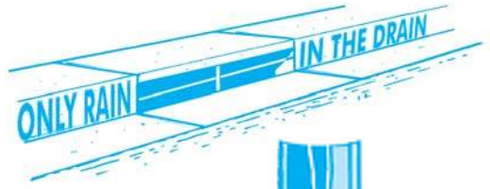
NON-STORMWATER DISCHARGES



GUIDELINES for disposal of washwater from:

- Sidewalk, plaza or parking lot cleaning
- Vehicle washing or detailing
- Building exterior cleaning
- Waterproofing
- Equipment cleaning or degreasing

Do you know . . . where the water should go?



Riverside County has two drainage systems - sanitary sewers and storm drains. The storm drain system is designed to prevent flooding by carrying excess rainwater away from streets. . . it's not designed to be a waste disposal system. Since the storm drain system does not provide for water treatment, it often serves the unintended function of transporting pollutants directly to our waterways.

Unlike sanitary sewers, storm drains are not connected to a treatment plant - they flow directly to our local streams, rivers and lakes.

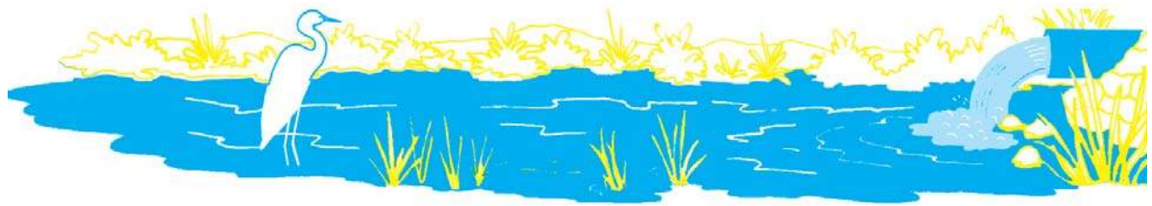
Non-stormwater discharges such as washwater generated from outdoor cleaning projects often transport harmful pollutants into storm drains and our local waterways. Polluted runoff contaminates local waterways and poses a threat to groundwater resources.

Soaps, degreasers, automotive fluids, litter, and a host of other materials washed off buildings, sidewalks, plazas, parking areas, vehicles, and equipment can all pollute our waterways.

The Cities and County of Riverside StormWater/CleanWater Protection Program

Since preventing pollution is much easier, and less costly than cleaning up "after the fact," the Cities and County of Riverside StormWater/CleanWater Protection Program informs residents and businesses of pollution prevention activities such as those described in this pamphlet.

The Cities and County of Riverside have adopted ordinances for stormwater management and discharge control. In accordance with state and federal law, these local stormwater ordinances **prohibit** the discharge of wastes into the storm drain system or local surface waters. This includes non-stormwater discharges containing oil, grease, detergents, degreasers, trash, or other waste materials.



PLEASE NOTE: The discharge of pollutants into the street, gutters, storm drain system, or waterways - without a Regional Water Quality Control Board permit or waiver - is ***strictly prohibited*** by local ordinances and state and federal law.

Help Protect Our Waterways!

Use These Guidelines For Outdoor Cleaning Activities and Washwater Disposal

DO . . . Dispose of **small amounts** of **washwater from cleaning building exteriors, sidewalks, or plazas** onto landscaped or unpaved surfaces provided you have the owner's permission and the discharge will not cause flooding or nuisance problems, or flow into a storm drain.

DO NOT . . . Discharge **large amounts** of these types of washwater onto landscaped areas or soil where water may run to a street or storm drain. Wastewater from exterior cleaning may be pumped to a sewer line with specific permission from the local sewering agency.

DO . . . Check with your local sewering agency's policies and requirements concerning waste water disposal. **Water from many outdoor cleaning activities** may be acceptable for disposal to the sewer system. See the list on the back of this flyer for phone numbers of the sewering agencies in your area.

DO NOT . . . Pour **hazardous wastes** or toxic materials into the storm drain or sewer system . . . properly dispose of it instead. When in doubt, contact the local sewering agency! The agency will tell you what types of liquid wastes can be accepted.

DO . . . Understand that **water (without soap) used to remove dust from clean vehicles** may be discharged to a street or storm drain. **Washwater from sidewalk, plaza, and building surface cleaning** may go into a street or storm drain if ALL of the following conditions are met:

1) The surface being washed is free of residual oil stains, debris and similar pollutants by using dry cleanup methods (sweeping, and cleaning any oil or chemical spills with rags or other absorbent materials before using water).
2) Washing is done with water only - no soap or other cleaning materials.
3) You have not used the water to remove paint from surfaces during cleaning.

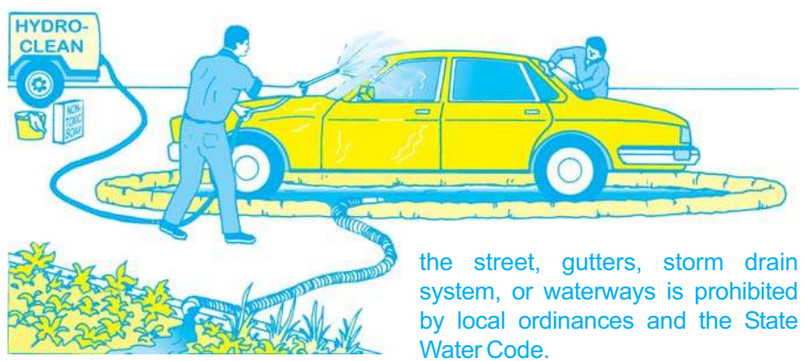
DO NOT . . . Dispose of water containing **soap or any other type of cleaning agent** into a storm drain or water body. This is a direct violation of state and/or local regulations. Because **wastewater from cleaning parking areas or roadways** normally contains metallic brake pad dust, oil and other automotive fluids, it should never be discharged to a street, gutter, or storm drain.

DO . . . Understand that **mobile auto detailers** should divert washwater to landscaped or dirt areas. Note: Be aware that soapy washwater may adversely affect landscaping; consult with the property owner. Residual washwater may remain on paved surfaces to evaporate; sweep up any remaining residue. If there is sufficient water volume to reach the storm drain, collect the runoff and obtain permission to pump it into the sanitary sewer. Follow local sewering agency's requirements for disposal.

DO NOT . . . Dispose of left over cleaning agents into the gutter, storm drain or sanitary sewer.

Regarding Cleaning Agents:

If you must use soap, use biodegradable/phosphate free cleaners. Avoid use of petroleum based cleaning products. Although the use of nontoxic cleaning products is strongly encouraged, ***do*** understand that these products can still degrade water quality and, therefore, the discharge of these products into



the street, gutters, storm drain system, or waterways is prohibited by local ordinances and the State Water Code.

Note: When cleaning surfaces with a high pressure washer or steam cleaning methods, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning, as compared to the use of a low pressure hose, can remove additional materials that can contaminate local waterways.

Other Tips to Help Protect Our Water . . .

Screening Wash Water

A thorough dry cleanup before washing (without soap) surfaces such as building exteriors and decks without loose paint, sidewalks, or plaza areas, *should be sufficient to protect storm drains.* **However**, if any debris (solids) could enter storm drains or remain in the gutter or street after cleaning, washwater should first pass through a "20 mesh" or finer screen to catch the solid material, which should then be disposed of in the trash.

Drain Inlet Protection/ Containing & Collecting Wash Water

- Sand bags can be used to create a barrier around storm drain inlets.
- Plugs or rubber mats can be used to temporarily seal storm drain openings.
- You can also use vacuum booms, containment pads, or temporary berms to keep wash water away from the street, gutter, or storm drain.

Equipment and Supplies

Special materials such as absorbents, storm drain plugs and seals, small sump pumps, and vacuum booms are available from many vendors. For more information check catalogs such as New Pig (800-468-4647), Lab Safety Supply (800-356-0783), C&H (800-558-9966), and W.W. Grainger (800-994-9174); or call the Cleaning Equipment Trade Association (800-441-0111) or the Power Washers of North America (800-393-PWNA).

Helpful telephone numbers and links:

Riverside County Stormwater Protection Partners

Flood Control District	(951) 955-1200
County of Riverside	(951) 955-1000
City of Banning	(951) 922-3105
City of Beaumont	(951) 769-8520
City of Calimesa	(909) 795-9801
City of Canyon Lake	(951) 244-2955
Cathedral City	(760) 770-0327
City of Coachella	(760) 398-4978
City of Corona	(951) 736-2447
City of Desert Hot Springs	(760) 329-6411
City of Eastvale	(951) 361-0900
City of Hemet	(951) 765-2300
City of Indian Wells	(760) 346-2489
City of Indio	(760) 391-4000
City of Lake Elsinore	(951) 674-3124
City of La Quinta	(760) 777-7000
City of Menifee	(951) 672-6777
City of Moreno Valley	(951) 413-3000
City of Murrieta	(951) 304-2489
City of Norco	(951) 270-5607
City of Palm Desert	(760) 346-0611
City of Palm Springs	(760) 323-8299
City of Perris	(951) 943-6100
City of Rancho Mirage	(760) 324-4511
City of Riverside	(951) 361-0900
City of San Jacinto	(951) 654-7337
City of Temecula	(951) 694-6444
City of Wildomar	(951) 677-7751

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555 or e-mail us at
fcnpdes@rcflood.org

- Riverside County Flood Control and Water Conservation District
  www.rcflood.org

Online resources include:

- California Storm Water Quality Association
  www.casqa.org
- State Water Resources Control Board
  www.waterboards.ca.gov
- Power Washers of North America
  www.thepwna.org

Stormwater Pollution

What you should know for...

Outdoor Cleaning Activities and Professional Mobile Service Providers

Storm drain pollution prevention information for:

- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

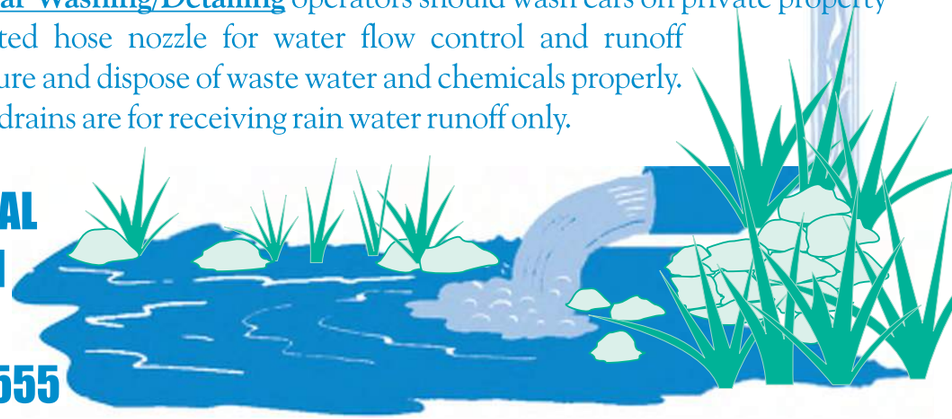
Do you know where street flows actually go?

Storm drains are NOT connected to sanitary sewer systems and treatment plants!

The primary purpose of storm drains is to carry *rain* water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** *Always* have a **Spill Response Kit** on hand to clean up unintentional spills. Only emergency **Mechanical** repairs should be done in City streets, using drip pans for spills. **Plumbing** should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. **Window/Power Washing** waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled **Carpet Cleaning** wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. **Car Washing/Detailing** operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Remember, storm drains are for receiving rain water runoff only.

REPORT ILLEGAL STORM DRAIN DISPOSAL 1-800-506-2555



Help Protect Our Waterways!

Use these guidelines for Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or body of water is *PROHIBITED* by law and can result in stiff penalties?

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. ***Each of us*** can do our part to keep stormwater clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do...consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do...prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do...use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do...obtain the property owner's permission to dispose of ***small amounts*** of power washing waste water on to landscaped, gravel or unpaved surfaces.

Do...check your local sanitary sewer agency's policies on wash water disposal regulations before disposing of wash water into the sewer. (See list on reverse side)

Do...be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do...check to see if local ordinances prevent certain activities.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.

Report illegal storm drain disposal
Call Toll Free
1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them with being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.

When cleaning surfaces with a ***high-pressure washer*** or ***steam cleaner***, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks. Water is a precious resource, don't let it flow freely and be sure to shut it off in between uses.

Screening Wash Water

Conduct thorough dry cleanup before washing exterior surfaces, such as buildings and decks ***with loose paint***, sidewalks or plaza areas. Keep debris from entering the storm drain after cleaning by first passing the wash water through a "20 mesh" or finer screen to catch the solid materials, then dispose of the mesh in a refuse container. Do not let the remaining wash water enter a street, gutter or storm drain.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or other appropriate materials.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Concrete/Coring/Saw Cutting and Drilling Projects

Protect any down-gradient inlets by using dry activity techniques whenever possible. If water is used, minimize the amount of water used during the coring/drilling or saw cutting process. Place a barrier of sandbags and/or absorbent berms to protect the storm drain inlet or watercourse. Use a shovel or wet vacuum to remove the residue from the pavement. Do not wash residue or particulate matter into a storm drain inlet or watercourse.

Landscaping and garden maintenance activities can be major contributors to water pollution. Soils, yard wastes, over-watering and garden chemicals become part of the urban runoff mix that winds its way through streets, gutters and storm drains before entering lakes, rivers, streams, etc. Urban runoff pollution contaminates water and harms aquatic life!

In Riverside County, report illegal discharges into the storm drain, call
1-800-506-2555
"Only Rain Down the Storm Drain"

Important Links:

Riverside County Household Hazardous Waste Collection Information
1-800-304-2226 or www.rivcowm.org

Riverside County Backyard Composting Program
1-800-366-SAVE

Integrated Pest Management (IPM) Solutions
www.ipm.ucdavis.edu

California Master Gardener Programs
www.mastergardeners.org
www.camastergardeners.ucdavis.edu

California Native Plant Society
www.cnps.org

The Riverside County "Only Rain Down the Storm Drain" Pollution Prevention Program gratefully acknowledges Orange County's Storm Water Program for their contribution to this brochure.

...Only Rain Down ...the Storm Drain

What you should know for... Landscape and Gardening

Best Management tips for:

- Professionals
- Novices
- Landscapers
- Gardeners
- Cultivators

Tips for Landscape & Gardening

This brochure will help you to get the most of your lawn and gardening efforts and keep our waterways clean. Clean waterways provide recreation, establish thriving fish habitats, secure safe sanctuaries for wildlife, and add beauty to our communities. NEVER allow gardening products or waste water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.

- Plant native vegetation to reduce the amount of water, fertilizers and pesticides applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro-spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.

- Consider recycling your green waste and adding "nature's own fertilizer" to your lawn or garden.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.
- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains or sewers. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting.
- Try natural long-term common sense solutions first. Integrated Pest Management (IPM) can provide landscaping guidance and solutions, such as:
  - **Physical Controls** - Try hand picking, barriers, traps or caulking holes to control weeds and pests.
  - **Biological Controls** - Use predatory insects to control harmful pests.
  - **Chemical Controls** - Check out www.ipm.ucdavis.edu before using chemicals. Remember, all chemicals should be used cautiously and in moderation.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Waste Collection Center to be recycled.
- *Dumping toxics into the street, gutter or storm drain is illegal!*

www.bewaterwise.com Great water conservation tips and drought tolerant garden designs.

www.ourwaterourworld.com Learn how to safely manage home and garden pests.

Additional information can also be found on the back of this brochure.

For Information:

For more information on the General Industrial Storm Water Permit contact:

State Water Resources Control Board (SWRCB)
(916) 657-1146 or www.swrcb.ca.gov/ or, at your Regional Water Quality Control Board (RWQCB).

Santa Ana Region (8)
California Tower
3737 Main Street, Ste. 500
Riverside, CA 92501-3339
(909) 782-4130

San Diego Region (9)
9771 Clairemont Mesa Blvd., Ste. A
San Diego, CA 92124
(619) 467-2952

Colorado River Basin Region (7)
73-720 Fred Waring Dr., Ste. 100
Palm Desert, CA 92260
(760) 346-7491

SPILL RESPONSE AGENCY:
HAZ-MAT: (909) 358-5055
HAZARDOUS WASTE DISPOSAL: (909) 358-5055
RECYCLING INFORMATION: 1-800-366-SAVE
TO REPORT ILLEGAL DUMPING OR A CLOGGED STORM DRAIN: 1-800-506-2555

To order additional brochures or to obtain information on other pollution prevention activities, call: (909) 955-1111.

StormWater CleanWater
PROTECTION PROGRAM

Riverside County gratefully acknowledges the State Water Quality Control Board and the American Public Works Association, Storm Water Quality Task Force for the information provided in this brochure.

DID YOU KNOW . . .

YOUR FACILITY MAY NEED A STORM WATER PERMIT?

Many industrial facilities and manufacturing operations must obtain coverage under the Industrial Activities Storm Water General Permit

FIND OUT IF YOUR FACILITY MUST OBTAIN A PERMIT

StormWater Pollution . . . What you should know

Riverside County has two drainage systems - sanitary sewers and storm drains. The storm drain system is designed to help prevent flooding by carrying excess rainwater away from streets. Since the storm drain system does not provide for water treatment, it also serves the *unintended* function of transporting pollutants directly to our waterways.

Unlike sanitary sewers, storm drains are not connected to a treatment plant - they flow directly to our local streams, rivers and lakes.

In recent years, awareness of the need to protect water quality has increased. As a result, federal, state, and local programs have been established to reduce polluted stormwater discharges to our waterways. The emphasis of these programs is to prevent stormwater pollution since it's much easier, and less costly, than cleaning up "after the fact."

National Pollutant Discharge Elimination System (NPDES)

In 1987, the Federal Clean Water Act was amended to establish a framework for regulating industrial stormwater discharges under the NPDES permit program. In California, NPDES permits are issued by the State Water Resources Control Board (SWRCB) and the nine (9) Regional Water Quality Control Boards (RWQCB). In general, certain industrial facilities and manufacturing operations must obtain coverage under the Industrial Activities Storm Water General Permit if the type of facilities or operations falls into one of the several categories described in this brochure.

How Do I Know If I Need A Permit?

Following are ***general descriptions*** of the industry categories types that are regulated by the Industrial Activities Storm Water General Permit. Contact your local Region Water Quality Control Board to determine if your facility/operation requires coverage under the Permit.

➜ Facilities such as cement manufacturing; feedlots; fertilizer manufacturing; petroleum refining; phosphate manufacturing; steam electric power generation; coal mining; mineral mining and processing; ore mining and dressing; and asphalt emulsion;

➜ Facilities classified as lumber and wood products (except wood kitchen cabinets); pulp, paper, and paperboard mills; chemical producers (except some pharmaceutical and biological products); petroleum and coal products; leather production and products; stone, clay and glass products; primary metal industries; fabricated structural metal; ship and boat building and repairing;

➜ Active or inactive mining operations and oil and gas exploration, production, processing, or treatment operations;

➜ Hazardous waste treatment, storage, or disposal facilities;

➜ Landfills, land application sites and open dumps that receive or have received any industrial waste; unless there is a new overlying land use such as a golf course, park, etc., and there is no discharge associated with the landfill;

➜ Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards;

➜ Steam electric power generating facilities, facilities that generate steam for electric power by combustion;

➜ Transportation facilities that have vehicle maintenance shops, fueling facilities, equipment cleaning operations, or airport deicing operations. This includes school bus maintenance facilities operated by a school district;

➜ Sewage treatment facilities;

➜ Facilities that have areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water.

How do I obtain coverage under the Industrial Activities Storm Water General Permit?

Obtain a permit application package from your local Regional Water Quality Control Board listed on the back of this brochure or the State Water Resources Control Board (SWRCB). Submit a completed Notice of Intent (NOI) form, site map and the appropriate fee ($250 or $500) to the SWRCB. Facilities must submit an NOI thirty (30) days prior to beginning operation. Once you submit the NOI, the State Board will send you a letter acknowledging receipt of your NOI and will assign your facility a waste discharge identification number (WDID No.). You will also receive an annual fee billing. These billings should roughly coincide with the date the State Board processed your original NOI submittal.

What are the requirements of the Industrial Activities Storm Water General Permit?

The basic requirements of the Permit are:

1. The facility must eliminate any non-stormwater discharges or obtain a separate permit for such discharges.

2. The facility must develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must identify sources of pollutants that may be exposed to stormwater. Once the sources of pollutants have been identified, the facility operator must develop and implement Best Management Practices (BMPs) to minimize or prevent polluted runoff.

   Guidance in preparing a SWPPP is available from a document prepared by the California Storm Water Quality Task Force called the California Storm Water Best Management Practice Handbook.

3. The facility must develop and implement a Monitoring Program that includes conducting visual observations and collecting samples of the facility's storm water discharges associated with industrial activity. The General Permit requires that the analysis be conducted by a laboratory that is certified by the State of California.

4. The facility must submit to the Regional Board, every July 1, an annual report that includes the results of its monitoring program.

A Non-Storm Water Discharge is... *any discharge to a storm drain system that is not composed entirely of storm water. The following non-storm water discharges are authorized by the General Permit: fire hydrant flushing; potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems; drinking fountain water; atmospheric condensates including refrigeration, air conditioning, and compressor condensate; irrigation drainage; landscape watering; springs; non-contaminated ground water; foundation or footing drainage; and sea water infiltration where the sea waters are discharged back into the sea water source.*

A BMP is . . . *a technique, process, activity, or structure used to reduce the pollutant content of a storm water discharge. BMPs may include simple, non-structural methods such as good housekeeping, staff training and preventive maintenance. Additionally, BMPs may include structural modifications such as the installation of berms, canopies or treatment control (e.g. setting basins, oil/water separators, etc.)*

WARNING*: There are significant penalties for non-compliance: a minimum fine of $5,000 for failing to obtain permit coverage, and, up to $10,000 per day, per violation plus $10 per gallon of discharge in excess of 1,000 gallons.*

Stormwater Pollution

What you should know for...

Industrial & Commercial Facilities

Best Management Practices (BMPS) for:

- Industrial Facilities
- Commercial Facilities

Riverside County Stormwater Program Members

City of Banning
(951) 922-3105

City of Beaumont
(951) 769-8520

City of Calimesa
(909) 795-9801

City of Canyon Lake
(951) 244-2955

City of Cathedral City
(760) 770-0340

City of Coachella
(760) 398-3502

City of Corona
(951) 736-2447

City of Desert Hot Springs
(760) 329-6411

City of Eastvale
(951) 361-0900

City of Hemet
(951) 765-2300

City of Indian Wells
(760) 346-2489

City of Indio
(760) 391-4000

City of Jurupa Valley
(951) 332-6464

City of Lake Elsinore
(951) 674-3124

City of La Quinta
(760) 777-7000

City of Menifee
(951) 672-6777

City of Moreno Valley
(951) 413-3000

City of Murrieta
(951) 304-2489

City of Norco
(951) 270-5607

City of Palm Desert
(760) 346-0611

City of Palm Springs
(760) 323-8299

City of Perris
(951) 943-6100

City of Rancho Mirage
(760) 324-4511

City of Riverside
(951) 826-5311

City of San Jacinto
(951) 487-7330

City of Temecula
(951) 694-6444

City of Wildomar
(951) 677-7751

Coachella Valley Water District
(760) 398-2651

County of Riverside
(951) 955-1000

Riverside County Flood Control District
(951) 955-1200

YOU can prevent Stormwater Pollution following these practices...

Industrial and Commercial Facilities

The Riverside County Stormwater Program has identified a number of Best Management Practices (BMPs) for Industrial and Commercial Facilities. These BMPs control and reduce stormwater pollutants from reaching our storm drain system and ultimately our local water bodies. City and County ordinances require businesses to use these BMPs to protect our water quality. Local cities and the County are required to verify implementation of these BMPs by performing regular facility inspections.

Prohibited Discharges

Discontinue all non-stormwater discharges to the storm drain system. It is *prohibited* to discharge any chemicals, paints, debris, wastes or wastewater into the gutter, street or storm drain.

Outdoor Storage BMPs

- Install covers and secondary containment areas for all hazardous materials and wastes stored outdoors in accordance with County and/or City standards.
- Keep all temporary waste containers covered, at all times when not in use.
- Sweep outdoor areas instead of using a hose or pressure washer.
- Move all process operations including vehicle/equipment maintenance inside of the building or under a covered and contained area.
- Wash equipment and vehicles in a contained and covered wash bay which is closed-loop or connected to a clarifier sized to local standards and discharged to a sanitary sewer or take them to a commercial car wash.

Spills and Clean Up BMPs

- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep up the area.
- Clean up spills immediately when they occur, using dry clean up methods such as absorbent materials or sweep followed by proper disposal of materials.
- Always have a spill kit available near chemical loading dock doors and vehicle maintenance and fueling areas.
- Follow your Business Emergency Plan, as filed with the local Fire Department.
- Report all prohibited discharges and non-implementation of BMPs to your local Stormwater Coordinator as listed on the back of this pamphlet.
- Report hazardous materials spills to 951-358-5055 or call after hours to 951-782-2973 or, if an emergency, call the Fire Department's Haz Mat Team at 911.

Plastic Manufacturing Facilities BMPs

AB 258 requires plastic product manufacturers to use BMPs, such as safe storage and clean-up procedures to prevent plastic pellets (nurdles) from entering the waterway. The plastic pellets are released into the environment during transporting, packaging and processing and migrate to waterways through the storm drain system. AB 258 will help protect fish and wildlife from the hazards of plastic pollution.

Training BMPs

As prescribed by your City and County Stormwater Ordinance(s), train employees in spill procedures and prohibit non-stormwater discharges to the storm drain system. Applicable BMP examples can be found at www.cabmphandbooks.com.

Permitting

Stormwater discharges associated with specific categories for industrial facilities are regulated by the State Water Resources Control Board through an Industrial Stormwater General Permit. A copy of this General Permit and application forms are available at: www.waterboards.ca.gov, select stormwater then the industrial quick link.

To report illegal dumping or for more information on stormwater pollution prevention call: 1-800-506-2555 or e-mail us at: fcnpdes@rcflood.org.

For Information:

To report illegal dumping or a clogged storm drain
1-800-506-2555

Hazardous Materials Disposal,
Recycling/Disposal Vendors call:
951-486-3200 or 1-800-506-2555

County Code Enforcement Offices
(unincorporated area)
Lake Elsinore/Mead Valley.....951-245-3186
Jurupa Valley.....951-275-8739
Moreno Valley/Banning 951-485-5840
Murrieta So. County 951-600-6140
Thousand Palms District 760-343-4150

Environmental Crimes
1-800-304-6100

Spill Response Agency
1-800-304-2226 or 951-358-5172

Recycling and Hazardous Waste Disposal
1-800-366-SAVE

For pollution prevention brochures or to obtain information on other County Environmental Services, call 1-800-506-2555

Popular links:
www.rcflood.org
www.cabmphandbooks.com
www.cfpub.epa.gov/npdes

ONLY RAIN DOWN THE STORM DRAIN
POLLUTION PREVENTION PROGRAM
1-800-506-2555

Riverside County's "Only Rain Down the Storm Drain" Pollution Prevention Program members include:

Banning
Beaumont
Calimesa
Canyon Lake
Cathedral City
City of Riverside
Corona
Coachella
Coachella Valley Water District
Desert Hot Springs
Hemet
Indian Wells
Indio
Lake Elsinore
La Quinta
Menifee
Murrieta
Moreno Valley
Norco
Palm Desert
Palm Springs
Perris
Rancho Mirage
Riverside County
San Jacinto
Temecula
Wildomar

Stormwater Pollution

What you should know for...

Automotive Maintenance and Car Care

Best Management Practices (BMPS) for:

- Auto Body Shops
- Auto Repair Shops
- Car Dealerships
- Gas Stations
- Fleet Service Operations

Stormwater Pollution...What You Should Know

Riverside County has three major river systems, or watersheds, that are important to our communities and the environment. Improper automotive maintenance, storage and washing activities can cause pollution that endangers the health of these rivers.

Pollutants that can collect on the ground from automotive repair, storage and washing areas such as antifreeze, oil, grease, gas, lubricants, soaps and dirt can be washed into the street by rain, over-irrigation or wash water runoff. Once these pollutants are in the streets they can be carried to these rivers by the storm drain system. Unlike the sewer system, the storm drain system carries water (and pollution) to our rivers without treatment. Pollution from storm drains is a form of storm water pollution.

A common storm water pollution problem associated with automotive shops and businesses is the activity of hosing down service bays without proper capture of runoff water, illegal dumping of fluids to the street or storm drain inlets and not properly storing hazardous materials. Examples of pollutants that can be mobilized by these activities include oil and grease from cars, copper and asbestos from worn break linings, zinc from tires and toxics from spilled fluids.

The Cities and County of Riverside have adopted ordinances, in accordance with state and federal law, which prohibit the discharge of pollutants into the storm drain system or local lakes, rivers or streams. This brochure provides common practices that can prevent storm water pollution and keep your shop in compliance with the law.

Best Management Practices for Auto Body & Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations

Changing Automotive Fluids

- Locate storm drains on or near your property. Do not allow material to flow to these drains.
- Collect, and separately recycle motor oil, antifreeze, transmission fluid and gear oil. Combining waste fluid prevents recycling.
- Drain brake fluid and other non-recyclables into a proper container and handle as a hazardous waste.
- Use a recyclable radiator flushing fluid and discard safely.

Only rain is allowed down the storm drain! Don't be an offender!! Violations of local ordinances are prosecuted to the fullest extent of the law.

Identify specific activities with the potential to cause spills or release pollutants such as oil, grease, fuel, etc. Post signs and train employees on how to prevent and clean up spills during activities.

YOU can prevent Stormwater Pollution following these practices...

Working on Transmissions, Engines and Miscellaneous Repairs

- Keep a drip pan or a wide low-rimmed container under vehicles to catch fluids whenever you unclip hoses, unscrew filters, or change parts, to contain unexpected leaks.
- Drain all fluids from wrecked vehicles into proper containers before disassembly or repair.
- Store batteries indoors, on an open rack.
- Return used batteries to a battery vendor.
- Contain cracked batteries to prevent hazardous spills.
- Catch metal filings in an enclosed unit or on a tarpaulin.
- Sweep filing areas to prevent washing metals into floor drains.

Cleaning Parts

- Clean parts in a self-contained unit, solvent sink, or parts washer to prevent solvents and grease from entering a storm drain.

Fueling Vehicles

- Clean-up minor spills with a dry absorbent, rather than allowing them to evaporate.
- Use a damp cloth and a damp mop to keep the area clean rather than a hose or a wet mop.

Keeping your shop or work area pollutant clean and environmentally safe

- Never hose down your work area, as pollutants could be washed into the storm drain.
- Sweep or vacuum the shop floor frequently.
- Routinely check equipment. Wipe up spills and repair leaks.
- Use large pans or an inflatable portable berm under wrecked cars.
- Avoid spills by emptying and wiping drip pans, when they are half-full.
- Keep dry absorbent materials and/or a wet/dry vacuum cleaner on hand for mid-sized spills.
- Train your employees to be familiar with hazardous spill response plans and emergency procedures.
- Immediately report hazardous material spills that have entered the street or storm drain to OES and local authorities.

Outdoor Parking and Auto Maintenance

- Use covered or controlled areas to prevent offsite spills.
- Sweep-up trash and dirt from outdoor parking and maintenance areas. Do not hose down areas. All non-stormwater discharges to the street of storm drain are prohibited.

Storing and Disposing of Waste

- Store recyclable and non-recyclable waste separately.
- Place liquid waste (hazardous or otherwise) in proper containers with secondary containment.
- Cover outdoor storage areas to prevent contact with rain water.
- Collect used parts for delivery to a scrap metal dealer.

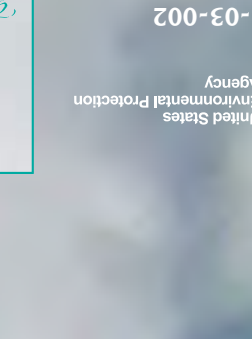
Washing vehicles and steam cleaning equipment

- For car washing, minimize wash water used and use designated areas. Never discharge wash water to the street, gutters or storm drain.
- Be sure to keep waste water from engine parts cleaning or steam cleaning from being discharged to the street, gutter or storm drain.
- Wash vehicles and steam clean with environmentally friendly soaps and polishes.

Selecting and Controlling Inventory

- Purchase recyclable or non-toxic materials.
- Select “closed-loop” suppliers and purchase supplies in bulk.

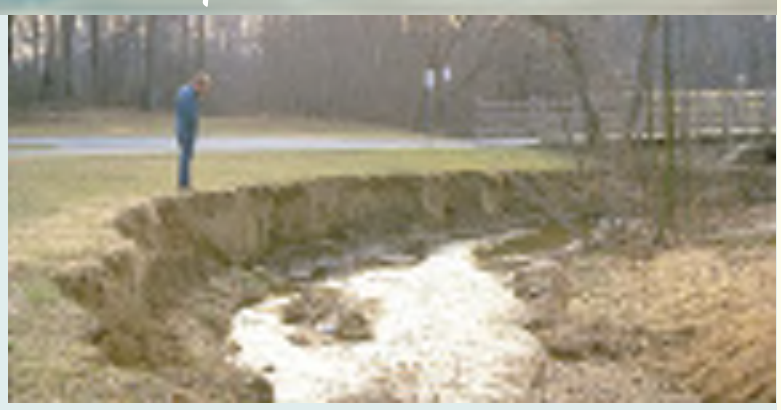
After the Storm



What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Why is stormwater runoff a problem?



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.

- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

United States Environmental Protection Agency

EPA 833-B-03-002

January 2003

Internet Address (URL) • HTTP://www.epa.gov
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THE YEAR OF CLEAN WATER

Clean Water Environment

A Citizen's Guide to Understanding Stormwater

Stormwater Pollution Solutions

Residential

Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

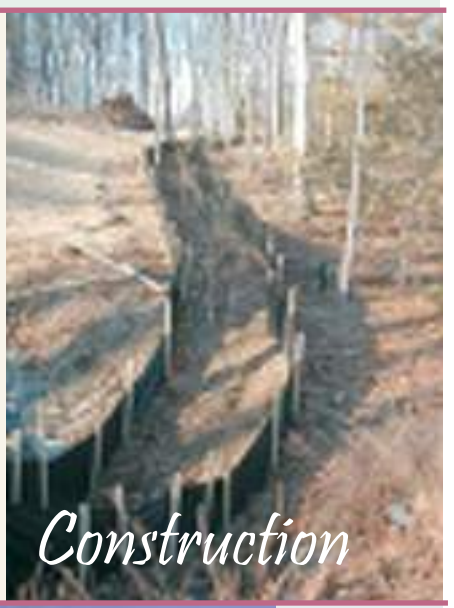
Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.



Construction

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.

Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

Stormwater Pollution Found in Your Area!

This is not a citation.

This is to inform you that our staff found the following pollutants in the storm sewer system in your area. This storm sewer system leads directly to

_____ .

- ❑ Motor oil
- ❑ Oil filters
- ❑ Antifreeze/ transmission fluid
- ❑ Paint
- ❑ Solvent/degreaser
- ❑ Cooking grease
- ❑ Detergent
- ❑ Home improvement waste (concrete, mortar)
- ❑ Pet waste
- ❑ Yard waste (leaves, grass, mulch)
- ❑ Excessive dirt and gravel
- ❑ Trash
- ❑ Construction debris
- ❑ Pesticides and fertilizers
- ❑ Other

_____

For more information or to report an illegal discharge of pollutants, please call:

www.epa.gov/npdes/stormwater

EPA
United States
Environmental Protection
Agency

EPA 833-F-03-002
April 2003

Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up debris, chemicals, dirt, and other pollutants and deposit them into a storm sewer system or waterbody.

Anything that enters a storm sewer system is discharged *untreated* into the waterbodies we use for swimming, fishing, and providing drinking water.

Remember: Only Rain Down the Drain

To keep the stormwater leaving your home or workplace clean, follow these simple guidelines:

- Use pesticides and fertilizers sparingly.
- Repair auto leaks.
- Dispose of household hazardous waste, used auto fluids (antifreeze, oil, etc.), and batteries at designated collection or recycling locations.
- Clean up after your pet.
- Use a commercial car wash or wash your car on a lawn or other unpaved surface.
- Sweep up yard debris rather than hosing down areas. Compost or recycle yard waste when possible.
- Clean paint brushes in a sink, not outdoors. Properly dispose of excess paints through a household hazardous waste collection program.
- Sweep up and properly dispose of construction debris like concrete and mortar.

EPA

Clean Water State Revolving Fund

ACTIVITY *UPDATE*

Innovative use of Clean Water State Revolving Funds for Nonpoint Source Pollution

States are successfully using linked deposit and pass-through loans to fund important nonpoint source pollution remediation projects

Many states are successfully using the USEPA's Office of Water, Clean Water State Revolving Fund (CWSRF) loan program to fund important nonpoint source pollution remediation projects. Nonpoint source pollution is widely viewed as one of the most serious threats to our nation's water quality. State and local governments, local watershed and agricultural organizations, and many others are working to devise solutions that address nonpoint source pollution. The CWSRF program provides very attractive low-interest loans that spread project costs over a repayment period of up to 20 years. Today, CWSRF programs are funding projects that address agriculture runoff, leaking on-site septic systems, and urban nonpoint source pollution, including stormwater runoff and brownfield contamination.

During the initial operating phase of CWSRF programs, states designed loan options and implemented administrative procedures that would best serve municipal wastewater system projects. However, when considering how the CWSRF program could be used to address nonpoint source pollution, a number of states recognized that they would need to go beyond the typical municipal borrower and provide loan assistance to farmers, homeowners, and nonprofit organizations. States also recognized that providing loans to small private borrowers could be challenging. The loans would fund a variety of small projects, there would be more of them to service and manage, and there would be a greater risk of loan defaults.

States have taken different approaches to addressing these challenges. In some states, the CWSRF program has called upon internal expertise and the expertise of other state personnel to help manage loans to private borrowers. Other states have used creative lending approaches that pass loan risks and loan servicing responsibilities to financial institutions, local governments, or other state agencies. These lending methods include linked deposit loan programs with local financial institutions and pass-through loan programs with local government or state agencies. This activity update will highlight these loan structures with three case studies of successful state programs.

What is a linked deposit loan?

Under a linked deposit loan approach, a state works with local private lending institutions to provide assistance for nonpoint source pollution control. The state agrees to accept a reduced rate of return on an investment (e.g., a certificate of deposit) and the lending institution agrees to provide a loan to a borrower at a similarly reduced interest rate. For example, if the typical earnings rate for a certificate of deposit (CD) is five percent, a state might agree to purchase a CD that earns two percent interest, and in exchange, the lending institution agrees to provide a loan to a borrower at an interest rate that is three percentage points lower than the market rate for the borrower. In this program, the CWSRF investment (deposit) is linked to a low-interest loan, thereby earning the description "linked deposit loan."

Linked deposit loan programs provide benefits for CWSRF programs, local financial institutions, and borrowers. The linked-deposit approach benefits CWSRF programs because they support high priority nonpoint source projects and because they place risk and management responsibilities with local financial institutions. Financial institutions earn profits from the linked deposit agreements and add an additional service for their customers. Borrowers find linked deposit programs to be economical and comfortable; they save money with low-interest loans, and they are comfortable working with local financial institutions.

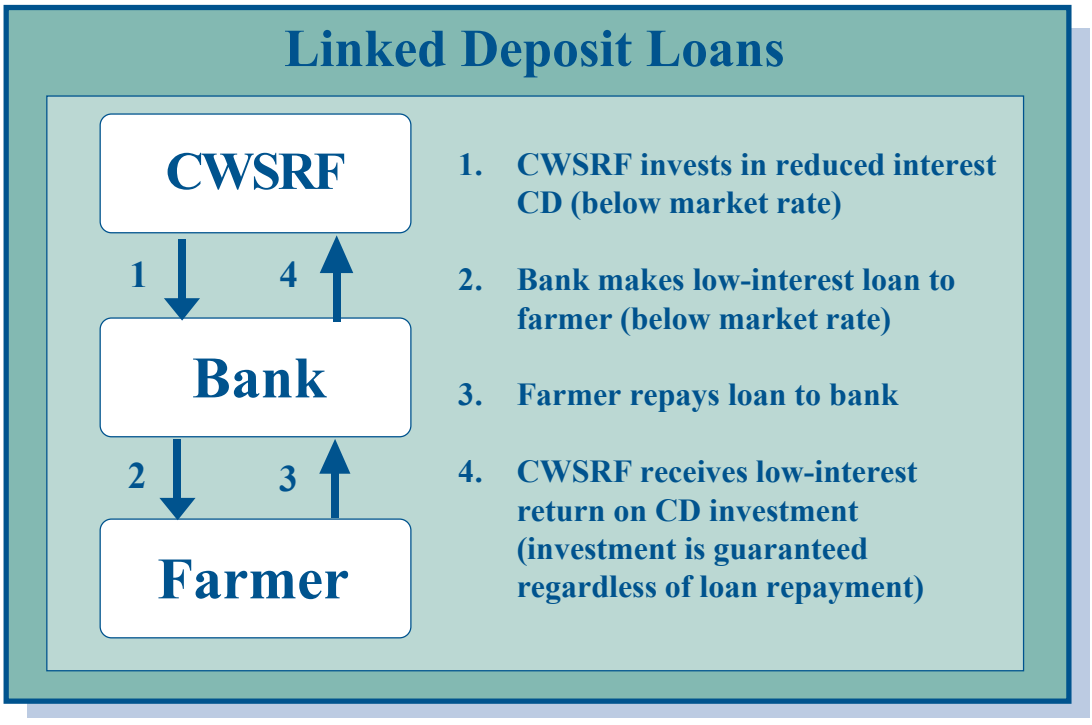


Figure 1. Linked deposit program flow chart

What is a pass-through loan?

In a pass-through loan, a CWSRF program makes a loan to another state or local government agency and that agency then lends the funds to private borrowers to address nonpoint source pollution. The town, county, or state agency reviews the project and the finances of each borrower. CWSRF loan funds are "passed-through" another government agency to private borrowers.

Pass-through loan programs benefit CWSRF programs, pass-through partners (towns, counties, and state agencies), and borrowers. These programs benefit CWSRF programs because they support high-priority nonpoint source projects and because they place risk and management responsibilities with program partners. Towns, counties, and state agencies benefit from pass-through programs because CWSRF funds support their nonpoint source priorities. Pass-through loans can offer two potential benefits to borrowers. First, pass-through loans are not provided by private lenders and, as a result, are likely to have lower interest rates. Second, local government agencies may have greater flexibility to provide loans to borrowers with relatively weak credit conditions if the borrower's nonpoint source project is a high priority for the state or local government agency.

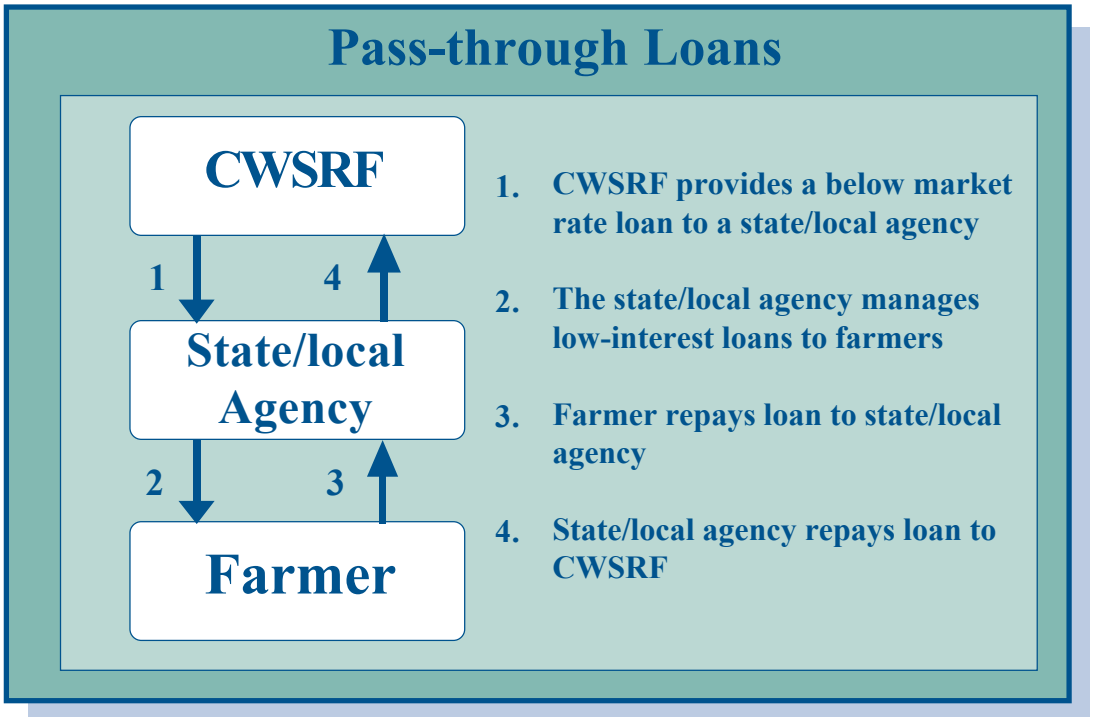


Figure 2. Pass-through program flow chart

Who has benefited from these programs and what have they funded?

CWSRF linked deposit and pass-through loan programs have supported borrowers implementing a variety of nonpoint source projects:

- Homeowners have implemented stormwater runoff best management practices and repaired or replaced failing on-site septic systems.
- Homeowner associations have addressed failing stormwater management facilities.
- Farmers have addressed agricultural runoff with a wide variety of agricultural best management practices including the construction of manure storage facilities, the restoration of filter strips and grassed waterways, and the use of conservation tillage equipment.

Ohio Case Study — Linked Deposit Loan Program

Ohio has used a linked-deposit loan program since 1993 to fund projects that support county watershed management plans. This program has funded more than 300 projects, including the repair of onsite wastewater treatment systems and the implementation of best management practices for agriculture, forestry, stormwater, and land development. The CWSRF program developed this program with the help of county soil and water conservation districts and local banks.

The CWSRF program implements its linked deposit loan program one county at a time. Each county's program is developed with two concurrent steps: the county soil and water conservation district develops a watershed management plan, and the CWSRF program and local financial institutions enter into agreements describing requirements and procedures for linked deposit loans.

Watershed management plans describe a watershed, identify sources of pollution, suggest actions that would address those pollution sources, prioritize water quality problems, identify sources of funding, and establish an implementation schedule. The county soil and water district's draft plan is reviewed by Ohio EPA and by a formal public review process. If Ohio EPA approves a plan after this review, the CWSRF program and the soil and water conservation district sign a memorandum of understanding that describes how these two entities will coordinate their implementation of the management plan.

At the same time that a watershed management plan is developed and reviewed, soil and conservation districts contact local banks to identify institutions that would like to participate in a linked deposit program. Interested banks enter into agreements with the CWSRF program that describe requirements and procedures for linked deposit loans.

Any borrower with a project that helps to implement a watershed management plan is eligible for a linked deposit loan. Participating banks review borrowers' credit using their own credit standards. If a bank approves a linked deposit loan, the CWSRF program purchases a CD of equal value from the bank. The CWSRF program accepts a CD interest rate that is five percentage points lower than the rate of a U.S. Treasury Note or Bond with the same term. The borrower's loan interest rate is also reduced by five percentage points. The bank makes semiannual payments of principal and interest to repay the CWSRF for its investment in the CD, and it makes these payments even if the borrower defaults on the linked deposit loan.

Massachusetts Case Study — Lending through Local Government

Since 1995, Massachusetts' Community Septic Management Program has used pass-through loans with local municipalities to fund the repair and replacement of failing septic systems. The program has funded more than 3,000 projects across the state. The CWSRF has developed this program with the cooperation of local municipalities.

Communities that participate in Massachusetts' Community Septic Management Program can borrow hundreds of thousands of dollars from the CWSRF program, but communities must first develop a septic management plan and procedures for a local betterment loan program (the community uses betterment assessments to secure the loans). Massachusetts provides grants of up to $20,000 to municipalities to support these planning activities and the administration of the program.

Massachusetts law defines a betterment assessment as a charge imposed on real property that receives a benefit from a public improvement. Municipalities have traditionally imposed betterments to pay for improvements such as roads, sidewalks and sewer lines. In the Community Septic Management Program, however, betterment agreements allow individuals to receive community support (a betterment loan) for septic system improvements, and the agreements allow communities to ensure that the loans are repaid as part of a property tax bill. The community can place a municipal lien on property if a homeowner defaults on a betterment loan.

Septic management plans identify and prioritize areas with septic systems that require monitoring, maintaining, and upgrading. As part of the planning process, communities develop maintenance schedules for septic systems, and they develop databases that track the inspection, maintenance, and upgrade of these systems. The Massachusetts Department of Environmental Protection reviews all community septic management plans.

Before a community can receive a CWSRF loan from the state, however, it also develops the framework for a local betterment loan program. Communities create administrative structures to manage the programs, devise a method for selecting priority projects, and work with their tax assessors to ensure that homeowners will repay their betterment loans as part of their local tax assessments.

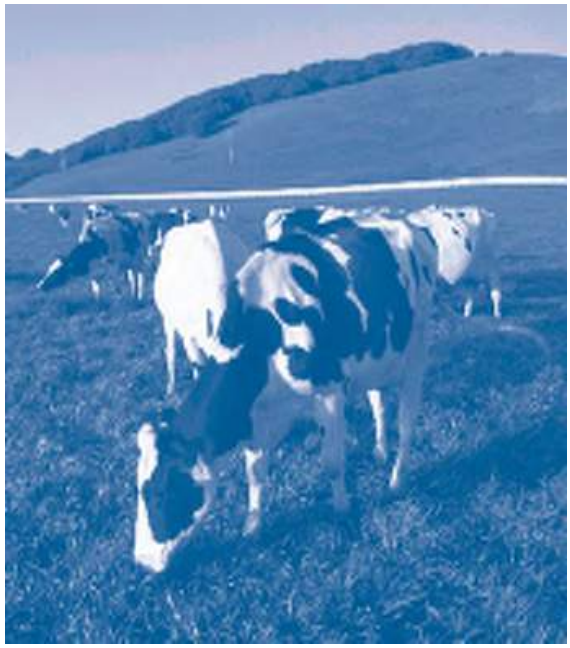
Communities that develop septic management plans and procedures for a local betterment loan program receive loans from the CWSRF program for 20 years at zero percent interest. Communities typically borrow $200,000 from this program. Homeowners typically receive twenty-year loans from communities at two to five percent interest. Communities can use interest accrued on betterment loans to support the administrative costs of the loan programs. Communities must begin to repay the CWSRF within one year after they have finished dispersing the proceeds of each CWSRF loan.

Missouri Case Study — Lending through State Agencies

Missouri's Nonpoint Source Animal Waste Treatment Facility Loan Program is a pass-through loan program that uses a state agency as a loan intermediary. Since 1995, the Missouri Agriculture and Small Business Development Authority (MASBDA) has borrowed $5 million from the CWSRF program, and MASBDA has used these funds to support the construction of 88 animal waste treatment systems for livestock and poultry producers. The agricultural operation of each borrower in this loan program produces fewer than 1,000 animal units -- concentrated animal feeding operations are ineligible.

Missouri's Nonpoint Source Animal Waste Treatment Facility Loan Program does not require a regional planning effort similar to the soil and water conservation plans required in Ohio' linked deposit program or the septic management plans required in Massachusetts' pass-through loan program. Engineers with Missouri's CWSRF program review each project application to ensure that CWSRF-financed structures and equipment support the goals of the program.

Missouri's CWSRF program provides 10-year loans to MASBDA that have a 1.8 percent interest rate. Individual agricultural producers access these resources by submitting applications to MASBDA. MASBDA reviews the financial component of each application, assessing cash flows and establishing security requirements. Borrowers must provide a dedicated source of repayment and a first or second deed of trust on their property. Agricultural producers typically receive 10-year loans from MASBDA that have interest rates from 5.3-5.8 percent. However, MASBDA does not offer construction financing for animal waste treatment systems. Typically, agricultural producers use loans from the Nonpoint Source Animal Waste Treatment Facility Loan Program to pay off construction loans from a private lender. MASBDA uses the repayments from agricultural producers to repay its loan from the CWSRF.



Case Study Contact Information

More information on the programs outlined in this update can be found on the state program web sites or by contacting the programs themselves.

Ohio Environmental Protection Agency
Div. of Environmental & Financial Assistance
Contact: Bob Monsarrat
Phone: 614-644-3655
Web site:
www.epa.state.oh.us/defa/linkdepo.html

Massachusetts Department of Environmental Protection
Massachusetts' Community Septic Management Program
Contact: Joseph McNealy
Phone: 617-556-1068
Web site: www.state.ma.us/dep/brp

Missouri Department of Agriculture
Animal Waste Facility Loan Program
Contact: Steve Townley
Phone: 573-751-1397
Web site: www.mda.state.mo.us/a2c.htm

For more information about the Clean Water Revolving Fund, or for a program representative in your State, please contact:

Clean Water State Revolving Fund Branch

U.S. Environmental Protection Agency

1201 Constitution Avenue, NW (Mailcode 4204M)

Washington, DC 20004

Phone: (202) 564-0752 **Fax:** (202) 501-2403

Internet: http://www.epa.gov/owm

Clean Water
State Revolving Fund

Office of Water July 2002 EPA 832-F-02-004

Clean Water

Everybody's Business

10 Things You Can Do to Prevent Stormwater Runoff Pollution

- Use fertilizers sparingly and sweep up driveways, sidewalks, and roads
- Never dump anything down storm drains
- Vegetate bare spots in your yard
- Compost your yard waste
- Avoid pesticides; learn about Integrated Pest Management (IPM)
- Direct downspouts away from paved surfaces
- Take your car to the car wash instead of washing it in the driveway
- Check car for leaks, and recycle motor oil
- Pick up after your pet
- Have your septic tank pumped and system inspected regularly

EPA United States Environmental Protection Agency

For more information, visit www.epa.gov/nps or www.epa.gov/npdes/stormwater

EPA
United States
Environmental Protection
Agency

EPA 841-F-03-003

Protecting Water Quality *from* URBAN RUNOFF

Clean Water Is Everybody's Business

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain and snowmelt to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers, where they seriously harm water quality. To protect surface water quality and groundwater resources, development should be designed and built to minimize increases in runoff.

The most recent National Water Quality Inventory reports that runoff from urbanized areas is the leading source of water quality impairments to surveyed estuaries and the third-largest source of impairments to surveyed lakes.

Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?

How Urbanized Areas Affect Water Quality

Increased Runoff

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to filter slowly into the ground. In contrast, impervious (nonporous) surfaces like roads, parking lots, and rooftops prevent rain and snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall and snowmelt remains above the surface, where it runs off rapidly in unnaturally large amounts.

Storm sewer systems concentrate runoff into smooth, straight conduits. This runoff gathers speed and erosional power as it travels underground. When this runoff leaves the storm drains and empties into a stream, its excessive volume and power blast out streambanks, damaging streamside vegetation and wiping out aquatic habitat. These increased storm flows carry sediment loads from construction sites and other denuded surfaces and eroded streambanks. They often carry higher water temperatures from streets, roof tops, and parking lots, which are harmful to the health and reproduction of aquatic life.

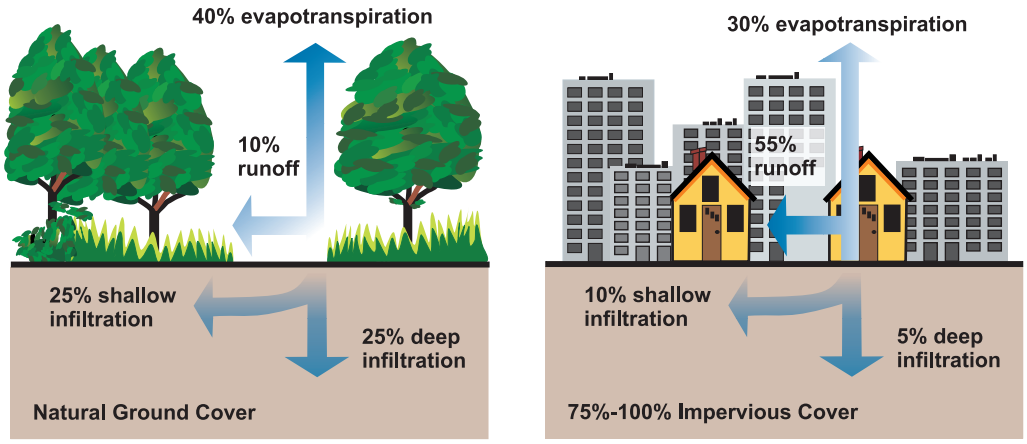
The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot survive when these conditions prevail.

Increased Pollutant Loads

Urbanization increases the variety and amount of pollutants carried into streams, rivers, and lakes. The pollutants include:

- Sediment
- Oil, grease, and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria, and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles, and other sources
- Thermal pollution from dark impervious surfaces such as streets and rooftops

These pollutants can harm fish and wildlife populations, kill native vegetation, foul drinking water supplies, and make recreational areas unsafe and unpleasant.



Relationship between impervious cover and surface runoff. Impervious cover in a watershed results in increased surface ruunoff. As little as 10 percent impervious cover in a watershed can result in stream degradation.

Managing Urban Runoff

What Homeowners Can Do

To decrease polluted runoff from paved surfaces, households can develop alternatives to areas traditionally covered by impervious surfaces. Porous pavement materials are available for driveways and sidewalks, and native vegetation and mulch can replace high maintenance grass lawns. Homeowners can use fertilizers sparingly and sweep driveways, sidewalks, and roads instead of using a hose. Instead of disposing of yard waste, they can use the materials to start a compost pile. And homeowners can learn to use Integrated Pest Management (IPM) to reduce dependence on harmful pesticides.

In addition, households can prevent polluted runoff by picking up after pets and using, storing, and disposing of chemicals properly. Drivers should check their cars for leaks and recycle their motor oil and antifreeze when these fluids are changed. Drivers can also avoid impacts from car wash runoff (e.g., detergents, grime, etc.) by using car wash facilities that do not generate runoff. Households served by septic systems should have them professionally inspected and pumped every 3 to 5 years. They should also practice water conservation measures to extend the life of their septic systems.

Controlling Impacts from New Development

Developers and city planners should attempt to control the volume of runoff from new development by using low impact development, structural controls, and pollution prevention strategies. Low impact development includes measures that conserve natural areas (particularly sensitive hydrologic areas like riparian buffers and infiltrable soils); reduce development impacts; and reduce site runoff rates by maximizing surface roughness, infiltration opportunities, and flow paths.

Controlling Impacts from Existing Development

Controlling runoff from existing urban areas is often more costly than controlling runoff from new developments. Economic efficiencies are often realized through approaches that target "hot spots" of runoff pollution or have multiple benefits, such as high-efficiency street sweeping (which addresses aesthetics, road safety, and water quality). Urban planners and others responsible for managing urban and suburban areas can first identify and implement pollution prevention strategies and examine source control opportunities. They should seek out priority pollutant reduction opportunities, then protect natural areas that help control runoff, and finally begin ecological restoration and retrofit activities to clean up degraded water bodies. Local governments are encouraged to take lead roles in public education efforts through public signage, storm drain marking, pollution prevention outreach campaigns, and partnerships with citizen groups and businesses. Citizens can help prioritize the clean-up strategies, volunteer to become involved in restoration efforts, and mark storm drains with approved "don't dump" messages.

Related Publications

Turn Your Home into a Stormwater Pollution Solution!

www.epa.gov/nps

This web site links to an EPA homeowner's guide to healthy habits for clean water that provides tips for better vehicle and garage care, lawn and garden techniques, home improvement, pet care, and more.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas

www.epa.gov/owow/nps/urbanmm

This technical guidance and reference document is useful to local, state, and tribal managers in implementing management programs for polluted runoff. Contains information on the best available, economically achievable means of reducing pollution of surface waters and groundwater from urban areas.

Onsite Wastewater Treatment System Resources

www.epa.gov/owm/onsite

This web site contains the latest brochures and other resources from EPA for managing onsite wastewater treatment systems (OWTS) such as conventional septic systems and alternative decentralized systems. These resources provide basic information to help individual homeowners, as well as detailed, up-to-date technical guidance of interest to local and state health departments.

Low Impact Development Center

www.lowimpactdevelopment.org

This center provides information on protecting the environment and water resources through integrated site design techniques that are intended to replicate preexisting hydrologic site conditions.

Stormwater Manager's Resource Center (SMRC)

www.stormwatercenter.net

Created and maintained by the Center for Watershed Protection, this resource center is designed specifically for stormwater practitioners, local government officials, and others that need technical assistance on stormwater management issues.

Strategies: Community Responses to Runoff Pollution

www.nrdc.org/water/pollution/storm/stoinx.asp

The Natural Resources Defense Council developed this interactive web document to explore some of the most effective strategies that communities are using around the nation to control urban runoff pollution. The document is also available in print form and as an interactive CD-ROM.

For More Information

U.S. Environmental Protection Agency
Nonpoint Source Control Branch (4503T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

www.epa.gov/nps

February 2003

Stormwater Management

A Guide for Auto Recycler Owners and Operators

Stormwater Protection
Starts With You

The facility operator's attitude toward stormwater management can make all the difference. It's your responsibility to communicate to your employees that stormwater management is a priority. Make sure your employees understand why stormwater management is important, both to your business and to the environment. Start by having them review the enclosed video and fact sheet.

Protecting stormwater can benefit your business in several important ways:

- **Professionalism and pride in your business** – Both workers and customers appreciate a clean and responsible facility.
- **It's the law** – Not complying with stormwater rules can put your business in jeopardy. Regulators and environmental groups across the country are increasingly targeting auto dismantlers for stormwater violations.

Protect the environment to protect your business

- **Environmental protection** – We all want clean streams, rivers, lakes, bays, and oceans for our families and for our future. Your business can protect the environment by following some straightforward and commonsense practices.

The following practices describe options that your facility can implement to help address its stormwater issues. Although following all of the practices described below may help improve performance with regard to stormwater management, it does not guarantee that your facility will be in compliance with all applicable stormwater rules. Check with your state regulatory agency or EPA for more information.

The Stormwater Permit

All vehicle dismantling facilities in the United States (except those in a combined sewer service area or facilities that do not discharge stormwater from their property) are required by the Clean Water Act to obtain a stormwater permit either from the U.S. Environmental Protection Agency or from an appropriate state agency. You must first file a Notice of Intent (NOI) with the appropriate state agency. You must also prepare a Storm Water Pollution Prevention Plan (SWPPP) to describe how you will address your facility's stormwater issues.

The practices below are organized by facility area or activity. Links and contact information to obtain additional information about stormwater and other environmental issues related to auto dismantling are listed at the end of this document.

What are Best Management Practices (BMPs)?

The term "BMP" is used to describe management practices that many different industries use to address a range of environmental issues. We'll use BMP to describe the practices that you can implement to address your auto dismantling facility's stormwater issues.

› Training

Employee training is critical! Train appropriate employees on relevant stormwater management procedures, especially during the wet season and prior to rain or snow events. All employees must be trained upon their initial hire and at least once per year thereafter. Be sure to document employee training. Also, place signs around activity areas as reminders to your workers; for example, "No fluids in the drain" or "Sweep up loose absorbent daily." Make up your own signs that make sense for your operation.

› Incoming Vehicles

Inspect all incoming vehicles for leaking fluids and unwanted materials as they enter your facility. Promptly contain leaks with drip pans or absorbent materials.

› Fluid Removal

Establish a procedure for processing vehicles and stick to it. First, before any vehicle is placed in the yard for long-term storage or crushed, and before fluid-containing parts are dismantled, drain the following fluids from the vehicle in the order that best fits your operation:

- Fuel
- Motor oil
- Transmission fluid
- Brake fluid
- Antifreeze
- Freon

Draining these fluids before placing the vehicle in the yard reduces 1) the possibility of spills when parts are removed later, and 2) time and cost to your business of cleaning up leaks and spills.

› Fluid Draining and Vehicle Dismantling Area

Ideally, these activities should be conducted in the same area, which should be covered with a roof. Your fluid draining and vehicle dismantling areas have more potential to contaminate stormwater than any other areas of your facility. Properly covering this area can eliminate contact with rainfall and is a great way to get a big bang for your buck in preventing stormwater pollution. Rain or snow can carry harmful materials like oil or gasoline into the soil and nearby streams, rivers, and lakes. Roofs not only keep out rain and snow, but also make the work area more comfortable for your workers.

If you don't currently dismantle fluid-containing parts and drain fluids under cover, you don't necessarily have to put up an entirely new and expensive building. One low-cost roofing option available is the "VersaTube" offered by Tuff Shed. (See http://www.tuffshed.com/versatube.htm or call (800) BUY-TUFF for more information.)

Another option includes building your own temporary cover using low-cost materials. Plans and materials for such temporary roofs can be obtained from vendors like South Bay Canopy (408) 998-8280.

You should also have a concrete pad in the draining and dismantling area, and you should drain all vehicles on this surface. Draining over concrete makes spills and leaks easier to clean up and minimizes the chance of environmental harm. Use appropriate fluid removal and handling equipment, such as suction systems, drain racks, and funnels for the containers.

Prevent stormwater pollution by minimizing the exposure of dismantling and fluid removal activities to stormwater. In addition to overhead cover, possible options include installing intercept trenches, berming the perimeter of the area, or using channels, swales, or grade breaks to divert the flow of stormwater around these areas.

› Fluid Storage

Storing fluids properly helps cut down on the amount of contaminants that end up in stormwater. When you remove fluids, transfer them to the proper container. Confine fluid storage to designated areas that are covered and have adequate secondary containment. Keep drums containing fluids away from storm drains; consider storing fluids near the location where fluids are drained. Maintain good integrity of all storage containers. Do not leave open drain pans that contain fluids around the shop.

You are responsible for ensuring that your fluids are handled by an authorized processor, transporter, and treatment/disposal facility.

› Spill Cleanup

Clean up spills promptly and thoroughly. Keep appropriately sized and stocked "spill kits" available in the areas where you conduct the following activities:

- Dismantling and fluid removal
- Fluid storage
- Battery and parts storage
- Fueling
- Equipment maintenance

For smaller spills, use shop rags and oil dry. Used absorbents should be placed in a designated container for proper disposal.

What should be in your spill kit?

- Absorbent socks or booms
- Absorbent pillows and pads
- Oil dry
- Broom and shovel
- Disposal bags or other containers
- Safety goggles
- Plastic gloves

- **Never use vehicle fluids for dust control!**
- **Don't mix your used oil with solvents, brake cleaner, or antifreeze.**
  This creates a hazardous waste, which can't be recycled and is very expensive to get rid of.
- **Don't pour fluids into your septic system, sanitary sewer, dry well, on the ground, or in the trash.**

› Parts Storage

Store engines, transmissions, and other oily parts (resale, core, or scrap) in a way that avoids exposure to rain or snowfall. This can include:

1) Storing parts indoors
2) Storing parts under a permanent roof on impervious surface
3) Storing parts in weather-proof, leak-proof, covered containers
4) Placing parts in vehicle bodies
5) Providing temporary cover (like tarps) for these parts as an interim measure

Lead acid battery components are toxic and corrosive and can contaminate the soil and water if handled improperly. Store batteries inside a building or outside in covered, non-leaking containers. Separate batteries from other wastes like paper, rags, garbage and flammable or hazardous chemicals. Monitor your battery storage area for leaks or deterioration, and take quick action to address any spills or leaks. Lime can be used to neutralize spilled battery acid. *Never pour battery acid on the ground or into a storm drain!*

Radiators removed from vehicles should be stored under a roof, tarp, or other cover, and raised up off the ground such that there is no contact with rainfall and surface drainage.

› Crushing

Never crush a vehicle without draining all the fluids and removing gas tanks, tires, and batteries. Capture and properly dispose of residual fluids released during crushing. You're responsible for ensuring fluids are captured and don't run off your property, even if you use a contractor to crush your vehicles.

› Vehicle Storage

If engines or fluid-containing parts remain in the vehicle when it is placed in the yard, place a hood or other cover, such as a well-secured tarp, over the vehicle engine. Use drip pans under stored vehicles with leaks.

Don't place vehicles on the ground where there is a heavy stormwater flow or close to a storm drain.

After vehicles are moved, scrape up dirt or gravel that was stained from leaks and drips. Manage the contaminated material in accordance with applicable regulations.

- Never wash spills into storm drains!
- Sweep up absorbent material and properly dispose at least daily.

› Equipment Maintenance

Schedule and perform periodic inspections of equipment. Regular maintenance of equipment such as forklifts reduces risk of breakdown and fluid release. Check for leaks and spills and for malfunctioning, worn, or corroded parts. Equipment maintenance should be done indoors or, where practical, on an impervious surface. If maintenance can't be done under cover, take adequate spill control and/or cleanup measures.

› Fueling

Pave refueling areas with concrete to prevent contamination of the soil and to enable cleanup. Don't leave vehicles unattended while fueling.

› Housekeeping

Sweep and clean paved surfaces daily to reduce sediment and contaminant buildup. Routine housekeeping is important. Catchments, inlets, oil-water separators, oil booms, waddles, tarps, and other pollutant-collecting materials need to be maintained regularly or they can become ineffective. Clean out drain inlets periodically, especially before the wet season, during the wet season, and after the wet season ends.

› Erosion Control

Tackle TSS! You may have heard of TSS or total suspended solids – in other words, dirt. Controlling the amount of dirt that runs off your property is important because metals and other harmful pollutants can attach themselves to the dirt particles and end up flowing off the property with stormwater. Eroded soil can also smother aquatic life.

Implement appropriate vegetative, structural, or stabilization measures such as basins, sediment traps, geotextiles, buffer strips, or filter berms in areas without much vegetation where soil erosion is evident.

› Non-Stormwater Discharges

Wash water from equipment, work areas, or shop floors cannot come into contact or mix with rainfall or surface drainage, or drain offsite. Vehicle and hand wash water is OK to be discharged to the sanitary sewer where allowed (be sure to check with your local sanitary sewer district). Most states prohibit all non-stormwater discharges from your property, including, but not limited to, discharges of wash water, rinse water and spilled fluids. If you are permitted to use sewers, make sure your drain is connected to the sanitary sewer. If this is not possible in your area, the wash water must be managed on-site. Management options include recycling, re-use, or off-site disposal. If you let the water soak into the ground (infiltration), take appropriate steps to prevent groundwater contamination and infestation by mosquitoes or other pests. For additional information consult your local regulatory agency.

- Residues from dried wash water cannot come into contact with rainfall or surface drainage.

- **Know where your drains go. Plug any floor drains that would let a spill run into septic systems or storm drains.**
  Automotive fluids and solvents can contaminate drinking water if they end up in drains that discharge to soil.

- Following washing, collect and clean up any accumulated sediments, oil deposits, debris, and paint particles.
- Do not steam clean or pressure wash parts without proper wash water management.
- Do not hose down the shop floor if water will run into a storm drain or off the property.

› Stormwater Filter Systems

Inexpensive filter systems or absorbents can provide an extra level of defense against stormwater pollution. Examples include: absorbent socks or booms, silt fences, straw bales, rock filters, and inlet filters. Regular maintenance of these products is essential – if they're not maintained, they won't work. Further, these measures are not a substitute for good stormwater management practices.

› Inspection

Inspect your site regularly to ensure all appropriate BMPs are being implemented. Increase inspections during periods of rainy weather. Based on permit or management needs, maintain a record of visual inspections.

Inspect oil containers, fresh water systems, irrigation lines, fueling areas, and other piping systems for leaks. If evidence of leaks is found, promptly repair or replace damaged parts to prevent polluted runoff and non-stormwater discharges.

› Customer Education

Inform customers who remove parts to do so properly and to appropriately dispose of fluids. For example, make fluid receptacles readily available, post signs that require the use of drip pans for parts removal, and prohibit waste generating activities like vehicle maintenance in parking lots.

Mercury Switches

Mercury switches are an important issue. Many older vehicles contain mercury, which is highly toxic and can cause learning disabilities and mental retardation in newborn children. When vehicles are crushed and mercury remains inside, it can get onto the ground and into waterways. Also, mercury can be released into the air and water bodies after scrapped vehicles go to the shredder.

What to do about mercury

Mercury switches are commonly found under vehicle hoods and trunks and less frequently in automatic braking systems (ABS). These switches can easily be removed to prevent contamination of the environment and human health problems.

Information on removing mercury from vehicles is available online at:

epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf

epa.gov/region5/air/mercury/autoswitch.htm

switchout.ca

Some states require mercury switches to be removed before vehicles are crushed. Some auto dismantlers remove the switches even if they are not required to do so. If you choose to address this important environmental issue and remove mercury switches before your vehicles are crushed, store the switches in a leak-proof, clearly marked, closed container. Also take care to ensure that the switches do not break during handling or storage. A licensed metals recycler that reclaims mercury can dispose of the switches. Contact your state environmental agency for more information.

You
>> CAN <<
Make a Difference!

Auto recyclers do their part to conserve natural resources by recycling valuable materials. Build on this good work and protect the environment from polluted runoff by implementing the BMPs described in this fact sheet. Make sure that your employees understand that stormwater management is important and are trained to implement your BMPs.

Remember,
stormwater protection
starts with YOU!

"It's critical for owners to set an example and be actively involved in implementing BMPs." – Brian Werth, Select Auto & Truck Recyclers

Where to find more information

Check out the following sources for additional information on BMPs for auto recyclers:

Manuals

- An Environmental Compliance Workbook for Automotive Recyclers, Florida DEP
  www.dep.state.fl.us/central/home/ps/asyca/fl_gyb.pdf
- Environmental Compliance Guide for Motor Vehicle Salvage Yards, OH Small Bus. Assistance Office
  www.epa.state.oh.us/other/sbao/salvageguide.pdf
- Vehicle Recycling Manual: A Guide for Vehicle Recyclers, Washington State Department of Ecology
  www.ecy.wa.gov/pubs/97433.pdf
- Automotive Recyclers Guide to a Cleaner Environment, New York DEC
  www.dec.state.ny.us/website/reg8/press/autorec/autorec0.pdf
- Certified Auto Recycler (CAR) Guidance Manual, Automotive Recyclers Association
  www.autorecyc.org (Available to members only)

Other Sources

- The National Compliance Assistance Clearinghouse is your guide to compliance information on the Internet. It provides quick access to compliance tools and contacts from EPA and other compliance assistance providers. The clearinghouse has an entire section devoted to the auto salvage industry.
  cfpub.epa.gov/clearinghouse
- A list of state and local environmental contacts can be found on the internet at:
  www.epa.gov/epapages/statelocal/envrolst.htm
- The EPA Small Business Ombudsman can help you understand environmental regulations, or refer you to local contacts. Their toll-free small business hotline provides regulatory and technical assistance information: (800) 368-5888

Vendors

Call for catalogs or more information

Low-Cost Roofs:		**Fluid Removal and Storage Equipment**:		**Spill Kits and Absorbent Materials**:	
Tuff Shed	(800) BUY-TUFF	Hy-Tec Environmental	(800) 336-4499	Stormtech	(888) 549-5374
South Bay Canopy	(408) 998-8280	Spill Cleanup Direct	(800) 356-0783	New Pig	(800) 468-4647

Note: Sustainable Conservation and U.S. EPA do not endorse any of these products.
This list is not complete: other vendors may provide similar or identical products and services.

Developed by

Sustainable Conservation
www.suscon.org

Supervisión de la Precipitación Pluvial

Una Guía para los Dueños y Operadores de Recicladoras de Autos

La Protección de la Precipitación Pluvial Comienza Con Usted

La actitud del operador de la compañía hacia la supervisión de la precipitación pluvial puede hacer la diferencia. Es su responsabilidad comunicar a sus empleados que la supervisión de la precipitación pluvial es una prioridad. Asegúrese que sus empleados entiendan por qué es importante la supervisión de la precipitación pluvial tanto para su negocio como para el medio ambiente. Comienze mostrándoles el video y hoja informativa que aquí se adjuntan.

Proteger la precipitación pluvial puede beneficiar a su negocio de varias maneras importantes:

- **Profesionalismo y orgullo en su negocio** - Tanto los trabajadores como sus clientes aprecian una compañía limpia y responsable.
- **Es la ley** - El no cumplir con las normas de precipitación pluvial puede poner su negocio en juego. Los grupos reguladores y ambientalistas en todo el país estan enfocándose cada vez más en las desmanteladoras de autos por violaciones en cuanto a la precipitación pluvial.
- **Protección ambiental** - Todos queremos arroyos, ríos, lagos, bahías, y oceanos limpios para nuestras familias y nuestro futuro. Su compañía puede proteger el medio ambiente siguiendo algunas prácticas directas y de sentido común.

Proteja el medio ambiente para proteger a su negocio

Las siguientes prácticas describen opciones que su compañía puede aplicar para ayudarse a administrar lo relativo a la precipitación pluvial. Aunque el seguir todas las prácticas descritas abajo puede ayudar a mejorar el desempeño respecto a la supervición de la precipitación pluvial, ello no garantiza que su compañía estará en cumplimiento con todas las normas aplicables de la precipitación pluvial. Comuníquese con una agencia reguladora del estado o la EPA si desea más información.

El Permiso de precipitación pluvial

Todas las instalaciones desmanteladoras de vehículos en los Estados Unidos (excepto aquellas en una área de servicio de desagüe combinado o instalaciones que no desechen precipitación pluvial de su propiedad) están obligadas por la Ley de Agua Limpia (Clean Water Act) a obtener un permiso de precipitación pluvial, ya sea de la Agencia de Protección del Medio Ambiente de los EE.UU. o de una agencia estatal correspondiente. Usted primero debe archivar un Aviso de Intención (Notice of Intent, o N.O.I.) ante la agencia estatal correspondiente. También debe preparar un Plan de Prevención de Contaminación de la precipitación pluvial (SWPPP) para describir cómo es que su compañía administrará lo referente a la precipitación pluvial.

Las siguientes prácticas están organizadas por área o actividad de la compañía. Para referencias y contactos para obtener información adicional acerca de la precipitación pluvial y otros asuntos ambientales relacionados la desmantelación de vehículos, vea el final de este documento.

¿Cuáles son las prácticas de mejor manejo (BMPs)?

El término “BMP” es utilizado para describir prácticas de manejo que muchas diferentes industrias usan para dirigir un gran número de asuntos ambientales. Nosotros utilizaremos BMP para describir las prácticas que usted puede aplicar para administrar lo referente a la precipitación pluvial en su desmanteladora de autos.

Supervisión de la Precipitación Pluvial

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› La capacitación

¡La capacitación de los empleados es fundamental! Capacite a sus empleados en procedimientos referentes al manejo de la precipitación pluvial, especialmente durante la temporada de lluvia y nieve y antes de que éstas lleguen. Todos los empleados deben ser capacitados al inicio de su contratación y al menos una vez al año después de ella. Asegúrese de documentar la capacitación de sus empleados. También debe colocar letreros alrededor de las áreas de actividad con recordatorios para sus trabajadores. Por ejemplo, "Evite los fluidos en el drenaje" o "Barra diariamente el absorbente." Diseñe sus propios letreros que den sentido a su operación.

› Ingreso de vehículos

Inspeccione todos los vehículos de reciente ingreso por posibles fugas de fluidos y materiales no deseados, cuando vayan entrando a las instalaciones. Contenga rápidamente las fugas con charolas o materiales absorbentes.

› Extracción de fluidos

Establezca un procedimiento para procesar vehículos y apéguese a él. Primero, antes de que cualquier vehículo sea colocado en la yarda por un término largo de almacenamiento o para compactarse, y antes que se desmantelen las partes que contengan fluidos, extraiga los siguientes fluidos del vehículo, en el orden que mejor funcione para su operación:

- Combustible
- Aceite de motor
- Líquido de transmisión
- Líquido de frenos
- Anticongelante
- Gas freón

Extraer estos fluidos antes de colocar el vehículo en la yarda disminuye 1) la posibilidad de derrames cuando las partes son removidas posteriormente, y 2) el tiempo y costo requerido en su negocio para limpiar fugas y derrames.

› Área de extracción de fluidos y de desmantelamiento de vehículos

Lo ideal es que estas actividades se realicen en la misma área, la cual debe estar cubierta con un techo. Sus áreas de extracción de fluidos y de desmantelación de vehículos tienen mayor potencial de contaminar la precipitación pluvial que cualquier otra área de su compañía. El cubrir apropiadamente esta área puede eliminar el contacto con la caída de la lluvia y es una gran forma de economizar, al prevenir la contaminación de la precipitación pluvial. La lluvia y la nieve pueden acarrear materiales dañinos como aceite o gasolina al suelo y cerca de arroyos, ríos, y lagos. Los techos no solo

detienen la lluvia y la nieve, sino que también hacen el área de trabajo más cómoda para sus trabajadores.

Si usted no desmantela actualmente partes que contengan fluidos y extrae fluidos debajo de un techo, usted no necesariamente tiene que construir un edificio nuevo y costoso. Una opción disponible es el techo de bajo costo "Versa Tube" ofrecido por Tuff Shed. (Vea http://www.tuffshed.com/versatube.htm o llame (800) BUY TUFF para más información.) Otra opción incluye construir su propio techo temporal utilizando materiales de bajo costo. Puede obtener planos y materiales de dichos techos temporales de vendedores como South Bay Canopy (408) 998-8280.

Usted también debe tener una plataforma de concreto en el área de extracción y desmantelamiento, y dee drenar todos los vehículos sobre la superficie. El drenar sobre concreto hace que los derrames y fugas sean más fáciles de limpiar y minimiza la posibilidad de daño ambiental. Utilice equipo apropiado para la extracción y manejo de fluidos, tales como sistemas de succión, racas de drenaje y embudos para contenedores.

Prevenga la contaminación de la precipitación pluvial minimizando la exposición de las actividades de desmantelamiento y de extracción de fluidos a la precipitación pluvial. Además de un techo, otras opciones posibles incluyen instalar zanjas interceptoras, bordear el perímetro del área, o utilizar canales, o cortes para desviar el flujo de la precipitación pluvial fuera del alcance de estas áreas.

› Almacenamiento de fluidos

El almacenar los fluidos apropiadamente ayuda a reducir la cantidad de contaminantes que terminan en la precipitación pluvial. Cuando extraiga fluidos, colóquelos en el contenedor apropiado. Destine el almacenamiento de fluidos a áreas designadas que estén cubiertas y que tengan un adecuado contenimiento secundario. Mantenga los barriles que contengan fluidos alejados de los drenajes de agua; considere almacenar los fluidos cerca del área donde los fluidos son extraidos. Mantenga en buenas condiciones todos los contenedores de almacenamiento. No deje charolas abiertas que contengan fluidos alrededor del taller.

Usted es responsable de asegurarse que sus fluidos sean manejados por procesadores, transportistas, y compañías de tratamiento/desechos autorizados.

- **¡Nunca utilice fluidos de vehículo para controlar el polvo!**
- **No mezcle su aceite usado con solventes, limpiador de frenos, ni anticongelante.** **Esto crea un desperdicio peligroso el cual no puede ser reciclado y es muy costoso deshacerse de él.**
- **No vierta fluidos dentro del sistema séptico, el drenaje sanitario, los pozos, en la tierra, ni en la basura.**

› Limpieza de derrames

Limpie los derrames rápida y completamente. Guarde kits para derrames, del tamaño apropiado, en todas las áreas donde realice las siguientes actividades:

- Desmantelamiento y extracción de fluidos
- Almacenamiento de fluidos
- Almacenamiento de baterías y partes
- Abastecimiento de combustible
- Mantenimiento de equipo

Para derrames menores utilice trapos y "oil dry". Los materiales absorbentes usados deberán colocarse en un contenedor designado para su desecho.

¿Qué debería haber en su kit para derrames?

- Tubos ("socks") absorbentes
- Cojines y almohadas absorbentes
- "Oil dry"
- Escoba y pala
- Lentes de seguridad
- Guantes de plástico
- Bolsas para desecho y otros contenedores

› Almacenamiento de partes

Almacene motores, transmisiones, y otras partes grasosas (reventa, core, o chatarra) de forma que se evite la exposición a la lluvia o caída de nieve. Esto puede incluir:

1) Almacenar partes a puerta cerrada
2) Almacenar partes bajo un techo permanente sobre una superficie impenetrable
3) Almacenar partes en contenedores cubiertos a prueba del clima y de fugas
4) Colocar partes en las carrocerías de los vehículos
5) Proveer cobertura temporal (como lonas) para estas partes como medida alterna

Los componentes de la batería de acido de plomo son tóxicos y corrosivos y pueden contaminar el suelo y agua si son manejados incorrectamente. Almacene las baterías dentro o fuera de un edificio en contenedores cubiertos y sin fugas. Separe las baterías de otros desperdicios como el papel, trapos, basura y químicos inflamables o peligrosos. Monitoree su área de almacenamiento de baterías por posibles fugas o deterioraciones, y tome acción rapida para evitar cualquier derrame o fuga. La cal puede utilizarse para neutralizar el acido de batería derramado. *¡Nunca vierta acido de batería en la tierra o dentro del drenaje de agua!*

Los radiadores extraidos de los vehículos deben almacenarse bajo techo, lona, u otro cobertizo, y a cierta altura del suelo de tal manera que no haya contacto con la lluvia o el drenaje de la superficie.

› Compactación

Nunca compacte un vehículo sin haber extraido todos los fluidos y quitado los tanques de gasolina, las llantas y las baterías. Contenga y deseche apropiadamente los residuos de fluidos que escurran mientras se está compactando. Usted es responsable de asegurarse que se contangan todos los fluidos y que no escurran fuera de su propiedad, aún si compacta sus vehículos a través de un contratista.

› Almacenamiento de vehículos

En caso de que haya motores o partes que contengan fluidos dentro del vehículo cuando éste se coloque en la yarda, coloque un cofre u otro cobertor tal como una lona bien asegurada sobre el motor del vehículo. Coloque charolas debajo de los vehículos que tengan fugas. No ponga vehículos en la tierra donde haya una corriente fuerte de precipitación pluvial o cerca de un drenaje. Después de que los vehículos sean retirados, levante la tierra o grava que ha sido manchada por fugas y goteos. Maneje el material contaminado de acuerdo con las regulaciones correspondientes.

- **¡Nunca dirija derrames hacia los drenajes!**
- **Barra el material absorbente y deséchelo apropiadamente al menos una vez al día.**

› Mantenimiento del equipo

Programe y realice inspecciones periódicas del equipo. El mantenimiento regular del equipo, tal como los montacargas, reduce el riesgo de que se descomponga y que tire fluidos. Revise por posibles fugas y derrames, el mal funcionamiento, desgaste, o partes corroídas. El mantenimiento del equipo debe hacerse en un lugar cerrado o, cuando sea práctico, en una superficie impenetrable. Si el mantenimiento no puede hacerse bajo techo, tome medidas adecuadas de control de derrames y/o limpieza.

› Abastecimiento de combustible

Pavimente las áreas de abastecimiento de combustible con concreto para prevenir la contaminación del suelo y facilitar la limpieza. No deje los vehículos sin atender mientras se estén cargando de combustible.

› Mantenimiento

Barra y limpie las superficies pavimentadas diariamente para reducir la sedimentación y acumulación de contaminantes. El mantenimiento como rutina es importante. Recipientes, zanjas, separadores de agua/aceite, repelentes de aceite, lonas, y demas materiales para retener contaminantes deben recibir mantenimiento regular o pueden llegar a ser ineficaces. Limpie las zanjas de drenaje periódicamente, antes, durante y después de la temporada de lluvias.

› Control de la erosión

¡Elimine los TSS! Quizás haya oído hablar de los TSS o sólidos totalmente suspendidos: en otras palabras, la tierra. Controlar la cantidad de tierra que se escurre fuera de su propiedad es importante porque los metales y otros contaminantes dañinos pueden adherirse a las particulas de tierra y terminar escurriéndose fuera de la propiedad hacia la precipitación pluvial. El suelo erosionado puede también extinguir la vida acuática.

Tome medidas adecuadas en cuanto a la vegetación, estructuración o estabilización, tales como desagües, retenedores de sedimentación, geotextiles, o bordos de filtración en áreas sin mucha vegetación, donde la erosión del suelo es evidente.

› Los escurrimientos que no provienen de la precipitación pluvial

El agua para lavar equipo, áreas de trabajo, o pisos del taller no puede entrar en contacto o mezclarse con la lluvia o el drenaje superficial ni el drenaje común. El agua para lavarse las manos o lavar vehículos puede descargarse en el drenaje sanitario donde sea permitido (asegúrese de contactar a su distrito local de drenaje sanitario). La mayoría de los estados prohiben los escurrimientos de su propiedad que no provengan de la precipitación pluvial, incluyendo, pero sin limitarse a, los escurrimientos de agua para lavar, para enjuagar y de fluidos derramados. Si usted tiene permiso para usar drenajes, asegúrese que su drenaje esté conectado al drenaje sanitario. Si esto no es posible en su área, el agua para lavar debe ser manejada dentro de su propiedad. Las opciones de manejo incluyen el reciclaje, el reuso o su desecho fuera de la propiedad. Si usted deja que el agua se acumule en la tierra (filtración), tome los pasos adecuados para prevenir contaminación en la tierra o que se infeste con mosquitos u otras plagas. Para información adicional consulte su agencia reguladora local.

- Los residuos secos del agua para lavar no pueden entrar en contacto con la lluvia o drenaje de la superficie.

- **Usted debe saber hacia dónde están dirigidos sus drenajes. Tape cualquier drenaje en el suelo que pudiera dejar escurrir un derrame hacia un sistema séptico o drenaje de agua.**
  Los fluidos y solventes de los autómoviles pueden contaminar el agua potable si caen en drenajes que se descargan sobre el suelo.

- Después de lavar, recoja y limpie cualquier sedimentación acumulada, depósitos de aceite, chatarra, y partículas de pintura.
- No lave partes a vapor o a presión sin el manejo apropiado del agua para lavar.
- No lave el piso del taller con manguera si el agua va a escurrir hacia el drenaje o fuera de la propiedad.

› Sistemas de filtración de la precipitación pluvial

Los sistemas de filtración no costosos o absorbentes pueden ofrecer un nivel de defensa adicional contra la contaminación de la precipitación pluvial. Algunos ejemplos incluyen: tubos absorbentes, cercos, pacas de paja, filtros de roca, y zanjas para filtrar. El mantenimiento regular de estos productos es esencial: si no reciben mantenimiento, no van a funcionar. Además, estas medidas no sustituyen a las prácticas del buen manejo de la precipitación pluvial.

› Inspección

Inspeccione sus instalaciones con regularidad para asegurarse que se estén aplicando todas las BMPs correctas. Aumente las inspecciones durante los periodos de clima lluvioso. Basándose en el permiso o necesidades de supervisión, mantenga un registro de las inspecciones visuales. Inspeccione los contenedores de aceite, los sistemas de agua fresca, las líneas de irrigación, las áreas de abastecimiento de combustible, y demás sistemas de tuberías por posibles fugas. Si existe evidencia de alguna fuga, repárela rápidamente o reemplace las partes dañadas para prevenir escurrimientos contaminados y descargas de agua que no provengan de la precipitación pluvial.

› Educación de los clientes

Notifique a sus clientes que sustraen partes que lo hagan correctamente y que desechen los fluidos debidamente. Por ejemplo, coloque recipientes para fluidos a disposición de los clientes, coloque letreros que requieran el uso de charolas para quitar partes, y prohiba actividades que generen desperdicios, como el dar mantenimiento a vehículos en el estacionamiento.

Switches de mercurio

Los switches o interrruptores de mercurio son un aspecto importante. Muchos vehículos viejos contienen mercurio, el cual es altamente tóxico y puede causar discapacidades del aprendizaje y el retardo mental en niños recién nacidos. Cuando los vehículos son compactados y el mercurio se mantiene adentro, éste puede caer en el suelo y en las corrientes de agua. El mercurio también puede esparcirse en el aire y en los mantos acuíferos después de que los vehículos compactados van a la cortadora.

Puede obtener información acerca de como remover el mercurio de los vehículos por el internet en:

epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf

epa.gov/region5/air/mercury/autoswitch.htm

switchout.ca

Qué hacer acerca del mercurio

Los switches de mercurio se hayan normalmente debajo de los cofres y cajuelas de los vehículos y menos frecuentemente en sistemas de frenado automático (ABS). Estos switches se pueden extraer antes de compactar los vehículos. Algunas desmanteladoras de autos quitan los switches aunque no se les requiera. Si usted decidiera participar en este importante aspecto ambiental y removiera los switches de mercurio antes de compactar sus vehículos, debe almacenar los switches en un contenedor cerrado claramente marcado y a prueba de fugas. También asegúrese de que los switches no se quiebren cuando se manejen o almacenen. Una recicladora de metales con licencia que recolecte mercurio puede desechar los switches. Contacte a su agencia ambiental del estado si desea más información.

¡Usted
>> PUEDE <<
Hacer la Diferencia!

Las recicladoras de autos hacen su labor para conservar los recursos naturales al reciclar materiales valiosos. Coopere en esta buena labor y proteja al medio ambiente de los escurrimientos contaminados, aplicando las BMPs descritas en este documento. Asegúrese que sus empleados entiendan que el manejo de la precipitación pluvial es importante y que se les capacite para aplicar las BMPs.

Recuerde, ¡la protección de la precipitación pluvial

Comienza con USTED!

"Es fundamental para los propietarios poner el ejemplo y participar activamente en la aplicación de las BMPs."

— Brian Werth, Select Auto & Truck Recyclers

Dónde puede encontrar más información

Consulte las siguientes fuentes si desea más información acerca de las BMPs para recicladoras de autos:

Manuales

- An Environmental Compliance Workbook for Automotive Recyclers, Florida DEP
  www.dep.state.fl.us/central/home/ps/asyca/fl_gyb.pdf
- Environmental Compliance Guide for Motor Vehicle Salvage Yards, OH Small Bus. Assistance Office
  www.epa.state.oh.us/other/sbao/salvageguide.pdf
- Vehicle Recycling Manual: A Guide for Vehicle Recyclers, Washington State Department of Ecology
  www.ecy.wa.gov/pubs/97433.pdf
- Automotive Recyclers Guide to a Cleaner Environment, New York DEC
  www.dec.state.ny.us/website/reg8/press/autorec/autorec0.pdf
- Certified Auto Recycler (CAR) Guidance Manual, Automotive Recyclers Association
  www.autorecyc.org (Disponible para miembros solamente)

Otras fuentes

- La National Compliance Assistance Clearinghouse es su guía sobre cómo obtener información acerca de los requerimientos por el internet. Ésta le proporciona al rápido acceso a las herramientas requeridas y los contactos de la EPA y de otros proveedores de asistencia en cuanto a los requerimientos. Dicha agencia tiene una sección entera dedicada a la industria del salvamento de autos. http://cfpub.epa.gov/clearinghouse
- Puede hallar una lista de contactos ambientalistas del estado y locales por el internet en:
  epa.gov/epapages/statelocal/envrolst.htm
- El EPA Small Business Ombudsman le puede ayudar a comprender las regulaciones ambientales, o proporcionarle contactos locales. La línea libre de cobro para pequeños empresarios provee información sobre asistencia regulatoria y técnica: (800) 368 5888.

Información sobre vendedores

Techos de bajo costo:

Tuff Shed	(800) BUY-TUFF
South Bay Canopy	(408) 998-8280

Extracción de fluidos y equipo de almacenamiento:

Hy-Tec Environmental	(800) 336-4499
Spill Cleanup Direct	(800) 356-0783

Kits para derrames y materiales absorbentes:

Stormtech	(888) 549-5374
New Pig	(800) 468-4647

Nota: Sustainable Conservation y U.S. EPA no endosa ninguno de estos productos.
Esta lista no esta completa: otros vendedores pueden proveer productos y servicios similares o idénticos.

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www.suscon.org

Clean Water State Revolving Fund

FACT SHEET

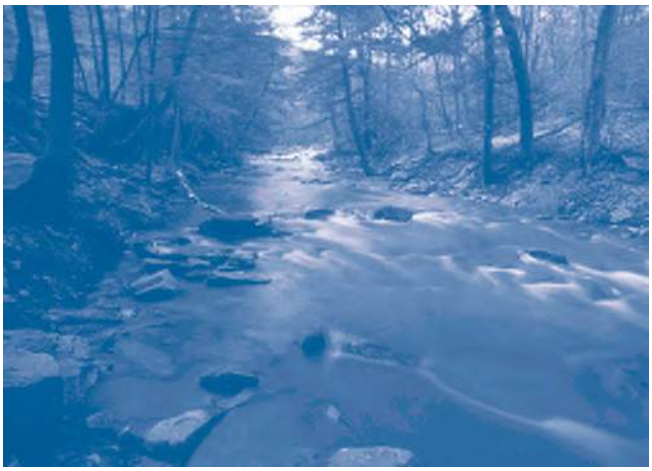
Cleaning Up Polluted Runoff with the Clean Water State Revolving Fund

What's In It For You?

The Clean Water State Revolving Fund (CWSRF) program has become a major source of funding to address polluted runoff. To date, 30 of the 51 CWSRF programs have provided funding for nonpoint source and estuary protection projects. Today annual funding to address polluted runoff exceeds $200 million. CWSRF loans are issued at below market rates (zero percent to less than market), offering borrowers significant savings over the life of the loan.

History

In creating the CWSRF program, Congress ensured that it would be able to fund most types of water quality projects, including nonpoint source, wetlands, estuary, and other types of watershed projects, as well as more traditional municipal wastewater treatment systems. The CWSRF program provisions in the Clean Water Act give no more preference to one category or type of project than any other.



Capacity of the CWSRF

The 51 CWSRF programs work like banks (each state and Puerto Rico has one). Federal and state contributions are used to capitalize or set-up the programs. These assets are used to make low-interest loans for important water quality projects. Repaid funds are then recycled to fund other important water quality projects.

The CWSRF programs have in excess of $42 billion in assets and average funding for the past three years exceedes $4 billion annually. The funding of polluted runoff projects with the CWSRF is gaining momentum. Since 1989, the CWSRF program has funded 3,400 projects, investing more than $1.6 billion in polluted runoff projects.

Who May Qualify?

Included in a long list of eligible loan recipients are communities, citizens groups, businesses, farmers, homeowners, watershed groups, and nonprofit organizations. Since the program is managed largely by the states, project eligibility may vary according to the priorities within each state. Contact your state's CWSRF program for details.

Polluted Runoff and the CWSRF

The CWSRF can fund virtually any type or category of polluted runoff that is included in a state approved nonpoint source (NPS) management plan.

Polluted runoff occurs when rainfall, snowmelt, or irrigation runs over land or through the ground, picks up pollutants, and deposits them into surface or ground

water. For instance, polluted runoff from agricultural sources is the leading contributor to water quality impairments in rivers, degrading over 60% of impaired river miles.

Terraces, conservation tillage and conservation buffers save soil and improve water quality

Here are a few actual project examples from states that demonstrate what the CWSRF can do:

- **California -** Stormwater management facilities, including sediment basins and constructed wetlands. Purchasing easements for wetland protection
- **Delaware -** Animal waste management facilities, including manure storage facilities and dead chicken composters
- **Massachusetts -** Septic system improvements and replacement
- **Minnesota -** Agricultural best management practices (BMPs) to prevent and reduce runoff. Purchasing conservation tillage equipment and implementing soil erosion controls
- **New York** - Purchasing land and easements for source water protection projects
- **Washington -** Rehabilitation of streambanks, riparian corridors and buffers
- **Wisconsin** - Water protection and improvement projects on brownfield redevelopment sites
- **Wyoming -** Removal of leaking underground storage tanks and remediation of contaminated ground water and soil

State of the art lagoon animal waste management system

These are just a sample of the projects that have been funded. Contact your state or visit the CWSRF web site for more examples and information **(www.epa.gov/owm/cwfinance/index.htm)**

Benefits of Loans

First, Funds are Available. CWSRF loans can usually be obtained much faster than grants and each year over $200 million is spent on nonpoint source projects.

Second, No Cash Up-Front. Most grant programs require significant cost shares (as much as 40 percent or more). A CWSRF loan can cover 100 percent of project costs with no cash up-front.

Third, Significant Cost Savings. CWSRF loans provide significant cost savings over the life of the loan. The total cost of a zero percent CWSRF loan will be approximately 50 percent less than the same project financed by a commercial loan at 7.5 percent.

Fourth, Loans can Complement other Funding Sources. It may be possible to combine a CWSRF loan with grant dollars from other sources. Check with your state.

Sources of Repayment

Many users of the CWSRF program have demonstrated a high level of creativity in developing sources of repayments. The source of repayment need not come from the project itself. Some possible sources include:

- Fees paid by property owner or homeowner
- Fees paid by a developer
- Dedicated portion of local, county, or state taxes or fees
- Recreational fees (fishing license, park entrance fees)
- Stormwater management fees
- Wastewater user charges
- Donations or dues made to nonprofit groups
- Business revenues

Making Funding Accessible - Ohio Examples

The state of Ohio employs several innovative funding methods to ensure a variety of watershed projects receive funding. Two unique funding methods used in Ohio are the Linked-Deposit Loan Program and the Watershed Resource Restoration Sponsorship Program (WRRSP). In both examples the state shows creativity by taking existing institutional arrangements and modifying them to achieve the state's goals and meet the needs of loan recipents.

Linked Deposit Lending Program

In Ohio's linked-deposit program, the state makes arrangements with local banks to provide loans for agricultural BMPs and on-site wastewater treatment projects. Under a linked-deposit arrangement the state agrees to buy a bank's investment (CD) and receive a lower than market rate of return on the investment. The bank agrees to provide reduced interest rate loans for eligible projects. The linked-deposit loan interest rate reflects the difference between the state's reduced rate of return on the investment and the market rate of return.

The linked-deposit approach benefits CWSRF programs because they support high priority nonpoint source projects and because they place risk and management responsibilities with local financial institutions. Financial institutions earn profits from the linked deposit agreements and add an additional service for their customers. Borrowers find linked deposit programs to be economical and comfortable; they save money with low-interest loans, and they are comfortable working with local financial institutions.

For more information on linked-deposit loans see EPA's Activity Update ***"Innovative Use of Clean Water State Revolving Funds for Nonpoint Source Pollution"*** (EPA 832-F-02-004) found on the CWSRF web site.

Watershed Resource Restoration Sponsorship Program (WRRSP)

The WRRSP offers communities very low interest rates on loans for wastewater treatment plant improvements if the communities also sponsor projects that protect or restore water resources. The end payment for the wastewater treatment plant project is the same because of the lower interest rate and the simultaneous funding for the restoration project by the wastewater treatment plant. The benefit of this program is water restoration projects that normally would not receive funding are completed with the help of the wastewater treatment plants.

To date, the WRRSP program has supported projects that have acquired wetlands and riparian lands, acquired conservation easements, restored habitat, and removed dams.

Over the past two years under the WRRSP, communities in Ohio have used $24 million of CWSRF loan funds to protect and restore 1850 acres of riparian lands and wetlands and 38 miles of Ohio's stream corridors.

For more information on Ohio's WRRSP see EPA's Activity Update ***"Ohio's Restoration Sponsor Program Integrates Point Source and Nonpoint Source Projects"*** (EPA 832-F-02-001) found on the CWSRF web site.

Challenges Ahead

With increasing emphasis on watershed-based program management and implementation of Total Maximum Daily Loads (TMDLs) in impaired water bodies, it will be even more important to take advantage of the tremendous buying power of the CWSRF program.

How to Get More From the CWSRF

- Share information on polluted runoff priorities with CWSRF managers
- Work to enhance CWSRF programs to include funding of polluted runoff projects
- Become involved in the annual CWSRF planning and priority setting process
- Help market the program and encourage loan applications

The water quality community needs to work together to increase understanding of polluted runoff issues and facilitate the use of the powerful resources of the CWSRF to address these significant problems. EPA has been encouraging the states to open their CWSRFs to the widest variety of water quality projects and to use their CWSRFs to fund the highest priority projects in targeted watersheds. Those interested in cleaning up polluted runoff must seek out their CWSRF programs, gain an understanding of how their state program works, and participate in the annual process that determines which projects are funded.

For more information about the Clean Water Revolving Fund, or for a program representative in your State, please contact:

Clean Water State Revolving Fund Branch

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW (Mailcode 4204M)

Washington, DC 20460

Phone: (202) 564-0752 **Fax:** (202) 501-2403

Internet: www.epa.gov/owm/cwfinance/index.htm

Clean Water
State Revolving Fund

What is WaterSense?

WaterSense is a voluntary public-private partnership program sponsored by the U.S. Environmental Protection Agency. Its mission is to protect the future of our nation's water supply by promoting and enhancing the market for water-efficient products and services.

www.epa.gov/watersense

U.S. EPA WaterSense

5 Simple Ways to Save Water

United States Environmental Protection Agency
(4204M)

EPA-832-F-06-007
May 2006
www.epa.gov/watersense

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Saving water is simple and smart.

1 Be smart when irrigating your lawn or landscape.

- Water the lawn or garden during the coolest part of the day. Early morning is best.
- Water plants according to their water needs; you'll have healthier plants and a lower water bill.
- Set sprinklers to water lawns and gardens only—not the street or sidewalk.
- Use soaker hoses or trickle irrigation systems for trees and shrubs.

2 Use your appliances wisely.

- Wash only full loads or set small loads to the appropriate water level.
- Scrape rather than rinse dishes before loading them into the dishwasher.
- Replace old clothes washers with ENERGY STAR qualified appliances that use less water.

3 Don't flush your money down the drain/Toilets.

- A leaky toilet can waste 200 gallons of water per day. Check your toilet for leaks by adding food coloring to the tank. If the toilet is leaking, color will appear in the bowl within 15 minutes. Look for worn out, corroded or bent parts in the leaky toilet. Most replacement parts are inexpensive, readily available and easily installed. (Flush as soon as test is done, since food coloring may stain the tank.)
- When replacing your toilet, look for high-efficiency models that use less than 1.3 gallons per flush.

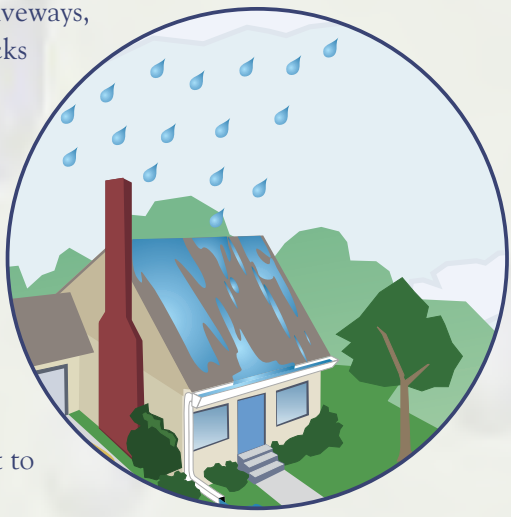
4 Conserve around the house.

- Keep drinking water in the refrigerator instead of letting the faucet run until cool. A running tap can use about 2 gallons of water per minute.
- Try not to leave the tap running while you brush your teeth or shave.
- Don't pour water down the drain if you can use it for other projects such as watering a plant or cleaning.

5 Stop those leaks.

- Verify that your home is leak-free. Many homes have hidden water leaks that can waste more than 10 percent, costing both you and the environment. Read your water meter before and after a two-hour period where no water is being used. If the meter does not read exactly the same, you probably have a leak.
- Repair dripping faucets and showers. If your faucet is dripping at the rate of one drop per second, you can expect to waste 2,700 gallons per year. This waste will add to the cost of water and sewer utilities or strain your septic system.

As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants. Stormwater can flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water. Polluted runoff is the nation's greatest threat to clean water.



By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automotive fluids off the ground and out of stormwater. Adopt these healthy household habits and help protect lakes, streams, rivers, wetlands, and coastal waters. Remember to share the habits with your neighbors!

Healthy Household Habits for Clean Water

Vehicle and Garage

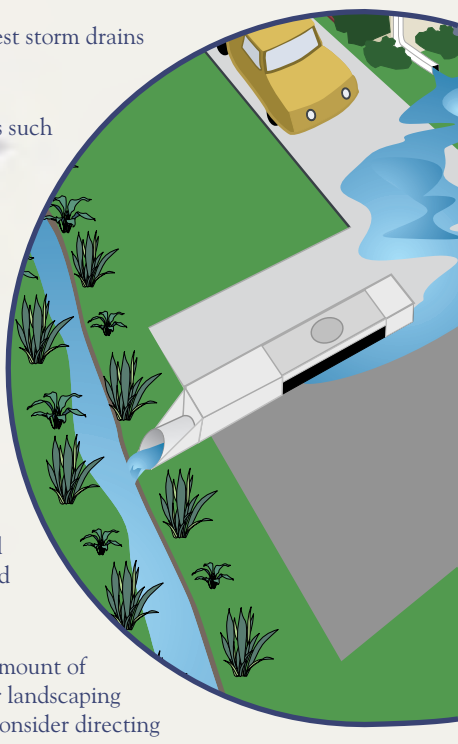
- Use a commercial car wash or wash your car on a lawn or other unpaved surface to **minimize** the amount of dirty, soapy water flowing into the storm drain and eventually into your local waterbody.

- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. Clean up **spilled fluids** with an absorbent material like kitty litter or sand, and don't rinse the spills into a nearby storm drain. Remember to properly dispose of the absorbent material.
- **Recycle** used oil and other automotive fluids at participating service stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.

Lawn and Garden

- Use pesticides and fertilizers **sparingly**. When use is necessary, use these chemicals in the recommended amounts. Avoid application if the forecast calls for rain; otherwise, chemicals will be washed into your local stream.
- Select **native** plants and grasses that are drought- and pest-resistant. Native plants require less water, fertilizer, and pesticides.
- **Sweep up** yard debris, rather than hosing down areas. Compost or recycle yard waste when possible.
- Don't overwater your lawn. Water during the **cool** times of the day, and don't let water run off into the storm drain.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. **Vegetate** bare spots in your yard to prevent soil erosion.

Home Repair and Improvement



- Before beginning an outdoor project, locate the nearest storm drains and **protect** them from debris and other materials.
- **Sweep up** and properly dispose of construction debris such as concrete and mortar.
- Use hazardous substances like paints, solvents, and cleaners in the **smallest amounts possible**, and follow the directions on the label. Clean up spills **immediately**, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Purchase and use **nontoxic**, **biodegradable**, **recycled**, and **recyclable** products whenever possible.
- **Clean** paint brushes in a sink, not outdoors. Filter and reuse paint thinner when using oil-based paints. Properly dispose of excess paints through a household hazardous waste collection program, or donate unused paint to local organizations.
- **Reduce** the amount of paved area and increase the amount of vegetated area in your yard. Use native plants in your landscaping to reduce the need for watering during dry periods. Consider directing downspouts away from paved surfaces onto lawns and other measures to increase infiltration and reduce polluted runoff.

Pet Care

- When walking your pet, remember to **pick up** the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Swimming Pool and Spa

- **Drain** your swimming pool only when a test kit does not detect chlorine levels.
- Whenever possible, drain your pool or spa into the **sanitary** sewer system.
- Properly store pool and spa chemicals to **prevent** leaks and spills, preferably in a covered area to avoid exposure to stormwater.

Septic System Use and Maintenance

- Have your septic system **inspected** by a professional at least every 3 years, and have the septic tank **pumped** as necessary (usually every 3 to 5 years).
- Care for the septic system drainfield by **not** driving or parking vehicles on it. Plant only grass over and near the drainfield to avoid damage from roots.
- Flush responsibly. Flushing household chemicals like paint, pesticides, oil, and antifreeze can **destroy** the biological treatment taking place in the system. Other items, such as diapers, paper towels, and cat litter, can **clog** the septic system and potentially damage components.

Storm drains connect to waterbodies!

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January 2003

THE YEAR OF CLEAN WATER
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Remember: Only rain down the drain!

For more information, visit
www.epa.gov/npdes/stormwater
or

Make your home

The

SOLUTION TO STORMWATER POLLUTION!

A homeowner's guide to healthy habits for clean water

EPA United States Environmental Protection Agency

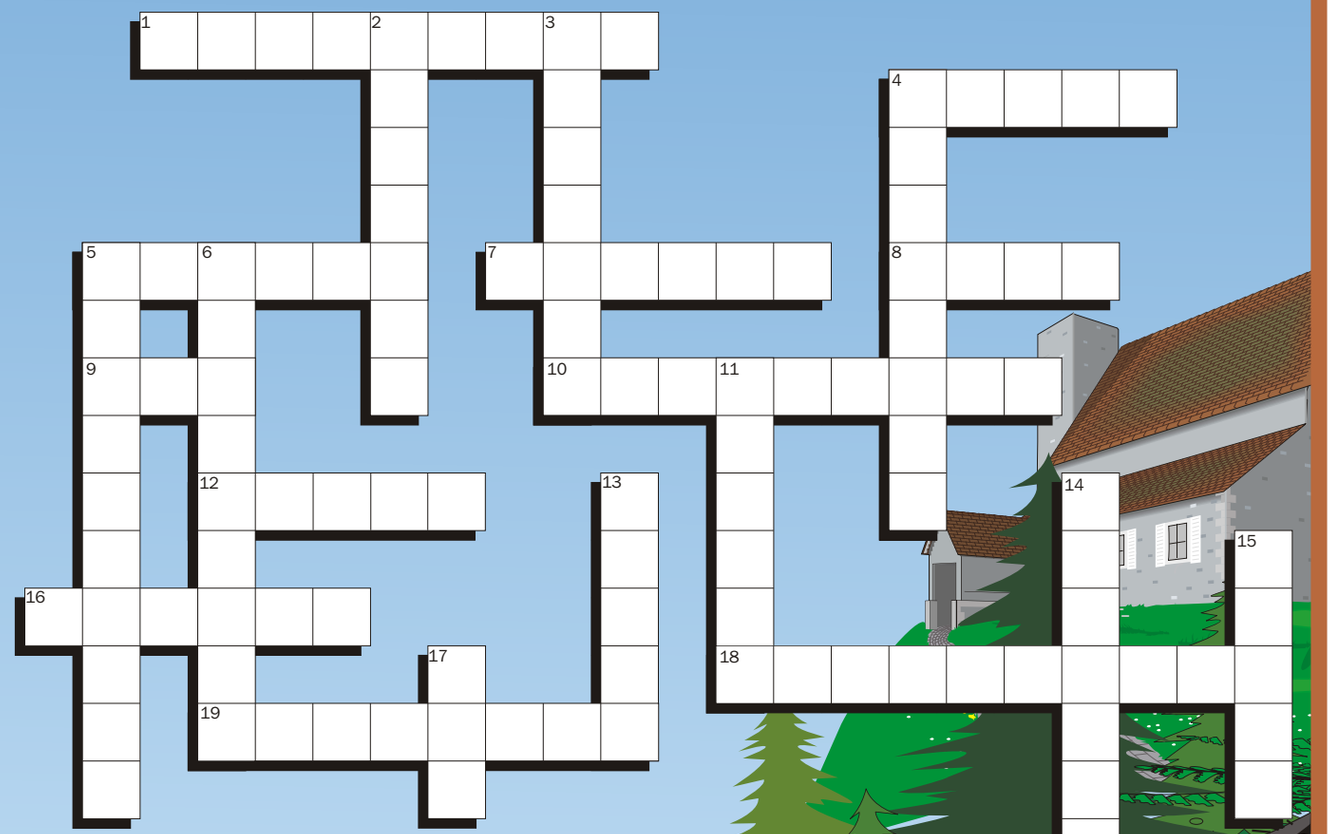
Take the Stormwater Runoff Challenge

Across:

1) The area of land that drains into an estuary, lake, stream, or groundwater is known as a _____.
4) The _____ of speeding boats can erode shorelines.
5) Maintaining your _____ tank will help to prevent bacteria and nutrients from leaking into groundwater and surface waters.
7) Wetland plants act like a natural water _____, removing harmful pollutants from stormwater runoff.
8) Leave your grass clippings on your _____ to reduce the need for commercial fertilizers.
9) A single quart of motor _____, if disposed of improperly, can pollute 2 million gallons of water.
10) Fertilizers and animal wastes contain _____ that "feed" algae and other aquatic plants harmful to water quality.
12) Polluted runoff from both rural and _____ sources has a significant impact on water quality.
16) Storm _____ don't always connect to sewage treatment plants, so runoff can flow directly to rivers, lakes, and coastal waters.
18) Follow directions carefully when applying _____ on your lawn—more isn't always better.
19) Polluted runoff (also called_____ source pollution) comes from so many places that it's hard to "pinpoint" a source.
20) Yard and vegetable food waste are suitable additions to a _____ pile.

Down:

2) Don't dump used motor oil into storm drains. _____ it!
3) _____ of soil from barren land can cloud nearby streams.
4) _____ prevent flooding, improve water quality, and provide habitat for waterfowl, fish, and wildlife.
5) Marking "Do Not Dump, Drains to Bay" on a _____ is one way to educate people about polluted runoff.
6) Excess sediment, nutrients, toxics, and pathogens are all types of runoff _____.
11) Polluted _____ is the nation's #1 water quality problem.
13) The cattail is one wetland _____ that helps purify polluted runoff.
14) Too much _____ in water can harm aquatic life.
15) Proper crop and animal management on _____ helps to control water pollution.
17) _____ impact development helps control stormwater pollution through conservation approaches and techniques.



Choices:

compost	nonpoint	sediment
drains	nutrients	septic
erosion	oil	storm drain
farms	plant	urban
fertilizer	pollution	wakes
filter	recycle	watershed
lawn	runoff	wetlands
Low		

EPA United States Environmental Protection Agency

For more information, please visit EPA's Polluted Runoff web site at www.epa.gov/nps

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Water-Efficient Landscaping:

Preventing Pollution & Using Resources Wisely

A Message from the Administrator

Christine Todd Whitman

I believe water is the biggest environmental issue we face in the 21st Century in terms of both quality and quantity. In the 30 years since its passage, the Clean Water Act has dramatically increased the number of waterways that are once again safe for fishing and swimming. Despite this great progress in reducing water pollution, many of the nation's waters still do not meet water quality goals. I challenge you to join with me to finish the business of restoring and protecting our nation's waters for present and future generations.

United States Environmental Protection Agency
Office of Water (4204M)
EPA832-F-02-002
September 2002
www.epa.gov/owm/water-efficiency/index.htm

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What is Water-efficient Landscaping?

Water, many agree, is our most precious natural resource; without it, life ceases. Yet judging by our water use and consumption practices, many of us in the United States seem to take it for granted. A typical household uses approximately 260 gallons of water per day. "Water conscious" individuals often install high-efficiency shower heads and toilets and wash only full loads of clothes and dishes to reduce consumption. But in the summer, the amount of water used outdoors by a household can exceed the amount used for all other purposes in the entire year. This is especially true in hot, dry climates.

Gardening and lawn care account for the majority of this seasonal increase, but other outdoor activities, such as washing cars and filling swimming pools, also contribute. According to the U.S. Geological Survey, of the 26 billion gallons of water consumed daily in the United States[1], approximately 7.8 billion gallons, or 30 percent[2], is devoted to outdoor uses. The majority of this is used for landscaping. In fact, it is estimated that the typical suburban lawn consumes 10,000 gallons of water above and beyond rainwater each year (Vickers, p 140).

Many mistakenly believe that stunning gardens and beautiful lawns are only possible through extensive watering, fertilization, and pesticide application. As this booklet will demonstrate, eye-catching gardens and landscapes that save water, prevent pollution, and protect the environment are, in fact, easily achieved by employing water-efficient landscaping. Water-efficient landscaping produces attractive landscapes because it utilizes designs and plants suited to local conditions.

This booklet describes the benefits of water-efficient landscaping. It includes several examples of successful projects and programs, as well as contacts, references, and a short bibliography. For specific information about how to best apply water-efficient landscaping principles to your geographical area, consult with your county extension service and local garden and nursery centers. Local governments and water utilities also possess a wealth of information and suggestions for using water more efficiently in all aspects of your life, including landscaping.

Xeriscape garden at Denver Water

1 W.B. Solley, R.R. Pierce, and H.A. Perlman. 1998. *Estimated Use of Water in the United States in 1995* (USGS Circular 1200). USGS. Reston, VA. p.27.

2 Amy Vickers. 2001. *Handbook of Water Use and Conservation*. WaterPlow Press. Amherst, MA. p. 140.

Xeriscaped front yard in Colorado Springs

Many terms and schools of thought have been used to describe approaches to water-efficient landscaping. Some examples include "water-wise," "water-smart," "low-water," and "natural landscaping." While each of these terms varies in philosophy and approach, they are all based on the same principles and are commonly used interchangeably. One of the first conceptual approaches developed to formalize these principles is known as "Xeriscape[3] landscaping." Xeriscape landscaping is defined as "quality landscaping that conserves water and protects the environment." The word "Xeriscape" was coined and copyrighted by Denver Water Department in 1981 to help make water conserving landscaping an easily recognized concept. The word is a combination of the Greek word "*xeros*," which means "dry," and "landscape."

The seven principles upon which Xeriscape landscaping is based are:

- Proper planning and design
- Soil analysis and improvement
- Appropriate plant selection
- Practical turf areas
- Efficient irrigation
- Use of mulches
- Appropriate maintenance

The eight fundamentals of water-wise landscaping, below, illustrate the similarities in the underlaying concepts and principles of Xeriscape landscaping and other water-efficient approaches.

- Group plants according to their water needs.
- Use native and low-water-use plants.
- Limit turf areas to those needed for practical uses.
- Use efficient irrigation systems.
- Schedule irrigation wisely.
- Make sure soil is healthy.
- Remember to mulch.
- Provide regular maintenance.

In short, plan and maintain your landscape with these principles of water efficiency in mind and it will continue to conserve water and be attractive.

3 Denver Water welcomes the use of the term Xeriscape in books, articles, and speeches promoting water conserving landscape. EPA is using this term with permission from Denver Water. For permission to use "Xeriscape" in your publications, call Denver Water at 303 628-6330.

Why Use Water-efficient Landscaping?

Proper landscaping techniques not only create beautiful landscapes, but also benefit the environment and save water. In addition, attractive, water-efficient, low-maintenance landscapes can increase home values.

Water-efficient landscaping offers many economic and environmental benefits, including:

- Lower water bills from reduced water use.
- Conservation of natural resources and preservation of habitat for plants and wildlife such as fish and waterfowl.
- Decreased energy use (and air pollution associated with its generation) because less pumping and treatment of water is required.
- Reduced home or office heating and cooling costs through the careful placement of trees and plants.
- Reduced runoff of stormwater and irrigation water that carries top soils, fertilizers, and pesticides into lakes, rivers, and streams.
- Fewer yard trimmings to be managed or landfilled.
- Reduced landscaping labor and maintenance costs.
- Extended life for water resources infrastructure (e.g., reservoirs, treatment plants, groundwater aquifers), thus reduced taxpayer costs.

Meadow Sage (Salvia pratensis) *is the background for New Mexico Evening Primrose* (Oenothera berlandieri 'siskiyou')

How is Water-efficient Landscaping Applied?

Landscaping that conserves water and protects the environment is not limited to arid landscapes with only rocks and cacti. Through careful planning, landscapes can be designed to be both pleasing to the senses and kind to the environment. One simple approach to achieving this is applying and adopting the basic principles of water-efficient landscaping to suit your climatic region. The seven principles of Xeriscape landscaping are used below to describe these basic concepts in greater detail.

Dragon's Blood Sedum (Sedum spurium) *under Honeylocust Trees* (Gleditsia triaconthos)

Proper planning and design

Developing a landscape plan is the first and most important step in creating a water-efficient landscape. Your plan should take into account the regional and microclimatic conditions of the site, existing vegetation, topography, intended uses of the property, and most importantly, the grouping of plants by their water needs. Also consider the plants' sun or shade requirements and preferred soil conditions. A well-thought-out landscape plan can serve as your roadmap in creating beautiful, water-efficient landscapes and allow you to continually improve your landscape over time.

Soil analysis and improvements

Because soils vary from site to site, test your soil before beginning your landscape improvements. Your county extension service can analyze the pH levels; nutrient levels (e.g., nitrogen, phosphorus, potassium); and the sand, silt, clay, and organic matter content of your soil. It can also suggest ways to improve your soil's ability to support plants and retain water (e.g., through aeration or the addition of soil amendments or fertilizers).

Appropriate plant selection

Your landscape design should take into account your local climate as well as soil conditions. Focus on preserving as many existing trees and shrubs as possible because established plants usually require less water and maintenance. Choose plants native to your region. Native plants, once established, require very little to no additional water beyond normal rainfall. Also, because they are adapted to local soils and climatic conditions, native plants commonly do not require the addition of fertilizers and are more resistant to pests and disease.

When selecting plants, avoid those labeled "hard to establish," "susceptible to disease," or "needs frequent attention," as these types of plants frequently require large amounts of supplemental water, fertilizers, and pesticides. Be careful when selecting non-indigenous species as some of them may become invasive. An invasive plant might be a water guzzler and will surely choke out native species. Your state or county extension service or local nursery can help you select appropriate plants for your area.

The key to successful planting and transplanting is getting the roots to grow into the surrounding soil as quickly as possible. Knowing when and where to plant is crucial to speeding the establishment of new plants. The best time to plant will vary from species to species. Some plants will thrive when planted in a dormant or inactive state. Others succeed when planted during the season when root generation is highest and sufficient moisture is available to support new growth (generally, spring is the best season, but check plant tags or consult with your local nursery for specific species).

Practical turf areas

How and where turf is placed in the landscape can significantly reduce the amount of irrigation water needed to support the landscape. Lawns require a large amount of supplemental water and generally greater maintenance than other vegetation. Use turf where it aesthetically highlights the house or buildings and where it has practical function, such as in play or recreation areas. Grouping turf areas can increase watering efficiency and significantly reduce evaporative and runoff losses. Select a type of grass that can withstand drought periods and become dormant during hot, dry seasons. Reducing or eliminating turf areas altogether further reduces water use.

Efficient irrigation

Efficient irrigation is a very important part of using water efficiently outdoors, and applies in any landscape—whether Xeriscape or conventional. For this reason, an entire section of this booklet addresses efficient irrigation; it can be found on page 6.

Use of mulches

Mulches aid in greater retention of water by minimizing evaporation, reducing weed growth, moderating soil temperatures, and preventing erosion. Organic mulches also improve the condition of your soil as they decompose. Mulches are typically composed of wood bark chips, wood grindings, pine straws, nut shells, small gravel, or shredded landscape clippings. Avoid using rock mulches in sunny areas or around non-arid climate plants, as they radiate large amounts of heat and promote water loss that can lead to scorching. Too much mulch can restrict water flow to plant roots and should be avoided.

Wine Cup (Callirhoe involucrata) *and Sunset Hyssop* (Agastache rupestris) *in the Denver Water Xeriscape Garden*

Appropriate maintenance

Water and fertilize plants only as needed. Too much water promotes weak growth and increases pruning and mowing requirements. Like any landscape, a water-efficient yard will require regular pruning, weeding, fertilization, pest control, and irrigation. As your water-efficient landscape matures, however, it will require less maintenance and less water. Cutting turf grass only when it reaches two to three inches promotes deeper root growth and a more drought-resistant lawn. As a rule of thumb, mow your turf grass before it requires more than one inch to be removed. The proper cutting height varies, however, with the type of grass, so you should contact your county extension service or local nursery to find out the ideal cutting height for your lawn. Avoid shearing plants or giving them high nitrogen fertilizers during dry periods because these practices encourage water-demanding new growth.

Water-efficient Landscape Irrigation Methods

With common watering practices, a large portion of the water applied to lawns and gardens is not absorbed by the plants. It is lost through evaporation, runoff, or being pushed beyond the root zone because it is applied too quickly or in excess of the plants' needs. The goal of efficient irrigation is to reduce these losses by applying only as much water as is needed to keep your plants healthy. This goal is applicable whether you have a Xeriscape or a conventional landscape.

To promote the strong root growth that supports a plant during drought, water deeply and only when the plant needs water. For clay soils, watering less deeply and more often is recommended. Irrigating with consideration to soil type, the condition of your plants, the season, and weather conditions—rather than on a fixed schedule—significantly increases your watering efficiency. Grouping plants according to similar water needs also makes watering easier and more efficient.

Purple Fountain Grass (Pennisetum setaceum "Rubrum") *and Marigolds* (Calendula officinalis) *in planter bed*

Irrigating lawns, gardens, and landscapes can be accomplished either manually or with an automatic irrigation system. Manual watering with a hand-held hose tends to be the most water-efficient method. According to the AWWA Research Foundation's outdoor end use study, households that manually water with a hose typically use 33 percent less water outdoors than the average household. The study also showed that households with in-ground sprinkler systems used 35 percent more water, those with automatic timers used 47 percent more water, and those with drip irrigation systems used 16 percent more water than households without these types of systems. These results show that in-ground sprinkler and drip irrigation systems must be operated properly to be water-efficient.

You can use a hand-held hose or a sprinkler for manual irrigation. To reduce water losses from evaporation and wind, avoid sprinklers that produce a fine mist or spray high into the air. Soaker hoses can also be very efficient and effective when used properly. Use a hand-held soil moisture probe to determine when irrigation is needed.

To make automatic irrigation systems more efficient, install system controllers such as rain sensors that prevent sprinkler systems from turning on during and immediately after rainfall, or soil moisture sensors that activate sprinklers only when soil moisture levels drop below pre-programmed levels. You can also use a weather-

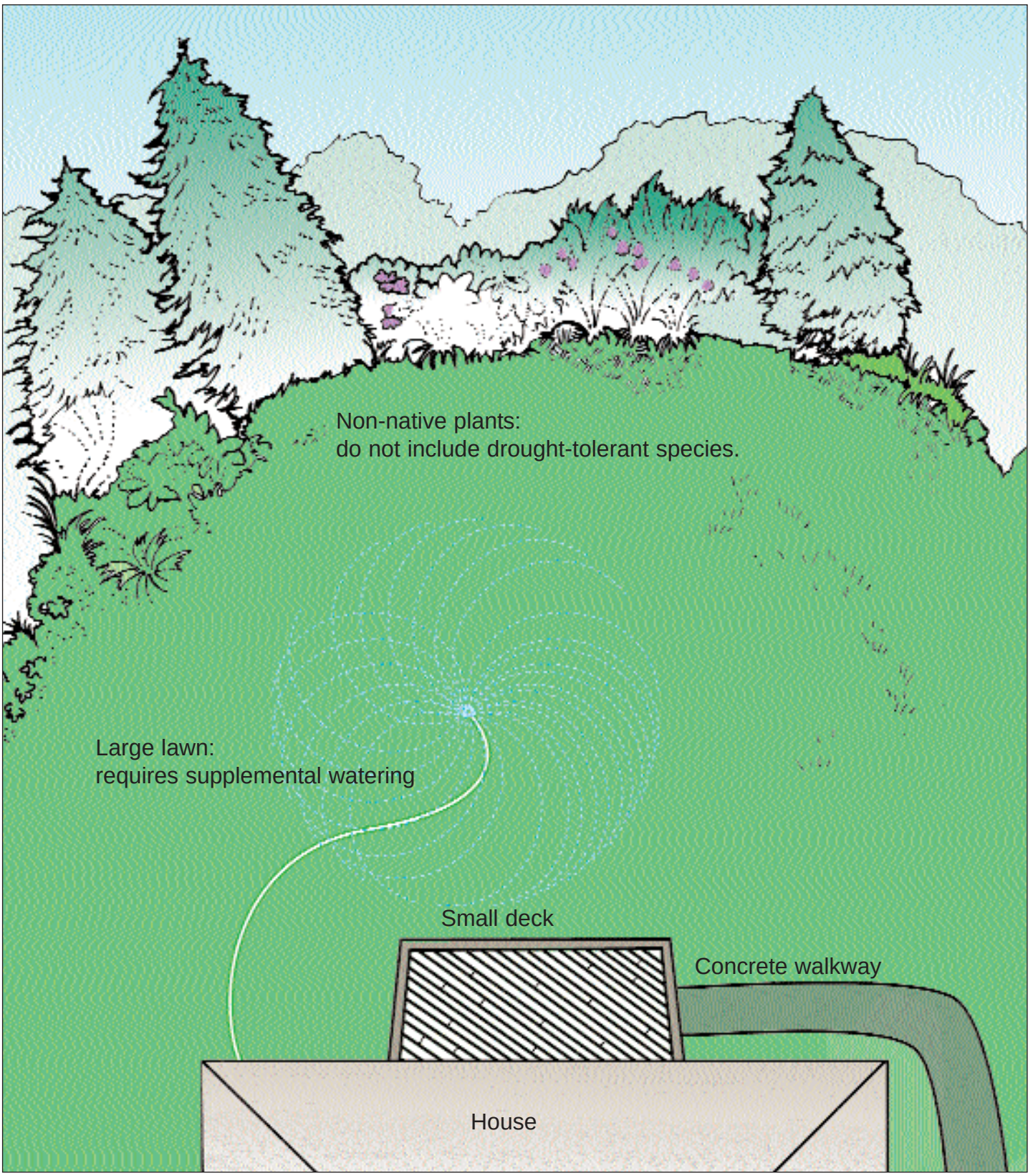
driven programming system. Drip-type irrigation systems are considered the most efficient of the automated irrigation methods because they deliver water directly to the plants' roots. It is also important to revise your watering schedule as the seasons change. Over-watering is most common during the fall when summer irrigation schedules have not been adjusted to the cooler temperatures.

To further reduce your water consumption, consider using alternative sources of irrigation water, such as gray water, reclaimed water, and collected rainwater. According to the AWWA Research Foundation, homes with access to alternative sources of irrigation reduce their water bills by as much as 25 percent.[4] Graywater is untreated household waste water from bathroom sinks, showers, bathtubs, and clothes washing machines. Graywater systems pipe this used water to a storage tank for later outdoor watering use. State and local graywater laws and policies vary, so you should investigate what qualifies as gray water and if any limitations or restrictions apply. Reclaimed water is waste water that has been treated to levels suitable for nonpotable uses. Check with local water officials to determine if it is available in your area. Collected rainwater is rainwater collected in cisterns, barrels, or storage tanks. Commercial rooftop collection systems are available, but simply diverting your downspout into a covered barrel is an easy, low-cost approach. When collecting rainwater, cover all collection vessels to prevent animals and children from entering and to prevent mosquito breeding. Some states might have laws which do not allow collection of rainwater, so be sure to check with your state's water resource agency before implementing a rainwater collection system.

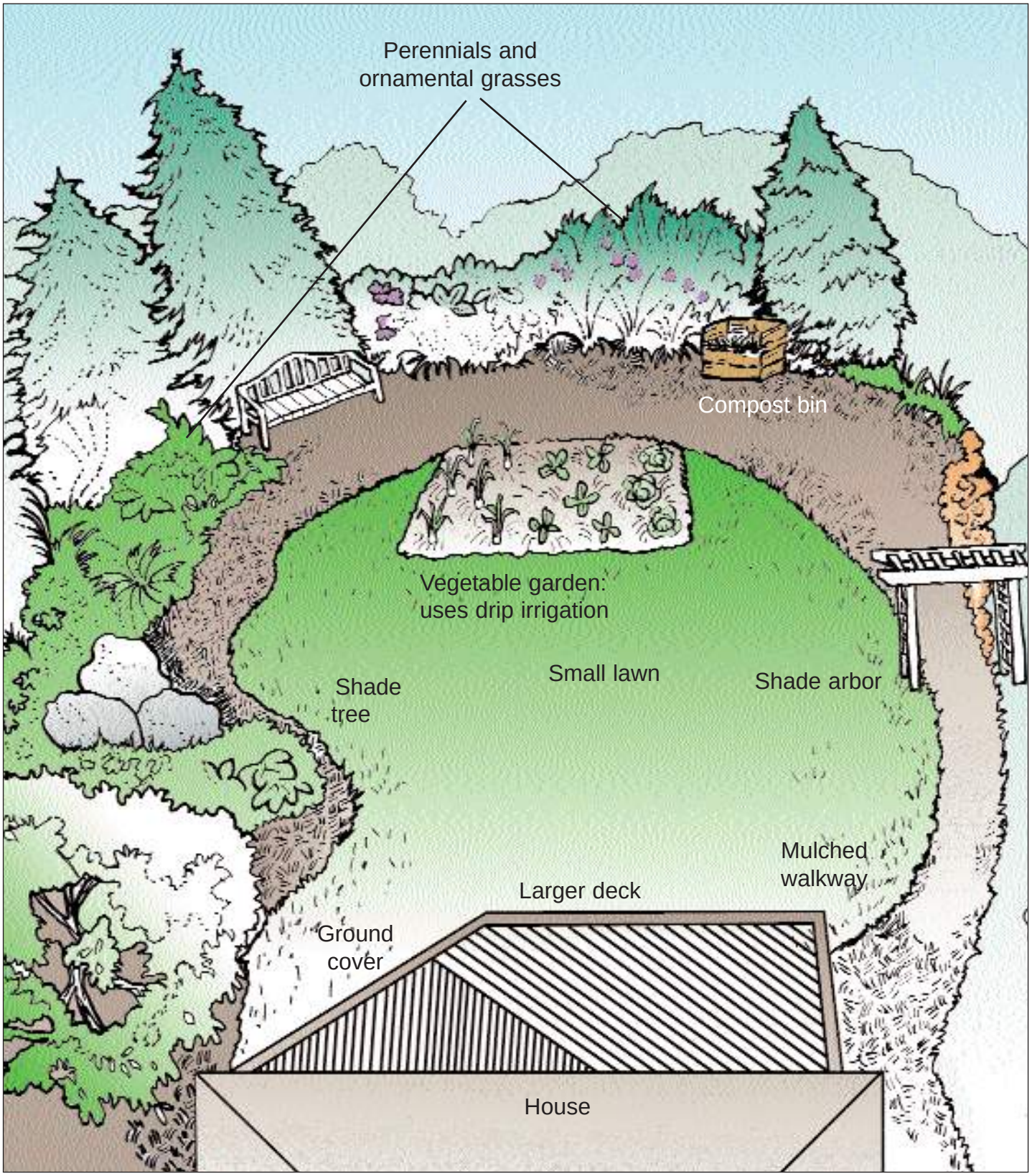
Red Valerian (Centranthus ruber)

4 AWWA Research Foundation. 1999. *Residential End Uses of Water*. <www.waterwiser.org>

Non-xeriscaping



Xeriscaping



Examples of Successful Water-efficient Landscaping Projects

Water-efficient landscaping techniques can be used by individuals, companies, state, tribal, and local governments, and businesses to physically enhance their properties, reduce long-term maintenance costs, and create environmentally conscious landscapes. The following examples illustrate how water-efficient landscapes can be used in various situations.

Oriental Poppies (Paparer orientale)

Homeowner–public/private partnership

- The South Florida Water Management District, the Florida Nurserymen and Growers Association, the Florida Irrigation Society, and local businesses worked together to produce a television video called "Plant It Smart with Xeriscape." The video shows how a typical Florida residential yard can be retrofitted with Xeriscape landscaping to save energy, time, and money. The showcase yard (selected from 70 applicants) had a history of heavy water use—more than 90,000 gallons per month. After the retrofit, the yard's aesthetic value was enhanced; plus it now uses 75 percent less water and relies on yard trimmings for mulch and compost.
- The Southwest Florida Water Management District (SWFWMD), the City of St. Petersburg, and Pinellas County, Florida, produced a video called "Xeriscape It!" It shows a landscape being installed using the seven Xeriscape principles. The SWFWMD also funded several Xeriscape demonstration sites and maintains a Xeriscape demonstration garden at its Brooksville, Florida, headquarters. The garden features a variety of native and non-native plants and is available for public viewing, along with a landscape plant identification guide.
- Residents of Glendale, Arizona, can receive a $100 cash rebate for installing or converting more than half of their landscapable area to non-grass vegetation. The Glendale Water Conservation Office conducts an inspection of the converted lawn to ensure compliance with rebate requirements and then issues a rebate check to the homeowner. The purpose of the Landscape Rebate Program is to permanently reduce the amount of water used to irrigate grass throughout Glendale.

State government

- Although perceived as a water-rich state, Florida became the first to enact a statewide Xeriscape law. Florida's legislature recognized that its growing population and vulnerable environment necessitated legal safeguards for its water resources. The Xeriscape law requires Florida's Departments of Management Ser-

vices and Transportation to use Xeriscape landscaping on all new public properties and to develop a 5-year program to phase in Xeriscape on properties constructed before July 1992. All local governments must also consider requiring the use of Xeriscape and offering incentives to install Xeriscaping.

- Texas also developed legislation requiring Xeriscape landscaping on new construction projects on state property beginning on or after January 1994. Additional legislation, enacted in 1995, requires the Department of Transportation to use Xeriscape practices in the construction and maintenance of roadside parks. All municipalities may consider enacting ordinances requiring Xeriscape to conserve water.

City government

In Las Vegas, Nevada, homeowners can receive up to $1,000 for converting their lawn to Xeriscape, while commercial landowners can receive up to a $50,000 credit on their water bill. The city and several other surrounding communities hope these eye-catching figures will help Las Vegas meet its goal of saving 25 percent of the water it would otherwise have used by the year 2010; to date, it has saved 17 percent. Local officials plan to reach the target with the assistance of incentive programs encouraging Xeriscape, a city ordinance limiting turf to no more than 50 percent of new landscapes, grassroots information programs, and a landscape awards program specifically for Xeriscaped properties. Preliminary results of a five-year study show that residents who converted a portion of their lawns to Xeriscape reduced total water consumption by an average of 33 percent. The xeric vegetation required less than a quarter of the water typically used and one-third the maintenance (both in labor and expenditures) compared to traditional turf.

Yellow Ice Plant (Delosperma nubigenum) *close-up*

Developers

Howard Hughes Properties (HHP), a developer and manager of more than 25,000 acres of residential, commercial, and office development property, has enthusiastically used drought tolerant landscaping on all of its properties since 1990. Most of the company's properties are located in Las Vegas, one of the country's fastest growing metropolitan areas. To conserve resources, the city and county have implemented regulations requiring developers to employ certain Xeriscape principles in new projects. Specifically, a limited percentage of grass can be used on projects, and it must be kept away from streets. As the area's first large-scale developer to recognize the need and value in incorporating drought tolerant landscaping in parks, streetscapes, and open spaces, HHP uses native and desert-adaptive plants that survive and thrive in the Las Vegas climate with minimal to moderate amounts of water.

Drip system irrigation controllers are linked to weather stations that monitor the evapotranspiration rate. This allows HHP to determine the correct amount of water to be applied to plants at any given time. HHP tests the irrigation systems regularly and adds appropriate soil amendments to promote healthy plant growth. The maintenance program also includes pest management, the use of mulching mowers, and the use of rock mulch top dressing on all non-turf planting areas. These measures combine to ensure a beautiful, healthy, and responsible landscape.

Public/private partnerships

Even the most water-conscious homeowners in Southern California are over-watering by 50 to 70 gallons per day. The excess water washes away fertilizers and pesticides, which pollute natural waterways. The quantity of water wasted (and the dollars that pay for it) are even more substantial for large-scale commercial properties and developments.

An innovative partnership in Orange County links landscape water management, green material management, and non-point source pollution prevention goals into one program—the Landscape Performance Certification Program. This program emphasizes efficient landscape irrigation and features a "landscape irrigation budget" based on a property's landscape area, type, and the daily weather. The Municipal Water District monitors actual water use through a system of 12,000 dedicated water meters installed by participating landscape managers.

Participants, including landscapers, property managers, and homeowner associations, can compare the actual cost of water used on their property with the calculated budget. Those staying within budget are awarded certification, a proven marketing tool. This new voluntary program is implemented by the Municipal Water District with input from the California Landscape Contractors' Association, the Orange County Integrated Management Department, the Metropolitan Water District of Southern California, and local nurseries and has the support of 32 retailing water suppliers. The program is already credited with increasing the use of arid-climate shrubs and landscaping to accommodate drip irrigation, and has resulted in cost savings to water customers.

Miscanthus sinensis (Miscanthus grass, also called Maiden grass) *variety with leaves turning yellow for fall.*

For More Information

The following list of organizations can provide more information on water-efficient landscaping. This is not meant to be an exhaustive list, rather it is intended to help you locate local information sources and possible technical assistance.

Turkish Speedwell (Veronica liwanensis) *in background and tulips in foreground.*

Water Management Districts or Utilities

Your local water management district often can provide information on water conservation, including water efficient landscaping practices. Your city, town, or county water management district can be found in the Blue Pages section of your local phone book or through your city, town, or county's Web site if it has one. If you do not know your city, town, or county's Web site, check for a link on your state's Web site. URLs for state Web sites typically follow this format: <www.state.(two letter state abbreviation).us>.

State/County Extension Services

Your state or county extension service is also an excellent source of information. Many extension services provide free publications and advice on home landscaping issues including tips on plant selection and soil improvement. Some also offer a soil analysis service for a nominal fee. Your county extension service can be found in the Blue Pages section of your local phone book under the county government section or through your county's Web site if it has one. The U.S. Department of Agriculture's Cooperative State Research, Education, and Extension Service (www.reeusda.gov/statepartners/usa.htm) provides an online directory of land-grant universities which can help you locate your state extension service. Government Guide (www.governmentguide.com) is yet another online resource that might prove helpful in locating state or local agencies.

Organizations

The following is a partial list of organizations located across the United States that provide helpful information on water-efficient landscaping.

American Water Works Association (AWWA)
6666 West Quincy Avenue
Denver, CO 80235
Telephone: 303 794-7711
and
1401 New York Avenue, NW, Suite 640
Washington, DC 20005
Telephone: 202 628-8303
Web: <www.awwa.org>

Arizona Municipal Water Users Association (AMWUA)
Web: <www.amwua.org/program-xeriscape.htm>

BASIN
City of Boulder Environmental Affairs
P.O. Box 791
Boulder, CO 80306
Phone: 303 441-1964
E-mail: basin@bcn.boulder.co. us
Web: <bcn.boulder.co.us/basin/local/seven.html>

Denver Water
1600 West 12th Avenue
Denver, CO 80204
Phone: 303 628-6000
Fax: 303 628-6199
TDDY: 303 534-4116
Office of Water Conservation hotline:
303 628-6343
E-mail: jane.earle@denverwater.org
Web: <www.water.denver.co.gov/conservation/conservframe.html>

New Mexico Water Conservation Program/Water Conservation Clearinghouse
P. O. Box 25102
Santa Fe, NM 87504
Phone: 800 WATER-NM
E-mail: waternm@ose.state.nm.us
Fax: 505 827-3813
Web: <www.ose.state.nm.us/water-info/conservation/index.html>

Project WET - Water Education for Teachers
201 Culbertson Hall
Montana State University
Bozeman, MT 59717
Phone: 406 994-5392
Web: <www.montana.edu/wwwwet>

Rocky Mountain Institute
1739 Snowmass Creek Road
Snowmass, CO 81654-9199
Phone: 970 927-3851
Web: <www.rmi.org>

Southern Nevada Water Authority
1001 S. Valley View Boulevard, Mailstop #440
Las Vegas, NV 89153
Phone: 702 258-3930
Web: <www.snwa.com>

Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899
Phone: 352 796-7211 or 800 423-1476 (Florida only)
Web: <www.swfwmd.state.fl.us/watercon/xeris/swfxeris.html>

Sustainable Sources Green Building Program: Sustainable Building Source Book
E-mail: info@greenbuilder.com
Web: <www.greenbuilder.com/sourcebook/xeriscape.html>

Water Conservation Garden – San Diego County
12122 Cuyamaca College Drive West
El Cajon, CA 92019
Phone: 619 660-0614
Fax: 619 660-1687
E-mail: info@thegarden.org
Web: <www.thegarden.org/garden/xeriscape/index.html> and <www.sdcwa.org/manage/conservation-xeriscape.phtml>\

WaterWiser: The Water Efficiency Clearing House
(Operated by AWWA in cooperation with the U.S. Bureau of Reclamation)
6666 West Quincy Avenue
Denver, CO 80235
Phone: 800 559-9855
Fax: 303 794-6303
E-mail: bewiser@waterwiser.org
Web: <www.waterwiser.org>

Xeriscape Colorado!, Inc.
P.O. Box 40202
Denver, CO 80204-0202
Web: <www.xeriscape.org>

Resources

The following is a partial list of publications on resource efficient landscaping. For even more information, particularly on plants suited to your locale, consult your local library, county extension service, nursery, garden clubs, or water utility.

Ball, Ken and American Water Works Association Water Conservation Committee. *Xeriscape Programs for Water Utilities*. Denver: American Water Works Association, 1990.

Bennett, Jennifer. *Dry-Land Gardening: A Xeriscaping Guide for Dry-Summer, Cold-Winter Climates*. Buffalo: Firefly, 1998.

Bennett, Richard E. and Michael S. Hazinski. *Water-Efficient Landscape Guidelines*. Denver: American Water Works Association, 1993.

Brenzel, Kathleen N., ed. *Western Garden Book*, 2001 Edition. Menlo Park: Sunset Publishing Corporation, 2001.

City of Aurora, Colorado Utilities Department. *Landscaping for Water Conservation: Xeriscape!* Aurora: Colorado Utilities Department, 1989.

Johnson, Eric and Scott Millard. *The Low-Water Flower Gardener: 270 Unthirsty Plants for Color, Including Perennials, Ground Covers, Grasses & Shrubs*. Tucson: Ironwood Press, 1993.

Knopf, James M. *The Xeriscape Flower Gardener*. Boulder: Johnson Books, 1991.

Knopf, James M., ed. *Waterwise Landscaping with Trees, Shrubs, and Vines: A Xeriscape Guide for the Rocky Mountain Region, California, and the Desert Southwest*. Boulder: Chamisa Books, 1999.

Knox, Kim, ed. *Landscaping for Water Conservation: Xeriscape*. Denver: City of Aurora and Denver Water, 1989.

Nellis, David W. *Seashore Plants of South Florida and the Caribbean: A Guide to Identification and Propagation of Xeriscape Plants*. Sarasota: Pineapple Press, Inc., 1994.

Perry, Bob. *Landscape Plants for Western Regions: An Illustrated Guide to Plants for Water Conservation*. Claremont: Land Design Publishing, 1992.

Phillips, Judith. *Natural by Design: Beauty and Balance in Southwest Gardens*. Santa Fe: Museum of New Mexico Press, 1995.

Phillips, Judith. *Plants for Natural Gardens: Southwestern Native & Adaptive Trees, Shrubs, Wildflowers & Grasses*. Santa Fe: Museum of New Mexico Press, 1995.

Robinette, Gary O. *Water Conservation in Landscape Design and Maintenance*. New York: Nostrand Reinhold, 1984.

Rumary, Mark. *The Dry Garden*. New York: Sterling Publishing Co., Inc., 1995.

Springer, Lauren. *The Undaunted Garden: Planting for Weather-Resilient Beauty*. Golden: Fulcrum Publishing, 1994.

Springer, Lauren. *Waterwise Gardening*. New York: Prentice Hall Gardening, 1994.

Stephens, Tom, Doug Welsh, and Connie Ellefson. *Xeriscape Gardening, Water Conservation for the American Landscape*. New York: Macmillan Publishing, 1992.

Sunset Books, eds. *Waterwise Gardening: Beautiful Gardens with Less Water*. Menlo Park: Lane Publishing Company, 1989.

Vickers, Amy. *Handbook of Water Use and Conservation*. Amherst, MA: WaterPlow Press, 2001.

Weinstein, Gayle. *Xeriscape Handbook : A How-To Guide to Natural, Resource-Wise Gardening*. Golden: Fulcrum Publishing, 1998.

Williams, Sara. *Creating the Prairie Xeriscape*. Saskatchewan: University Extension Press, 1997.

Winger, David, ed. *Xeriscape Plant Guide: 100 Water-Wise Plants for Gardens and Landscapes*. Golden: Fulcrum Publishing, 1998.

Winger, David, ed. *Xeriscape Color Guide*. Golden: Fulcrum Publishing, 1998.

Winger, David, ed. *Evidence of Care: The Xeriscape Maintenance Journal, 2002, Vol. 1*, Colorado WaterWise Council, 2001.

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Illustrations by Linda Cook.

For copies of this publication contact:
EPA Water Resources Center (RC-4100)
U.S. Environmental Protection Agency
Ariel Rios Building, 1200 Pennsylvania Avenue, NW.
Washington, DC 20460

For more information regarding water efficiency, please contact:
Water Efficiency Program (4204M)
U.S. Environmental Protection Agency
Ariel Rios Building, 1200 Pennsylvania Avenue, NW.
Washington, DC 20460
<www.epa.gov/OWM/water-efficiency/index.htm>

United States
Environmental Protection Agency (4204M)
Washington, DC 20460

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Drainage System Maintenance SC-44

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).

- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.

- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.

- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.

- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.

- Regulations may include adoption of substantial penalties for illegal dumping and disposal.

- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.

- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:

  - Purchase and installation of signs.

  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.

  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.

  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line:
http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Waste Handling & Disposal SC-34

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Accomplish reduction in the amount of waste generated using the following source controls:
  - ✓ Production planning and sequencing;
  - ✓ Process or equipment modification;
  - ✓ Raw material substitution or elimination;
  - ✓ Loss prevention and housekeeping;
  - ✓ Waste segregation and separation; and
  - ✓ Close loop recycling.
- ☐ Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- ☐ Recycle materials whenever possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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- Use the entire product before disposing of the container.
- To the extent possible, store wastes under cover or indoors after ensuring all safety concerns such as fire hazard and ventilation are addressed.
- Provide containers for each waste stream at each work station. Allow time after shift to clean area.

Good Housekeeping

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain. Clean in a designated wash area that drains to a clarifier.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- If possible, move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Preventative Maintenance

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.

- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, vacuuming, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Spill Response and Prevention Procedures

- Keep your spill prevention and plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - ✓ Vehicles equipped with baffles for liquid waste; and
  - ✓ Trucks with sealed gates and spill guards for solid waste.

Material Handling and Waste Management

Litter Control

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.

- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for waste handling and disposal, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.

- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and the types of waste handled. Significant capital costs may be associated with reducing wastes by modifying processes or implementing closed-loop recycling.
- Many facilities will already have indoor covered areas where waste materials will be stored and will require no additional capital expenditures for providing cover.
- If outdoor storage of wastes is required, construction of berms or other means to prevent stormwater run-on and runoff may require appropriate constructed systems for containment.
- Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

References and Resources

Minnesota Pollution Control Agency, *Industrial Stormwater Best Management Practices Guidebook*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315,* Revised. Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities

Oregon Department of Environmental Quality, 2013. *Industrial Stormwater Best Management Practices Manual- BMP 26 Fueling and Liquid Loading/Unloading Operations.* Available online at: http://www.deq.state.or.us/wq/wqpermit/docs/IndBMP021413.pdf.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control.* Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Sacramento County Environmental Management Stormwater Program: Best Management Practices. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Outdoor Liquid Container Storage SC-31

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

Accidental releases of materials from above ground liquid storage tanks, drums, and dumpsters present the potential for contaminating stormwaters with many different pollutants. Tanks may store many potential stormwater runoff pollutants, such as gasoline, aviation gas, diesel fuel, kerosene, oils, greases, lubricants and other distilled, blended and refined products derived from crude petroleum. Materials spilled, leaked, or lost from storage tanks may accumulate in soils or on other surfaces and be carried away by rainfall runoff. These source controls apply to containers located outside of a building used to temporarily store liquid materials and include installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Approach

Pollution Prevention

- Educate employees about pollution prevention measures and goals.
- Keep an accurate, up-to-date inventory of the materials delivered and stored on-site.
- Try to keep chemicals in their original containers, and keep them well labeled.

Suggested Protocols

General

- Develop an operations plan that describes procedures for loading and/or unloading. Refer to SC-30 – Outdoor

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Loading/Unloading of Materials for more detailed BMP information pertaining to loading and unloading of liquids.

- Protect materials from rainfall, run-on, runoff, and wind dispersal:
  - Cover the storage area with a roof.
  - Minimize stormwater run-on by enclosing the area or building a berm around it.
  - Use a "doghouse" structure for storage of liquid containers.
  - Use covered dumpsters for waste product containers.
- Employ safeguards against accidental releases:
  - Provide overflow protection devices to warn operator or automatic shut down transfer pumps.
  - Provide protection guards (bollards) around tanks and piping to prevent damage from a vehicle or forklift.
  - Provide clear tagging or labeling, and restrict access to valves to reduce human error.
- Berm or surround tank or container with secondary containment system, including dikes, liners, vaults, or double walled tanks.
- Be aware and ready to address the fact that some municipalities require secondary containment areas to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.
- Contact the appropriate regulatory agency regarding environmental compliance for facilities with "spill ponds" designed to intercept, treat, and/or divert spills.
- Have registered and specifically trained professional engineers identify and correct potential problems such as loose fittings, poor welding, and improper or poorly fitted gaskets for newly installed tank systems.

Storage Areas

- Provide storage tank piping located below product level with a shut-off valve at the tank; ideally this valve should be an automatic shear valve with the shut-off located inside the tank.
- Provide barriers such as posts or guardrails, where tanks are exposed, to prevent collision damage with vehicles.
- Provide secure storage to prevent vandalism-caused contamination.
- Place tight-fitting lids on all containers.
- Enclose or cover the containers where they are stored.

- Raise the containers off the ground by use of pallet or similar method, with provisions for spill control.
- Contain the material in such a manner that if the container leaks or spills, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters or groundwater.
- Place drip pans or absorbent materials beneath all mounted container taps, and at all potential drip and spill locations during filling and unloading of containers. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.
- Ensure that any underground or aboveground storage tanks are designed and managed in accordance with applicable regulations, identified as a potential pollution source, and have secondary containment such as a berm or dike with an impervious surface.

Inspection

- Provide regular inspections:
  - Inspect storage areas regularly for leaks or spills.
  - Conduct routine inspections and check for external corrosion of material containers. Also check for structural failure, spills and overfills due to operator error, failure of piping system.
  - Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.
  - Visually inspect new tank or container installations for loose fittings, poor welding, and improper or poorly fitted gaskets.
  - Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
  - Replace containers that are leaking, corroded, or otherwise deteriorating with ones in good condition. If the liquid chemicals are corrosive, containers made of compatible materials must be used instead of metal drums.
  - New or secondary containers must be labeled with the product name and hazards.

Training

- Train employee (e.g., fork lift operators) and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill if one should occur.
- Train employees in proper storage measures.
- Use a training log or similar method to document training.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment, and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Prevent operator errors by using engineering safeguards and thus reducing accidental releases of pollutants.
- Store and maintain appropriate spill cleanup materials in a location near the tank storage area and known to all.

Other Considerations

- Storage sheds often must meet building and fire code requirements.
- The local fire district must be consulted for limitations on clearance of roof covers over containers used to store flammable materials.
- All specific standards set by Federal and State laws concerning the storage of oil and hazardous materials must be met.
- Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code.
- Storage of oil and hazardous materials must meet specific Federal and State standards including:
  - Spill Prevention Control and Countermeasure Plan (SPCC) Plan
  - Secondary containment
  - Integrity and leak detection monitoring
  - Emergency preparedness plans

Requirements

Costs

Costs will vary depending on the size of the facility and the necessary controls, such as berms or safeguards against accidental controls.

Maintenance

- Conduct weekly inspection.
- Sweep and clean the storage area regularly if it is paved, do not hose down the area to a storm drain.

Supplemental Information

The most common causes of unintentional releases are:

- Installation problems
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- External corrosion and structural failure
- Spills and overfills due to operator error
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa

Further Detail of the BMP

Aboveground Tank Leak and Spill Control

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be paved with Portland cement concrete, free of cracks and gaps, and impervious in order to contain leaks and spills,
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10% of the volume of all of the containers or 110% of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator

Maintenance is critical to preventing leaks and spills. Conduct routine weekly inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa

- Inspect new tank or container installation visually for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently release accumulated stormwater during the wet season.
- Have periodic integrity testing conducted by a qualified professional.

Container Management

- To limit the possibility of stormwater pollution, containers used to store dangerous waste or other liquids should be kept inside the building unless this is impractical due to site constraints. If the containers are placed outside, the following procedures should be employed:
  - Dumpsters used to store items awaiting transfer to a landfill should be placed in a lean-to structure or otherwise covered. Dumpsters shall be kept in good condition without corrosion or leaky seams.
  - Garbage dumpsters shall be replaced if they are deteriorating to the point where leakage is occurring. Dumpsters should be kept undercover to prevent the entry of stormwater. Employees should be made aware of the importance of keeping the dumpsters covered and free from leaks.
  - Waste container drums should be kept in an area such as a service bay. If drums are kept outside, they must be stored in a lean-to type structure, shed or walk-in container to keep rainfall from reaching the drums.

Dikes

One of the best protective measures against contamination of stormwater is diking. Containment dikes are berms or retaining walls that are designed to hold spills. Diking is an effective pollution prevention measure for above ground storage tanks and railcar or tank truck loading and unloading areas. The dike surrounds the area of concern and holds the spill, keeping spill materials separated from the stormwater side of the dike area. Diking can be used in any industrial or municipal facility, but it is most commonly used for controlling large spills or releases from liquid storage areas and liquid transfer areas.

- For single-wall tanks, containment dikes should be large enough to hold the contents of the storage tank for the facility plus rain water.
- For trucks, diked areas should be capable of holding an amount equal to the volume of the tank truck compartment. Diked construction material should be strong enough to safely hold spilled materials.
- Dike materials can consist of earth, concrete, synthetic materials, metal, or other impervious materials.
- Strong acids or bases may react with metal containers, concrete, and some plastics.

- Where strong acids or bases or stored, alternative dike materials should be considered. More active organic chemicals may need certain special liners for dikes.
- Dikes may also be designed with impermeable materials to increase containment capabilities.
- Dikes should be inspected during or after significant storms or spills to check for washouts or overflows.
- Regular checks of containment dikes to insure the dikes are capable of holding spills should be conducted.
- Inability of a structure to retain stormwater, dike erosion, soggy areas, or changes in vegetation indicate problems with dike structures. Damaged areas should be patched and stabilized immediately.
- Earthen dikes may require special maintenance of vegetation such as mulching and irrigation.

Curbing

Curbing is a barrier that surrounds an area of concern. Curbing is similar to containment diking in the way that it prevents spills and leaks from being released into the environment. Curbing is usually small scaled and does not contain large spills like diking. Curbing is common at many facilities in small areas where handling and transfer of liquid materials occur. Curbing can redirect contaminated stormwater away from the storage area. It is useful in areas where liquid materials are transferred from one container to another. Asphalt is a common material used for curbing; however, curbing materials can include earth, concrete, synthetic materials, metal, or other impenetrable materials.

- Spilled materials should be removed immediately from curbed areas to allow space for future spills.
- Curbs should have manually-controlled pump systems rather than common drainage systems for collection of spilled materials.
- The curbed area should be inspected regularly to clear clogging debris.
- Maintenance should also be conducted frequently to prevent overflow of any spilled materials as curbed areas are designed only for smaller spills.
- Curbing has the following advantages:
  - Excellent run-on control
  - Inexpensive
  - Ease of installment
  - Provides option to recycle materials spilled in curb areas
  - Common industry practice

Examples

The "doghouse" design has been used to store small liquid containers. The roof and flooring design prevent contact with direct rain or runoff. The doghouse has two solid structural walls and two canvas covered walls. The flooring is wire mesh about secondary containment. The unit has been used successfully at Lockheed Missile and Space Company in Sunnyvale.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Fueling Areas SD-30

Photo Credit: Geoff Brosseau

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- ☑ Collect and Convey

Description

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the stormwater conveyance system. Spills at vehicle and equipment fueling areas can be a significant source of pollution because fuels contain toxic materials and heavy metals that are not easily removed by stormwater treatment devices.

Approach

Project plans must be developed for cleaning near fuel dispensers, emergency spill cleanup, containment, and leak prevention.

Suitable Applications

Appropriate applications include commercial, industrial, and any other areas planned to have fuel dispensing equipment, including retail gasoline outlets, automotive repair shops, and major non-retail dispensing areas.

Design Considerations

Design requirements for fueling areas are governed by Building and Fire Codes and by current local agency ordinances and zoning requirements. Design requirements described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements.

Designing New Installations

Covering

Fuel dispensing areas should provide an overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area should drain to the project's treatment control BMP(s) prior to discharging to the stormwater conveyance system. Note - If fueling large equipment or vehicles that would prohibit the use of covers or roofs, the fueling island should be designed to sufficiently accommodate the larger vehicles and equipment and to prevent stormwater run-on and runoff. Grade to direct stormwater to a dead-end sump.

Surfacing

Fuel dispensing areas should be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete should be prohibited. Use asphalt sealant to protect asphalt paved areas surrounding the fueling area. This provision may be made to sites that have pre-existing asphalt surfaces.

The concrete fuel dispensing area should be extended a minimum of 6.5 ft from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 ft, whichever is less.

Grading/Contouring

Dispensing areas should have an appropriate slope to prevent ponding, and be separated from the rest of the site by a grade break that prevents run-on of urban runoff. (Slope is required to be 2 to 4% in some jurisdictions' stormwater management and mitigation plans.)

Fueling areas should be graded to drain toward a dead-end sump. Runoff from downspouts/roofs should be directed away from fueling areas. Do not locate storm drains in the immediate vicinity of the fueling area.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

- In the case of an emergency, provide storm drain seals, such as isolation valves, drain plugs, or drain covers, to prevent spills or contaminated stormwater from entering the stormwater conveyance system.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Non-Stormwater Discharges SC-10

Description

Non-stormwater discharges (NSWDs) are flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain if local regulations allow. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include: potable water sources, fire hydrant flushing, air conditioner condensate, landscape irrigation drainage and landscape watering, emergency firefighting, etc. as discussed in Section 2.

However there are certain non-stormwater discharges that pose an environmental concern. These discharges may originate from illegal dumping of industrial material or wastes and illegal connections such as internal floor drains, appliances, industrial processes, sinks, and toilets that are illegally connected to the nearby storm drainage system through on-site drainage and piping. These unauthorized discharges (examples of which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains.

Non-stormwater discharges will need to be addressed through a combination of detection and elimination. The ultimate goal is to effectively eliminate unauthorized non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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pollutants on streets and into the storm drain system and downstream water bodies.

Approach

Initially the Discharger must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is the elimination of unauthorized non-stormwater discharges. See other BMP Fact Sheets for activity-specific pollution prevention procedures.

General Pollution Prevention Protocols

- Implement waste management controls described in SC-34 Waste Handling and Disposal.
- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" or similar stenciled or demarcated next to them to warn against ignorant or unintentional dumping of pollutants into the storm drainage system.
- Manage and control sources of water such as hose bibs, faucets, wash racks, irrigation heads, etc. Identify hoses and faucets in the SWPPP, and post signage for appropriate use.

Non-Stormwater Discharge Investigation Protocols

Identifying the sources of non-stormwater discharges requires the Discharger to conduct an investigation of the facility at regular intervals. There are several categories of non-stormwater discharges:

- Visible, easily identifiable discharges, typically generated as surface runoff, such as uncontained surface runoff from vehicle or equipment washing; and
- Non-visible, (e.g., subsurface) discharges into the site drainage system through a variety of pathways that are not obvious.

The approach to detecting and eliminating non-stormwater discharges will vary considerably, as discussed below:

Visible and identifiable discharges

- Conduct routine inspections of the facilities and of each major activity area and identify visible evidence of unauthorized non-stormwater discharges. This may include:
  - ✓ Visual observations of actual discharges occurring;

- ✓ Evidence of surface staining, discoloring etc. that indicates that discharges have occurred;
- ✓ Pools of water in low lying areas when a rain event has not occurred; and
- ✓ Discussions with operations personnel to understand practices that may lead to unauthorized discharges.

- ☐ If evidence of non-stormwater discharges is discovered:
  - ✓ Document the location and circumstances using Worksheets 5 and 6 (Section 2 of the manual), including digital photos;
  - ✓ Identify and implement any quick remedy or corrective action (e.g., moving uncovered containers inside or to a proper location); and
  - ✓ Develop a plan to eliminate the discharge. Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge.

- ☐ Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge. Make sure the facility SWPPP is up-to-date and includes applicable BMPs to address the non-stormwater discharge.

Other Illegal Discharges (Non visible)

Illicit Connections

- ☐ Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- ☐ Isolate problem areas and plug illicit discharge points.
- ☐ Locate and evaluate discharges to the storm drain system.
- ☐ Visual Inspection and Inventory:
  - ✓ Inventory and inspect each discharge point during dry weather.
  - ✓ Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system.
  - ✓ Non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- ☐ A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.

- Inspect the path of loading/unloading area drain inlets and floor drains in older buildings.

- Never assume storm drains are connected to the sanitary sewer system.

Monitoring for investigation/detection of illegal discharges

- If a suspected illegal or unknown discharge is detected, monitoring of the discharge may help identify the content and/or suggest the source. This may be done with a field screening analysis, flow meter measurements, or by collecting a sample for laboratory analysis. Section 5 and Appendix D describe the necessary field equipment and procedures for field investigations.

- Investigative monitoring may be conducted over time. For example if, a discharge is intermittent, then monitoring might be conducted to determine the timing of the discharge to determine the source.

- Investigative monitoring may be conducted over a spatial area. For example, if a discharge is observed in a pipe, then monitoring might be conducted at accessible upstream locations in order to pinpoint the source of the discharge.

- Generally, investigative monitoring requiring collection of samples and submittal for lab analysis requires proper planning and specially trained staff.

Smoke Testing

Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two piping systems. Smoke testing is generally performed at a downstream location and the smoke is forced upstream using blowers to create positive pressure. The advantage to smoke testing is that it can potentially identify multiple potential discharge sources at once.

- Smoke testing uses a harmless, non-toxic smoke cartridges developed specifically for this purpose.

- Smoke testing requires specialized equipment (e.g., cartridges, blowers) and is generally only appropriate for specially trained staff.

- A Standard Operating Procedure (SOP) for smoke testing is highly desirable. The SOP should address the following elements:

  - ✓ Proper planning and notification of nearby residents and emergency services is necessary since introducing smoke into the system may result in false alarms;

  - ✓ During dry weather, the stormwater collection system is filled with smoke and then traced back to sources;

- ✓ Temporary isolation of segments of pipe using sand bags is often needed to force the smoke into leaking pipes; and
- ✓ The appearance of smoke in a waste vent pipe, at a sewer manhole, or even the base of a toilet indicates that there may be a connection between the sanitary and storm water systems.

- Most municipal wastewater agencies will have necessary staff and equipment to conduct smoke testing and they should be contacted if cross connections with the sanitary sewer are suspected. See SC-44 Drainage System Maintenance for more information.

Dye Testing

- Dye testing is typically performed when there is a suspected specific pollutant source and location (i.e., leaking sanitary sewer) and there is evidence of dry weather flows in the stormwater collection system.
- Dye is released at a probable upstream source location, either the facility's sanitary or process wastewater system. The dye must be released with a sufficient volume of water to flush the system.
- Operators then visually examine the downstream discharge points from the stormwater collection system for the presence of the dye.
- Dye testing can be performed informally using commercially available products in order to conduct an initial investigation for fairly obvious cross-connections.
- More detailed dye testing should be performed by properly trained staff and follow SOPs. Specialized equipment such as fluorometers may be necessary to detect low concentrations of dye.
- Most municipal wastewater agencies will have necessary staff and equipment to conduct dye testing and they should be contacted if cross connections with the sanitary sewer are suspected.

TV Inspection of Drainage System

- Closed Circuit Television (CCTV) can be employed to visually identify illicit connections to the industrial storm drainage system. Two types of CCTV systems are available: (1) a small specially designed camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping, or (2) a larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe.
- CCTV systems often include a high-pressure water jet and camera on a flexible cable. The water jet cleans debris and biofilm off the inside of pipes so the camera can take video images of the pipe condition.

- CCTV units can detect large cracks and other defects such as offsets in pipe ends caused by root intrusions or shifting substrate.
- CCTV can also be used to detect dye introduced into the sanitary sewer.
- CCTV inspections require specialized equipment and properly trained staff and are generally best left to specialized contractors or municipal public works staff.

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks may include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. These wastes can cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ Illegal dumping hot spots;
  - ✓ Types and quantities (in some cases) of wastes;
  - ✓ Patterns in time of occurrence (time of day/night, month, or year);
  - ✓ Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills);
  - ✓ An anonymous tip/reporting mechanism; and
  - ✓ Evidence of responsible parties (e.g., tagging, encampments, etc.).
- One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Spill and Leak Prevention and Response

- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.
- See SC-11 Spill Prevention Control and Cleanup.

Employee Training Program

- Training of technical staff in identifying and documenting illegal dumping incidents is required. The frequency of training must be presented in the SWPPP, and depends on site-specific industrial materials and activities.
- Consider posting a quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.
- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan. Employees should be able to identify work/jobs with high potential for spills and suggest methods to reduce possibility.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.

- Conduct spill response drills annually (if no events occurred) in order to evaluate the effectiveness of the plan.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Quality Assurance and Record Keeping

Performance Evaluation

- Annually review internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.
- Develop document and data management procedures.
- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Annually document and report the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.
- Document training activities.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Many facilities do not have accurate, up-to-date 'as-built' plans or drawings which may be necessary in order to conduct non-stormwater discharge assessments.
  - ✓ Online tools such as Google Earth™ can provide an aerial view of the facility and may be useful in understanding drainage patterns and potential sources of non-stormwater discharges
  - ✓ Local municipal jurisdictions may have useful drainage systems maps.

- Video surveillance cameras are commonly used to secure the perimeter of industrial facilities against break-ins and theft. These surveillance systems may also be useful for capturing illegal dumping activities. Minor, temporary adjustments to the field of view of existing surveillance camera systems to target known or suspected problem areas may be a cost-effective way of capturing illegal dumping activities and identifying the perpetrators.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital facility cost requirements may be minimal unless cross-connections to storm drains are detected.
- Indoor floor drains may require re-plumbing if cross-connections are detected.
- Leaky sanitary sewers will require repair or replacement which can have significant costs depending on the size and industrial activity at the facility.

Maintenance (including administrative and staffing)

- The primary effort is for staff time and depends on how aggressively a program is implemented.
- Costs for containment, and disposal of any leak or discharge is borne by the Discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Permit Requirements

The IGP authorizes certain Non-Storm Water Discharges (NSWDs) provided BMPs are included in the SWPPP and implemented to:

- Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
- Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
- Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards (WQS); and,

- Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability."

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